Mobile Communication and the Protection of Children

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Preface

"How is your Phd going?" and "When do you finish?" are two stressful questions a PhD student faces and dreads. There are times when I am sure a PhD student will ask himself why he[1] is putting himself through such an 'ordeal'.

For me, the primary objective for writing a thesis arose from the observation of the transformative trends in communicative practices amongst the younger generation. This is due in no small part to the development of new communication technology and its accompanying devices and applications.

In recent years there has been a rise in the up-take of mobile phones. Amongst the younger generation, a contributing factor to the rise and rapid diffusion is the mobile phone's personal and liberating qualities in addition to its varied communicative expressive applications. While this has breathed fresh dimensions to the social structure and independence of these youngsters, we are well aware that the technology can be used for purposes that are different from those purposes that were originally intended. Thus, it is necessary to appreciate and understand the impact of mobile communication technology on children and young people. There is also an urgent need for the regulators, civic society and the relevant stakeholders to respond responsibly to the challenges that arise as a result of the use and abuse of mobile communication technology.

I wish to record my sincere appreciation to the following people persons who supported me throughout. My supervisor, Professor H. Jaap van den Herik has patiently and meticulously read, questioned, commented, the text many times. He ensured that the text is continuously improved. I am grateful for his support, guidance, and advice. Moreover, I acknowledge Dr. Bart Schermer, my co-supervisor, for his invaluable comments. A special mention also goes out to Bni. Yung-ven, Shanthi Sabapathy, Tasha and Ashton for their continuing love, patience, and support.

Finally, I would like to show my deepest gratitude and love to my mentor and Guru, Paramahansa Yogananda without whom this project would have never been remotely possible.

Rebecca Ong — Hong Kong/Leiden, February 2010

1 For brevity, I use 'he' and 'his' whenever 'he' or 'she' and 'his' and 'her' are meant.

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List of abbreviations

3G	Third Generation
ABA	Australian Broadcasting Authority
ACA	Australian Communications Authority
ACLU	American Civil Liberties Union
ACMA	Australian Communications and Media Authority
ADSL	Asymmetric Digital Subscriber Line
AOL	America On-Line
ARPA	Advanced Research Projects Agency
ARPU	Average Rate Per User
ASP	Application Service Provider
AVMSD	Audio Video Media Services Directive
BA	Broadcasting Authority
BBFC	British Board of Film Classification
BORO	Bill of Rights Ordinance
BRTF	Better Regulation Task Force
BWA	Broadband Wireless Access
C&ED	Customs and Excise Department
CC	Creative Commons
CDA	Communications Decency Act
CDMA	Code Division Multiple Access
CEOP	Child Exploitation and Online Protection Center
CERN	European Particle Physics Laboratory
COIAO	Control of Obscene and Indecent Articles Ordinance
COPA	Child On-line Protection Act
COPPA	Children's On-line Privacy Protection Act
COE	Council of Europe
CRC	Convention on the Rights of the Child
CRTC	Canadian Radio Television and Telecommunications Commission
CSL	CSL New World Mobility Limited
CSP	Content Service Provider
DSL	Digital Subscriber Line
DVD	Digital Video Disc
ECPAT	End Child Prostitution, Child Pornography, and Trafficking of Children
EFF	Electronic Freedom Frontier
FBI	Federal Bureau of Investigations
FBO	Facilities-Based Operator
FCC	Federal Communications Commission
FCO	Film Classification Ordinance

FTNS	Fixed Telecommunication Network Service
GB	GigaBytes
GPS	Global Positioning Service
HKISPA	Hong Kong Internet Service Provider Association
HKSAR	Hong Kong Special Administrative Region
HSDPA	High Speed Downlink Packet Access
HTML	Hyper-Text Mark-up Language
IAB	Internet Architecture Board
ICANN	Internet Corporation for Assigned Names and Numbers
ICANN	Internet Corporation for Assigned Names and Numbers
ICCPR	International Covenant on Civil and Political Rights
ICH	Internet Content Host
ICRS	Internet Content Rating System
IDA	Information Development Authority
IETF	Internet Engineering Task Force
IESG	Internet Engineering Steering Group
IGF	Internet Governance Forum
IIA	Internet Industry Association
IM	Instant Messenger
IMCB	Independent Mobile Classification Body
INTERPOL	International Centre for Missing & Exploited Children
IOSM	Inter-Operator Short Message
IOSMS	Inter-Operator Short Message Service
IPR	Intellectual Property Rights
IPTV	Internet Protocol Television
IRC	Internet Relay Chat
ISFE	Interactive Software Federation of Europe
ISOC	Internet Society
ISP	Internet Service Providers
ITU	International Telecommunication Union
ITU	International Telecommunications Union
IWF	Internet Watch Foundation
LBS	Location-Based Service
LEGCO	Legislative Council
M	Mature audiences
MA15+	Not suitable for under 15s
Mbps	Megabits per second
MCMC	Malaysian Communications and Multimedia Authority
MHz	MegaHertz
MMS	Multimedia Messenger Service
MNO	Mobile Network Operator
MP3	MPEG-1 Audio Layer 3
MPEG	Moving Pictures Experts Group
MSP	Mobile Service Provider
MVNO	Mobile Virtual Network Operator
NCC	National Consumer Council
NFP	Network Facilities Provider
NGN	New Generation Network

NPC	National People Congress
NSP	Network Service Provider
NTT	Nippon Telegraph and Telephone Corporation
OAT	Obscene Appeals Tribunal
OECD	Organisation for Economic Cooperation and Development
OFCA	Office of Communications Authority
OFCOM	Office of Communication
OFL	Office of Film and Literature
OFTA	Office of Telecommunication Authority
PCPO	Prevention of Child Pornography Ordinance
P2P	Peer-to-Peer
PDPO	Personal Data Privacy Ordinance
PEGI	Pan European Game Information
PG	Parental Guidance
PICS	Platform for Internet Content Selection
PNET	Public Non Exclusive Telecommunication
PSP	PlayStation Portable
R18+	Restricted to 18 and over
RC	Restricted Content
RFID	Radio Frequency Identification
SBO	Service-Based Operator
SMS	Short Message Service
SNS	Social Networking Sites
SRI	Stanford Research Institute
SWAMI	Safeguards in a World of Ambient Intelligence
TA	Telecommunication Authority
TCP/IP	Transmission Control Protocol/Internet Protocol (TCP/IP)
TELA	Television, Entertainment and Licensing Authority
UCL	Unified Carrier Licence
UCLA	University of California Los Angeles
UEMO	Unsolicited Electronic Messages Ordinance
UK or U.K.	United Kingdom
UMTS	Universal Mobile Telecommunication System
UNCITRAL	United Nations Commission of International Trade Law
UNDRP	Uniform Domain Name Dispute Resolution Policy
UNICEF	United Nations Children's Fund
UNICRI	United Nations Interregional Crime Justice Research Institute
UNIDIR	United Nations Institute for Disarmament Research
US or U.S.	United States of America
VCD	Video Compact Disc
VOD	Video On Demand
VoIP	Voice Over Internet Protocol
W3C	World Wide Web Consortium
WIPO	World Intellectual Property Organisation
WLAN	Wireless Local Area Network
WSIS	World Summit on the Information Society
X18+	Films containing sexually explicit content

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1 Mobile communication and the protection of children

The design, development, and public introduction of new generation devices such as third generation (3G) mobiles present a formidable challenge of protecting children and young people from inappropriate materials and other dangers. Of immediate concern is illegal and harmful content. Other concerns include unwanted content such as unsolicited messages (spam) and privacy issues.[1]

This thesis aims to study the protection of children in a convergent environment[2] based on two themes: the rapid development of technologies which may prompt the need for a new adequate regulatory framework.

The first theme focuses on the application of new communication technologies as facilitative instruments in the abuse of children and young people. There are in three main areas of increasing concern, i.e., (a) content, (b) contact, and (c) commercialism; we will call them the three Cs. The first theme will briefly examine the three Cs through the prism of sociology, cognitive science, and psychology. This represents the first part of our investigation.

The second theme investigates to what extent the existing regulatory framework is adequate as an efficient protection mechanism against the concerns. If it turns out that the degree of adequacy is insufficient then the task is to prepare a new adequate regulatory framework.

The second theme constitutes the second and the legal parts of our study. It will guide our path along a comparative legal study of the regulatory measures as adopted in Hong Kong on the one hand, with regulatory practices

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1 See for example, Wright, D., Gutwirth,S., and Friedwald, M., Shining light on the dark side of ambient intelligence, (2007), Foresight, Vol. 9. No. 2, Emerald Group Publishing Ltd, available at http://www.emeraldinsight.com/Insight/ViewContentServlet?Filename=/published/emeraldfulltextarticle/pdf/2730090205.pdf, see further SWAMI project funded under the European Commission 6th framework Program - European Commission (EC) (2003), Work Programme for the specific programme for research, technological development and demonstration: 'Integrating and strengthening the European Research Area', specific activity covering policy-orientated research under "Policy support and anticipating scientific and technological needs" (SSP Call 3), Brussels. SWAMI is the acronym for Safeguards in a World of Ambient Intelligence. See further Security and Privacy issues in Location Based Services, available at http://www.roseindia.net/technology/LBS/security-and-privacy-issues-lbs.shtml

2 By using 'convergent environment' we mean the coming together of network technology, equipment technology, services, and markets. A detailed description is provided for in Chapter 7.

and arrangements of other jurisdictions, on the other hand. The main idea is to develop a viable regulatory strategy in mobile content regulation that is applicable in Hong Kong as well as worldwide. The strategy should fit in the new framework and, conversely, the new framework should perfectly embrace the new strategy.

The first chapter constitutes an introduction to the topics mentioned above. In Section 1.1, we formulate two challenges, viz. (1) the provision of content of an illegal or harmful nature, and (2) the use of the interactive services offered by mobile technology and the Internet. Section 1.2 describes the historical background of the Internet as a modern form of communication. In Section 1.3, we deal with mobile Internet, its benefits and risks. In section 1.4, we discuss the question whether the Internet should be controlled, if so, who should bear the risk, and the limitations of direct state intervention. In Section 1.5, we formulate our problem statement. Our research is guided by four dedicated research questions formulated in Section 1.6. The research methodology applied is described in Section 1.7. The structure of the thesis is given in Section 1.8.

1.1 Two challenges of new generation mobile devices

The rapid development of communication technology and in particular of the new generation devices has spurred concerns over the delivery of new interactive mobile services and the content of such services. Mobile services encompass a diverse mix of broadcast, media, entertainment media, and personal software applications. The wide variety and the interactiveness of the content and services is particularly attractive to children and young people. Without any doubt, the range and variety of mobile content services will continue to evolve. Mobile content and services can be provided by third parties (content providers) and the network operators themselves. It can also be provided over an open network platform such as the Internet. With mobile content services and services forming a major revenue generator for network providers, societal concerns have led to calls for the regulation of such content and services. The reason for such calls has been based on

1 the provision of content of an illegal or harmful nature and
2 the use of the interactive services offered by mobile technology and the Internet which are been used to facilitate the abuse and the commission of offences against children and young people.

The two elements above can be seen as two challenges which require legal measures. Therefore they should be thoroughly investigated and adequate solutions should be proposed. With the continuous development of mobile telecommunication and wireless networking technologies, it is vital for the protection of children and young people that an urgent and effective regulatory

regime be developed to meet these challenges now and in the future. Of course, we have observed that some regulatory frameworks already exist for mobile content regulation. We mention here two examples, (a) Australia's Schedule 7 on-line content scheme (described in greater detail in Chapter 7) and (b) Singapore's voluntary code of practice for self regulation of mobile content in Singapore.[3] However, we believe that by and large various jurisdictions are in the stage of experimenting and learning from each other so as to arrive at the best approach to adopt. This belief asks for serious in-depth studies and adequate proposals to improve the current legal frameworks.

1.2 THE INTERNET AS A MODERN FORM OF COMMUNICATION

Towards the end of the 20th century, mankind found itself in the midst of an information revolution where it saw words such as information superhighway,[4] cyberspace, and knowledge-based society.[5] Castells (1996) observed that the information-technology revolution has introduced a new form of society – a network society.[6] The essence of the revolution was the manner in which the information was created, stored, and distributed. In no small way, the revolution was greatly edged on and aided with several innovative technologies such as computerisation, compression technology, digitisation, and telecommunications. Indeed, the revolution and the emergence of new technologies arose out of the interaction between digitised content, convergent platforms, and global communication networks. With the development of the Internet, new possibilities of a network society such as Web 2.0, social networking sites, chat and 3D virtual world have emerged. A prime example of a 3D virtual world is Second Life.

Below we provide a brief overview of the rapid growth of the Internet in order to understand the development and to be able to extrapolate the results towards future expectations. We start in Subsection 1.2.1 with a condensed

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3 Voluntary Code for Self Regulation of Mobile Content in Singapore, jointly developed by MobileOne Ltd, Singapore Mobile Telecom Pte. Ltd., and Starhub Mobile Pte. Ltd., (2006), available at http://www.m1.com.sg/M1/about/regulatory/pdf/Self-Regulation_of_Mobile_Content.pdf

4 Stephen Saxby described the rise of the information society as "the transformation from the industrial economy … to the logical advances produced… following the development of the computer". See Saxby, S., (1990), *The Age of Information: The Past Development and Future Significance of Computing and Communications*, Macmillan, London.

5 Cyberspace was first described by William Gibson in the early 1980s in his novel, *Neuromancer* as "consensual hallucination that felt and looked like a physical space but was a computer generated construct representing abstract data. People could plug into this 'space' and work, play and live as they do in the real world". See also Fleming, T. H., (1997), The Rules of Cyberspace: Informal Law in a New Jurisdiction, 85 *Illinois Bar Journal* 174.

6 Castells, M., (1996), *The Rise of the Network Society*, 2nd edition, Blackwell, Cambridge, Massuchusetts.

description of the first network, the beginning of the Internet. In Subsection 1.2.2, we discuss the Internet, and touch upon the important packet-switching technology, and in Subsection 1.2.3, we describe the World Wide Web (WWW). In Section 1.2.4, we deal with the expanded communities.

1.2.1 The first network

Initially seen as mere calculating machines (in the 1950s), computers saw their functions and capabilities expanded to information handlers. For laymen in computer science, we remark that all forms of information including text, images, graphics, sound, and video were transformed to a basic representation consisting of zeros and ones. This is called *digitisation.* The basis of digital information is a 0 or a 1; they are called bits. In an expanded form a series of bits is a sequence of 0s and 1s; an information sequence of eight bits is called a byte.[7] Once digitised, the information possesses two valuable attributes. First, it becomes easily adaptable at every stage of creation, storage, dissemination, and use. As such it can be expediently shared with users on a wide and often global basis. Second, the digitised information (coupled with great advances in compression technology) allows much of the data to be stored and transmitted with impartiality in that it can be disseminated through a network without any restrictions as to (1) who created the information, (2) what form it takes, and (3) in what manner it is being disseminated. The development of a network with these three properties can be seen as the first step towards a digital society.

1.2.2 The Internet

The advent of the Internet or as it is commonly called 'a worldwide system of inter-connected network and computers' (officially established in 1969[8]) was technologically the next step. More specifically, the Internet is a global information system that is logically linked together by a unique address space based on the Internet Protocol or its subsequent extensions and follow-on.[9] In its real sense, the Internet constitutes a vast decentralised network that links people and information through computers and increasingly through other digital technologies and allow for both interpersonal communication and

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7 Negroponte describes a bit as "having no colour, size or weight … it is the smallest atomic element in the DNA of information…for practical purposes, we consider the bit to be a 1 or a 0". See Negroponte, N., (1995), *Being Digital*, Chatham: Hodder & Stoughton, Sydney, Australia.

8 Hossain, B., (2004), The Internet Encyclopedia, (eds.)Wiley Publishers, see also Lloyd, I.J., (2004), Information Technology Law, Oxford University Press, England.

9 Definition of the Internet, 1995 Federal Networking Commission at ww.fnc.gov/internet<uscore>res.html

information retrieval.[10] Our investigations revealed that the history of the Internet revolves around three distinct elements. The first element is the technological evolution that began with the development of the open network architecture. The second element is the operations aspect of the infrastructure and the third element is the collection of communities that create, maintain, and develop the technology.[11]

Open-network architecture

It is stated that the Internet started in 1964 when Leonard Klienrock of MIT (Massachusetts Institute of Technology) convincing Lawrence Roberts (also of MIT) of the theoretical feasibility of communications using packets rather than circuits. In developing a shared computer network, the scientists realised that a secured system in which vital information can still be transmitted despite a disruption in the normal channels of communication is required. This became the basis of the packet-switching technology.[12] This was a major step towards computer networking. The packet-switching technology relies on the transmission of information based on distributed networks.[13] The information message must first be broken down to numerous smaller 'packets'. Each packet contains the internet protocol (IP) address of the destination node (computer) and is also labelled as to its position in the informational message.[14] The informational messages are then sent on their way and are routed through a large group of linked computers to their ultimate destination; each packet does not necessarily take the same route but rather the more expedient less congested route. Upon arrival at the ultimate destination, the informational message will be reassembled in the correct order to form the original message.[15]

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10 DiMaggio, P., Hargittai, E., Russell Neuman, W., and Robinson, John P., (2001), Social Implications of the Internet, 27 *Annual Review of Sociology*, p. 307-336.

11 Leiner, B. M., Cerf, V. C., Clark, David. D., Kahn, R. E., Klienrock, L., Lynch, D. C., Postel, J., Roberts, L. G., and Wolff, S. A Brief History of the Internet, Internet Society; available at www.isoc.org/internet/history/brief.shtml

12 Donald Davies developed the concept of packet switching in 1965 and proposed it to U.K.'s NPL Data Communications Network. However, the proposal was never funded.

13 This was the basis of research conducted by Baran of Rand Corporation. See On Distributed Communications at www.rand.org/publications/RM/baran.list.html

14 Note that the packet-switching technology is different from the circuit-switching technology commonly used in telephone networks. In a telephone network, when a call is made, a dedicated connection line is opened and kept opened for the duration of the call. In contrast, the connection in packet-switching technology opens long enough to send or route the packet of information along to another computer until it reaches its destination.

15 See *re Doubleclick Inc*, 154 F. Supp 2d F97 (SDNY 2001). See also Lloyd, I. J., (2004), *Information Technology Law,* 4th Edition, Oxford University Press. Also see Kahn's rules when designing the open network in *Brief History of the Internet* at supra n. 11.

It was in 1966 when Roberts was in DARPA[16] that he developed the plan for "ARPANET".[17] It has been stated that the Internet was funded as an advanced project of the US Department of Defense; its main purpose being to maintain communication between the US military and the government in the event of a nuclear war. However since what defines the Internet is its capacity to connect networks of different types, it follows that ARPANET as a single network could hardly be described as an Internet.[18] It was when Kleinrock's Network Measurement center at UCLA was selected to be the first node on the ARPANET and Stanford Research Institute (SRI) provided the second node and a further addition of UC Santa Barbara and the University of Utah that we saw the beginning of the Internet. The ARPA net may be considered as the first constituent element of the Internet.[19]

The Internet was based on the idea that there would be multiple independent networks of arbitrary design beginning with the ARPANET as the pioneering packet switching network. The infrastructure expanded to include packet satellite networks, ground-based packet radio networks, and other networks.[20] Thus, the underlying technical idea of the Internet is in its open-architecture networking. Using this approach, the choice of any individual network technology was not dictated by a particular network architecture but rather could be selected freely by a provider and made to interwork with other networks through a meta-level "Internetworking Architecture".[21] However, in an open-architecture network, each individual network may be separately designed and developed having its own unique interface which it may offer to users and/or other providers. What was necessary was the development of a set of communication protocols which would provide a common language for any user to connect to and to communicate on the Internet. This led to

16 The Advanced Research Projects Agency (ARPA) changed its name to Defense Advanced Research Projects Agency (DARPA) in 1971, then back again to ARPA in 1993, and back again to DARPA in 1996, its current name. See Brief History of the Internet, supra n. 11.

17 ARPANET was not about people communication over distances. It was about time-sharing. Time-sharing made it possible for research institutions to use the processing power of other institutions computers when they had large calculations to do that which required more power or when someone else's facility might do the job better. See Peter, I., So who really did invent the Internet? Net History; available at http://www.nethistory.info/History%20of%20the%20Internet/origins.html

18 ARPANET was a single closed network and is regarded as the forerunner of the modern Internet as we know today. See also *American Civil Liberties Union v Reno*, 929 F Supp 824, p. 830-845 (ED pa 1996).

19 For a history of the Internet and cyberspace, see Hafner, K. and Lyon, M., (1996), *Where Wizards Stay Up Late: The Origins of the Internet,* New York, Touchstone and the Internet Society's 'A Brief History of the Internet', supra n.11.

20 Supra Internet Society's 'A Brief History of the Internet', n. 11.

21 Supra.

the development of a set of standard operating and transmission protocols known as transmission control protocol/internet protocol (TCP/IP).[22]

The protocols and the World Wide Web

In the TCP/IP, the TCP is concerned with service features such as flow control and recovery of lost packets while the IP provides for addressing and forwarding of individual packets. Thus, the TCP/IP may be considered as the second constituent element and operations aspect of the Internet. As Lloyd (2004) succinctly states "there are no social or political controls over the making of such connection and the cost implications are minimal".[23] Castells (1996) observed somewhat earlier that "Networks are open structures, able to expand without limits, integrating nodes as long as they are able to communicate within the network, namely as long as they share the same communication codes …".[24] In principle, any node can speak as a peer to any other node, as long as it obeys the rules of the TCP/IP protocols, which are strictly technical, not social or political.[25]

As a result of the increase in the scale of the Internet, it was necessary to make it easy for people to use the network. This led to assigning names to host computers. Originally, it was feasible to maintain a single table of all the hosts and their associated names and addresses. However, the exponential growth of independently managed networks meant that a single table proved no longer feasible. That led to the invention of the domain name system (DNS). Domain names are a user friendly form of identifiers. As mentioned, all computers on the Internet are provided with an identifier known as the IP address. Currently, the IP address comprises of a 32-digit sequence for example, the IP address for City University is 144.214.156.104. However, since memorising a sequence of digits represents an insurmountable if not an impossible task, a user friendly mnemonic representation of the IP address called the domain name is used. The DNS permitted a scalable distributed mechanism for resolving hierarchical host names into an Internet address. We remark that one way of looking at the exponential growth of the Internet is by looking at the number of registration of top level domain names. For example, in November 2008 there were 78,249,372 .com domains, 11,919,835 .net, 7,241,128

22 The TCP/IP was designed based on an open architecture networking; that is the connections between the networks take place at a higher open architectural level although the individual networks are each separately designed with its own unique interface. See supra n. 11. Communication between users under ARPANET was based on 'Network Control Protocol' which converts messages into streams of packets as the source and then reassembled them into messages at the destination.

23 Supra Lloyd n. 8.

24 Supra n. 6.

25 See also Sterling, B., *A Brief History of the Internet*, at http://www.vir.com/Demo/tech/SterlingBrief.html and http://www.library.yale.edu/div/instruct/internet/history.htm

.org, 2,032,537 .biz registered as compared to 54,180,979 .com domains, 7,855,912 .net, 4,825,772 .org and 1,438,945 .biz registered in July 2006.[26]

The World Wide Web (WWW) is a constituent element that contributed significantly to the appeal and use of the Internet. It was developed by Tim Berners-Lee and the European Particle Physics Laboratory (CERN). The WWW began as a CERN project, called ENQUIRE. The project had two features: (1) similar to TCP/IP, Tim Berners-Lee's protocol was "to have an open architecture to allow researchers to connect any computer no matter what operating system it was using" and (2) information was to be distributed using the network itself.[27] This was done by using a language known as hypertext markup language (HTML) which allows users to move between documents by clicking on the links.[28] With the help of browsers, the world of multimedia and interactivity is opened to all. Thus, the Internet as we know it is made up of a physical infrastructure; that is servers, computers, routers, cables, and a common language which enables computers to talk to each other and which makes it user friendly to anyone who wishes to have access to it. Although the technology was created at CERN, CERN had decided not to take control of it, but rather allowed the technology to be placed in the public domain "to further compatibility, common practices, and standards in networking and computer supported collaboration".[29] Effectively, the decision by CERN allowed the web to be continuously developed and expanded in a non-restrictive way to what it has become today.

Further and in addition to the WWW, we mention two other important protocols, i.e., the Simple Message Transfer Protocol (SMTP) which is the basic standard for electronic mails (emails) and the file transfer protocol (FTP) which provides for the uploading and downloading of files from the Internet. We remark that the protocols and the WWW have not only built upon the other's applications and supplemented the workings of the Internet but have provided the global community with the enriching experience of global interactiveness and sharing.

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26 See http://www.domaintools.com/internet-statistics/. .com domains represent commercial interest, .net – network service organizations and .org – private non profit organizations. .biz is amongst the later domains approved for registration. The other domains are .aero, .coop, .info, .museum, and .pro.

27 Environmental design and control, in Murray, A. M. (2007). *The Regulation of Cyberspace: Control in the Online Environment*, Routledge-Cavendish, Taylor & Francis Group, Great Britain.

28 Berners-Lee, T started the project with the purpose of building a distributed hypermedia system and was joined by Cailliau, R.

29 Supra n.18 and Ten Year Public Domain for the Original Web Software, available at http://tenyears-www.web.cern.ch/tenyears-www/Declaration/Page1.html

A collection of communities

The third and final element of the Internet is the collection of communities that create, maintain, and develop the technology. The early ARPANET researchers worked as a close-knit community. The collaborative effort amongst researchers continued with other research programs with each research program forming a working group. For example, as the Internet evolved the ARPANET network working group evolved into the Internet working group. Various task forces were then formed to each focus on a particular area of technology, for example, end-to-end protocols, routers and so on. The Internet Architecture Board (originally named the Internet Activities Board) (IAB) was formed from the chairs of the task forces. We mention other organisations which had contributed (and continue to contribute) to the development of the Internet are the Internet Engineering Task Force (IETF), the Internet Engineering Steering Group (IESG), the Internet Research Task Force (IRTF), the Internet Society (ISOC) and the World Wide Web Consortium (W3C).

1.2.3 Expanded communities

If we take all the elements together then we can establish that the Internet is nothing more than a modern form of communication; a 21st century method of transporting digitised information. We state that the new communication technology supports modern form of communication in that it expands the community we live in by linking global communities.

The ability to communicate is an integral element of survival to all living creatures. Communication reinforces social and family ties, provides security, and instills trust. One of man's distinguishing features to that of other life forms is his[30] ability to communicate via non-verbal modes of communication. This is not restricted to the use of his body language but rather includes his innate intelligence and creativity which have led him to adapt to his surroundings and circumstances. This way of adapting leads him to develop various modes of communication. Indeed following on from Castell's (1996) network society, Barr (2000) added the following.

> "Every society is an information society. Throughout history, different cultures have adopted different modes of communication but all are information societies of some kind … contemporary information society is highly dependent on information networks that can distribute images, data and symbols."[31]

Through the centuries, various modes of communication developed: from smoke signals, via messengers on horseback, and carrier pigeons to the tele-

30 For brevity, we use 'he' and 'his' whenever 'he or she' and 'his or her' are meant.

31 Barr, T., (2000) newmedia.com.au: *The Changing Face of Australia's Media and Communication*, p. 20 Allen & Unwin, Sydney, Australia.

graph, postal services, telephone, telex, and fax. All these tools of communication can be seen in pictographs on the walls of Stone Age caves, Egyptian hieroglyphics, various writings in different languages, and computer codes. As the mode of communication improved, political units and social interdependence expanded geographically.[32] Reaching these expanded communities was made possible by the introduction of mass media, such as the printing presses, the film, radio, and the television.[33] In fact, in this new era of communication, we have moved from a scarcity of information to a hyper-abundance of information. Further and in addition to this era of hyper-abundance of information, it is apparent that it was not until these moveable types of communication (chiefly by the emergence of the print revolution) that communication has become independent of its place of creation.[34] Thus as time pass, the place of production has become less important to the form of communication. Without doubt, new technologies have created a set of changes that pervades all aspects of society and re-organised all older relationships in that it widens arenas, multiplies actors, and increases the velocity and volatility of transactions.[35]

Flew suggests that the Internet refers to (1) both the technical infrastructure of computers and servers permanently connected through high-speed telecommunication networks and (2) to the forms of content, communication, and information sharing that occur through these networks.[36] We agree with Flew's suggestion since quite apart from the Internet's open-network architecture, its protocols and the collection of communities that have contributed significantly to the evolution of the Internet, we remark that without global society accepting the Internet as a new mode of communication, the Internet might not have achieved the status that it has today.

Thus, the Internet as a form new communication technology is no longer a novelty but rather is a part of everyday reality. The technology is not only welcomed but embraced by society as a possibility of providing increased personal freedom, reduced social hierarchy, enhanced possibilities for leisure, and a greater quality of social interaction and communication.[37] This view is supported by a number of Internet advocates. For example, Tyler (2002) opined that the Internet and new technologies is changing the nature of work,

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32 Benkler, Y., Property, the Commons and the First Amendment: Towards a Core Common Infrastructure at http://www.benkler.org/WhitePaper/pdf

33 Supra.

34 This is seen in the Aboriginal art fixed on rock face, Greek legendary stories restricted to plays in amphitheatres and Babylonian obelisks rooted in the sand. See Hirst, M and Harrison, J., (2007), From Gutenberg to Global News: A Brief History of the Print Media in *Communication and New Media*, Oxford University Press, Oxford, England, p. 81.

35 Bell, D., (1989). The Third Revolution: and its possible consequences, *Dissent* 36 (2) (spring) p. 164-176.

36 Flew, T., (2005). What's New about New Media? *New Media: An Introduction*, 2nd Edition, Oxford University Press, Oxford, England, p. 4.

37 Supra.

government, and social relationship (…) this may lead to fundamental changes in personal and social life.[38] In fact, with one of the Internet's most important virtues, its global communications network, we see the rise of virtual communities. These communities are dependent on individuals at all levels of society, participating and interacting in computer mediated communications – the most common forms being the electronic mail (email), newsgroups and bulletin boards, and real-time chat or messaging. The take-up rate of these new forms of communication is notably high due to its expediency, its low cost, and its real-time communication. For instance, email costs less in terms of postage and time, especially in overseas communication. Moreover, newsgroups and discussion groups allow communication and exchange of information on subjects to particular interest groups. With Internet relay chat (IRC) and instant messaging applications such as google talk, MSN, and i-chat, users are able to engage in 'instant' communication comparable to chatting on the telephone.

However, we add that the Internet is not merely a modern form of communication. Rather the Internet as a new form of communication has given birth to a broad range of beneficial activities. This we argue is what Flew meant when he suggested that the Internet also refers to the forms of content, communication, and information sharing that occur through these networks.[39] We deal with the Internet's broad range of beneficial activities in Subsection 1.4.

1.3 THE MOBILE INTERNET

Data released by the International Telecommunication Union (ITU) 2009 report revealed that 61% of the world population has access to a wireless connection in 2008.[40] We remark that the data is significant since it indicates the importance that the global community attaches to mobility and convenience. Indeed, growth in mobile phone penetrations was revealed to be most significant in developing countries with a growth close to 40% at the end of 2007.[41] In fact, ITU forecasted that mobile penetration in emerging markets will grow from 46% in 2008 to 96% in 2013. The ITU stated that it was possible that one of the main drivers for the rapid rise in mobile subscriptions is the development of mobile technologies and the corresponding functionalities and applications.[42] We see clear evidence of ITU's statement reflected in, for example, the roll-out

38 Tyler, T. R., (2002). Is Internet changing social life? *Society for Psychological Study of Social Issues*, 58 (1), pp. 195-205.

39 Supra Flew, n. 36.

40 Measuring the Information Society, - The ICT Development Index, (2009), ITU, available at http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009_w5.pdf

41 Supra.

42 The other drivers include a proliferation of flat-rate data tariffs and enhanced user- interactive experience.

of mobile-centric devices such as the Apple iPhone, Palm Pre, Nokia's N97, Google's G1 Android phone, and Blackberry's storm. The deployment of the new devices may just be the tip of the ice-berg. Thus, we state that with the rapid roll-out and adoption of new mobile devices, and its corresponding technologies with the increasing demand for greater mobile Internet applications, there is a real possibility that the global community is on the verge of a mobile Internet revolution. The prevailing question here is: what are the contributing factors to the new revolution? We consider the contributory factors as benefits of mobile Internet (see Subsection 1.3.1). In Subsection 1.3.2, we mention three potential risks of the mobile Internet.

1.3.1 The benefits of mobile Internet

We mention three main contributing factors: connectivity, mobility, and portability. First, we state that mobile Internet technology allows an individual to do most of the things the individual does on a fixed Internet connection with the distinct advantage of doing it 'on the go'. Next to being connected, this would include *inter-alia* engaging in education and trade, participating in civic engagement, sharing and exchanging information, experiences, and interests, expressing one's identity, and enhancing social connection and communication. Second, the mobility provides the mobile user with the connectivity of the fixed Internet and more. Third, an example of the distinct advantage of the mobile phone's portability is clearly reflected in the drastic rise in the access of local information content, i.e., a growth of 51% in March 2009 as compared to March 2008.[43] Amongst the local content accessed, online directories (73%) registered the highest percentage of growth followed by restaurants (70%), maps (63%), and movies (60%).[44]

1.3.2 The risks of mobile Internet

Before we proceed with the risks of the mobile Internet, we wish to draw the readers' attention to two assumptions. First, we would like to state that smart phones such as the Apple iPhone, Palm Pre and the like are advanced mobile devices more commonly owned and used by adult users rather than children and young people. However, the 3G Internet-enabled mobile phones is assumed to be owned by the younger generation and that raises the concern.[45]

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43 Audience for Local Content Accessed by Mobile Devices grow by 51% in a Year, (2009) Search Engine Optimisation, June 2009, available at http://www.searchengineoptimization-seo.com.au/audience-for-local-content-accessed-by-mobile-devices-grows-51-in-a-year/

44 Supra.

45 Perez, S., (2008). Today's Iphone users are young, rich and technically savvy, Read, Write Web, April 1, 2008; available at http://www.readwriteweb.com/archives/todays_iphone_users_are_young_rich_and_technically_savvy.php. see also Hani, F., (2010) Rising demand for 3G mobile phones, The Brunei Times, 29 January 2010; available at http://www.bt.com.

Second, although most research on the impact of the Internet on children and young people is focused primarily on the fixed Internet, we assume that mobile Internet is the next logical next step and therefore we will refer to these research results and accompanying data for our present study. For a better understanding, we mention here three examples of research groups that investigate the concerns mentioned above (1) the European Commission's Safer Internet plus Programme (2005-2008)4,[46] (2) Safer Children in a Digital World (2008)4,[47] and (3) Protecting Children On-line: An ECPAT Guide (2003).[48]

The benefits brought upon by the new communication technologies like the Internet cannot be isolated from the risks. For children and young people, the potential risks arising on-line are correlated to the potential benefits on-line. While the Internet offers immense opportunities for children and young people to explore globally, share the world and to network with many persons, research data is beginning to reveal three main areas of concern of youngster's exposure to the Internet. The three areas of concern are (1) content (illegal and harmful materials), (2) contact (sourcing and grooming, and cyber-bullying), and (3) commercialism (spam, premium-rate-services and younger generations as target market). The three concerns are discussed in greater detail in Chapter 4.

1.3.3 Controlling the Internet

In its early days, the Internet had little impact on the average person as it was originally designed for the exclusive use of the military, academics, and researchers. But as the Internet adapted to public use (since 1989), the Internet developed exponentially as compared to conventional forms of communication.[49] It led to the emergence of cyberspace and the explosive growth of activities in the virtual location it created. This exponential growth can be attributed to societal adoption of the Internet as a means of enriching its (society's) very existence.

In this section, we start providing an overview of the broad range of beneficial activities (Subsection 1.4), it is followed by a discussion on unfavourable activities (Subsection 1.4.1). This evokes the question which body

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bn/en/home_news/2009/04/24/rising_demand_for_3g_mobile_phones and 3G.cn Expects bright future as 3G in China continues to soar, PR Newswire Asia, August 24, 2009; available at http://www.prnasia.com/pr/09/08/09570411-1.html

46 See http://ec.europa.eu/information_society/activities/sip/index_en.htm

47 See http://www.dcsf.gov.uk/byronreview/pdfs/Final%20Report%20Bookmarked.pdf

48 See http://ecpat.net/EI/Publications/ICT/Protecting_Children_Online_ENG.pdf

49 It is interesting to note that the Internet was viewed as a library since it possesses a large database of information and is often used as a research tool; a telephone – for providing an 'instant' one to one mode of keeping in touch with friends and families, near and far; a 'street corner or park' or shopping mall for providing a public forum for views to be aired and a broadcast media being analogous to print media. See oral arguments of counsels in *Reno v ACLU* 929 F Supp 824, p. 830-845 (ED pa 1996).

is governing the Internet; candidates are the WSIS (see Subsection 1.4.2) and the ICANN (Subsection 1.4.3) (or four other organisations). We conclude the section by the undefined rules of the Internet (Subsection 1.4.4) and the limitations of direct state intervention (Subsection 1.4.5).

1.4 A BROAD RANGE OF BENEFICIAL ACTIVITIES

The Internet has given rise to a rich, varied, closely connected, and highly structured social, cultural, and intellectual on-line world.[50] Without doubt, the Internet's growth has made the world smaller by turning it into a global village.[51] It has changed the way we live, work, learn, and play. Students and academics all over the world use computers and the Internet as a source of learning and teaching; business firms, however small, may offer goods and services electronically and may access product information and markets. Bill Gates opined that the development of Internet had presented a new era of "friction-free capitalism" or "a shopper's heaven", where "market information will be plentiful and transactions cost low".[52] Recreational activities, banking and investment services, and even legal advice are provided on-line.[53] The open nature of Internet has also enabled governments, companies, and organisations to become more transparent and service oriented.[54] It is envisaged that this transparency in communication will foster tolerance, promote democracy, re-distribute wealth, destroy trade barriers, and bring world peace.[55] However, despite the extolling benefits of the Internet, there are

50 See Crawford, S., (2005), Shortness of Vision: Regulatory Ambition in the Digital Age, *Fordham Law Review*, Symposium on Law and Information Society, November 2005.

51 The global online population as at June 30, 2008 was 1,463,632,361 as against a world estimated population of 6,672,120,288. This can be compared to 360,965, 492 which was the online population as at December 31, 2000. This is broken down into Internet users by geographical regions: Asia 578.5 million, Europe 384.6 million, North America 248.2 million, Latin America/Caribbean 139.0 million, Africa 51.1 million, Middle East 41.9 million, and Oceania/Australia 20.2 million. See Internet World Statistics at http://www.internetstatistics.com/stats.htm

52 Gates, B., (1996), *The Road Ahead*, Penguin, New York, N.Y.

53 See, for example, online gaming sites such as www.gamesites200.com/gaming/, www.ItsYourTurn.com, online books websites -www.pagebypagebooks.com,www.bookspot.com/onlinebooks/, online financial and investment services – www.fidelity.com, www.sungard.com, www.bankofamerica.com, legal advice websites – www.clsdirect.org.uk, www.freelawyer.co.uk, www.citizensadvice.org.uk

54 Note in this respect a number of national governments have adopted some form of e-government in which a number of services are electronically provided such as the tendering or procurement of government contracts, the payment of taxes and the renewal of licences. It is also not uncommon to find the vast majority of companies and organizations with their own websites with essential information of the company and organisation.

55 Cairncross, F., (1997), *The Death of Distance: How the Communications Revolution will Change Our Lives*, Harvard University Press, Boston, Massachusetts.

complaints, such as information overload or infoglut,[56] the decline in book culture,[57] a loss of the real community by considering networks as isolating people,[58] and the fact that the computer dehumanises social activities.[59] In fact, with so much reliance and dependency placed on the Internet and its applications, there was much concern of an impending global chaos when the millennium bug struck.

1.4.1 *Unfavourable activities*

Just as in the offline world, next to beneficial good activities, new technologies and innovations do bring with it unfavourable activities. On a daily basis, unfavourable on-line activities, such as (child) pornography, spam, identity fraud, hate-speech, copyright infringement, and on-line gambling, raise public concern. There is an increasing concerted effort to protect users from its negative effects. Governments and regulatory bodies are using 'society fears' to regulate and to assert greater control over the on-line world. This has led to the question of 'Internet governance'. Can the Internet be governed, controlled or regulated and if so, to what extent and by whom?

1.4.2 *The World Summit on the Information Society*

The threats of unfavourable on-line activities did not go unnoticed by the international community. The World Summit on the Information Society (WSIS), for example, is one of the highest profile events to recognise and to deal with the opportunities and the potential hazards arising from the new media and communications technology. WSIS convened after the General Assembly of the United Nations noted (1) the increasing and significant role of telecommunications at the political, economic, social, and cultural levels and (2) endorsed a proposal from the International Telecommunications Union (ITU) that WSIS be convened.[60] WSIS took place in two phases. The first meeting was in Geneva

56 Postman, N., (1992), *Technopoly: The Surrender of Culture to Technology*, Alfred A Knopf, New York, N.Y., Ellul, J., *The Technological Bluff*, William B Eerdmans Publishing Co, Grand Rapids, Massachusetts.

57 Sanders, B., (1994), *A is for Ox: Violence, Electronic Media and the Silencing of the Written Word*, Pantheon Books, New York, N.Y.

58 Stoll, C., (1995), *Silicon Snake Oil: Second Thoughts on the Information Highway*, Doubleday, New York, N.Y.

59 Forrester, T., (1992), Megatrends or mega mistakes? Whatever happened to the Information Society? *The Information Society* 8 (July – September) p. 133-146.

60 See Resolution 73 of the ITU Plenipotentiary Conference in Minneapolis, available at http://www.itu.int/wsis/docs/background/resolutions/73.html. The Resolution was adopted in December 2001 by the General Assembly.

(10-12 December 2003) and the second was in Tunis (16-18 November 2005).[61] What was important about WSIS was that heads of government, ministers, high-level representatives from international organisations, private-sector and civil-society representatives were invited to both the Geneva and the Tunis rounds to participate, contribute, and support the Geneva Plan of Action and the Tunis Agenda for the Information Society. It is apparent that WSIS envisaged a

> "people centered, inclusive and development-orientated Information Society where everyone can create, access, utilize, and share information and knowledge, enabling individuals, communities, and peoples to achieve their full potential in promoting sustainable development and improving their quality of life."[62]

Indeed we note that WSIS underscores the importance of participation of developing countries in decisions regarding Internet governance.[63] This was recognised in Geneva when it was noted that "governance issues related to the Internet are a complex challenge which requires a complex answer and which has to include all stakeholders – civil-society, private industry and governments".[64] It is clear that one of the underlying themes of WSIS is Internet governance. This theme is reflected repeatedly in WSIS recognition. We see *inter-alia* (1) that Internet governance is not restricted to Internet naming and addressing (rather it includes significant public policy issues, likes Internet resources, the security and safety of the Internet, and other issues pertaining to the Internet6[65]), and (2) that Internet governance includes social, economic, and technical issues including affordability, reliability, and quality of service.[66] Moreover, the Tunis phase has led to the establishment of the Internet Governance Forum (IGF) for the purpose of facilitating enhanced cooperation between governments, international organisations, and all other stakeholders to enable them to carry out their roles and responsibilities in relation to international public policy issues relating to the Internet including but not limited to the

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61 The objective of the Geneva phase was "to develop and foster a clear statement of political will and take concrete steps to establish the foundations for an Information Society for all, reflecting all the different interests at stake" whilst the objective for the Tunis phase was "to put the Geneva Plan of Action into motion as well as to find solutions and reach agreements in the fields of Internet governance, financing mechanisms and follow-up, and implementation of the Geneva and Tunis documents". See http://www.itu.int/wsis/docs2/tunis/off/6rev1.html

62 Principle 1 Declaration of Principles, WSIS Geneva, December 2003. See Declaration of Principles: Building the Information Society: A Global Challenge in the New Millennium, available at http://www.itu.int/wsis/docs/geneva/official/dop.html

63 Item 65 Tunis Agenda for the Information Society, Tunis, November 2005; available at http://www.itu.int/wsis/docs2/tunis/off/6rev1.html

64 WSIS Vision in Process: Geneva 2003-Tunis 2005, available at www. Worldsummit2003.deldownload_del/Vision_in_process.pdf.

65 Supra Item 58, Tunis Agenda.

66 Supra Item 59, Tunis Agenda n. 44.

coordination and management of critical Internet resources. To this end, the IGF will be multilateral, multi-stakeholder, democratic, and transparent.[67]

1.4.3 *Internet Corporation for Assigned Names and Numbers (and four other organisations)*

Currently, the issue of Internet governance has taken on a broader meaning. Two questions may be posed in relation to this: (1) Who may control the Internet's infrastructure? (2) Who may control the flow of information between the linked computers and thus the activities that represent that flow? Needless to say, whoever controls and governs the Internet will be 'all powerful and supreme'. The decisions involved will have a great impact on the social, cultural, and innovative aspects of its users.

So, the prevailing question is: who is in charge? This question cannot be answered without first looking at the numerous participants that are involved in the technical structure and workings of this global network. For example, the US government with its initial funding has retained its power despite delegating, in 1998, the assignment of domain names and IP addresses to Internet Corporation for Assigned Names and Numbers (ICANN), a non-profit private sector organisation.[68] In addition to ICANN, a number of other Internet organisations also play an important role. We mention four of them: the Internet Society (ISOC), the World Wide Web Consortium (W3C), the Internet Architecture Board (IAB), and the Internet Engineering Task Force (IETF).[69] These organisations decide on the technical standards of the Internet and develop common protocols to promote the Internet's evolution and to ensure its interoperability. For example, the IETF takes on the larger responsibility for the approval of Internet standards while W3C is responsible for evolving the various protocols and standards associated with the Web7[70] Further along the line, we have Internet Service Providers (ISPs), telecommunication companies, hardware and software companies. ISPs are well known as the gatekeepers to the Internet, providing and controlling access to the on-line world. The backbone of the Internet being the high speed fibre optic cables that carry bits and bytes speedily to its intended destination are owned by telecommunication companies such as Cable & Wireless. Hardware and software companies with their software and applications enable users to browse, search, create 3D graphic representations, or merely provide the multimedia experience. In

67 Item 73. See supra Item 72 Tunis Agenda for IGF's mandate, n.44.

68 ICANN has been designated by the US government to serve as the global consensus entity to which the US government is transferring its responsibility for coordinating four key functions for the Internet: the management of domain name system, the allocation of IP address space, the assignment of protocol parameters, and the management of the root server system. See http://www.icann.org/general/fact-sheet.htm

69 See, and www.w3.org

70 Supra www.isoc.org, www.ietf.org

support of the role that these companies play, we should take cognisance of the case of the *US vs Microsoft*, a dispute concerning the use of browsers. In the *US vs Microsoft*,[71] it was alleged that Microsoft had abused its monopoly on the PC operating system market in that it was bundling and selling its Internet Explorer (IE) web browser software with its Microsoft Windows operating system. It was further alleged that this unfairly restricted the market for competing web browsers such as Netscape Netvigator. An argument was raised that the WWW could at some level and to a certain extent be controlled if the company controls the software which provides access to the WWW.[72] Finally, one of the controllers we would like to mention explicitly is the Internet (on-line) communities themselves. The communities decide what activity should be allowed or tolerated in the on-line world. For example, a user in a newsgroup may be flamed for making rude statements or for offending other users of that newsgroup.

1.4.4 The undefined rules of the Internet

So, the answer to the question: who is controlling the Internet and the on-line world? is that neither an organisation nor a government is controlling the Internet, the on-line world, and the activities that arise within that world. The partitioning in a variety of (overlapping) subgroups is, in fact, the essential framework that takes care of obeying the rules of Internet in whatever form this might be. Thus, while it is stated that there is no well defined set of rules for Internet use and the behaviour on Internet, this may only be true in the early days of the Internet. In the early days, the providers had their own set of informal rules, seen as rules of conduct. The system operated much like an anarchy in that, those who did not adhere and comply to the informal rules were 'cast out'. However, the informal rules could not operate with the exponential growth of the Internet. The attempt to formally manage the Internet and its corresponding activities, led to the creation of new types of regulations which includes national and regional legal frameworks. For example, we see the European Union continuing its work on harmonisation of the legal rules concerning Internet.[73]

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71 87 F. Supp. 2d 30 (D.D.C. 2000).

72 The proposed settlement required Microsoft to share its application programming interfaces with third-party companies and appoint a panel of three people who will have full access to Microsoft's systems, records, and source code for five years in order to ensure compliance. Supra *U.S. vs Microsoft*.

73 See for example, Commission adopts strategy for 'Creative Content Online', *EU Business*, available at http://europa.eu/avpolicy/other_actions/content_online/index_en.htm., EU urges tougher Internet privacy rules, *EU Business*, April 2009, available at http://www.eubusiness.com/news-eu/1239703321.86/.

1.4.5 Limitation of direct state intervention

While we have discussed in the foregoing sections, the possible parties who may in one way or another control the Internet, we remark that there are inherent limitations to the direct state intervention. We state that there are two elements that underscore the state's inherent limitation. (1) the nature of the Internet itself and (2) the jurisdiction. For the nature, we may remark that the law is territorial and is dependent on physical borders. So, the Internet transcends physical limitations and therefore its activities are global. Related to the feature of territoriality is the element of jurisdiction in that a state can only exercise its sovereignty (by promulgating laws, enforcing, and adjudicating) within its physical boundaries. Any attempts to regulate and control activities beyond the recognised boundaries are rarely accepted.[74] The limitation on state intervention is dealt with in greater detail in Section 8.2.

1.5 PROBLEM STATEMENT

The convenience, efficiency, and immense benefits heralded by the Internet are but one side of the same coin. As mentioned in Section 1.1, there are two challenges posed by the Internet and the on-line world which equally demand an efficient response.[75] We state that a third important challenge may emerge from the two challenges given earlier. It is particularly faced by governments. The challenge deals with the protection of children from on-line inappropriate and abusive activities. The attractiveness of unfavourable activities is greatly facilitated and supported by the diverse range of communication possibilities that the Internet offers. Here we should note that the Internet sits at the top of a pyramid in the range of devices that facilitates communication. Below we discuss the Internet as the apex of modern day communication (Subsection 1.5.1), the continuous transformation (Subsection 1.5.2) followed by the protection of children on-line (Subsection 1.5.3), and economic issues versus moral issues in Subsection 1.5.4. In Subsection 1.5.5, we briefly describe possible regulatory issues. We present a two-folded problem statement as a guide to our study in Subsection 1.5.6.

1.5.1 The Internet: the apex of modern day communication

We see the development mentioned above evidenced in a report by the International Telecommunication Union (ITU) released in September 2008. The report

74 See as examples, *Yahoo v Licra* 379 F.3d 1120 (9th Circuit) and *Gutnick v Dow Jones*, 2002 HCA 56.

75 Meyerson, M. I., (1994), Virtual Constitutions: The Creation of Rules for Governing Private Networks, 8 *Harvard Journal of Law and Technology*, p. 129.

ranks Hong Kong second (with Singapore) in terms of percentage of household broadband penetration in Asia Pacific.[76] This was supported by the Office of Telecommunication Authority (OFTA) in Hong Kong which reported that as at June 2008, there were more than 1.92 million registered customers using broadband services with speeds up to 1000 Mbps (Megabits per second). In the residential market, 77.3% of the households are using broadband service.[77] In August 2008, there were 168 licensed Internet Service Providers (ISPs).[78]

Thus with the Internet as the apex of modern day communication, we see new technological devices and applications rapidly evolving to incorporate, facilitate, and improve this new form of communication. Here we mention personal digital assistants (PDAs) and Internet-access enabled mobile handsets as examples of devices providing Internet services on the go. The ITU predicts that the Asia-Pacific region is poised to become the world's mobile powerhouse with more than 50% of all mobile phone users in the world. Hong Kong is amongst the countries in the Asia-Pacific with more mobile subscribers than fixed-line subscribers. Indeed this is seen represented as 160.8% mobile subscriber penetration rate as at August 2008 as compared to a household fixed-line penetration rate of 100.6%.[79] Moreover, in the issuance of 3G licenses, the Director General of Telecommunications made it clear that two objectives of the Telecommunication Authority in Hong Kong were (1) to advance Hong Kong's status as a mobile data-service hub in Asia and (2) to encourage advanced innovation of mobile data services and applications.

1.5.2 The continuous transformation

Although computers are traditionally seen as the instrument which provides access to the Internet, we now remark that providing access to the Internet is no longer their sole task. Convincing evidence of the rapid growth of mobile Internet is seen amongst the younger population. For example, Nielsen On-line

76 The Asia-Pacific region is the world's largest broadband market with a 39 per cent share of the world's total at the end of 2007. In terms of broadband access, Asia-Pacific has made remarkable progress in the past few years, with subscriber numbers growing almost five-fold in five years: from 27 million at the beginning of 2003 to 133 million at the start of 2008. See ITU's Asia-Pacific Telecommunication and ICT Indicators Report. The latter focuses on Broadband connectivity: Too much or too little? Asia-Pacific region leads high speed Internet connectivity, but wide divide prevails. September 2008, Press Release, ITU; available at http://www.itu.int/newsroom/press_releases/2008/25.html

77 Hong Kong: The Facts 'Telecommunication'; available at www.gov.hk/en/aboutHK/factsheets/docs/telecommunication.pdf

78 Supra.

79 Office of the Telecommunications Authority, Key Telecommunication Statistics; available at http://www.ofta.gov.hk/en/datastat/key_stat.html

launch of Mobile Media View[80] in the UK revealed that in the second and third quarter of 2008, the number of Britons accessing the Internet via the mobile phone increased by 25% from 5.8 million to 7.3 million compared to 3% for PC-based Internet (34.3 to 35.3 million).[81] Further, 25% of mobile Internet consumers are aged 15 to 24 compared to 16% for PC-based consumers. Rapid growth is also seen in the US where research firm Forrester confirms our observation.[82] We see this phenomenon also in the rapid rise of mobile data services, such as mobile Internet services, multimedia services, and all sorts of download services provided for and accessible via the mobile handset devices. By continuing the new technology, subscribers are able to experience easier and faster downloads, video streaming, and web-browsing on their mobile handsets.

Here, we once again remark that the significant transforming role played by the new media and communication technology was recognised by organisations such as WSIS.

1.5.3 The protection of children on-line

In 2005, WSIS had issued a consensus statement called the Tunis commitment to raise awareness of the benefits that the information and communication technologies can bring to humanity.[83] More importantly, in addition to recognising "the role of information and communication technologies (ICT) in the protection of children and in enhancing the development of children", the Tunis Commitment urged the governments, private sector, civil-society, national organisations, and international organisations of the need to "strengthen action to protect children from abuse and defend their rights in the context of ICT".[84] There are a number of initiatives which exist nationally and internationally that advocate the protection of children on-line. We mention here three national initiatives: (1) the UK's Child Exploitation and On-line Protection Center (CEOP),[85] (2) the Internet Watch Foundation (IWF), and (3) the US legislative initiative in the form of the Child On-line Protection Act (COPA). Regionally, we note the proactive approach undertaken by the European Union's Safer Internet Program. The Safer Internet program (2009-2013)

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80 Nielsen Mobile Media View was a survey conducted by Nielsen Online in the U.K. on how the mobile Internet is growing, the age of the consumers using it as well as how the most popular mobile websites perform on the PC-based Internet.

81 Nielsen Online, Mobile Internet growth 8x greater than PC-based Internet growth, News Release, November 2008, available at www.nielsen-online.com

82 Forrester Forecast: Global Online Population to hit 2.2 billion by 2013: Emerging market drives increase: double digit growth rate in Asia, July 2009, available at http://www.forrester.com/ER/Press/Release/0,1769,1296,00.html

83 The Tunis Commitment, 2005; available at http://www.itu.int/wsis/docs2/tunis/off/7.html

84 Supra.

85 CEOP is dedicated to protecting children from sexual abuse wherever they may be. See www.ceop.co.uk

builds upon the Safer Internet Action Plan (1999-2004) and the Safer Internet Plus Program (2005-2008). On the international front we see the 'Child On-line Protection' initiative launched by the International Telecommunications Union (ITU) in collaboration with United Nations agencies such as UNICEF, the United Nations Inter-regional Crime and Justice Research Institute (UNICRI), and the United Nations Institute for Disarmament Research (UNIDIR).[86] Other leading agencies such as the International Centre for Missing & Exploited Children, Interpol, and Save The Children have also lent their support to ITU's initiative. We mention two trends resulting from these initiatives: (1) an increasing global awareness of the need to create a safe and secure on-line environment for children and (2) the recent establishing of a platform for coordinated efforts to ensure that on-line child protection measures are effective and accessible. While it is recognised that there are established Internet safety projects and Kids On-line programs, these projects and programs are not available in all countries.

1.5.4 Economic issues versus moral issues

In the continuing rapid and progressive development of mobile hardware (mobile handsets) and software (mobile data applications and mobile content), we see an encounter of economic issues and moral issues. An honest assessment has to be made of the real harm faced by children and young people through the misuse of these new technologies. In this respect we list the following studies conducted by Thornburgh and Lin (2002)8,[87] Taylor and Qualye (2003)8,[88] Mitchell, Finkelhor and Wolak (2003),[89] Livingstone and Bober (2005),[90] Wolak, Mitchell and Finkelhor (2005),[91] Ybarra, Diener-West and Leaf (2006),[92] and Belsey (2008).[93]

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86 ITU launches initiative to protect children online, November 2008, ITU, available at http://www.itu.int/newsroom/press_releases/2008/33.html

87 Thornburgh, D., and Lin, H.S., (2002), Youth, Pornography and the Internet, National Academy, Washington D.C.

88 Taylor, M and Qualye, E., (2003), Child Pornography: An Internet Crime, Brunner-Routledge, Hove and New York, N.Y.

89 Mitchell, K., Finkelhor, D., and Wolak, J., (2003), The Exposure of Youth to unwanted sexual Materials on the Internet: A National Survey of Risk, Impact and Prevention, 34 Youth & Society, p. 330-358.

90 Livingstone, S. and Bober, M., (2005), U.K. children go on-line: Final Report of Key Project Findings, London, LSE Research On-line; available at http://eprints.lse.ac.uk/399/

91 Wolak, J., Mitchell, K., and Finkelhor, D., (2007), Unwanted and Wanted Exposure to On-line Pornography in a National Sample of Youth Internet Users, February 2007, Pediatrics, Vol. 11, No. 2.

92 Ybarra, M.L, Diener-West, M., Leaf, P.J, (2007), Examining the Overlap in Internet Harassment and School Bullying: Implications for School Intervention, Journal of Adolescent Health, Dec 41 supp. 1, p. 42-50.

93 Belsey, B., Cyberbullying, Always Aware, Always On, 2008; available at www.cyberbullying.ca

In so far as mobile communication such as the use of mobile phones is concerned, the harm to youngsters is all the more disconcerting. The ownership of mobile phones is getting cheaper and younger. Mobile phones have attributes that are particularly attractive to children and young people. The devices are personal and private. They keep the user in continuous communication with the user's family and peers. Consequently, it is not uncommon for children and young people who access the Internet via Internet-enabled mobile phones to be exposed to the three Cs, i.e., (1) content like pornography and violent mobile games, (2) contact like on-line sourcing, grooming, and cyber-bullying, and (c) commercialism like mobile spam, premium-rate services and being subjected to unethical and aggressive marketing tactics. There are increasing concerns that inappropriate content (exposure to illegal and harmful materials) can lead to inappropriate contact, such as bullying and grooming activities by exploitative adults. We observe that the concern for this vulnerable group also extends to the exploitation and abuse of children and young people through victimisation and child sexual abuse.[94] We are cognisant of the fact that the Internet has in conjunction with other modern digital technology empowered and facilitated child-abusers to create and distribute anonymously abusive images of children. The risk is all the more daunting in so far as mobile phones are concerned. The personal, portable, and always-on feature of Internet-enabled mobile phones together with camera and video recording capabilities and location-based services applications can provide a secured means of establishing direct contact with children for the purposes of sexual exploitation.

1.5.5 Possible regulatory issues

A number of regulatory issues are raised when considering the second theme underlying our thesis and that is, the adequacy (or inadequacy) of the existing regulatory framework as an efficient protection mechanism against the concerns of the three Cs. Related to the second theme, we consider what might be a better regulatory strategy to adopt for the protection of children and young people. We mention here three broad issues we regard as important in dealing with the second theme. (1) the applicability of the conventional prescriptive law approach to the non-physical environment of the Internet, (2) the acceptance of 'surrogate regulators', and (3) a shift towards a culture of shared responsibility. By a culture of shared responsibility, we mean inculcating a culture by which there is an acceptance by the community and the relevant stakeholders that the responsibility for protecting children and young people is one that must be shared. The three issues are discussed in greater detail in Chapters 6, 7, 8, 9, and 10.

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94 Taylor, M., and Qualye, E., (2003), *Child Pornography: An Internet Crime,* Brunner-Routledge, Hove and New York, N.Y.

1.5.6 *A two-folded problem statement*

Taking into account the above observations, our two-folded problem statement (PS) reads as follows.

PS1: Why is mobile communication technology via the use of new generation mobile phones a threat in terms of content, contact, and commercialism to children and young people?

PS2: How might we seek to address the inadequacies in the existing regulatory framework with regards to the protection of this vulnerable group (children and young people)?

1.6 Research questions

With the two-folded problem statement in mind, we would like to list a series of research questions examining the possible means and consequences of receiving unfavourable on-line activities to guide our research with respect to PS1 and PS2.

From the observations given in Section 1.5, we formulate four research questions (RQs).

RQ 1: What (sociological, cognitive, and psychological) impact does the rise in the use of mobile communication technology have on children and young people?

RQ 2: To what extent does the current regulatory framework protect children and young people from harm and abuse? Or otherwise stated, how adequate is that protection?

RQ 3: What lessons can we derive from other jurisdictions in the formulation of a viable regulatory strategy?

RQ 4: What are the important elements that should be included in the new legal framework?

We remark that RQ1 deals with PS1 and that RQ2 to RQ4 concentrate on PS2. Before we proceed further, we would like to stress that the thesis adopts a multi-disciplinary character in that it touches on sociology, cognitive science, and psychology. We do provide a caveat and that is, we do not profess to be an expert in all the three domains, i.e., sociology, cognitive science, and psychology but the impact is to be described in this form. Although we aim at sociological impact, in this case, the other factors are involved. RQ1 focuses in particular on the three main domains. Moreover, RQ2 to RQ4 can easily be related to the second theme of our study as given at the beginning of this Chapter – the legal part of our research. RQ2 considers the position in Hong Kong, while RQ3 takes on an international comparison. RQ4 focuses on establishing elements for a viable regulatory framework for mobile content regula-

tion that is applicable in Hong Kong as well as worldwide. All in all, the four research questions will guide our investigations. In Section 1.8, we indicate in which chapter the research questions will be addressed.

1.7 RESEARCH METHODOLOGY

With the four research questions in mind, this study follows a research methodology that consists of five stages. They are: (1) an evaluation of the state of art of the communication technologies and its expectations; (2) a literature review and an analysis of the legal framework, (3) the evaluation of models from other jurisdictions, (4) providing building blocks for a new legal framework, and (5) developing a method of determining responsibilities and liabilities. To be more specific and by combining the five methodological stages into a research program in which we relate the stages with the RQs, we may provide a scheme (see Figure 1.1).

RQ / *Stages*	*RQ1*	*RQ2*	*RQ3*	*RQ4*
State of the art, evaluation and expectations	X			
Reviewing and analysing		X		
Evaluating other jurisdictions			X	
Identifying important elements in designing a new legal framework				X
Determining responsibilities and liabilities				X

Figure 1.1: The relations between RQs and the research activities.

1.8 THE STRUCTURE OF THE THESIS

The study consists of eleven chapters. Chapter 1 has an introductory nature; it contains the problem statement and the four research questions as well as the research methodology.

Since the thesis adopts a multi-disciplinary approach in that it briefly examines issues in sociological, cognitive science, and psychological areas (first part) and law (second part), the thesis is divided into two main parts. The first part consists of Chapters 2 to 5.

Chapter 2 describes: mobile telephony and the telecommunication infrastructure.

Chapter 3 discusses: whether a convergence of technologies might stimulate relevant authorities in addressing the inadequacies of the regulatory framework with regards to the protection of children and young people.

Chapter 4 provides: an examination of the mobile phone's role in modern society, and the potential risks associated with the adoption and use of mobile phones by children and young people.

Chapter 5 examines: the impact of potential risks on children and young people.

The focus of Chapters 6 to 10 is on the legal perspective. It investigates the possible regulatory strategies and alternative regulatory regimes as follows.

Chapter 6 provides: an evaluation of the adequacy of the regulatory arrangements adopted in Hong Kong to manage the risks.

Chapter 7 conducts: a comparative study of regulatory strategies adopted in other jurisdictions.

Chapter 8 considers: regulatory paradigms.

Chapter 9 evaluates: regulatory strategies and regulatory alternatives, in particular we examine the merits and demerits of a self-regulatory regime.

Chapter 10 continues: with a discussion of what measures might be more appropriate taking into account (a) the intangible and fluid nature of the environment, (b) the rapidness in the development of new technology, and (c) the social and regulatory objectives of the state.

Chapter 11 contains: the answers to RQ1 to RQ4, the answers to PS1 and PS2, as well as the conclusion. Moreover, future research is envisaged.

In Figure 1.2, we provide the relations between the Chapters, the RQs and the PSs.

Chapter		SOCIOLOGICAL				LEGAL					
RQ/PS	1	2	3	4	5	6	7	8	9	10	11
RQ1	X				X						X
RQ2	X					X					X
RQ3	X						X				X
RQ4	X									X	X
PS1	X										X
PS2	X										X

Figure 1.2: The relations between Chapters and the RQs/PSs.

2 Mobile telephony

This chapter aims to provide a brief overview of mobile telephony. It is meant to make the reader familiar with the ingredients that are relevant when answering the RQs introduced in Chapter 1. We start with a general introduction.

Rapidly developing mobile technologies have contributed to a variety of capabilities and functionalities that are becoming standard applications in mobile phones and other communication devices. The mobile phone, for example, has evolved into a platform that offers multimedia interactive experience to its users. We attribute the mobile phone's rapid evolution to two distinguishing features: its ability (1) to connect people and (2) to empower the user. The first distinguishing feature of the mobile phone, i.e., to connect (communicative element), is a significant element when considering the growing need for society to stay in touch, to communicate, and to have access to information 'anytime, anywhere, anyhow'. However, we are also seeing a changing trend in the way the society is connecting. We are *no longer* using the mobile *to talk* but we are also using the mobile phone as an empowering medium (see below) to play, to share, to view, to update, to invite, to consult, to message, and to conference.

In relation to having access to information 'anytime, anywhere, anyhow', this is observed in the provision of a variety of mobile audio-visual contents and services either without charge (free) or for a fee via premium-rate services. Three types of content may be provided: (1) mobile customisation content (ringtones, logos, and wall papers), (2) content of informational value (news, sport, weather, and financial market update), and (3) entertainment content. Some examples of entertainment content include a short movie and music clips, and mobile games. In order to take advantage of the mobility and portability of mobile devices, a number of other services have also been developed for the mobile platform. These take the form of dating services and location-based informational services.

The second distinguishing feature of the mobile phone is that it empowers the user, by placing the user in control. The user controls (1) how he can be contacted, (2) when he can be contacted, and (3) the type of content and services he wishes to have access to. The control that the user experiences in a mobile environment outweighs by far the control he has in a fixed environment. Although, similar content and services are readily available in the fixed environment, the increasing demands and requirements for these new forms of wireless communication have propelled the development and evolution

of mobile technology and with it, mobile content development to satisfy the ever growing demands of the user.

The chapter starts with a brief discussion of the development of mobile communication technology (Section 2.1). Section 2.2 contains a brief overview of Hong Kong's mobile telecommunications infrastructure and its players. The introduction of mobile content is dealt with in Section 2.3. The chapter considers the delivery of mobile content over various platforms in Section 2.4. We conclude the chapter in Section 2.5.

2.1 THE DEVELOPMENT OF MOBILE TECHNOLOGY

Mobile devices have evolved significantly over the past fifteen years. The earlier generation mobile phones stayed relatively close to their original objective of providing vocal communication. They were neither designed to display pictures, graphics, and short video clips, nor to have the capability to play music, capture still images, and access and send e-mail. However, the mobile phones have evolved to incorporate greater user friendly applications. Their size have also become smaller and their weight much lighter.

Three major generations

Historically, there are three major generations of mobile telephony with fast wireless data transmission. The 1st generation mobile phones, for example, were analog based. The 2nd generation (2G) mobile devices were based on the GSM (Global System for Mobile Communication). The data speeds of 2G mobile phones were between 9.6 kilobits per second (Kbps) to 14.4 Kbps.[1] Shortly thereafter, an improvement on the GSM came in the form of the GPRS (General Packet Radio Service) 2.5G service. The GPRS transfers data at 27 Kbps.[2] Further development of mobile technology saw the introduction of 3G technology. With 3G, UMTS (Universal Mobile Telephony System) was used. In comparison to earlier technologies, 3G provides faster data transfers at speeds of 128Kbps to 384Kbps.[3] This enables mobile users to access the Internet, to download files, and share videos. It also provides users with the experience of the fixed Internet platform. With 3G, mobile phone screens have become larger with full vibrant colours. Furthermore, storage capacity has increased to take on the experience of a variety of audiovisual content of the Internet.

1 Ahlert, C., Nash, V., and Marsden, C., (2005), Implications of the Mobile Internet for the Protection of Minors, *Preliminary Report of the OII-led Working Group on Mobile Phones and Child Protection of EICN*, April 2005; available at http://network.foruminternet.org

2 Supra.

3 Supra.

Emphasis is on applications

However, from the user's point of view, the differences between the later and earlier generations of mobile phones are characterised by the applications which the mobile phones facilitate.[4] We observe that it was only with the introduction of 2G digital cellular technology that we had the integration of voice and data communication. Thus, the first application of SMS (short messaging service) and MMS (multimedia messaging service) were provided by 2G mobile phones. The application remains the best known application of 2G mobiles and is still a common form of text communication between mobile phone users. SMS application is popularly used to personalise a mobile phone to reflect a mobile user's identity and fashion sense by downloading ring-tones, logos, and wall papers. With 2.5G mobile phones, the availability of entertainment content increased and became more varied to include graphic, photos, music, and games download. Communication via messaging became more personal and interactive with MMS. However without doubt, we observe that the mobile world 'opened up' with the introduction of 3G technology. 3G provides a full range of broadband applications available, including audio and video streaming, video capture, on-line gaming, and a host of other applications. Richer content, higher quality graphics, and greater interactivity is what distinguishes 3G from earlier generations of mobile phones.[5] Indeed, the next evolutionary step in mobile phone development is the introduction of smart phones seen in the form of for example, Apple iPhone, Blackberry, and Palm Pre. Possessing enhanced features such as Wi-Fi, web-browsing, MP3 and movie play-back, the smart phones are experiencing a rapid rise in consumer sales.[6]

Experience of new technologies

Although mobile technology and wireless communication are continuously evolving together with other standards that are recently developed, such as (1) WiFi and Bluetooth (2) WiMAX technology, and 4G, this chapter does not intend to focus on these technologies. The reason is that the more recent technologies and the mobile devices are currently not available in terms of (a) cost of service, and (b) cost of hardware, to children and young people. We are of the opinion that when the devices incorporating the later standards and technology, become increasingly available to the younger generation under competition driven economies, the potential hazards and risks raised in Chapter 3 will become even more pressing to both governments and communities.

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4 Supra.

5 Alhert, Nash and Marsden supra n.1.

6 Lohr, S., (2009), *Smart phones rises fast from gadget to necessity*, The New York Times, Technology, June 9, 2009, available at http://www.nytimes.com/2009/06/10/technology/10phone.html?_r=1; see also Perez, M. (2009), *Smart Phone will be the next phone for many*, Information Week, June 12, 2009, available at http//www.informationweek.com/news/personal_tech/smartphones/showArticle.jhtml?articleID=21780102

2.2 TELECOMMUNICATION INFRASTRUCTURE IN HONG KONG

Having considered the various mobile technologies, this section will briefly deal with Hong Kong's telecommunications infrastructure (Subsection 2.2.1), telecommunication services, and mobile operators (Subsection 2.2.2). The telecommunications services in the section are restricted to mobile telephony services and do not include services such as fixed line telephony or Internet Protocol telephony. Moreover, we address the open access strategy (Subsection 2.2.3).

2.2.1 The infrastructure: mobile phone services

Licenses for mobile services were first issued in 1987 for analogue service. This was rapidly followed by the issuance of digital GSM service in 1992. We observe that competition remains keen in the mobile services sector. As at August 2008, there were fourteen digital networks operating: four in the 800/900 MHz (of Megahertz) bands, six in the 1700 -1900 MHz bands, and a further four in the UMTS bands.[7]

The telecommunication infrastructure in Hong Kong is well established. With a population of just over 7 million, Hong Kong has over 3.8 million fixed telephone lines and approximately 8.8 million mobile phone subscribers. The number of registered mobile subscribers was recorded at 11,230,499 in August 2008.[8] This represents one of the highest penetration rate of about 160.8%. It can be compared to 10.98 million in June 2008 and 9.3 million at the end of February 2007; this represents an increase from 123 mobile phones per 100 inhabitants at the beginning of 2006.[9] As at the end of August 2008, out of the 11,230,499 subscribers, 2.961,460 are 2.5G and 3G mobile service subscribers.[10] In addition to voice services, popular applications and data services enjoyed are SMS, mobile internet, download services, multimedia, video, and mobile TV. Further with the current 3G network in the process of being upgraded with high speed downlink packet access (HSDPA) technology, 3G mobile-service users can experience higher speed data download of up to 3.6Mbps. In fact, the successful upgrade has led the increase in the number of 2.5G and 3G data-service users from 2.66 million in July 2006 to 2.94 million

7 Hong Kong: The Facts-Telecommunication, available at http:www.gov.hk/en/abouthk/factsheets/docs/telecommunications.pdf

8 The number includes digital, PCs and pre-paid SIM subscribers. See Key statistics for Telecommunications in Hong Kong, available at http://www.ofta.gov.hk/en/datastat/eng_wireless.pdf

9 As at July 2007, the mobile penetration rate is 139.8% with registered mobile subscribers standing at 9,674825. The number of 2.5G and 3G subscribers as at the end of July is 2,657,736. See http://www.ofta.gov.hk/en/datastat/key_stat.html

10 See Key Statistics for Telecommunication Services in Hong Kong as at August 2008; available at www.ofta,.gov.hk/en/datastat/eng_wireless.pdf

in July 2008.[11] As of July 2008, 26% of mobile-service users in Hong Kong have subscribed to data services. We believe that the statistics provide a relevant indicator in that with the increasing number of 3G users, it is conceivable that the consumption of mobile content services and the exposure to inappropriate materials will likewise increase.

2.2.2 The players

Having briefly described the infrastructure for mobile services this section deals with the players in a mobile telecommunication sector. In this respect, we regard mobile network operators (MNOs) and mobile virtual network providers (MVNOs) as the two main players.

A: Mobile network operators (MNOs)
Mobile network operators (MNOs) are assigned a radio spectrum through which public radio communication service is provided. In Hong Kong, as an MNO means a holder of the following: (1) a mobile carrier license, (2) a public radio telephone services license, or (3) a personal communication services license. There are six licensed personal-communication-service-licensed operators in Hong Kong. The six personal-communication-service-licensed operators are also licensed MNOs. We provide details of the licensed MNOs in Appendix A, where we also provide two Figures. Figure A1 illustrates the market share of the respective MNOs in Hong Kong as at early 2005 and Figure A2 shows the mobile market in Hong Kong as at early 2006. In Appendix B, we illustrate by way of a case sample of CSL New World Limited Ltd via its brand name, One2Free. The case sample provides the typical mobile content that an MNO might offer to mobile phone users in Hong Kong.

B: Mobile virtual network operators (MVNOs)
In so far as Mobile Virtual Network Operators (MVNOs) are concerned, we note that the establishment of MVNOs is a fairly recent phenomenon. In Hong Kong, an MVNO is an entity that "provides mobile telecommunications services to customers through interconnection with and access to the radio-communications infrastructure of a Mobile Network Operator (MNO)".[12] Thus, an MVNO

11 OFTA Trading Fund Report 2007/2008; available at www.ofta.gov.hk/en/trade-fund-report/0708/pdf.full.pdf

12 See Office of Telecommunication Authority at ww.ofta.com.hk. Other definitions of MVNO have been provided by International Telecoms Union and U.K.'s Office of Communication. ITU defined MVNO as "an operator who provides mobile communications services to users without its own airtime and government-issued licenses" whilst OFCOM defines MVNO as "an organization providing customers with mobile phone services without owning any airtime". See a brief description on different types of MVNO in http://web.si.umich.edu/tprc/papers/2006/513/dewenter_haucap_workingpaper.pdf

does not have its own infrastructure. Rather, it uses the infrastructure of an MNO.

The first MVNO was UK's Virgin Mobile in 1999. MVNOs have been viewed positively since (1) they stimulate competition, and (2) are able to target niche markets. MVNOs promote competition as (a) they enable new entrants to enter the market without the large network building costs required, (b) they bring down prices and keep MNOs honest by expanding consumer choices, and (c) they promote the use of excess network capacity.[13] MVNOs provide an attractive complement to the MNOs by focusing on content creation and distribution. Examples of MVNOs include Disney Mobile, Mobile ESPN, and Vivendi Universal Music Mobile.[14]

Given the popularity of MVNOs in Europe, and with the view of opening up the telecommunication services sector, the Hong Kong Telecommunication Authority has provided for their establishment of MVNOs in Hong Kong. Thus, MVNOs provide mobile services to customers by access to, and interconnection with radio-communications infrastructure of MNOs.[15] The issuance of a public-non-exclusive-telecommunication (PNET) licence to provide MVNO services was part of Hong Kong's liberalisation efforts to open the telecoms market by allowing companies which does not have their own networks to participate in the operations and the provision of local mobile telecom services.[16] This is in accordance with the Telecommunications Authority's (TA) obligations on open network access. TA's open access strategy is described in the following subsection.

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13 Srivastava,. L., (2006), The Regulatory Environment For Future Mobile Multimedia Services, Issue Paper 2006, Document number MMS/03v2; available at www.itu.int/osg/spu/ni/multimobile/presentations/ITUsrivastava_mobilemultimedia.pdf

14 Disney Mobile is a collaboration between U.S.'s Sprint and U.K.'s O2. The service will offer Disney branded mobile phones with restricted calling and internet access as determined by children's parents. Children between the ages of 8to14 year olds will be targeted. See www.disney.go.com/disneymobile/. Vivendi Universal Music offers speciality music applications (including previews of new releases , music news, CD buying capabilities.

15 Note MVNOs are different from resellers. Resellers merely resell the service of the MNO without establishment and maintenance of any means of telecommunication. The services are marketed using the reseller's own brand and billing function. See Leung, M., (2002), Mobile Virtual Network Operators in Hong Kong, April 2002, available at www.swedishtrade.se/ittelekom/static/MVNO.pdf

16 In this regard, as far as MVNOs are concerned, the telecommunications system of a MVNO interconnects with a 3G network within the meaning of "interconnection" as provided for and required under section 36A of the Telecommunications Ordinance. A MVNO which satisfies minimum criteria has access to numbering resources.and mobile network codes. As qualified MVNOs may seek the Telecommunication Authority's intervention under the open network access regime.

2.2.3 Open access strategy

The open network policy provides for licensed 3G network operators in Hong Kong to open 30 % of their network capacity to 'non-affiliated' service providers.[17] Non-affiliated service providers include MVNO, and content or service providers (CSP).[18] The open access strategy encourages capable, small, and medium enterprises to design and provide creative mobile applications. It is also envisaged that content providers will have the opportunity to provide new services over the networks at a fair price.[19]Thus although MVNOs do not have the right to the radio spectrum, mobile services are provided via the infrastructure of a MNO. In addition, MVNOs operate their own switching, billing, and database.[20] As such, an MVNO provides the same services to customers as if it is an MNO but without owning a radio spectrum.

We observe that Hong Kong's open access strategy is non-discriminatory in that (1) it enables service providers, whether MVNOs or content service providers (CSPs), to have access to the same transmission and supporting capabilities as the host MNO when it serves its own customers, and (2) there is no difference in treatment of traffic associated with non-affiliated service providers that use the network. We note that the terms of access between MNOs and MVNOs including the minimum committed quantity of traffic volume over a minimum committed period of time are normally reached through commercial arrangements. In the event that agreement to provide access is not reached between the parties, the Telecommunication Authority may intervene. The intervention of the Authority where necessary, ensures greater competition at content, application, and service levels.

With a brief background of the policies and the regulations for the telecommunication sector, we proceed to consider why content has become an important factor in the provision of telecommunication services. In Section 2.3, we aim to consider the platforms available for mobile content delivery.

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17 This is Special Condition 12 of the mobile carrier licence. Special condition 12 is normally incorporated as a clause in the MVNO network capacity licence agreement. See a sample of the agreement by HK CSL Limited, one of the Hong Kong's licensed MNO at http://hkcsl.locusin.com/wwwhkcsl/mvno/Reference_Network_Capacity_Agreement_publication_version.doc. In fact, a MVNO may seek access to network capacity of more than the 30% offered under the open network access obligations. This can be done through negotiations and commercial agreements between the MVNO and the MNO.

18 MVNOs and CSPs will buy access capacity at tariffs decided by the MNO. For example, the tariff set by CSL is calculated by the maximum mega bits per second (mbps) per month committed by CSL multiply by HK$65 million: http://hkcsl.locusin.com/wwwhkcsl/mvno/3G.html. The Telecommunication Authority would only intervene if the published tariffs are (1) unfair, (2) discriminatory, or (3) anti-competitive: Special condition 12.4 of the licence.

19 Leung supra n. 15.

20 Supra.

2.3 Mobile content as new revenue

The promise of providing broad mobile multimedia experience was sufficient for telecommunication companies and government alike to see mobile content as a new revenue stream. Globally, this led to mobile network operators investing heavily in the infrastructure required for the provision of new generation networks, particularly for the spectrum rights to run 3G services.[21] Furthermore, studies have indicated that the average rate per user (ARPU) is decreasing. Thus, in order to re-coup their investment on infrastructure networks and to increase revenue from reduced ARPU, content has become an important driver in the take-up rate of mobile technology. Consequently, in order to maximize their immediate profits and drive customer adoption of mobile data services, network providers will have to focus on developing and launching certain types of data services.

2.4 Platforms for delivery of content

Technological advances in mobile communication have spurred the development of new business models to take advantage of consumers' demand for mobile content. A diverse range of content and services are available on the mobile devices. Some services are new in that the services have been tailored to suit the mobile environment whilst some services have migrated from fixed environments such as the television and the Internet. We have seen examples of content that have been re-figured from websites and news media such as (a) news, (b) weather, (c) sport results, (d) financial news, and (e) interactive games in the sample case of One2Free. In view of the variety in the type of content and services offered, business models can take three forms (1) network operators offering their own content, (2) network operators allowing third parties to provide content, and (3) network operators providing open access to the Internet.[22]

Thus content delivered by these platforms will be briefly examined in the following subsections. Subsection 2.4.1 will deal with content produced by MNO and Subsection 2.4.2 will deal with content produced by a third party in partnership with MNO. The third platform dealing with content provided over the Internet will not be examined since we assume that all readers are familiar with the nature and availability of such content.

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21 For example, the U.K. spectrum auction in March 2000 was recorded to be the largest auction in history, raising £22.5 billion thus valuing the U.K. spectrum at U.S. $107.2 per person.21 This is approximately three times more than the Italian spectrum, four times more than the Dutch spectrum and fifty times more than the Swiss spectrum.21 All Italian, Dutch, and Swiss spectrums were auctioned in the year 2000. In total the European spectrum auctions raised £60 billion.

22 Supra.

2.4.1 Content produced by MNO

A number of the content-producing services are delivered to mobile users by the network operator using SMS and MMS. Depending on the nature of services and the content delivered, the services and content are normally charged at premium rate. Much of the content delivered would be suitable for the general mobile user. However, content may be developed to appeal to a particular segment of society. Examples of such content include adult content (including adult ring-tones), violent games content, and gambling content.

2.4.2 Content produced by third party in partnership with MNO

Mobile content may be developed and provided in partnerships with content providers and network providers. In some cases, the network provider may only provide 'carrier service' for the delivery of content to its users. Where content provision involves a partnership between content developers and network providers, it will invariably involve striking the right balance of involvement of the partners in the corresponding value chain. This is seen more specifically for example, in (1) sharing the development cost of content and applications, (2) sharing the risk amongst the partners involved, and (3) revenue sharing.[23]

As with most business partnerships, differences between partners and challenges will arise in the pursuit of the business venture. In such circumstances, to reduce potential conflicts, guidance might be sought from successful mobile business models. One example of a successful business model is the experience of Japanese operators. A high degree of success can been achieved with an efficient business model like the Japanese business model. The Japanese business model provides a number of key factors which contributed to its success. The factors include (1) a high degree of flexibility, (2) an openness to content providers, (3) a functioning value chain, with operational control over most of the value chain from server to handset dealer, (4) a transparent billing system, (5) ease of content integration, (6) mass market availability of handsets, and (7) excellent marketing.[24] Although there is little evidence of conflicts arising between MNOs and content service providers (CSPs) in Hong Kong, being mindful of these factors will go a long way to help foster a better relationship between the parties.

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23 Review of the Regulation of Content Delivered over Mobile Communications Devices, Call for Submissions, Department of Communications, Information Technology and Arts, available at www.dcita.gov.au

24 A prime example of a successful business model being NTT DoCoMo. See also McKinsey, Comparative Assessment of the Licensing Regimes for 3G Mobile Communications in the European Union and their Impact on the Mobile Communications Sector, available at http://ec.europa.eu/information_society/topics/telecoms/radiospec/doc/pdf/mobiles/mckinsey_study/final_report.pdf

2.5 CHAPTER CONCLUSION

On the basis of this brief overview of mobile technology in Hong Kong, we may conclude that the mobile telecommunication sector is responding well to the demands on modern society in (a) the continuous development of mobile devices (hardware), (b) the innovative creation of mobile applications, and (c) the establishment of business models. However, what is necessary for us is to venture further and to examine whether, and to what extent regulatory arrangements are in place to ensure that children and young people are protected against inappropriate mobile content provided over these delivery platforms. These are the tasks we set ourselves in Chapter 6.

3 Convergence of technologies

In this chapter, we aim to address convergence and its effects on the legal framework. We do this by considering (1) how the government's social objectives for the communication sector, particularly for consumer protection is addressed in the light of convergence, and (2) what are the implications of convergence on the government's policies with respect to the regulation of content. The answers to (1) and (2) will provide us with a better understanding in the formulation and adoption of a suitable approach to meet the challenges of convergence and the hazards it raises especially for children and young people.

Mortensen (2003) suggests four factors that might influence the regulatory assessment. The four factors are (1) technological, (2) economic, (3) public interest, and (4) socio-political.[1] Based on the conclusions of this chapter, i.e., in the light of converging technology, we may more precisely estimate the adequacy of the regulatory framework in addressing the potential hazards of mobile communication technology on children and young people.

The chapter begins with a brief description of convergence (Section 3.1). Five factors that fuel convergence is examined in Section 3.2. In Section 3.3, we deal with the objectives of government policies in the communication sector. In Section 3.4, we briefly describe the benefits and concerns of the converging process. Then in Section 3.5, we examine challenges to convergence. In Section 3.6, we describe the regulator's responsibility and the position in Hong Kong. The remainder of the chapter is devoted to regulatory convergence in Hong Kong wherein a brief comparative study is made of unified regulators (Section 3.7). Section 3.8 deals with responding to the challenges. The chapter provides conclusions and new challenges in Section 3.9.

3.1 What is convergence?

We start this section by considering what is meant by convergence. We remark that convergence is a difficult concept and there is no universally accepted definition of convergence. Rather, we observe that the concept has attracted

1 Mortensen, M.J., (2003), Beyond Convergence and the New Media Decision: Regulatory Models in Communications Law, Canadian Journal of Law & Technology, Vol. 2., No 2.

a number of postulations by various researchers as to what the term might encompass. Notwithstanding, we start with an official definition provided for by the European Commission (EC) Green Paper on Convergence (1997) where the EC expressed convergence as

> "(…) the ability of different network platforms to carry essentially similar kinds of services; and the coming together of consumer devices such as the telephone and personal computer".[2]

Stobbe and Just (2006) describe convergence as a process of qualitative change that connects two or more existing, and previously distinct markets.[3] More recently, the Finnish Communications Regulatory Authority at an International Telecommunication Union (ITU) workshop, defined convergence as "the process of integration of previously independent industries of telecommunication, information technology, and media".[4] Convergence can also be expressed as the ability of different network platforms to carry essentially similar kinds of services and the coming together of consumer devices such as the telephone, television, and personal computer. Convergence is therefore not just about technology, but about services, new ways of doing business and of interacting with society.[5] (Bezzina and Terrab, 2005).

We have chosen a definition by the OECD Working Party on Telecommunication and Information Services Policy (2004), for use in our study.

Definition (convergence):

> "Convergence is a process by which communication networks and their services are transformed such that:
> (1) different network platforms carry a similar range of voice, audiovisual and data transmission services;
> (2) different consumer appliances receive a similar range of service; and
> (3) new services are being created".[6]

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2 Green Paper on the Convergence of telecommunications, media and information technology sectors and the implications for regulation – Towards an approach for the information society, COM (97) 623; available at http://europa.eu/scadplus/leg/en/lvb/1214165.htm

3 Stobbe, A., Just, T., (2006), IT, telecoms & New Media: The dawn of technological convergence, in *Economics – Deutsche Bank Research*, Vol. 56, p. 4-5.

4 Mathilla, O., (2006), Overview of Convergence, NGN, VoIP, and related regulatory challenges, available at http://www.itu.int/ITU-D/afr/events/Dakar-2006_Regulatory_Challenges_of_VoIP_Africa/Presentations/Day1/Dakar_1_Overview_of_convergence_NGN_and_VoIP_plus_related~.pdf

5 Supra Green Paper, n. 2. See also Bezzina, J., and Terrab, M., (2005), Impacts of New Technologies on Regulatory Regimes, Technological Convergence and Regulation: Challenges Facing Developing Countries.

6 The Implications of Convergence for Regulation of Electronic Communications, by OECD Working Party on Telecommunication and Information Services Policy, July 2004; available at http://www.oecd.org/dataoecd/56/24/32983964.pdf

In simple terms, we may say that convergence is the coming together and the sharing of separate technologies, business models and services thereby synergistically creating new experiences. A brief examination of the technological and market convergence is provided for in Appendix C where we also provide two Figures. Figure C1 illustrates the convergences of sectors and Figure C2 shows the convergence at different levels. In the following section, we deal with five factors that fuel convergence.

3.2 FIVE FACTORS THAT FUEL CONVERGENCE

A number of factors contribute to the convergence process. We mention five of them: (1) digitisation, (2) technological advances in transmission techniques, (3) great advancements in network speeds, compression techniques, and storage capacity, (4) the growing availability of wireless devices and applications, and (5) market liberalisation. With respect to the latter, governments in response to the converging process, have recognise the need to liberalise markets from a form of monopoly to a market which promotes, encourages, and facilitates pre-competition. This led to a fertile environment of a continuous roll out of new services and applications.

We see this development most clearly in broadband Internet, 3G telephony, 4G mobile telephony, and digital television. They are a number of new technologies that will change society's consumption of and demand for content and will provide new business models and new experiences through real-time interactive services. An interesting recent example is Apple's iPhone released in 2007 which brings together the capabilities of a mobile phone, an iPod music player, a web browser, and the e-mail application of a computer in a single device.[7] New devices such as the iPhone are just instances of how technologies and content will continue to play a vital role in the ongoing converging process. Consequently, despite the fact that it is more than a decade since the release of the European Commission's Green Paper, the statement propounded that "(…) it is about services and new ways of doing business and interacting with society", it is still true. We see the truth of the EU's statement reflected in a plethora of convergent services currently available on various network platforms. These include (1) e-mail applications and world wide web access via hand-held devices such as PDAs and mobile phones, (2) webcasting of radio and television programming on the Internet, (3) using the Internet for voice telephony (VoIP), and (4) providers of cable television offering bundled packages of voice, Internet access, and broadcast services over the same network for one fee (triple play).

7 Knowledge@Wharton, (2007), Matching Technology to Consumers Demand, available at http://www.upenn.edu/researchatpenn/article.php?1166&tch

Therefore, we may conclude that convergence is not a matter of converging technologies but also represents a convergence of business models and a convergence of experiences.

Indeed, we observed that Hanrahan (2004) aptly described the converging situations as characterised by one or more of the following features.

1 *the multi-service feature*: multiple services, either new or formerly supported by different network services, being supported by a single set of facilities.
2 *the multi-function feature*: multiple services supported on a single terminal;
3 *the performing a function or extend functionality feature*: different infrastructures inter-working;
4 *the versatility feature*: the same service or content delivered by different types of infrastructures or media;
5 *the composition of services or content feature*: being able to exploit multiple services (or types of content) to provide more powerful services (or more complex content) forming;
6 *points of integration feature*: when diverse equipments can work into a single, common standard interface to support facilities.[8]

A prime example of Hanrahan's description is the mobile phone. As mentioned earlier, the mobile phone is not merely a telephone. 3G mobile phones can be used as a camera, a small screen television, a calculator, a calendar, and a computer. Moreover, we mention the much-talked-about Apple iPhone. The iPhone represents the convergence of both hardware, i.e., the handset, and software, i.e., software-based content and services. For example, the handset has *inter-alia,* an in-built digital camera, an internal storage capacity, both Wi-Fi and blue tooth capabilities, Internet access (when connected to a local area Wi-Fi) and a GPS device. The current iPhone operating system also supports a number of bundled applications. Thus we see the new-generation mobile phones (whether they be 3G, 4G, or the smart phones such as iPhone) incorporating Hanrahan's (2004) (1) multi-service feature, (2) multi-function feature, (3) composition of services or content feature, and (4) points of integration feature.

While not restricted to the introduction of the iPhone, it is apparent that the global society will see the continued rapid development of (1) mobile hardware, (2) supporting software applications and its functionalities, and (3) innovative business models and attractive user packages. Consequently, all these developments are the result of the advanced converging devices and the lower cost, in terms of (1) the handset and (2) the access. We remark that these new developments had facilitated the migration of potential hazards

8 Hanrahan, H., (2004) Modelling Convergence: Technology Layering for Horizontal Regulation, available at http://www.ee.wits.ac.za/comms/Telecomms%20output/output/satnac04/hanrahan.pdf

from a fixed platform onto a more mobile platform. Potential hazards are discussed in greater detail in Chapter 4.

In the circumstances, we may conclude that the process of convergence was in (a) response to the economic needs of the market sector, and (b) to satisfy the increasing demands of the consumers for new devices, new applications, and new experiences.

3.3 OBJECTIVES OF GOVERNMENT POLICIES IN THE COMMUNICATION SECTOR

It is clear that the *global consumer community* mostly benefits from convergent services and new business models. However, it remains to be seen (1) how and (2) to what extent governments are willing to take into account the rapid change that is taking place. In line with these two questions, we are mindful of the general common objectives for government policies in the communication sector.[9]

Governments (regulators) make use of a wide range of policies in the communication sector. For example, economic policies include *inter-alia*

1 competition principles,
2 restrictions on the size and influence of any one broadcasting operator or media operator, and in some cases, on the number of broadcasters,
3 license conditions which stipulate detailed content obligations and universal service obligations, and
4 funding of public broadcasters.[10]

Communication policies are generally aligned to the governments' economic, social, and cultural objectives (see Figure 3.1). While convergence in itself does not necessarily change the governments' objectives, it does influence the effectiveness with which existing policies meet those objectives.

9 These objectives are objectives common to OECD countries but are not regarded as dissimilar to non- OECD countries.

10 Supra OECD Report on Implications of Convergence for Regulation of Electronic Communications, supra n. 6. Note although the report was dated 2003,the report was declassified in July 2004

Economic objectives	1	Promote and sustain competition and choice as a means of minimizing price and maximizing quality of communication services
	2	Encourage investment and innovation
	3	Maximize the contribution of the communication sector to economic growth and performance
	4	Efficient allocation of spectrum
Social objectives	1	Affordable access to a universal service specified in terms of telephony, broadcasting and Internet access
	2	Plurality of voices in media
	3	Consumer protection and privacy
Cultural objectives	1	Cultural diversity and national identity reflected in content

Figure 3.1: Government objectives for policies in the communication sector.[11]

3.4 Convergence: its benefits and concerns

In this section, we briefly describe the benefits and the concerns of the converging process. Subsection 3.4.1 discusses the benefits of convergence. The concerns are dealt with in Subsection 3.4.2. The specific concerns arising from converging media on children and young people is more appropriately dealt with in Subsection 3.4.3. Subsection 3.4.4 discusses the power of technology. Finally, Subsection 3.4.5 provides a conclusion on the concerns mentioned.

3.4.1 Benefits

Convergence at whatever levels has many benefits. For instance, convergence intensifies competition since it takes place across delivery platforms and between services.[12] We have also seen how convergence has brought about the creation of new services and innovation. Consumers are pleased to see reduced delays in the access and receipt of data, i.e., the bottlenecks will be overcome, e.g., since with convergence the delivery of services is no longer restricted to one single delivery platform.[13] Torre and Rush (2006) suggest that in economies where convergence is fully implemented, the benefits are even larger. According to them, convergence (1) promotes the expansion of competition, allowing the introduction of inter-modal competition, in which networks and technologies compete with each other with no technological or regulatory restrictions, (2) fosters the development of increasingly more efficient technologies and services, (3) reduces the costs of telecommunications

11 Supra OECD, n. 6.
12 Supra Stobbe and Just, n.3.
13 Supra Green Paper, n. 2.

services, and (4) increases the appearance of a tailored offering to satisfy the specific needs of end users.[14]

3.4.2 Concerns

Although convergence does promote competition, there are nonetheless concerns. Mergers and acquisitions, for example, of large industry players converging at market level may reduce the choice for consumers. Thus the market may result in a monopoly governed by 'greater' control. There are even increasing concerns as to the extent convergence will affect the social and cultural objectives of the government especially with respect to (a) the plurality of voices in the media,[15] (b) the cultural diversity and national identity reflected in content, and (c) the consumer protection and privacy.[16] In other words and specifically in relation to the (c), the prevailing question is: will governments meet their social objectives of consumer protection and of privacy? Our investigations particularly aim at the protection of children and young people: to what extent is their protection affected by cognitive, psychological, and physical harm brought upon by converging applications and services? These are concerns that will be dealt with extensively in Chapter 4. For the present purposes, we state that the convergence between the Internet and mobile technology is providing youngsters with a wider and more expedient access to the world of entertainment, interactivity, and communication. The Internet-enabled mobile phone's has evolved to become a personal necessity and a representation of the user. Further, it has been argued the mobile phone's mobility and portability provides the youngsters with the independence they crave. However, we see the benefits of convergence between the Internet and mobile technology facilitating (1) the migration of potential hazards from a fixed location to a more mobile and less supervised platform and (2) the development of supporting applications such as location-based services (LBS). LBS are services developed by the network providers and their partners to provide personalised services and offer products which are specific to the location. We describe the usefulness of LBS and the risks associated with the use and potential abuse of the application in greater detail in Chapter 4.

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14 Torre, M. D.L., and Rush, C., (2006), Key Regulatory issues in an Era of Convergence, available at http://www.tmgtelecom.com/_PDFS/Key_Regulatory_Issues_in_an_Era_of_Convergence.pdf

15 The plurality of voices in the media is generally protected by government's restrictions on cross media or cross sectoral ownership. These restrictions can include conditions on domestic or foreign ownership restriction.

16 Supra Green Paper, n. 2.

3.5 Regulatory challenges to convergence

From our observations of the converging services, we may establish that the traditional differences between broadcasting and telecommunication cease to exist with the availability of the new services. As an example, we take the Internet which has (1) the one-to-many, and many-to-many transmission characteristics of broadcasting and (2) the one-to-one communication accessible via (in the case of wired Internet) the telephone lines, a characteristic of the telecommunication network.[17] With these converging services, a number of regulatory challenges arise. We emphasise that these challenges are neither jurisdiction-specific nor country-specific. Rather, we see these challenges emerging in response to existing domestic circumstances and regulatory environments. The regulatory challenges are represented by the following five sub-questions.[18]

a) Should we aim at the converging of regulations and regulators?
b) Is it possible to create a set of regulations that 'fits all', i.e., a new regulatory framework which covers all new services?
c) Is it time to reform the current regulatory framework that was based along specific industries/sectors (vertical structure)?
d) If so, would a horizontal structure, i.e., a structure based on separate regulation of content and carriage be more appropriate to meet the challenges of new converging services?

and most importantly,

e) In so far as our problem statement is concerned, would the new (convergent) regulatory framework adequately protect children and young people from the hazards accessible via these convergent devices?

In the light of the challenges, it would be prudent for each state to adopt a suitable approach to meet the challenges raised by (1) the rapid technological convergence, service convergence, and market convergence and (2) to balance the technological, service, and market convergence with the social objective of consumer protection and privacy. With this in mind, we consider in the following section the responsibilities of the Hong Kong regulator. The five sub-questions will be answered in Subsections 3.8.1 and 3.8.2.

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17 Other examples of converging services include video conferencing and video on demand.

18 These questions are not exhaustive. In fact, other questions which require response include (a) in the pre-convergence era, regulations with social and cultural objectives focusing on cultural diversity and local content quotas, for example, were designed for analogue transmission. Will these measures stand up to digital multi-channel content with international focus? (b) should regulatory focus be on delivery platforms rather than content? (c) should governments impose strict conditions and guidelines on content available for domestic consumption? (d) and if so, what standards should these be? See Hanrahan, supra n. 8.

3.6 A REGULATOR'S RESPONSIBILITIES AND THE POSITION OF HONG KONG

There is broad consensus that the new convergent products and services do not fit into conventional regulatory definitions and frameworks.[19] The increasingly blurred distinctions of telecommunication, broadcasting, computing, and media are providing fresh challenges to the traditional regulatory framework (see Subsection 3.5). What is important to note is that the new developments do not imply that existing regulations need to extend their coverage over other platforms or services; rather the new developments offer the opportunity to review and lighten existing regulations.[20] Thus, it is necessary to investigate whether and to what extent the opportunity for regulatory review was taken to protect children and young people adequately against the hazards. We do this by considering three-fold responsibilities of a regulator (Subsection 3.6.1) and by considering the telecommunication in Hong Kong (Subsection 3.6.2).

3.6.1 Three-fold responsibilities

We observe that regulating for convergence is not merely a policy implementation. Instead, we established that the regulators' role in the digital age is quite onerous in that it encompasses greater responsibilities and promotes different functions. For example, Seng (2000) suggested that a regulator has three-fold responsibilities, namely (1) market maker, (2) technology promoter, and (3) quasi-judicial arbiter. Seng sees the regulator as a market maker in his role of defining new-market opportunities by setting new directions to facilitate the creation of new products and services.[21] The policy decisions made by the regulator no doubt will have a significant impact on the future development of the communication infrastructure and the investment decisions. As a technology promoter, the regulator is responsible for endorsing and supporting the technologies.[22] This includes evaluating, selecting, and implementing relevant standards and protocols. In its role as a quasi-judicial arbiter, the regulator must ensure fair play among industry players, and between industry players and consumers.[23]

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19 See for example, Matilla, supra n. 4 and Torre and Rush, supra n. 14.

20 Supra OECD report, n. 6.

21 Seng, D., (2000) Regulatory frameworks for Convergence? Issues Arising from New Regulatory Frameworks in view of the Increasing Convergence of Conventional Telecommunications Models & Cybercommunications, in The Singapore Conference: Leading the Law and Lawyers into the New Millennium @ 2020, edited by Singapore Academy of Law, p. 201-240, Singapore: Butterworths Asia.

22 Supra.

23 Supra.

3.6.2 *Telecommunication in Hong Kong*

In so far as the Hong Kong telecommunication sector is concerned, we observe that Seng's suggestion is reflected in a statement posited by the immediate past Director General of Hong Kong's Telecommunication Authority, Mr. T.H. Au, (2007).[24]

> "Technological development is the driver for the growth of the industry. As the regulator of the telecommunications market, we have the responsibility to update our regulation and create a favourable environment for investment in these new technologies, which ultimately will bring innovation and choice to users and economic benefits to the community as a whole".[25] (Au, 2007)

In pursuance of the Telecommunication Authority (TA)'s role as the regulator of Hong Kong's telecommunications market, we note the TA success in two main objectives: after the formation of the Office of Telecommunication Authority (OFTA) in 1993, the TA established (1) an effective market competition within the industry, and (2) the de-regularisation role.

In recent years, the TA has been moved towards regulation on an ex-post approach with the focus on safeguarding an effective and fair competition rather than on a ruled-based ex-ante regulation.[26] Using the ex-post approach requires the regulator to set up a regulatory environment which promotes competition and facilitates investment. This includes (1) lowering entry barriers, (2) maintaining a level playing field, and (3) ensuring that the rules are transparent and clear. In fact, the TA sees its role as a regulator succinctly reflected in the following terms.

> "We have avoided picking winners in technologies,[27] or using regulation to drive developments in the market. Our aim is to facilitate the technological and market evolution at a number of levels. First, our job is to remove any regulatory barriers to new developments so that they can evolve to meet consumer demands without undue restraints and benefit consumers without unnecessary delays. Second, we will maintain a transparent and predictable environment, providing investors the confidence that there will be minimal regulatory risks to their investment. Third,

24 Note that Au retired as the Director General of Hong Kong's Telecommunication Authority at the end of December 2007.

25 Au, T.H., (2006) Year End Media Briefing, available at http://www.ofta.gov.hk/en/speech-presentation/2007/20070129.pdf

26 It is only in circumstances when the market cannot deliver the required policy objectives or where the players fail to comply with fair competition rules that the TA will intervene.

27 RO is Rebecca Ong, the author who sees the avoidance as the TA adopting a technology neutral approach.

to create a level playing field ensuring fair competition for every player in the game".[28]

According to Au (2006) the following will happen. Once the desired environment has been achieved through the facilitation of technological and market evolution, the regulator would sit back and allow the market players to compete with a minimum regulatory interference.[29] The regulator will intervene only when the market fails.[30] Consequently, we may conclude that Hong Kong's TA does reflect Seng's threefold responsibilities of a regulator.

3.7 Regulatory convergence in Hong Kong

Having considered TA's role and responsibilities as a regulator, in this section we will examine Hong Kong's regulatory position with respect to convergence. In this respect, our study revealed a more apparent and proactive undertaking by OFTA towards addressing a converging environment in the convergence of regulators. In Subsection 3.7.1, we describe briefly the position of a unified regulator in other major economies. In Subsection 3.7.2, we consider the position in Hong Kong. In addition, we briefly provide in Appendix D, details of measures undertaken by OFTA towards a converging environment.

3.7.1 A unified regulator of other jurisdictions

From our observations, having a single regulator is not a new phenomenon. The United States and Canada's regulator for telecommunications and broadcasting had always been a single regulator in the form of the US Federal Communications Commission (the FCC) and the Canadian Radio Television and Telecommunications Commission (the CRTC). We identify three main advantages in having a single unified regulator. First, the single regulator represents a one-stop shop for resolving all issues pertaining to the communications sector. Second, as a result of the first advantage, it will be more convenient, expedient and cost effective for industry players to deal with one regulator. Third, there will be consistency in the regulatory approach since decisions made will be taken in the light of the communications sector as a whole. This inevitably enhances efficiency, thereby reducing administrative work and unnecessary resources. Major economies such as the United Kingdom, Australia, and Malaysia have had separate regulators for telecommunica-

28 OFTA's Trading Fund Report 2006/07, available at http://www.ofta.gov.hk/en/trade-fund-report/0607/index.htm

29 Au, H., (2006), Evolving Regulation for a Networked Hong Kong, available at www.ofta.goc.hk/en/dg_article/au_articles/20061220.pdf

30 Supra.

tions and broadcasting. They have seen the inexpediency of maintaining a separate system and have moved towards merging the two.

A: The United Kingdom

The United Kingdom's Office of Communication (OFCOM), for example, is a convergent regulator as it brings together both economic regulation and cultural regulation with the aim of (1) encouraging competitive markets bringing benefits to consumers, and (2) balancing that against interest of society as a whole.[31] OFCOM was established as a body corporate by the *Office of Communications Act, 2002* as a regulator for the UK communications industries, with responsibilities across television, radio, telecommunications, and wireless communications services. It is empowered by the *Communications Act, 2003 inter-alia*, (a) to maintain plurality in the provision of broadcasting, (b) to apply adequate protection for audiences against offensive or harmful material, and (c) to apply adequate protection for audiences against unfairness or the infringement of privacy.[32]

B: Australia

In Australia, the Australian Communications Authority (ACA) and the Australian Broadcasting Authority (ABA) were merged to form the Australian Communications and Media Authority (ACMA).[33] The ACMA is now responsible for technical regulation, consumer issues and licensing of telecommunications and radio-communications in Australia.[34] It exercises powers under the Broadcasting Services Act 1992 (in relation to broadcasting) and the Telecommunications Act 1997, the Telecommunication (Consumer Protection and Services Standards) Act 1999, and the Radio-communications Act 1992, as well as other related legislations (in relation to telecommunications).[35]

C: Malaysia

Similarly, in Malaysia the telecommunication and the broadcasting industries were brought together under one regulator: the Malaysian Communications

31 Hooper, R., (2005) Content regulation in the multichannel digital age, Seminar in Hong Kong hosted by the Broadcasting Authority and the OFTA, August 29, 2005, available at www.ofcom.org.uk/media/speeches/2005/08/hk

32 OFCOM statutory duties and regulatory principles, available at http://www.ofcom.org.uk/about/sdrp/.

33 The ACA was a merger of Australian Telecommunications Authority (Austel) and the Spectrum Management Agency (SMA) on July 1st, 1997. Austel were responsible for issuing cabling licenses, equipment permits and monitoring the conduct of license and permit holders for all equipment and components connected to the Australian telephone network whilst SMA was the Australian Commonwealth statutory agency responsible for the management of radio communications in Australia. See *Australian Communication Authority Act 1997.*

34 See www.acma.gov.au

35 Supra.

and Multimedia Commission (MCMC).[36] The MCMC was the result of the government's review (1) of the functions of the Ministry of Energy, Telecommunications & Post, and (2) to replace the then existing sectoral legislations such as the *Telecommunications Act, 1950* and the *Broadcasting Act, 1988*. The fundamental principles of the *Communications and Multimedia Act 1998*, are (a) transparency, (b) technology neutral, (c) self regulation and regulatory forbearance, and (d) pre-competition.[37]

3.7.2 Hong Kong's proposed Communications Authority

Under the existing regulatory regime in Hong Kong, the provision of television program, and the carriage of television program services are separately licensed and regulated. Currently, the Broadcasting Authority (BA) regulates television and radio broadcasts services in accordance with *the Broadcasting Ordinance* and *Part IIIA (Sound Broadcasting Service)* of the *Telecommunication Ordinance*.[38] The *Broadcasting Ordinance* replaced the existing transmission-based licensing and regulatory regime for television services with a technology and transmission neutral regime under which four categories of services are licensed.[39] In addition, the *Telecommunication Ordinance* liberalised the telecommunications market, for example, by (1) allowing fixed telecommunication network services (FTNS) licensees to convey and provide television program services, including pay television and Video on Demand (VOD), (2) allowing cable television networks to deliver telecommunications services in addition to television services, and (3) requiring the former Wharf Cable to open up its broadband network for use by other television and telecommunications service providers.[40] Under the two ordinances, a television program service licensee can

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36 See *Malaysian Communications and Multimedia Commission Act, 1998*. See http://www.msc.com.my/cyberlaws/act_malaysiancomm.asp

37 Malaysian Communications and Multimedia Commission, ITU Regional Regulatory Seminar, Dalian, China August 2002; available at http://www.itu.int/ITU-D/treg/Events/Seminars/2002/china/pdf/11-doc4-1hamid.pdf

38 The BA was established in 1987 under the *Broadcasting Authority Ordinance (Cap.391*). In fact both the *Broadcasting Ordinance (Cap. 562*) and the *Telecommunication Ordinance (Cap. 106)* were the result of a 1998 review. See The 1998 Review of Television Policy and The Review of Fixed Telecommunications, available at http://www.ofta.gov.hk/en/press_rel/98/sep_98.html. Together with the setting up of the Information Technology and Broadcasting Bureau which brings under one branch the functions of the TA, the OFTA, the BA and TELA, a administrative convergence of inter-alia telecommunication, and broadcasting is brought under one roof.

39 These services are 1) domestic free television program services, 2) domestic pay television program services, 3) non-domestic television program services, and 4) other licensable television program services. These services are regulated according to their nature and pervasiveness rather than their transmission mode; see Press Release Issued by Information Technology and Broadcasting Bureau on 3 September 1998 – Proposals to open up TV & telecom markets" at http:www.ofta.gov.hk/en/press_rel/98/sep_98.html.

40 Supra Press release by ITBB September 1998.

choose to hire the transmission service of any licensed carrier to deliver its television service by any technology, be it terrestrial broadcasting, hybrid fiber coaxial cable, satellite or asymmetric digital subscriber line (ADSL).[41]

The broadcasting division of the Television and Entertainment Licensing Authority (TELA) is the executive arm of the BA.[42] Some of the functions and responsibilities of the BA include

a) issuing non domestic and other licensable television program service licenses,
b) making recommendations on license applications for sound broadcasting, domestic free and domestic pay television program service,
c) administering all licenses,
d) enforcing licensing conditions,
e) enforcing competition provisions in the Broadcasting Ordinance,
f) securing proper broadcasting content and technical standards,
g) handling complaints on breach of such standards.[43]

In contrast, the TA is responsible for *inter-alia* (a) the managing radio spectrum,[44] (b) licensing all telecommunication services,[45] (c) enforcing license conditions, and (d) enforcing competition provisions in the *Telecommunication Ordinance*.[46]

The system of the three different bodies, i.e., the BA, TELA, and TA involved in broadcasting and telecommunication matters in Hong Kong, proves to be too complicated, and confusing to both consumers and the industry. Moreover, it is not seen to be financially prudent in terms of utilisation of the taxpayers' revenue. It is thus proposed that a single regulator known as the Communications Authority (CA) be established by merging the TA and the BA.[47] The existing powers of the TA and the BA will be exercised by the CA. In addition, OFTA and the Broadcasting Division of the TELA will be brought together to form the Office of Communications Authority (OFCA) which will operate as a trading

41 ADSL is a form of digital subscriber line, a data communications technology that enables faster data transmission over copper telephone lines than a conventional voice band modem can provide. See further http://en.wikipedia.org/wiki/ADSL and 'What is ADSL', a Web Definition from Webpopedia; available at http://www.webopedia.com/TERM/A/ADSL.html

42 TELA deals with complaints and ensures broadcasting licensees comply with the legislation, licence conditions and codes of practice.

43 The BA Complaints Committee deals with complaints about broadcasting matters and makes recommendations for follow up action to the BA. It is noted that there is a BA Codes of Practice Committee which reviews the code of practice on programming, advertising and technical standards for both television and radio services.

44 See sections 32G-I Telecommunication Ordinance.

45 See for example, sections 7, 13C-F, Telecommunication Ordinance.

46 See for example, section 7G –N, Telecommunications Ordinance.

47 This is a similar arrangement to that adopted in Australia, when ACMA was set up. See Consultation Paper on the Establishment of a Communication Authority; available at http://www.cedb.gov.hk/ctb/eng/paper/pdf/CA_consultation_paper.pdf

fund.[48] Once established, the CA will conduct a comprehensive review of the *Broadcasting Ordinance (Cap. 562),* the *Telecommunications Ordinance (Cap. 106),* and the *Broadcasting Authority Ordinance (Cap. 391).*

3.8 RESPONDING TO THE CHALLENGES

A regulatory environment is typically developed in response to fresh challenges posed by societal needs or changing market conditions. As we mentioned earlier, according to Mortensen (2003), four factors, i.e., (1) technological, (2) economic, (3) public interest, and (4) socio-political might influence the regulatory assessment and its development.[49] We deal with the general position in Subsection 3.8.1. The position in Hong Kong is described in Subsection 3.8.2. We provide our position in Subsection 3.8.3. In Subsection 3.8.4, we advocate the regulator's role as the society's moral watchdog. Finally, in Section 3.8.5, we discuss the Green Dam Escort.

3.8.1 The general position

From our investigations, it is apparent that technological innovations and the convergence of media have caused a significant economic shift to a regulatory framework that seems to focus on market competition. The shift has rendered the once-distinct sector-specific carriage/content regulatory framework obsolete. Moreover, it has resulted in the government's undue emphasis towards market liberalisation and de-regulation. The current development indicates that regulation (which emphasises market characteristics of a specific service rather than its delivery system), should be given primary consideration.[50] Accordingly, in response to the challenges posed as sub-questions (a) to (e) (see Section 3.5), we may tentatively conclude that the converging environment has provided the impetus for

1 a re-assessment and a removal of the regulatory barriers to convergence and converging services (see sub-question (a) and (b);

48 Currently, OFTA operates as a trading fund. A government department operating on a trading fund basis means it is a self financing accounting entity. As such it does not rely on general revenue for its expenses. See *Trading Fund Ordinance (Cap. 430).* In the case of OFTA, OFTA's income is derived mainly from license fees charged. OFCA will act as the executive arm of the newly formed CA and will be headed by the Director-General. See supra Consultation Paper on the Establishment of a Communication Authority; available at http://www.cedb.gov.hk/ctb/eng/paper/pdf/CA_consultation_paper.pdf

49 Supra Mortensen, n.1

50 As far as competition is concerned, a re-assessment has to be made in terms of common carriage, dominance and open network provision with greater competition between industry players. See http://www.itu.int/osg/spu/youngminds/2007/essays/IbrayevaTogzhan.pdf; See also supra Mortensen.

2 a reduction of the level of regulatory intervention[51](see sub-question (c); and
3 the creation of new and lighter (horizontal) regulatory framework which encompasses new converging services (see sub-question (d).

The answers to sub-questions (a) and (e) (see Section 3.5) are more appropriately dealt with in Section 3.8.2, although not necessarily in the order presented.

3.8.2 The position of Hong Kong

As with other jurisdictions, the rapid technological and economic changes in Hong Kong in the fast moving technology sector makes a convincing case that the old dividing lines between telecommunication and broadcasting is fast dissolving, creating a new environment with new areas of general concern.[52] Williams (2006) suggests four areas of concern in Hong Kong: (1) technical standard/bandwidth allocation, (2) media content, (3) plurality of ownership/freedom of speech, and (4) competition enhancement.[53] Whilst we agree with the concerns raised by Williams, Williams' comments were focussed on the competition provisions for the proposed convergent regulatory regime.

We note that the proposal to establish the Communications Authority was submitted in 2006. However, our investigations revealed that the proposal has been delayed pending further consultations. The delay is an indication for a thorough review. We may expect that a thorough and comprehensive review will be completed with adequate measures for the protection of children and young people taken into account and introduced.

Throughout this chapter, our research revealed that in order to maintain its competitiveness in the telecommunication industry, the TA in Hong Kong adopted two main approaches: (1) a market-driven approach, and (2) the ex-post regulatory approach.[54] The ex-post approach involves a shift from the traditional regulatory approach which is based on predicting how the market will develop and imposing a competition framework to which the market is to conform, to a new regulatory approach where regulation is aimed at correcting existing market failures. In adopting both approaches, OFTA realises that it is not sufficient to preserve existing competition via the enforcement of regulation. The regulator must also promote competition by reshaping or

51 Final Report of ITU, 2002, available at http://www.itu.int/opb/publications.aspx?lang=en&parent=D-STG-SG01.10&folder=D-STG-SG01.10-2002
52 William. M., (2006), Establishment of a Communications Authority for Hong Kong, Comments on the Competition Provisions, available at http://www.cedb.gov.hk/ctb/submission/MarkWilliams.pdf
53 Supra.
54 This is in line with European competition policy in which regulators are moving away from ex-ante regulation to ex-post regulation.

withdrawing existing regulations that are unnecessary, inappropriate or disproportionate.[55]

With respect to sub-question (a), we are strongly of the view that while the proposal to establish a unified single regulator in the form of the CA (Communication Authority) (see Section 3.7.2) is a positive measure, its proposed role, functions, and responsibilities have not been thoroughly considered by the government. With that in mind and with the task to answer sub-question (e), we do not regard the new convergent regulatory framework as adequate in protecting children and young people from the hazards accessible via the convergent devices (the potential hazards are more specifically described and discussed in Chapter 4). We surmise that a number of questions remain unanswered. The unanswered questions can be seen as an open conclusion on the position of Hong Kong. Below we pose six questions for further consideration.

1 As more mobile content services become available, should these services be classified so as to inform users of their suitability for children and young people's consumption?
2 If the content are to be so classified, do we apply the standard classification system currently adopted for broadcasting services?
3 Should we establish an independent body within the Communication Authority to be responsible for *inter-alia*
   3a) overseeing the provision of content services?
   3b) establishing a standard (via consultation) which measures and reflects community standards of decency and proprietary?
4 Should we have a mechanism for monitoring premium-rate services?
5 Should we have a standard access control restriction adopted by all mobile operators and if so, what manner and form should it take?
6 Should there be a dedicated hotline and complaints mechanism for reporting inappropriate materials and abuses?

3.8.3 Our position

Although the proactive measures undertaken by TA to address the challenges posed by convergence and converging services are laudable, we re-iterate our position that the measures adopted so far are centred towards meeting the government's economic objectives rather than measures aimed towards the social objective of consumer protection and privacy, specifically in relation to the protection of children and young people. We do however note the Mainland's position on the latter, particularly with reference to Green Dam Youth Escort to be discussed in Subsection 3.8.5.

55 Supra n. 29.

Indeed, what we have observed as the position in Hong Kong is the regulator's concentration in introducing access provisions seen in terms of TA's introduction of the unified licensing scheme for fixed mobile convergence (FMC) and broadband wireless access (BWA) rather than the introduction of comprehensive measures to address adequately the concerns of converging media on children and young people. Indeed, this apparent state of affairs is a reflection of the TA's vision whereby the following statement was re-iterated.

> "Our regulatory regime is pro-liberalisation, pro-competition and pro-consumer, providing a regulatory framework which ensures that a wider range of telecommunication services is available to consumers at reasonable prices".[56]

The fact that the regime is "(…) pro-liberalisation, pro-competition and pro-consumer (…)" is observed most notably in the form of (a) fair and competitive pricing with regards to triple play packages, (b) promoting and encouraging investment and innovation through transparent decision making, (c) adopting a market driven approach, (d) ensuring efficient allocation of spectrum, and (e) ensuring the industry player provides a transparent complaints handling procedure. Although we are not denying the immense benefits such measures will bring to consumers, we do observe that the government's objective lies in preparing the market and the consuming community towards the eventual migration to new generation network (NGN).[57] Indeed, the Director General of the TA in the 2007-08 Trade Fund Report, had acknowledged the government's objectives towards NGN by stating

> "At OFTA, following the completion of a few important reviews on regulatory matters, new initiatives have been launched to pave the way for introducing communication services on the New Generation Networks".[58]

We remark that it is not uncommon as far as the government's social objective is concerned, for the focus of consumer protection to be on matters relating

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56 Office of Telecommunication Authority: Trading Fund Report 2007-2008; available at http://www.ofta.gov.hk/en/trade-fund-report/0708/pdf/full.pdf

57 The trends towards NGN deployment include VoIP, broadband wireless applications and fixed mobile convergence where we are seeing the move towards an all enabled IP based network. See Trends in Telecommunication Reform 2007, available at http://www.itu.int/dms_pub/itu-d/opb/reg/D-REG-TTR.9-2007-SUM-MSW-E.doc . A NGN is defined by ITU as "a packet-based network able for the provision of voice, data, and other content-based services. and able to make use of multiple broadband, QoS-enabled transport technologies and in which service-related functions are independent from underlying transport-related technologies. Broadband access can be either delivered through fixed-line technology such as Digital Subscriber Line (DSL), fibre-optic and cable TV, or wireless technology such as broadband wireless access (BWA). See Trends in Telecommunication Reform 2007 above.

58 Legislative Council Panel on Information Technology and Broadcasting papers; see www.legco.gov.hk/yr07-08/english/panels/itb/papers/itb0114cbi-601-1-e.pdf

to economic and commercial issues such as (a) the protection of intellectual property rights, (b) privacy, and (c) e-commerce concerns. These issues understandably generate greater concern and wider interest from an economic perspective than the concerns of the exposure of unsavory and inappropriate materials and its potential risk to children and young persons. For example, we see the requirement of consumer protection in the TA's regulations operating in the form of transparency and disclosure. The objective of transparency and disclosure is to ensure consumers are provided with choices to enable them to make informed decisions. We provide three examples as illustrations. First, in the provision of VoIP services, VoIP operators are required to inform consumers of the difference between their services and traditional switched voice service, especially with regards to emergency calls.[59] Second, the issuance of a TA statement setting out the best practice indicators for ISPs for the selling of residential broadband Internet service access.[60] The best practice indicators are aimed at five areas which are considered as important to consumers when choosing an ISP. The five areas are (1) network reliability, (2) service restoration, (3) customer hotline performance, (4) customer complaint handling, and (5) technical performance. According to the TA, these best practice indicators if correctly adopted by the ISPs, could prevent the incidence of misleading or deceptive conduct in the advertising and selling of broadband services.[61] Third, to help consumers make informed choices, the five major broadband ISPs have since January 2008 published performance pledges areas such as (1) network reliability, (2) service restoration time, (3) technical performance, (4) customer hotline performance, and (5) customer complaint handling.[62] These areas were identified by a survey conducted by the TA as important to consumers when choosing an ISP.[63]

From the statement on the objective of transparency and disclosure (and the three illustrations) we may conclude that the extent to which the TA as the regulator will go to enhance customer satisfaction will attract greater investment opportunities in the sector. This is more aptly expressed in the following statement by the then Director-General of OFTA.

> "The future focus of regulation is to create a regulatory environment conducive to convergence, investment in new technologies and the next generation networks,

59 OFTA clears way for IP telephony, available at http://www.ofta.gov.hk/en/press_rel/2005/Jun_2005_r2.html

60 Legislative Council Panel on Information Technology and Broadcasting, (2008), The Provision of Consumer Information in relation to Residential Broadband Use in Hong Kong, available at http://www.legco.gov.hk/yr07-08/english/panels/itb/papers/itb0310cb1-975-4-e.pdf

61 Supra.

62 Supra, n.60.

63 Supra, n.60.

with more emphasis on market based ex-post regulation than rule based ex-ante regulation".[64]

3.8.4 *Society's moral watchdog*

We opine that the protection of children and young people is severely lacking in the Territory's existing framework both in terms of access provisions and prescriptive laws. Thus, we agree with Seng (2000) that in addition to the three-fold responsibilities of the regulator previously mentioned, i.e., (1) market maker, (2) technology promoter, and (3) quasi-judicial arbiter, there is a fourth responsibility of equal importance with the former three responsibilities, which should not be overlooked or ignored. It is the role of the regulator as a *moral watchdog* for the community; a role that, we argue is in compliance with the government's social policy objective of consumer protection and privacy in the communication sector.

We believe that the regulator's role as 'society's moral watchdog' is of increasing importance in the current converging era. This is so in the existing digitised environment where data can be easily transmitted between various platforms and devices without the regulator having knowledge and/or effective control over (1) the type of data that is being transmitted, (2) the devices used for receiving and transmitting data, and (3) the intended or unintended recipients of the data. In this respect, we have seen how the mobile phones are being used as a device for accessing inappropriate materials and for facilitating the commission of contact crimes against children and young persons.

3.8.5 *The Green Dam Youth Escort*

Related to our argument of the regulator's role as society's moral watchdog, we take cognisance of the recent Mainland Chinese government's directive requiring computer manufacturers to install software for filtering on-line pornographic content on all computers made in or imported into China. Known as the Green Dam Youth Escort, the government requires all (1) domestic personal computer manufacturers and (2) imported personal computers sold in China to pre-install the latest version of "Green Dam Youth Escort" (Green Dam project).[65] The Green Dam project is a follow-up action

64 Supra Au, n.29.

65 Installation work should be completed by the end of June 2009 and as of July 1st 2009, all personal computers should be sold with the software pre-installed. In 2009 PC manufacturers and the providers of "Green Dam Youth Escort" should provide monthly reports to the Ministry of Industry and Information Technology (MIIT), about sales figures, the number of copies of the software installed, and comments on this work. From 2010 they should provide annual reports by the end of February. See Computers to pre- install Iternet filters, (2009) China Daily, June 29, 2009, available at http://www.chinadaily.com.cn/china/

by the Mainland Chinese government's one month on-line pornography crackdown conducted in January 2009 on illegal websites, blogs with "lewd" content, to contents on mobile phone websites, chat rooms, instant messenger groups, and video download services.[66] While the project has drawn consternation globally and is seen as a drastic measure that has been imposed in a draconian fashion, we remark that in so far as the Mainland is concerned, "the Green Dam project indicates the Mainland's stance as society's moral watchdog" in "promoting the healthy development of the country's Internet services, and in preventing the erosion of people's mind, and the destruction of society's moral standards".[67]

3.9 CHAPTER CONCLUSION

Having considered Hong Kong's recent regulatory review on the implications of convergence, we may conclude that no regulatory review is made in relation to (1) the type of content distributed or capable of being distributed and accessed via the use of converging devices, and (2) the actual distribution or dissemination of content.

Specifically, in the light of content and services available via converging devices such as the mobile phone, the relevant authorities have failed to provide a comprehensive guideline on the following three issues.

1 Whether there should be mandatory classification of mobile content by mobile network providers and content providers.
2 How and to what extent mobile users be allowed to 'opt-in' to gambling sites, adult materials, and gaming sites with adult and violent content upon age verification?
3 How and to what extent would the relevant authorities regulate premium-rate services to ensure that the children and young people are protected from unscrupulous traders?

While we may accept that a contributing reason to this lack of regulatory rigour may be due to the TA being the primary authority concerned with access provisions, we stress that more could have been done to address the current regulatory inadequacy. For example, the TA could proactively take the lead in inviting consultations from relevant stakeholders to propose a compre-

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2009-06/09/content_8265466.htm, see also Mackinnon, R., Original government document ordering "Green Dam" software installation, available at http://chinadigitaltimes.net/2009/06/original-government-document-ordering-green-dam-software-installation/

66 China to intensify on-line porn crackdown, China Daily, February 27, 2009, available at http://www.chinadaily.com.cn/china/2009-02/07/content_7453981.htm

67 Supra. Further, in addition to U.S. software company, Solid Oak Software's allegations that Green Dam uses a code stolen from its Cybersitter software, there have been claims that Green Dam software can be used to filter political content and dissent.

hensive code of practice which focuses on the protective content regulation measures for children and young people. This could, for example, cover age restriction measures such as whether it would be sufficient for mobile operators, service and content providers to provide access to inappropriate content to mobile users who are aged 18 and above? In other words, would it be sufficient to have one classification of mobile content, that is, content suitable for '18 years and over'? Once the code of practice is developed, the TA can impose a Special Condition in the granting and/or renewal of carrier licenses that the provisions of the code must be strictly complied.

We agree with the 2004 OECD report that any reform of communication regulatory arrangements is usually considered under three broad headings: (1) the shift from an industry- based framework, (2) a common regulatory framework for carriage of communication services, and (3) the regulation of content.[68] We surmise that there is an urgent need to re-formulate the existing regulatory arrangements so that it takes into account the interests and the protection of children and young people. Our investigations of the measures adopted in Hong Kong in the light of convergence of technologies does not reveal any measures undertaken by the regulators with respect to the regulation of content with a view to protect children and young people. Instead, what we have observed is the proliferation of measures for the purpose of establishing a conducive environment for preparing the society towards a new generation network (NGN) environment. We remark that the present position is due on the one hand, to the TA's policy of 'adopting a light handed regulatory approach', and on the other hand, one of general regulatory lethargy on the part of the government. The latter is discussed in greater detail in Chapter 7. The present position, we opine is not a suitable approach in light of the increasing concerns of converging media on children and young people.

We may thus conclude that while the convergence of technology between mobile communication and Internet provided an excellent opportunity for a comprehensive review of content regulation with the view to protect children and young persons, the opportunity was not taken – the convergence is thus not adequately addressed in the legal framework. At least, not at the moment.

In the next chapter, we set ourselves the task of considering the potential hazards that children and young people are exposed to via mobile communication technologies.

68 Supra OECD report, n.6.

4 Mobile communication and potential hazards

When considering communication as an integral element of all living beings, we see communication expressing itself in a myriad of forms. The Internet is described as the best example of modern communication technologies. Its significance as a medium of modern communication has encouraged the development of other communicative yet distinct technologies, such as instant messaging (IM), chat rooms, on-line gaming, social networking, and peer-to-peer sharing.

Before the advent of Internet-enabled mobile phones, access onto the on-line world was via fixed phone lines from a fixed location. It is apparent, that the personal computer will no longer be the main point of entry to the cyber-world. Conversely, it can be said that the mobile phone or its more advanced "brother", the smart phone, is no longer seen merely as an instrument for vocal communicative purposes over short and long distances. Indeed, the convergence between the Internet and the mobile technologies has resulted in establishing the mobile phones and their supporting networks as a significant part of the communicative component. This has led to a profound difference in the way children and young people are accessing the on-line world. In fact, two defining characteristics of this new form of communication are the *mobility* and the *interaction* it provides. As far as mobile communication is concerned, it is apparent that the advent of this form of communication is manifested in all spheres of life where communication is the heart of human activity. This was succinctly stated by ECPAT in their 2005 working draft.

> "The plummeting cost of mobile phones and improved access to satellite links are smoothing the way for many more people to enter into a new communications era, regardless of the availability of fixed phone lines and desk-top computers".[1]

Instead, children and young people will join the on-line world through their mobile phones. We see this new phenomena of youngsters accessing the on-line world via mobile phones evidenced in, for instance, a survey conducted in

1 Working Draft on Cyberspace as a Locale of Violence, ECPAT International 2005 available at www.ecpat.org

the UK in 2008 by Nielsen On-line.[2] The survey revealed that 25% of mobile Internet consumers are aged between 15 to 24 years, compared to 16% for PC-based consumers.[3] It is apparent that the technological advances in mobile communication have given rise to a number of developments. We mention four of them: (1) the creation of new mobile devices such as the Apple iPhone, (2) the development of new operating systems for mobile devices, such as Windows Mobile and Google's Android, (3) the development of Adobe Flash for mobile platforms, and (4) data download plans which will greatly reduce the cost of Internet connection on mobiles. Moreover, we note the launch of a "Facebook phone" called INQ1 by mobile phone company 3. For £15 a month, INQ1 users will obtain unlimited Facebook and Skype calls, as well as access to Windows Live Messenger, and up to 1GB a month of web access, plus unlimited texts, and unlimited electronic mail. We surmise that the developments mentioned would not have materialised without the availability and, perhaps, the affordability of greater bandwidth. Data from OECD shows that broadband users are active on the Internet more than PC-based consumers with up to 27% of the users using broadband for playing or downloading games and music, and 29% sending and receiving electronic mail.[4] Despite these beneficial developments, the launch of the technological advanced mobile communication devices with broadband network connection also herald the rise of many of the same concerns as PC-based Internet has shown. Our line of reasoning supported by three observations is as follows.

1 The endearing attributes of the mobile phone to children and young people (1a) personal items, (1b) independence, and (1c) social networking and relationships.
2 The security and continuous communication are viewed by parents and child carers as an asset.
3 The rapid diffusion of mobile phones as a result of (1) and (2) has facilitated the migration of potential hazards (seen in terms of concerns in the form of content, contact and commercialism) from a fixed location to a more mobile less supervised platform.

While it can be said that continuous communication and interaction is one of the primary reasons for the phenomenal success of mobile phones, we observe that some children and young people appear not to recognise (and appreciate) the harm that may befall them through their communication and

2 Mobile Internet growth 8x greater than PC-based Internet growth, Nielsen On-line, November 2008, Nielsen On-line, available at http://www.nielsen-on-line.com/pr/pr_081124_uk.pdf
3 Supra.
4 The Future of Internet Economy, OECD Policy Guidance for Addressing Emerging Consumer Protection and Empowerment Issues in Mobile Commerce, June 17-18, 2008, Seoul, Korea, available at http://www.oecd.org/document/19/0,2340,en_2649_34255_38051667_1_1_1_1,00.html

interactions they make. We mention three instances of how this might happen: (1) a youngster may make and send pornographic or inviting images of himself or herself via the mobile phone, (2) a child may innocently post personal details on sites, and (3) a child may meet someone on-line and may make arrangements to meet the person face-to-face. Moreover, we observe that the technology has empowered children and young people to act more boldly than they would act in real life. For example, the mobile phone's mobility, portability, and its personal characteristics provide the opportunity for a child bully to transcend the physical locations of the school ground and school premises to harass and bully their victims in the privacy of the victim's own bedroom. Technology has created a very small distance between the bully and the victim, resulting in the failure of the bully to recognise the real harm and distress caused to others as a result of their bullying and harassment. Unlike face-to-face bullying in the real world, bullies in on-line bullying and harassment do not see the painful effect that their actions have on victims since they are created by technological means such as the electronic mail, hateful websites, posting of photographs taken via camera phones, and intimidating SMS.

Further we observe that the integration of location-based services with mobile phones may facilitate and may make more expedient the potential hazards of sourcing and grooming and contact crimes by exploitative adults. While parents and child carers may see the benefits of such services in tracking and monitoring children, LBSs may be abused in its application by other non-well-meaning individuals. The service also raises privacy concerns and may encourage greater aggressive marketing tactics and spamming activities towards youngsters.

In other words, the mobile phone has provided greater access (and intrusion) to the youngsters' most intimate and private settings, thus increasing their risk of exposure to hazards.

This chapter is a preparatory chapter for Chapter 5 in which RQ1 is addressed. Chapter 4 investigates and attempts to evaluate (1) existing potential hazards in the on-line world that are readily available and accessible to children and young people via wireless communication technology, such as mobile telephony; and (2) the implications of the hazards on children and young people.

The chapter starts with the diffusion of mobile telephony (Section 4.1) and the factors that contribute to its rapid diffusion. Children and young people's use of the mobile is discussed under the title: "The younger generation and mobile telephony" (Section 4.2). Having considered attributes of the mobile phone, we briefly describe the content available on the Internet emphasising cyberspace and the potential hazards (Section 4.3). In Section 4.4, child protection concerns are addressed. Three important sections related to the concerns deal with them explicitly and show the potential dangers. We will call them the three C's. They discuss content (Section 4.5), contact (Section 4.6), and commercialism (Section 4.7). Chapter conclusions are given in Section 4.8.

4.1 Diffusion of mobile telephony

In this section, we describe the diffusion of mobile technology since 2000 and the factors that contributed to such a rapid diffusion. The factors enunciated are (a) anytime, anywhere (Subsection 4.1.1), (b) staying in perpetual contact (Subsection 4.1.2), and (c) safety and security (Subsection 4.1.3). Our section conclusion follows in Subsection 4.1.4.

Sale figures of mobile phone handsets have seen an enormous growth in recent years. For example, research firm Gartner reported that worldwide sales of mobile phones surpassed 1.15 billion in 2007, a 16% increase from 2006 (i.e., 990 million units). Sales reached 294.3 million units in the first quarter of 2008, a 13.6% increase from sales as compared to the same period in 2007. It is expected that the sales will reach more than 309 million units in the third quarter of 2008.[5] This is a 6% increase compared to the third quarter of 2007.[6] The US Consumer Electronics Association expected a 1% increase in demand for mobile phones compared to a 3.9% increase in demand for audio and video equipment.[7] The take-up rate of mobile telephony in terms of subscription has also increased exponentially in recent years. At the end of 2007, there were 3.33 billion mobile subscribers globally compared to approximately 1.16 billion in 2005,[8] representing 72% of the total number of telephone subscribers in the world.[9] The statistics thus indicate that wireless communication is diffusing faster than any other communication technology.[10] This is not to suggest that mobile telephony subscriptions have served as communication substitutes for

5 Gartner: 2008 Phone Unit Sales to Rise, Economy Weighs, available at http://www.cellular-news.com/story/31409.php?source=newsletter. Finnish mobile phone Goliath Nokia heads the list for top sellers of mobile phone units with sales of 115.2 million representing a market share of 39.1% during the first quarter of 2008, with Korean manufacturer, Samsung Electronic selling 42.4 million units with a market share of 14.4%.

6 www.gartner.com/it/page.jsp?id+612207

7 Mobile phone demand to grow, October 2008, ITFacts, Mobile Usage; available at http://blogs.zdnet.com/ITFacts/?cat=4. However, it is observed that due to deepening economic concerns, the global mobile phone market is expected to experience a growth rate of 3% down from an earlier forecast of 6% by an UBS analyst. See Analysts cut 2009 cell phone growth estimates, October 2008; available at www.reuters.com/article/technologyNews/idUSTRE4969vw20081007?feedType=RSS&feedName=technologyNew&rpc=69

8 3,331,003.3 (000) represents the total number of mobile subscribers in the five continents in 2007 – Africa 37,036.5 (000) (year 2002), 272,679.0 (000) (2007); Americas 255,451.3 (000) (2002), 658,417.4 (000) (2007); Asia 443,937.2 (000) (2002), 1,490,071.2 (000) (2007); Europe 405,447.7 (000), (2005), 882,824.3 (000) (2007); and Oceania 15,458.9 (2005), 27,001.4 (000) (2007) – See http://www.itu.int/ITU-D/icteye/Reporting/ShowReport.aspx?ReportFormat=PDF&ReportName=%2FWTI%2FCellularSubscribersPublic&RP_intYear=2007&RP_intLanguageID=1&ShowReport=true

9 Supra.

10 Castells, M., Fernandez-Ardevol, M., LinChuan, J.Q., and Sey, A., (2007) *Mobile Communication and Society*, (eds.), MIT Press, Cambridge, Massachusetts.

fixed (land) lines.[11] On the contrary, mobile phones are seen as complementary to the traditional telephone. Although, a number of factors exist that contribute to the diffusion of mobile telephones we have singled out three main factors. They are mentioned at the beginning of this section and will be discussed below.

4.1.1 Anytime, anywhere

As with the Internet, mobile telephony is changing the way individuals conduct their lives. Justifiably, mobile telephony is having a significant impact on transforming the work, family, and social aspects of our lives, by providing us mobility and convenience. Mobile telephony keeps us in continuous communication with our co-workers, family, and peers. We are always in touch; always reachable, anytime, anywhere. This new age phenomenon of being "reachable anytime, anywhere" is facilitated in the myriad forms of communication associated with mobile technology. The forms include (1) short message service (SMS), (2) instant messaging, and (3) video messaging. In addition to the conventional voice telephony, an Internet-enabled mobile keeps you in continuous touch via the use of electronic mail communication. Although mobile phones were initially adopted by field workers, these devices are seen as an ubiquitous necessity accessory for anybody.[12]

In the business world, mobile telephony adds value to the way business is conducted: the employee remains continuously in touch with his office and his employer.[13] However, this innocent conduct of 'being in continuous touch' is often seen as an employer's surveillance of his employees' productivity and whereabouts. It is neither uncommon for employers to use mobile communication as a means of monitoring his employee's time management skills, nor is it uncommon for the employer to control every employee's activity by using mobile communication as a 'wireless leash'.[14] As Kim observed, "managers can constantly check if their salesperson are working properly outside the company, while employees find less opportunity to slacken off".[15] Such a

11 It must however be noted that in some economies like China, one contributing factor to the high diffusion rate of mobile technologies is based on the historical inadequacies in the telecommunication infrastructure.

12 Castells, M., Fernandez-Ardevol, M., LinChuan, J.Q., and Sey, A., (2007), *Mobile Communication and Society*, (eds.), MIT Press, Cambridge, Massachusetts.

13 Supra.

14 See Laurier, E., (2002), The Region as a Socio-technical Accomplishment of Mobile Workers, in Brown, B. et al., (eds.), *Wireless World: Social and Interactional Aspects of Mobile Age*, p. 46-61, London: Springer referred to in *Mobile Communication and Society*, Castells et al. (eds.), (2007), p. 80, MIT Press, Cambridge, Massachusetts.

15 Kim, S-D., Korea: Personal Meaning in Katz and Aarkhus (eds.), *Personal Contact: Mobile Communication, Private Talk, Public Performance*, p. 63 -79, Cambridge University Press referred to in supra Castells et at. n. 12.

permanent connectivity results in the blurring of lines between work and play.[16] Indeed with the modern age society, there is a social expectation that one is always connected and contactable almost instantly. This is aptly expressed by a Professor of Psychology from the University of Michigan, Prof. David Meyer, when he said "The social norm is that you should respond within a couple of hours, if not immediately. If you don't, it is assumed you are out to lunch mentally, out of it socially, or don't like the person who sent the e-mail."[17] Consequently, despite the convenience and connectivity that the mobile phone provides, the technology is regarded as one of the contributing causes of increased stress in the society's fast lane since users feel they need to be contactable and must always answer the phone.[18] As shown above, there are benefits and drawbacks of being reachable anytime and anywhere. For us, at this point of research it is important to establish that 'anytime, anywhere' is a truth that must be seriously included in our investigations.

4.1.2 Staying in perpetual contact

Co-related to the mobile phone's element of 'anytime, anywhere', is its perpetual connectivity. Thus, owning a mobile phone is important even if you are not using it in the course of your work. In the family front, the perpetual connectivity can be seen in terms of, for example, monitoring the activities and whereabouts of children and the elderly. The technology is very helpful in co-ordinating family activities and errands, such as when and where to pick up the children from their school activities,[19] or the elderly ones from their bingo, and bridge sessions, or merely informing the other user to pick up a loaf of bread on the way home. Ling (2004) sees this 'micro-coordination' as an integral part of family life.

> "Micro-coordination is the nuanced management of social interactions. It can be seen in the re-direction of trips that have already started, it can be seen in the iterative agreement as to where and when we can meet friends, and it can be seen, for example, in the ability to call ahead when we are late to an appointment".[20]

16 Supra Kim n. 15.

17 Lohr, S, (2009) *Smart phones rises fast from gadget to necessity*, The New York Times, Technology, June 9, 2009, available at http://www.nytimes.com/2009/06/10/technology/10phone.html?_r=1

18 Calloway,J., Technology, Stress and the Lawyer's Quality of Life, article by Oklahama Bar Association, available at http://www.okbar.org/members/map/articles/technology.htm; see also 'Five of the Biggest Stress at Work and What To Do About Them', available at http://www.dreamcatcher-lifecoaching.co.uk/causesofstressatwork.pdf

19 It is not uncommon for parents to be 'on call' to pick up their children from school practices or social outings on the weekends.

20 Ling, R., (2004) *The Mobile Connection: The Cell's Phone's Impact on Society*, Morgan Kaufmann, San Francisco, CA.

The use of the mobile phone as a form of social reinforcement was supported in a study in 2006 by the Mobile Youth Life.[21] The study found that 25% of the 11-to-17-year-olds agree that the mobile phone had kept them in frequent contact with their grandparents. This is further confirmed by 45% of grandmothers who thought that the devices strengthen their communication with the younger generation.[22] In fact, 78% of those surveyed credited the use of mobile phones to better social lives since contact is easily maintained.[23] The mobile phone's ability to strengthen relationships is more apparent in separated or divorced families. Funston and Hughes (2006), for example, found that many children under the age of 18 from separated or divorced families found the mobile phones useful (1) in contacting or staying in touch with their non-resident parents when their parents are in conflict, or (2) where they have to worry about the feelings of their resident parent when contacting the other.[24]

Obviously, the immediate extension of anytime, anywhere is using the opportunity to be in contact with the other. In daily life, we have established that 'staying in perpetual contact' is a logical follow-up of anytime, anywhere. In family life this extension is much appreciated, in the employer-employee relations it is not yet applied to such a large extent. While we do believe the benefits of perpetual connectivity are significant, we remark that perpetual connectivity provided by the mobile phones serves as a double edged sword for both parents and their children. On the one hand, it serves as a 'digital leash' for children and young people who are expected to be contactable by their parents at all times and on other hand, the mobile is seen as an 'umbilical cord' linking parents to their children which the parents are unable to cast off.[25]

4.1.3 Safety and security

In addition to staying in perpetual contact, safety is one of the main reasons parents invest in a mobile for their children and the elderly. More parents than ever are viewing the mobiles as vital tools in supervising their children's behaviour, giving them peace of mind, and making them feel safer.[26] Personal safety is one of the main factors for diffusion of mobile technologies. This

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21 The Mobile Youth Life Report, (2006), The Carphone Warehouse: available at http://www.yougov.com/archives/pdf/CPW060101004_2.pdf

22 Supra.

23 Supra.

24 Funston, A and Hughes, K., (2006) Use and value of ICTs for separated families, *Telecommunication Journal of Australia*, Vol. 56(2) p.76-85 in Weerakkody, N.D., (2008) Mobile Phones and Children: An Australian Perspective, *Issues in Informing Science and Information Technology*, Vol. 5 p. 459-475

25 Supra.

26 Withers, K., Mobile have key roles for the young, Institute for Public Policy Research, BBC News, 22 October 2006, at http://news.bbc.co.uk/2/hi/technology/6070378.stm

became more apparent in the aftermath of the tragic incident of September 11. Soon after the incident, the status of the mobile phone was elevated to being regarded as a lifeline.[27] Since then the mobile is widely recognized as a personal safety and security device in times of emergencies. The emergencies can range from personal, private emergencies, such as (1) seeking assistance in repairing a flat tire in the middle of the night, via (2) reporting a crime scene, to public emergencies, such as (3) locating survivors due to natural and man-made disasters like earthquakes, hurricanes, floods, collapsed mines, and buildings.

4.1.4 Section conclusion

Having considered briefly, three main factors that led to the diffusion of mobile telephony in society (i.e., anytime, anywhere; staying in perpetual contact; and safety and security), we may conclude that the mobile phone plays a pivotal role in society's communicative practices.

4.2 THE YOUNGER GENERATION[28] AND MOBILE TELEPHONY

In this section we will (1) analyse the younger generation's use of the mobile telephony, and (2) the importance they place on their mobile phones. In this regard, we see the younger generation's use of the mobile phone in establishing their own (1) culture, (2) identity, (3) norms, and (4) language. For our analysis, we start discussing the attributes of the mobile phone. They are evaluated under the following headings: personal expression (Subsection 4.2.1), independence (Subsection 4.2.2), and (c) social networking and relationships (Subsection 4.2.3). In Subsection 4.2.4, we describe common youth traits.

One of the main drivers of the phenomenal success of mobile phones is its high adoption rate amongst the younger generation.[29] This section will

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27 See the mobile increased significance and corollary with that the increased in consumer ownership of mobile phones in the aftermath of September 11 in Dutton, W. H and Nainoa, F, Say Goodbye …let's roll, the social dynamics of wireless networks on September 11', 2003, *Prometheus*, 20 (3), p. 237 – 245.

28 The younger generation in this context will be used to describe children and young people between the ages of 7-to-17. In this respect, the terms 'youth', 'younger generation' and 'children and young people' will be used interchangeably to reflect individuals between 7-to-17 years. In most jurisdiction, these are individuals regarded generally as minors or below 18 years of age.

29 Three are numerous surveys conducted in the U.K. on the ownership of mobile phones amongst children. A sample of the surveys are as follows: (1) OFcom, the U.K.'s communications regulator, reported that 82% of 12-to-15-year-olds owned a mobile phone while just under half (49%) of 8-to-11-year-olds had one. (2) In another U.K. survey conducted by Intuitive Media in association with New Media Age amongst 1500 children, 53% and 72% of children between ages 8-to-9 and 7-to-13 respectively had their own mobile phones. See

evaluate the factors that contribute to that success. Moreover, it will consider the difference (if any) which exists between the younger generation's use of the mobile and its use by the working and family strata of society.

Working adults were the first strata of society to adopt the use and functionalities of the mobile phone.[30] The mobile phone, however, is no longer the sole domain of that class. The family strata soon followed the working strata. Thereafter, the mobile diffused quite rapidly, as a result of the younger generation's embrace of the technology. This is fueled by (1) their openness to new technology, (2) their willingness to adopt, and (3) their willingness to apply the new technology in their daily lives.

It is common knowledge that the younger generation is more adept at understanding and utilising the functions and capabilities of new technologies and the resulting devices than the older generation.[31] The widespread adoption and utilisation of the mobile phone by the younger generation can be seen from a relatively early age. However, despite the fact that children from the ages of 7-to-10-years do not fully utilise the mobile for vocal communication, this practice changes significantly when the children enter the pre-teen and teen years.[32] Within this age group, that is the pre-teen and teen

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http://www.intuitivemedia.com/cc.html . (3) In a 2006 Mobile Youth survey conducted by Yougov of more than 1,250 young people in the U.K., it has been reported that 51% of 10 years olds and 70% of 11 years old own their own phones: see http://www.yougov.com/archives/pdf/CPW060101004_2.pdf

In Germany, a representative poll of 923 children and adolescent by the institute, Synovate Kids + Teens (formerly known as Institut für Jugendforschung [Institute for Youth Research]) indicates that two thirds of 11-to-12-year-olds in Germany have their own mobile phone whilst in the age group of 9 to 10 years, 37% owned a mobile, 6 to 8 years, 8% and in the age groups of 13 to 14, 89% own a mobile phone. See http://www.heise.de/english/newsticker/news/77934

In Italy, the Save the Children survey showed that 31% of 5-to-13-year-olds had mobile phones. The level of ownership increased to nearly 100% for age groups 14 to 18. Poland's Nobody' Children Foundation indicated 92.1% of 12-to-17-years-olds owning a mobile phone. See European Commission summary of results of public consultation on "Child Safety and Mobile Phone Services" available at http://ec.europa.eu/information_society/activities/sip/docs/public_consultation/public_consultation_results_en.pdf

In the U.S., according to a 2004 study by TNS, nearly one-third of the children have their own mobile phones whilst 48% of children from Europe have their own mobiles. See http://www.textually.org/textually/archives/003582.htm; see also http://www.rcrnews.com/cgi-bin/news.pl?newsId=17768

30 In fact, the mobile phone was once more commonly used by people who job functions and responsibilities requires them to travel and not be stationed at one location for example, sales personnel, truck drivers and the police. See Lundin, J., and Nulden, U., Coordinating police work with mobile information technology, available at http://www.ituniv.se/~lujoha//Johan%20Lundin/Publications_files/Choosing%20device%20v1.pdf

31 Keegan, E., (2004) Technology Keynote: The Millenials are Coming, MetropolisMag.com, June 2004, available at http://www.metropolismag.com/cda/story.php?artid=533

32 Children between the ages of 7-to-10-years seem to be more interested in the games application on the mobile phone rather than its communicative element. According to the survey by the Young People and ICT Survey carried out in England for the Department for

years, the mobile phone is seen as an important communication tool with their peers. For this age group, communication with respect to their use of the mobile is also a means of teasing one another. This is done for instance by sending empty SMS and text messages, or by sending a boom call.[33] As stated above, the mobile phone has three main attributes that endear it to the younger generation: (1) personal, (2) independence, and (3) social networking and relationships.[34] We will deal with each attribute below.

4.2.1 Personal expression

The mobile phone has evolved within five years from the appearance where it was bulky and cumbersome with short battery life to the current lightweight handsets with multifunctional capabilities. This has provided new generation mobile phones with two distinct advantages: (1) mobility and (2) portability. Both advantages make the device an item that you have with you at all times; it is a technology which we never leave at home and go out. Ling (2001) and Kasesniemi (2003) see the "wearability" of the mobile as an attractive feature to users much like the watch.[35] In ten years, we have seen a transformation

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Education and Skills in September and October 2002, 41 per cent of girls and 30 per cent of boys aged 5-to-18, and in full-time education, owned a mobile phone. Ownership increased with age: 12 per cent of children aged 7-to-11 owned a mobile phone compared with 52 per cent aged 11-to-14 and nearly 70 per cent of children aged 14-to-18. See http://www.statistics.gov.uk/STATBASE/ssdataset.asp?vlnk=7202&More=Y

In Germany, a representative poll of 923 children and adolescent by the institute, Synovate Kids + Teens (formerly known as Institut für Jugendforschung [Institute for Youth Research]) indicates that two thirds of 11-to-12-year olds in Germany have their own mobile phone whilst in the age group of 9-to-10 years, 37% owned a mobile, 6-to-8 years, 8% and in the age groups of 13-to-14 , 89% own a mobile phone. See http://www.heise.de/english/newsticker/news/77934

In Italy, the Save the Children survey showed that 31% of 5-to-13year olds had mobile phones. The level of ownership increased to nearly 100% for age groups 14 to 18. Poland's Nobody' Children Foundation indicated 92.1% of 12-to-17 years old owning a mobile phone. See European Commission summary of results of public consultation on "Child Safety and Mobile Phone Services" available at http://ec.europa.eu/information_society/activities/sip/docs/public_consultation/public_consultation_results_en.pdf

In the U.S., according to a 2004 study by TNS, nearly one-third of the children have their own mobile phones whilst 48% of children from Europe have their own mobiles. See http://www.textually.org/textually/archives/003582.htm; see also http://www.rcrnews.com/cgi-bin/news.pl?newsId=17768

33 A boom call is a mobile phone call that is not designed not to be answered. The purpose of a boom call is to remain in contact; to inform the receiver that the caller is thinking of the receiver or is teasing him.

34 Mobile Youth Culture in Castells et al. (eds.), *Mobile Communication and Society*, 2007, MIT Press, Cambridge, Massachusetts , supra n.12.

35 Ling, R., "It is 'in'. It does not matter if you need it or not, just say you have it": fashion and domestication of the mobile telephone among teens in Norway in L. Fortunati (eds.), Il corpo umano tra technologie, communicazione e moda. Milan: Triennale di Milano referred to in Castells (eds.), *Mobile Communication and Society*, supra n. 12. See also Kases-

of the mobile phone from purely a communicative tool of the new age to an instrument of self awareness and public display.[36] Further, the mobile is no longer seen as a fashion accessory but rather a way of expressing one's own personal identity; an extension of one's individual self.

Katz (2006) opines that the mobile phone is an intimate and personal device; an item to demonstrate 'coolness', and an absolute 'must have' to 'stay in tune' or remain 'in the loop' with members of the peer group. The device is therefore considered more important than computers and televisions. Katz (2006) further suggests that those without mobile phones are regarded as the new generation social outcasts. Disconnected from their peers, they risk social isolation. To children and young people, mobile phones are portals to friendship and social networking, a means of social status and the keys to self image.[37]

Children protect their mobile phones by keeping them under their pillows and share their mobile phones by permission only. Mobiles are kept away from other siblings' prying eyes.[38] Parents are also frequently excluded when children are reading their text messages received.[39]

It is common for youths to personalise their handsets to reflect theirs needs and tastes. This is done for instance by downloading ring-tones, wallpapers, icons from websites maintained by mobile service providers or other content providers, changing mobile handset covers, and making pouches in which the handsets can be kept and carried.[40] Accordingly, we see the mobile technology becoming closely involved in the process of personal identity construction of the younger generation. Understandably, this fact was stated by Mobile Youth in its 2002 report, "The mobile phone is an icon of the youth generation". Therefore, it is appropriate to say that the mobile is an icon and expression of individualism. This brings us to the second endearing attribute of the mobile: independence.

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niemi, E.L., (2003) *Mobile Messages: Young People and a New Communication Culture*, 1st Edition, Tampere University Press, Tampere.

36 Katz and Sugiyama, Mobile Phones as fashion statements: the co-creation of mobile communication's public meaning in Ling, R and Pedersen, P., (eds.), *Mobile Communication: Re-negotiation of the Social Sphere,* p. 63-81, Springer, Surrey, U.K.

37 Katz, J., (2006) Staying connected, South China Morning Post, April 1 2006.

38 Vincent, J., (2005) Examining Mobile Phone and ICT Use amongst Children aged 11-to-16, Digital World Research Centre, University of Surrey, available at http://www.surrey.ac.uk/dwrc/People/Vincent.htm

39 Supra.

40 In China, young people customize their handsets by using "hand-phone cosmetics made from small beads, crystals and feathers. They are commonly made in the shape of "Hello Kitty" and "Garfield". See Yue, Z., Mobile phone demonstrates individuality: new expression of today's hand-phone culture. Beijing Morning Post 24 February, 2003: available at http://www.mobile.tom.com/Archive/1145/2003/2/24-53731.html

4.2.2 Independence

Closely linked with the concept of individualism (i.e., the personal attribute) is the concept of independence. Independence is more evident and is more strongly expressed by the younger generation. The youth's assertion of independence was used as a marketing tool by one of Japan's foremost mobile companies, i.e., NTT Docomo. A key leader in NTT Docomo's marketing force aptly expressed the youth's assertion of independence, in their promotion of the 'i-mode' as follows.

> "For me, 'i mode' is a declaration of independence; it is the 'I' mode, not the company mode (…). This is me in individual mode (…). The 'i' in the 'i-mode' is about the Internet and information, but it is also about identity".[41]

To the younger generation, independence is reflected in the freedom from (1) continuous parental or adult supervision in activities, and (2) regulation that stems from supervision. One example is in the use of the fixed (land) line telephony which is normally located in a family oriented setting such as the living or family room. The freedom from supervision and regulation facilitates privacy, craved by younger generation mobile users. For example, 52% out of 1,477 6-to-13-year-olds surveyed used their mobile phones without supervision.[42] Thus, the independence attribute of the mobile phone provides a pivotal dimension to the freedom that youths yearned, viz. one of greater freedom of movement and later nights out.

4.2.3 Social networking and relationships

Taken on a wider scale, the most important attribute of mobile communication is developing and maintaining social networks. In contrast to the earlier two attributes of the mobile phone, this third attribute is comparable to the staying-in-perpetual-contact factor previously discussed in Subsection 4.1.2.

The three factors which contribute to the diffusion of mobile telephony (1) anytime, anywhere, (2) communication and co-ordination of family activities, and (3) safety and security] are similarly applicable to the younger generation. For example, as far as the safety and security factor (80% of the 1,250 young people surveyed in the UK's 2006 Mobile Youth survey) reported that owning a mobile makes them feel safer when out and about shopping, socialising, and travelling to and from school or college.[43]

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41 'i-mode' is Japan's NTT Docomo mobile internet service. See http://www.nttdocomo.com; Stocker. T, 'The future at your fingertips', October 3 2000: available at http://www.tkai.com/press/001004_Independent.htm

42 2006 Intuitive Media survey.

43 *The Mobile Youth Life Report*, (2006), The Carphone Warehouse: available at http://www.yougov.com/archives/pdf/CPW060101004_2.pdf

The use of SMS (texting) adds to the uniqueness of the mobile phone, because "unlike voice calls, which are generally point to point and engrossing, messaging can be a way of maintaining ongoing background awareness of others, and of keeping multiple channels of communication open".[44] The use of SMS texting, a non-verbal form of communication is greatly applied in maintaining and re-inforcing social networking and relationships. This is demonstrated in 74% of 11-to-17-year olds who regularly send or receive SMS as compared to 14% who used the mobile for making calls (the 2006 Mobile Youth Survey).[45] Surveys have also shown the usefulness of SMS in removing awkwardness and embarrassment that comes with face-to-face circumstances.[46] Youngsters rather communicate behind the safety of virtual anonymity than speak face to face with the party at the other end. The mobile phone is thus perceived as a method to relay thoughts and feelings without having to see the intended recipient. As one youngster states "I do have a SMS relationship with a female friend but when we bump into one another, I am usually tongue-tied". Since it is so common for youngsters to develop a relationship via the mobile phones, it is not surprising that 25% of 11-to-17-year-olds received a text message inviting them for a date. This figure is doubled for the 16-to-17-year age group where text messages were sent to end a relationship.[47]

4.2.4 Common youth traits

In fact we can argue that the reason why mobile phones are particularly endearing to the younger generation is because the three attributes of the mobile phone: (1) personal, (2) independence, and (3) social networking and relationships, discussed above is synonymous with the traits of youth. Common youth traits include (in their preferred order): (1) the desire for independence (freedom), (2) personal identity (individualism), (3) connectivity (maintaining contact), and (4) community (a sense of belonging). Thus from our observations, we see the traits of youth reflected in (a) the attributes of the mobile telephony, and (b) its usage amongst the youth. Consequently, we may conclude that it is the youth's identification with the mobile phone that is a main contributing factor in the exponential growth of mobile telephony amongst the younger generation.

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44 Ito, Okabe and Matsuda, M., (2005) *Personal, Portable and Pedestrian: Mobile Phones in Japanese Life*, MIT Press, Cambridge, Massachusetts.

45 Supra n. 43.

46 Sohu-Horizon Survey: available at http://www.it.sohu.com/2004/02/19/96/article 219129623.shtml, See also Greenspan, R., IM usage nearly doubles, available at http://www.clickz.com/stats/markets/wireless/article.php/3400661

47 Supra Vincent, n. 37

4.3 New communication technology – the potential hazards

In this section, we briefly describe two sides of the same coin (1) the positive effects of new technologies (Subsection 4.3.1) and (2) a multitude of hazards (Subsection 4.3.2). In Subsection 4.3.3 two main hazards of end users are discussed. Finally, in Subsection 4.3.4, it is established that the greatest hazard is not quantifiable.

4.3.1 The positive effects

New communication technologies are often met by public concerns on their impact on children and young people. The concerns are not new, e.g., Buckingham (2008) suggests "a perpetual recurrence" of questions that have been studied historically in relation to new forms of media (and communication technologies) as they are developed.[48] The questions are usually centered on moral values typically in relation to violence and sex. However, there are beneficial effects experienced as a result of new media and communication technologies. For example, we mentioned earlier cyberspace which is seen as (1) an on-line world built around networks and systems and (2) a spatial sphere very much alive with the users' activities and experiences. With creative inputs and contributions by many users, cyberspace continues to be an expanding and enriching experience. For the greater part, a user's experience of cyberspace is positive even though we may distinguish two types of reason for a positive reaction. On the one hand, the reaction is positive for education, for research, as a business platform, as a marketing tool, or for the pursuit of entertainment and leisure. On the other hand, it may be positive for straightforward reasons, such as merely for purposes of communication. Communication in this sense, encompasses a full range of (1) sharing information, (2) forming new friendships, (3) re-inforcing older relationships, (4) exchanging experiences, and (5) merely keeping in touch.

4.3.2 A multitude of hazards

We have, however, observed that the benefits of the new technology are not "stand-alone" benefits, since they are and can often be strongly co-related with the hazards. The hazards take a variety of forms and can affect individuals and organisations in different ways. For example, content producers are

48 Buckingham, D., (2008) The Impact of Media on Children and Young People with a particular focus on the Internet and video games, prepared for the *Byron Review on Children and New Technology*, available at www.dcsf.gov.uk/byronreview

concerned with the unauthorised use, and distribution of content.[49] Organisations are also experiencing significant losses due to confidential data leakage.[50] Research conducted by the Enterprise Strategy Group reported that although the biggest threat comes from malicious and negligent insiders, there is an increasing concern that the organisation's intellectual property is likely to leak via traffic on the network, such as the electronic mail and the web.[51] In comparison to content providers, the concern of network operators stem from concerns that terminal devices, and the user's data application may be affected by viruses,[52] worms,[53] and Trojans horses.[54] Generally, a virus attack can cause damage by (a) corrupting the data, (b) deleting files, (c) causing systems to crash, (d) initiate denial of service attacks, and (e) leave Trojan horses, resulting in heavy financial losses.[55] A virus attack is costly for two main reasons. First, viruses and worms are costly to isolate and remove manually. They force businesses and IT staff to spend time deleting large volumes of spam e-mail, reactively patching and cleaning systems, and loading hot fixes, and anti-virus software.[56] Second, a virus attack disrupts business continuity.[57]

In addition, according to the network equipment manufacturer, Cisco, the disruption caused by the virus attacks can seriously damage the organisation's

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49 Grant, I., (2006) Telecoms – Convergence Challenge, *Infosecurity* Today, Vol. 3, Issue 3, May-June 2006, p. 19-21; available at http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B7GWT-4K3N2JD-9&_user=13304&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000001598&_version=1&_urlVersion=0&_userid=13304&md5=b623beed9742224fe8a93f9f1857f282

50 One third of the organizations surveyed admitted to losing intellectual property. See Jaques, R., (2007) Intellectual Property Theft Spreading fast, March 2007, ITNews, available at http://www.itnews.com.au/News/NewsStory.aspx?story=46935

51 Supra.

52 A computer virus is a computer program that can copy itself and infect a computer without permission or knowledge of the user. A virus can only spread from one computer to another when its host is taken to the uninfected computer, for instance by a user sending it over a network or the Internet, or by carrying it on a removable medium such as a floppy disk, a CD or a USB drive. Viruses can also spread via the email, the World Wide Web and file sharing programmes. Some of the more well known virus attacks were caused by Code Red virus, I Love You virus and Melissa virus. See http://en.wikipedia.org/wiki/Computer_virus

53 Worms are different from viruses in that they are self replicating programmes; using the network to send copies of itself to other unsuspecting terminals. Unlike viruses, worms do not need to attach themselves to an existing programme. They can damage the network merely by consuming bandwidth. See http://en.wikipedia.org/wiki/Computer_worm

54 Trojan horses are harmless until executed. The Trojan unloads hidden programs, commands, scripts, or any number of commands with or without the user's knowledge or consent. See http://en.wikipedia.org/wiki/Trojan_Horse_%28Computing%29

55 Technical Overview: Preventing Worm and Virus Outbreaks with Cisco Self Defending Networks; available at http://www.cisco.com/en/US/solutions/collateral/ns340/ns394/ns171/net_implementation_white_paper0900aecd801e009f.html

56 Supra.

57 Supra.

prestige and customer goodwill.[58] This was confirmed in a Computer Crime and Security Research Survey conducted by the Computer Security Investigation in participation with the San Francisco Federal Bureau of Investigations (FBI) Computer Intrusion Squad in 2006, which cited that virus attacks are the leading cause of financial losses.[59] Trojan horses may be launched by a virus. They are harmful as they can interfere with anti-virus and firewall programs, erase data, and allow remote access to a victim's computer. Thus, we may state that viruses, worms, and Trojan horses are hazards which may have the effect of causing a significant financial loss by infecting and destroying the system. While this may true of computer viruses, the threat to corporate infrastructure caused by *mobile viruses* cannot be underestimated. This threat arises from the common fact that the majority of mobile devices are brought into the organizations by individuals who had purchased them independently, rather than being issued as part of a coordinated IT department roll-out. The devices can thus be used as a transmission medium from which organizations can be infected.[60] With more sensitive data beginning to be stored in mobile devices, so is the threat of a malicious mobile virus code. Thus, the hazards that affect computers are equally prevalent in mobile phones.

4.3.3 Two main hazards for end users

Although there are a number of hazards to be faced by end users, we briefly describe two main concerns: (1) invasion of privacy, and (2) identity theft. First, invasion of privacy has been a cause of increasing concern amongst users of new technology and is the subject of much debate and regulation (both by statute and case-based law).[61] Second, identity theft resulting in losses is a hazard commonly faced by individuals. It is closely related to the invasion

58 Supra.

59 The top four categories of causes for financial losses are virus attacks, unauthorized access to networks, stolen/ loss of laptops and mobile hardware and theft of intellectual property. Despite the anonymous nature of the survey, only 50% of those organizations surveyed revealed actual financial losses due to breaches of security. See Virus Attacks Named Leading Culprits of Financial Loss by U.S. Companies in 2006, CSI/FBU Computer Crime and Security Survey, available at http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/07-13-2006/0004396284&EDATE

60 Jaques, R., (2004), The Dangers of Mobile Viruses, May 2004; available at http://www.v3.co.uk/vnunet/features/2129936/danger-mobile-viruses

61 It has been argued that invasion of privacy can encompasses surveillance technology, e-mail surveillance, excessive e-mail and SMS spam messages via on-line marketing tactics, and radio frequency identification tags (RFID). See for example, Schermer, B.W., Software agents, surveillance, and the right to privacy: a legislative framework for agent-enable surveillance, 2007, Leiden University Press, Netherlands., Risen, J. and Lightblau, E., E-mail surveillance renews concern in Congress, June 2009, The New York Times, available at http://www.nytimes.com/2009/06/17/us/17nsa.html?_r=1,. See also The Sorting Door Project – a project which explores the various issues of radio frequency identification including privacy and Surveillance; available at http://www.sortingdoor.com/

of privacy. An example of identity theft is electronic mail fraud where the electronic mail is used as a medium to perpetuate fraud.[62] A relatively new form of identity theft is phishing.[63] Phishing works by the fraudster sending an electronic mail to convince consumers to share or disclose their user names, passwords, and personal financial information for the purpose of using it to commit fraud. Identity theft fraud caused by phishing attacks has caused great concern since these attacks have resulted in considerable financial losses. However, despite numerous reports on the financial losses suffered,[64] a recent Microsoft study revealed that such losses were overestimated. According to Microsoft, US victims lose US$ 61 million a year instead of US$ 3.2 billion reported by Gartner in 2007.[65] Nonetheless, notwithstanding the accuracy of the estimate of financial losses incurred, we accept that phishing does cause economic loss. What it indicates is that individual users are not spared from either (a) an infringement of their rights or (b) from financial losses caused by the hazards as a result of continuing abuses of the new technology.

4.3.4 The greatest hazard is not quantifiable

The effects of the hazards described so far have been economic and financial losses. They are quantifiable, although it may be difficult to do so. However, in comparison with the losses suffered by the adult individuals and organisations, we submit that the hazards arising as a result of advancements made in new communication technologies in so far as children and young people are concerned have an equally, if not more damaging effect. Yet, they are with the current means not quantifiable. We mention here as an example, the invasion of privacy. We describe below, the exposure of the younger generation to the new technologies. We do so from an early age and note that as the children and young people mature, their sophistication in the use of the new technological devices and applications increases.

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62 What is Email Fraud? What Can I Do About It?, Knowledge Base, University Information Technology Services, Indiana University; available at http://kb.iu.edu/data/afvn.html. See also Email Scams, Phishing and Fraud; available at http://antivirus.about.com/od/emailscams/Email_Scams_Phishing_and_Fraud.htm

63 Phishing (or personal information scam) is a term used to describe the action of assuming the identity of a legitimate organisation, or web site, using e-mail or web pages and is regarded as one of the most common form of e-mail fraud.

64 Gartner: (2007) Phishing losses up $3.2 million, December 2007, Bank Technology News, available at http://www.americanbanker.com/btn_article.html?id=200712184RBWEMTG, Leyden, J., U.K. banking fraud rises to £301.7 million, available at http://www.theregister.co.uk/2008/10/01/uk_banking_fraud_soars/Phishing losses hit $3.2 billion in 2007 – Gartner, December 17, 2007. The survey was conducted on more than 4500 on-line U.S. adults, around 3.6 million U.S. adults fell victim and lost money in phishing attacks in the 12 months ending in August 2007, up from 2.3 million adults the year before. See http://www.finextra.co.uk/fullstory.asp?id=17871

65 Espiner, T., (2009) Microsoft: Phishing losses greatly overestimated, January 2009, ZDNet, U.K., available at http://news.zdnet.co.uk/security/0,1000000189,39589445,00.htm

Children and young people are no strangers to modern communication technologies having been weaned on them. It is common for children and young people to employ these technologies from their home, school, club, libraries, street cafes, shopping malls, and cybercafés. Indeed, it is not uncommon for children to spend a large part of their daily lives in the on-line world since the Internet, the WWW (world wide web), and other applications are used regularly to communicate with their peers. Children and young people are regular users of Instant Messaging (IM). They frequently chat on-line, electronic mail friends and family, play interactive games, download music and movies, do their homework, and perform other activities. However, we observe that it is with the regular use of these technological functionalities and applications that we arrived at establishing potential hazards that are not quantifiable. We will deal with these hazards in the remainder of this Chapter.

4.4 Child protection concerns

New technological innovations in communication technologies and devices, such as mobile phones, are not inherently harmful. We have seen the virtues of such devices in the previous sections. Despite the benefits, the devices may also be used in ways and for purposes that go beyond their original intended purpose. Whether intentionally or inadvertently, harm can be caused to children and young people whom we view as vulnerable strata of our society. In the following sections, we will investigate the potential mental hazards or key mental concerns that can be brought about by mobile phones. We will group the key areas of concern under three headings: (a) Content (Section 4.5), (b) Contact (Section 4.6), and (c) Commercialism (Section 4.7).[66]

As an aside, we mention one other related yet distinct concern for the younger people, i.e., the health concern. As society progresses with new technological innovations, the risk of harm resulting from the use of the innovations justifiably increases. For example, the use of mobile phones has given rise to health concerns. One such concern is whether the electromagnetic radiation emitted by mobile phones can have a stronger effect on children than adults.[67] In a recent study by brain surgeon Dr. Vini Khurana, it was claimed that the risk of brain tumours doubles for mobile phone users. Dr. Khurana

66 Also known as the "3Cs": see www.child-net.org.

67 For adults there have been claims that prolonged use of mobile phones lead to headaches, nausea, problems with concentration, cancer and brain tumour. See Mobile phones and young brain, The Age, January 26, 2008, available at http://www.theage.com.au/news/mobiles--handhelds/mobile-phones-and-young-brains/2008/01/26/1201368996791.html, also Can Mobile Phones Harm Children?, available at http://www.safekids.co.uk/MobilePhoneHarmChildren.html

warns "(…) that the danger has broader health ramifications than asbestos and smoking and directly concerns all of us particularly young children".[68]

It is clear that health concerns are not restricted to mobile phone usage. There are growing concerns that youth using other technological devices, such as the MP3, are experiencing hearing loss, a loss that is generally experienced in individuals of 50 or 60 years of age. Although, research into this health concern is continuing, there are unconfirmed reports that this might be due to being played loud music on MP3 players.[69] These concerns are physical concerns that are in addition to the mental harm that computers and other new technologies might have on children.[70] These concerns, however, are not the focus of our study and will not be dealt with.

4.5 CONTENT

We have observed from numerous studies that children and the youth can be exposed to various forms of harm: (1) through the use of new technological devices and (2) through the experiences they encounter whilst in the virtual world.[71] The studies have indicated that the experiences encountered are manifold and are not restricted to inappropriate materials accessible via the mobile phone.[72]

In this section, we will consider mobile content, i.e., (a) content available on the mobile service providers portal and (b) content that is accessible via the mobile phone. In this regards, we see issues of indecency and appropriateness that were often debated in conventional media, such as the television, film, and the print media (magazines and periodicals), emerging on the mobile platform. With content seen as the main driver of the new generation mobile phones, content developers are striving to meet and satisfy the demands of

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68 Thomson, I., (2008) Mobiles more dangerous than smoking, April 1 2008, available at www.vnunet.com/vnunet/news/2213238/mobile-phones-dangerous

69 Fisher, M.J., (2007) Experts worry about Harm to Hearing from MP3 Players, The Sydney Morning Herald, January 4, 2007 available at http://www.smh.com.au/news/digital-music/experts-worry-about-harm-to-hearing-from-mp3-players/2007/01/04/1167777193761.html. Also, see Healy, Jane. M., Failure to Connect: How Computers Affect Our Children's Mind – For Better or For Worse, Kindle edition.

70 See Children and Computer Technology: Analysis and Recommendations, available at http://www.futureofchildren.org/usr_doc/vol10no2Art1.pdf, also Wireless laptop may harm children, April 2007, available at http://www.metro.co.uk/news/article.html?in_article_id=47055&in_page_id=34&in_a_source=

71 The experiences in the virtual world may transpose itself or migrate to the real world. For example, a child may be abused following an initial contact made via the Internet enabled mobile phone. See further discussion on sourcing children and grooming in Section 2.6.1.

72 See An Evaluation of Getting to know IT all, Policy document, April 2006, 'Fair game? Assessing commercial activity on children's favorite websites and on-line environments, Policy document, December 2007; available at http://www.childnet-int.org/publications/policy.aspx

mobile users.[73] As a case in point, analysts predict that mobile content and the entertainment market in Western Europe alone will reach 32 billion euros by 2012.[74] The report expects games, sport, music, and multi-media downloads to lead the way, with adult content providing "an important revenue stream".[75] Consequently, we surmise that there can be a lack of vigilance and a callous attitude on the part of content developers and providers in return for increased profits.

With that in mind, content will be discussed in terms of two expressions of content (Subsection 4.5.1). It will be followed by a matter of grave concern (Subsection 4.5.2) inappropriate materials (Subsection 4.5.3), appetite for adult material (Subsection 4.5.4), pornography (Subsection 4.5.5), and incidence of exposure to pornography (Subsection 4.5.6). Finally, content in terms of mobile gaming will be discussed in Subsection 4.5.7.

4.5.1 Two expressions of content

Before we investigate the types of content, the better approach would be to consider the terms used in this context. The common verbal pairing of the term "illegal and harmful" have been the subject of both a national and an international debate as to what the term actually means, or rather, what the term encompasses? Assistance can be sought in the 1996 European Commission on Communication on Illegal and Harmful Content on the Internet. Below we discuss the notions (A) "illegal content" and (B) "harmful material" separately. We consider the two different expressions of a word that we would like to change.

A: Illegal content

"Illegal content" is said to reflect the illegality of the material, where the utterance or the publication of such material attracts criminal penalties.[76]

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73 It has been reported that mobile content is seen as a catalyst for the sales of new mobile phones to recoup the heavy investments made on 3G spectrum licenses. See Mobile Entertainment in Europe: Current State of Art, A European Commission User Friendly Information Society Accompanying Measures Project, 2003; available at www. knowledgehut.fi/projects/mgain/MGAIN_wp3-d311-delivered.pdf

74 Mobile content in Western Europe to reach 32 billion euros in 2012, September 1 2005, available at http://www.moconews.net/?p=3377. See also Mobile content market is booming, July 11, 2005 at http://www.theregister.co.uk/2005/07/11/mobile_content_triples/

75 Despite great optimism on the growth of mobile content, growth was reported to be slowing down in the United States. A Forbes Lifestyle Feature reported that reasons for the lagging growth of mobile content include unimaginative marketing and the failure of carriers to identify a lucrative niche audiences and their to their interests, see Tercek, R., Mobile Going Slow, May 18, 2006 available at http://www.forbes.com/2006/05/17/mobile-content-tercek_cx_rt_0518mobile_ls.html

76 Communication to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions COM(1996) 487 http://www.ispo.cec.be/legal/en/internet/communic.html

Examples of illegal material include child pornography, terrorist activities, incitement to racial or hatred discrimination, violence, and money laundering. Material that is illegal is defined by the laws of each jurisdiction. There is, however, more consensus in respect of content that is considered illegal than there are for harmful materials.[77] This is illustrated, for example, in child pornographic materials where the materials are universally banned irregardless of the consumer's age or the jurisdiction in which he lives (see below).

B: Harmful material

In contrast to "illegal content", the term "harmful material" is more vague, in that it is dependant more on the 'local culture'. Hargrave and Livingstone (2006) suggest that harm is widely (though not necessarily) conceived in objective terms; harm is taken to be observable by others, irrespective of whether harm is acknowledged by the individual concerned.[78] Hence, Hargrave and Livingstone opine that harm is measurable in a reliable fashion.[79]

However, it should be noted that what might be considered harmful in one jurisdiction or locality might not be so in another. This is most appropriately expressed in the 1996 European Commission document.

> "What is considered to be harmful depends on cultural differences. Each country may reach its own conclusions in defining the borderline between what is permissible and not permissible (…)".[80]

Moreover, seen from a scientific point of view we should also take into account that the notion "harmful material" is challenged by the fundamental law of expressing a free opinion. The question here is: to what extent is one allowed to express a harmful free opinion? Here the balance between "harmful" and "free opinion" should be settled by a new legal framework. This implies that some harmful free opinions are seen to be illegal.

In the circumstances mentioned above, material that "offends the values and feelings of others" and materials that are only dangerous when exposed to children and young people will be classified as "harmful material".[81] The latter, that is, materials that are dangerous when children and young people are exposed to them are materials that are generally not prohibited by law. These materials are accessible and consumed by the adult population but the provision of access of these material to children and young people becomes

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77 Note that the terms "banned" or "prohibited" can and is sometimes used in place of "illegal".

78 Hargrave A.M and Livingstone S., (2006) *Harm and Offence in Media Content: A Review of the Evidence*, Intellect Books, Bristol, U.K.; available at http://www.lse.ac.uk/collections/media@lse/pdf/Harm%20and%20Offence,%20summary.pdf

79 Supra.

80 Supra European Commission Communication 1996, n. 76.

81 Supra n. 76.

a matter of anxiety and grave concern. A good example is pornography (see Subsection 4.5.5). The concern expressed is the effect that the material might have on the physical, mental, and psychological development of the younger, immature generation to whom the materials are exposed.

4.5.2 A matter of grave concern

Despite the differences between the two expressions of content, both "illegal" content and "harmful" material are two sides of the same coin. What is important to note is that, both these contents are easily available and accessible by children and the young people. A matter of grave concern is that a majority of the inappropriate material is unwanted, i.e., the material is neither voluntarily sought nor solicited. Below, we will consider four types of content available on the Internet. They are mentioned in the beginning of this section.

4.5.3 Inappropriate materials

The Internet provides a vast database for inappropriate and potentially harmful materials. Deciding what is inappropriate is not an easy task since the decision is influenced by many factors such as the age, experience, environment, values, beliefs, and culture of the person making that decision. The perception of what is inappropriate also varies from one family to another. Notwithstanding, we provide a non-exhaustive list of what is generally accepted as inappropriate sites for children and young people. These sites include suicide sites,[82] do-it-yourself sites on how to make a bomb,[83] terrorists' sites, hate speech sites, and pornography. High on the list of inappropriate materials are pornography sites or sites which contain a relatively high degree of explicit sexual content. Pornography will be discussed in section 4.5.5. In the following Subsection we will briefly consider the demand for adult material.

82 For example, The Church of Euthanasia site. The Church professes four pillars which are a) suicide, b) sodomy, c) abortion, and d) cannibalism. See http://www.churchofeuthanasia.org/press/st_louis_suicide.html. See also "Ten common methods of suicide" at http://listverse.com/health/top-10-ways-to-commit-suicide/. There have been concerns over the recent spate of teenage suicides in Wales, United Kingdom. It was reported that the teenagers had used the Internet to research and discuss suicide amongst themselves. The government is considering changes to the law. See Suicide sites to be investigated, January 26, 2008 at http://www.thesun.co.uk/sol/homepage/news/article731078.ece

83 See for example, http://www.digg.com/gadgets/Kid_builds_homemade_rocket_launcher. On fact, the social networking site YouTube has some sites which shows how bombs are made.

4.5.4 Appetite for adult material

The market and profitability for adult content is huge. Experience drawn from the Internet and Wireless Application Protocol (WAP) indicated a strong upward demand from such content. Statistical evidence confirms this upward trend. For example, a study by market analyst Juniper Research indicates that the adult mobile content market is set to reach US$ 5 billion by 2013 with video chat services expected to be the largest contributor.[84] The expected revenue for 2008 is US$ 2.2 billion.

The figure is expected to rise with newer generations of mobile phones possessing greater broadband, larger capacity, and more vibrant colours.[85] Juniper Research of the UK expects the worldwide mobile adult content market to be worth US$ 3.3 billion by 2011, up from its current level of US$ 1.4 billion.[86] This is a significant increase on forecasts by Informa Telecoms and Media in 2007, which predicted a market value of US$ 2.3 billion by 2010. A total of US$ 14.5 billion in revenue is expected to be generated by the adult mobile content sector over the next five years with Europe accounting for 39% revenue over this period. The study also estimates that video-based services will account for over 70% of revenue in the mobile adult content market by 2011.[87]

The studies demonstrate an upward trend in the consumption of adult materials. Thus, we may tentatively conclude that what is required is the adoption of measures restricting the access to the adult material for children and young people.

4.5.5 Pornography

We have previously observed that pornographic materials are considered harmful content. Although we have seen the easy availability of pornographic materials being offered in conventional forms, such as video tapes and printed material, the Internet provides an easier, more expedient form of access to these materials. Illicit material may include banned pornographic material, such as child pornography or hard core adult pornographic material that is legal but regarded as inappropriate and repulsive even for the adult audience. Recent research by OFCOM (the UK's Office of Communication) (2007) have

84 Savvas, A., (2008) Mobile adult content still swelling, Computer Weekly, December 10 2008, available at http://www.computerweekly.com/Articles/2008/12/10/233820/mobile-adult-content-market-still-swelling.htm

85 Reardon, M., (2006) Red Light District on a Tiny Mobile Phone, February, 2006 at http://www.news.com/Red-light-district-on-a-tiny-mobile-screen/2100-1039_3-6161930.html?tag=st.rn

86 Ryan, E., (2006) Mobile porn market set to explode, Electric News Net, November 27, 2006; available at http://www.electricnews.net/frontpage/news-9851932.html

87 Supra.

found sexual content to be one of the main concerns of 37% of parents of 8-to-17-year-olds. The concern was also mentioned by 28% of 8-to-17-year-olds as the issue they are most concerned about with the Internet.[88] Notwithstanding, studies have revealed that there are youngsters who do seek out such content. For example, a survey by Wolak, Mitchell, and Finklehor (2005) reported that the great majority of youth with *wanted* exposure were teenage boys. The report showed that more than 38% of the male Internet users aged between 16 to 17 years surveyed, had visited X-rate sites on purpose.[89]

4.5.6 Incidence of exposure to pornography

In this section, we deal with the incidence of exposure to pornography in two aspects: (A) involuntary and accidental visits and (B) unwanted exposure. We conclude the subsection by: (C) significance of surveys.

A: Involuntary and accidental visits

Searching for pornography is not just for the curious.[90] However, we admit that pornographic sites may be encountered involuntarily. Despite the US Supreme Court's opinion of the US *Communication Decency Act* that "the odds are slim (…) that a user would enter a sexually explicit site by accident (…), the receipt of information on the Internet requires a series of affirmative steps",[91] research has indicated that in contrast to 13% of those surveyed having admitted to voluntarily visiting sex related sites, 34% were exposed to the sites without taking 'affirmative steps'.[92] Internet users (including children and young people) may be tricked into visiting these sites by capturing users searching for non-sexually related websites. Others are trapped when they mis-type innocent looking names of websites, such as 'whitehouse.com' or 'disnie.com'.

We observed that it is not uncommon for a child's attention to be diverted to pornographic sites via (1) spam mail and (2) pop-up advertisements on

88 OFCOM, (2007) *Children and the Internet: Consumer Panel Report*, London.

89 The 2005 survey was conducted amongst 1,500 young people between the ages of 10 and 17. See Wolak, J., Mitchell, K.,. and Finklehor, D., (2007) Unwanted and Wanted Exposure to On-line Pornography in a National Sample of Youth Internet Users, February 2007, *Pediatrics*, Vol. 119, No. 2.

90 In a 2006 Internet Review Statistics, it was indicated that the average age of first exposure to pornography is 11 years old. See http://internet-filter-review.toptenreviews.com/internet-pornography-statistics.html#anchor4

91 *Reno vs American Civil Liberties Union,* 117 S.Ct. 2329, 138 L.Ed 2d 874 1997.

92 Supra Wolak, Mitchell and Finkelhor supra n. 89. This is an increase of 5% and 8% respectively in a similar survey conducted by Wolak. J. Mitchell. K.J., and Finkelhor, D., in 2003. See Mitchell, K.J., Finkelhor, D., and Wolak, J., (2003) The Exposure of Youth to Unwanted Sexual Material on the Internet, Vol. 34, No. 3, March 2003, *Youth & Society*, p. 330 -358, Sage Publications.

interactive sites.[93] First, spam electronic mails are unsolicited electronic mails sent to unsuspecting Internet users with links to pornographic sites and images. For the curious child, this is sufficient to begin his exploration. Once a child enters a site, he may be 'mouse-trapped', into not being able to leave the site. Attempts to leave the site usually fails and the child will be led back to the same site or other pornographic sites. In fact, some sites configured the exit buttons so that clicking the button will take the user to other sexually explicit sites. A second way of introducing and exposing the inquisitive child is by using pop-up advertisements on interactive sites. Moreover, peer-to-peer (P2P) file sharing via on-line chat-rooms and newsgroups are also a popular means of attracting and diverting a child's attention. This was confirmed in the Wolak, Mitchell, and Finklehor's (2005) study where it was revealed that the risk of unwanted exposure to sexual materials increased with the use of file-sharing programs to download images.[94]Indeed, the risk of exposure to youths is increased by 20% when using such file-sharing programs.

B: Unwanted exposure

Wolak, Mitchell, and Finkelhor's (2005) survey also indicated that 34% of young people in the US who used the Internet regularly had experienced unwanted exposures[95] to sexually explicit pictures.[96] The researchers defined unwanted exposure to Internet pornography as "without seeking or expecting sexual materials, being exposed to pictures of naked people or people having sex when doing on-line searches, surfing the website and opening electronic mails or electronic mail links".[97] An earlier survey conducted by the same researchers, revealed that 32% of the images showed people having sex, with 7% involving violence in addition to nudity and sex.[98] 73% of these exposures occurred when young people were surfing the Internet. 27% occurred while opening electronic mails, or clicking links embedded in the electronic mails or instant messages.[99] 92% of those who encountered the offensive materials through electronic mail did so by opening messages from senders unknown

93 A survey was conducted by Symantec, an internet security firm in 2003. The survey conducted amongst 1,000 young people between the ages of 7 and 18 showed that 80% of them received spam on a daily basis. 47% of the spam received were from x rated websites. See www. symantec.com/press

94 Supra Wolak, Mitchell, and Finklehor, n. 89.

95 Note that the term 'unwanted exposure' can and may include 'inadvertent exposure'. Inadvertent exposure is defined as the tendency to be exposed to Internet pornography without the user's deliberate action. See Thornburgh, D., and Lin, H.S., *Youth, Pornography, and the Internet*, 2002, National Academy, Washington, DC.

96 Supra Wolak, Mitchell, and Finkelhor, n. 89.

97 See Mitchell, K., Finklehor, D., and Wolak, J., (2003) The Exposure of Youth to Unwanted Sexual Materials on the Internet: A National Survey of Risk, Impact and Prevention, 34 *Youth & Society* 2003, p. 330-358.

98 Supra n. 89.

99 Supra n. 89.

to them.[100] Further, 26% of surfing incidents was attributed to mouse-trapping instances, in which clicking on the exit buttons led the surfer to another sexually explicit site.[101] In 2006, Internet pornography statistics reported that 34% had received unwanted exposure to sexual material.[102] OFCOM reported that 12% of 5-to-7-year-olds and 16% of 8-to-17-year-olds had reportedly come across inappropriate content on the Internet in the first half of 2008.[103] This was supported by a recent study conducted by criminologists White, Gregory, and Eith (2008) which confirms the position that Internet users run the risk of accidental exposure to pornography via (a) electronic mail, (b) spam, (c) errors in typing URLs, and (d) key-word searches.[104] The criminologists continue by stating that "Although there are numerous software programs which offer parental controls in order to moderate content for children's viewing, children may still be inadvertently exposed to pornography and may subsequently seek out this material".[105] Such incidents of accidental exposure often result in user panic and distress especially if the user is not an adult and may result in feelings of being sexually harassed and fear in others.

C: Significance of studies

The studies cited above are significant in that they confirm three points: (1) the pervasiveness and proliferation of adult content material, (2) an upward trend in the incidence of unwanted exposure to pornography and unwanted sexual solicitation,[106] and (3) users need not actively seek such material; rather the material can be "exposed" to surfers who had no intention to access the material.

We may tentatively conclude that the rise in (2) justifiably reflects (2a) the increase in the time spent on-line by youngsters, (2b) rapid technological changes, such as faster broadband connections and digital photography, and

100 Supra n. 89.

101 Supra n. 89.

102 Internet Filter Review: Internet Pornography Statistics, 2006: available at http://internet-filter-review.toptenreviews.com/internet-pornography-statistics.html#anchor4

103 See www.ofcom.org.uk

104 White, L., Gregory, C., and Eith, C., (2008) The Impact of Accidental Exposure to Cyber-pornography on Sexual Offending Among Youth: A Case Study, Paper presented at the annual general meeting of the American Society of Criminology, Royal York. Toronto, November 9, 2008; available at http://www.allacademic.com/one/www/research/index.php?cmd=www_search&offset=0&limit=5&multi_search_search_mode=publication&multi_search_publication_fulltext_mod=fulltext&textfield_submit=true&search_module=multi_search&search=Search&search_field=title_idx&fulltext_search=%3Cb%3EThe+Impact+of+Accidental+Exposure+to+Cyberpornography+on+Sexual+Offending+Among+Youth%3A+A+Case+Study.%3C%2Fb%3E&PHPSESSID=fffaec3085fffe269730b1d91108f6fa

105 Supra.

106 Researchers Mitchell, Ybarra and Finklehor reported a decline in passive sexual solicitation, aggressive sexual solicitation i.e., solicitation that most likely would evolve to crimes of contact offline registered an increase in incidence. See supra.

(2c) aggressive marketing strategies of pornography merchants.[107] In fact, in relation to (3) and (2c), we observe that the aggressive marketing strategy is part of the strategy in a competitive business employed by the adult sites to drive traffic to their sites.[108] Using such a strategy the materials need not be requested for but are rather "pushed" towards the young users, enticing them to consume the material.

4.5.7 Mobile gaming

Further and in addition to pornography, there is an increasing concern in the gravity of violence that is emerging in on-line games[109] and in videos clips shared between and amongst youngsters. For example, according to a German 2006 JIM study, exchanging violent video via the mobile phone is a common practice of German adolescents. One out of three mobile phone owners has friends who have had violent video sent to them. 7% have themselves received violent videos. However, this section will focus on violent mobile games since mobile gaming is a major revenue source for the mobile gaming industry.

Mobile phone games have come a long way since Snake was first embedded in Nokia devices in 1997. Though the market for mobile phone on-line games has not reached the levels experienced by the adult content market, statistics has indicated that the market for the mobile gaming sector will increase in the near future. It is apparent that the mobile gaming industry is seen as a growth industry with revenues reportedly hitting US$ 4.5 billion in 2008.[110] Mobile application retailer, Handango indicate in their market survey that games and entertainment have surpassed their mobile business and professional applications. Games accessible via the mobile phone provide children and young people with (1) immediate gratification, (2) peer influence,

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107 Mitchell, K. J., (2007) Trends in Youth Reports of Sexual Solicitation, harassment and unwanted exposure to Pornography on the Internet, *Journal of Adolescent Health*, p. 116-126

108 Some of the tactics used by these adult sites include a) Click-throughs: this is to increase the advertising revenue with every click. To increase the number of click-throughs, some sites use pop-up windows. Known as 'mouse napping,' this technique traps users in an endless loop of porn, b) Home page hi-jacking involves planting a Java script command on computers to change the user's default home page to a porn site, and c) using hidden key words that are picked up by search engines. Porn operators bury key words, including brand names of popular toys, in the code of their Web sites to attract children. See http://www.bewebaware.ca/english/pornography.aspx#impact

109 Video games are generally marketed primarily towards children. A number of video games attract the young audience by incorporating sexuality as the dominant theme where much of the action takes place in strip clubs and bars with scantily clad women. Examples of such videos include Playboy: The Mansion and Singles: Flirt Up Your Life. See Stock, P., (2004)The harmful effects on children of exposure to pornography, 2004 Canadian Institute for Education on the Family, available at www.cief.ca/pdf/harmpornography.pdf

110 Perez, M., (2008) Handango partners with mobile games publishers, Information Week, December 2008, available at http://www.informationweek.com/news/personal_tech/smartphones/showArticle.jhtml?articleID=212501891&subSection=All+Stories

and (3) the convenience of not having to carry an additional electronic gaming device.[111] This is further spurred on by developers of mobile phones who are increasingly customising their devices for games. Nowadays we see mobile phones with bigger screen displays, better sound quality, and a variety of game downloadable sites. In a 2006 Nielsen Entertainment research commissioned by Nokia to provide an overview of the gaming habits and what mobile users are looking for in their mobile phones, it was reported that 80% of the mobile phone gamers played mobile games at least once a week with 34% playing every day.[112] It is observed that mobile gaming is an popular feature of the mobile phones for two reasons: (1) games can be played anywhere whether you are on the move, waiting, or at home (this is evidenced by 61% who reportedly played games on the move, 56% whilst waiting and 61% whilst at home)[113] and (2) users need not have a separate games console like a PlayStation (PSP) to play mobile games. However, there is concern that the increasing violence in traditional video games will be created for mobile consumption. While there is no research data available on violent mobile games, we opine that the concern is real. We find support for our position by noting what the legendary Nintendo game designer, Miyamoto, correctly said in an interview with the UK's television channel, Channel 4.

> "I don't want to curb freedom of expression, but I am concerned that many developers focus just on excessive violence in order to stimulate people's mind". "I believe that there are more ways of grabbing players' attention than violence alone". (Miyamoto, 2008)[114]

We surmise that what is important to note is that despite the impending growth of mobile gaming there does not appear to be adequate monitoring by the relevant authorities to ensure that the games offered are suitably appropriate for the relevant age groups.

4.6 CONTACT

This section deals with the second area of key concern: contact. Contact is closely related to content (e.g., pornography). As such, contact will be con-

111 Petroff, P., (2004) Teens want m-everything – but at what price?, Wireless Week, April 22 2004; available at http://www.wirelessweek.com

112 Evolution of Mobile Gaming: Exploring worldwide gaming habits, December 2006, available athttp://www.forum.nokia.com/info/sw.nokia.com/id/c52ab94e-e29d-498a-a36a-e80296e4184a/Evolution_Of_Mobile_Gaming_1_0_en.pdf.html. The research was conducted amongst 1,800 respondents across 6 countries.

113 Supra.

114 Snow, B., (2008), Miyamoto concerned with violent video games, October 2008, Game Pro, available at http://www.gamepro.com/article/news/207575/miyamoto-concerned-with-violent-video-games/

sidered under three headings: (1) sourcing and grooming, (2) unwanted sexual solicitation and (3) bullying. More specifically, the section will briefly discuss how the Internet, in particular its anonymity and its interactivity in combination with the functionalities of new generation devices is adopted to fuel, and facilitate the process of sourcing, and grooming of children and young persons (Subsection 4.6.1). Further and in addition to sourcing and grooming, Subsection 4.6.2 briefly considers unwanted sexual solicitation. In Subsection 4.6.3, we discuss the purpose of paedophile activities. Finally, we consider a new form of peer bullying: cyber-bullying in Subsection 4.6.4.

4.6.1 Sourcing children and grooming

Traditionally, sex crimes against children have largely centered on abuse perpetrated by the child's family members or friends.[115] We observed how the Internet has expanded this circle of child abusers to people outside the family using two main attributes of the Internet: (1) anonymity and (2) interactivity.

A: Anonymity

For paedophiles, before the advent of the Internet, sourcing children was risky and required a well planned strategy. Paedophiles had to make physical visits to places frequented by children, such as children's playground, swimming pools, arcades, and school grounds. Paedophiles would also need to seek employment in jobs which provides the necessary contact with and exposure to children. The Internet has done away with these cumbersome measures. In their desire to contact children, paedophiles have taken advantage of the anonymity of the Internet to meet, entice, and exploit children and young people.

A number of investigations have shown a significant number of young people that have been contacted by strangers on-line. Research by Livingstone and Bober (2005) suggests that 31% of 9-to-19-year-olds who go on-line at least weekly, reported having received unwanted sexual comments via e-mail, chat, instant messenger or text message,[116] whilst researchers Peter, Valkenberg, and Schouten (2006) found age to be a discriminating factor, with 12-to-14-year-

115 Child sexual abuse, American Academy of Child & Adolescent Psychiatry, available at http://www.aacap.org/cs/root/facts_for_families/child_sexual_abuse. See also ECPAT's Child Pornography and Sexual Exploitation On-line, (2008) World Congress III against Sexual Exploitation of Children and Adolescents, Rio De Janeiro, Brazil, November, available at http://www.ecpat.net/worldcongressIII/PDF/Press_Release/ECPAT_WCIII_ENG.pdf

116 Livingstone, S and Bober, M., (2005) U.K. children go on-line: Final Report of Key Project Findings', 2005 London: LSE Research On-line; available at http://eprints.lse.ac.uk/399/

olds tending to talk to strangers on-line more than older teenagers.[117] In his research, Smith (2007) revealed that 32% of on-line teens have been contacted by someone with no connection to them or any of their friends. Nearly 23% say that they feel scared or uncomfortable as a result. Overall, 7% of the on-line teens experienced disturbing stranger contact.[118] Although evidence indicates the increasing potential dangers of meeting strangers off-line who they first met on-line, there is still a high proportion of young people who do so.[119] This suggests that there may be some lack of clarity about who is a friend, an acquaintance, or a stranger.[120]

B: Interactivity

In addition to anonymity of the Internet, paedophiles benefit greatly from interactive communication technologies such as Internet Relay Chats, on-line chat rooms and instant messaging. Chat rooms appeal to children and young people because of the chat room allows communication with many people of similar interest in real time. For the paedophile, chatting on.line enables him[121] to identify a naïve vulnerable child with the intention of developing a relationship with. Once the relationship develops to a point where the child is able to confide and trust the paedophile, the paedophile may then move to sexualise the contact. This is done by (1) persuading the child to perform sexual acts, or (2) having the child agree to be photographed participating in such activities.[122] Paedophiles are also becoming adept at using software applications available and this is seen in the increasing use of peer-to-peer (P2P) networks by paedophiles.[123]

4.6.2 Unwanted sexual solicitation

Studies have shown that youngsters who are on-line regularly whether via the personal computer or an Internet enabled mobile phone have received unwanted sexual solicitation. Researchers Mitchell, Wolak, and Finklehor (2007)

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117 Peter, J., Valkenberg, P., and Schouten, A., (2006) Characteristics and Motives of Adolescents talking with Strangers on the Internet, *CyberPsychology and Behaviour*, Vol. 9 (5) p.526-530; available at http://www.lieberton-line.com/doi/abs/10.1089/cpb.2006.9.526

118 Smith, A., (2007) Teens and On-line Stranger Contact, October 2007, available at www.pewinternet.org/PPF/r/223/report_display.asp

119 Byron, T., (2008) Safer Children in a Digital World: Byron Review, Children and New Technology, March 2008; available at http://www.dcsf.gov.uk/byronreview/pdfs/Final%20Report%20Bookmarked.pdf

120 Supra.

121 For brevity we use 'he' and 'his' when 'he' or 'she' and 'his' and 'her' are meant.

122 Carr, J., Child abuse, Child pornography and the Internet at www.nch.org.uk

123 P2P applications have become well known because of Napster. P2P are used to share files – music, video, software and other files but it is increasing used to traffick pornography. Other P2P applications using the same principle of file share and swapping include KaZaa, Morpheus and Gnutella.

defined unwanted sexual solicitation as requests (1) to engage in sexual activities or sexual talk or (2) to give personal sexual information that was unwanted by an adult.[124] The researchers suggest that the impact is no less severe than unwanted exposure to pornography (see Subsection 4.5.5).

4.6.3 Purpose of paedophiles' activities

This subsection discusses some of the reasons, why child pornography materials continue to fuel interest despite it being considered illegal, and is banned in most jurisdictions. The "demand" for these materials, will continue to provide a stimulus for individuals to use new technological means to source, and exploit children and young people. We seek to find the reasons by asking two questions. First, why do paedophiles seek out children and exploit them? Second, what is the purpose behind the paedophiles' activities? The answer to these two questions reads: paedophiles source and abuse children to (1) satisfy their own desire, and (2) for the purposes of grooming. Grooming in this sense is seen as a means to an end. It is regarded as an integral part of familiarising, and making the child a participant in child pornography. In addition, (3) paedophiles source and abuse children to add them to their collection of child pornographic materials.[125]

We have observed that a high number of cases progress from on-line contact to direct face-to-face sexual encounters. This is evidenced from Wolak, Finkelhor, and Mitchell's (2004) study which shows that 93% of face-to-face encounters entail illegal sexual contact between offenders and victims.[126] A great majority of victims (83%) who met offenders face-to-face willingly went elsewhere with them.[127] Wolak, Finkelhor, and Mitchell classified the victims who attended such face-to-face meetings with offenders as follows: (1) 40% were given illegal drugs or alcohol, (2) 23% were exposed to adult pornography, (3) 15% were exposed to child pornographic materials, and 21% were photographed in sexual poses.[128]

From the foregoing, we can appreciate how and why child pornographic materials (1) continue to fuel interest amongst paedophiles and (2) continue to be one of the great potential hazards of the mobile phone, and its applications. From the findings above, we may conclude that it is difficult for children

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124 Mitchell, K. J., (2007) Trends in Youth Reports of Sexual Solicitation, harassment and unwanted exposure to Pornography on the Internet, *Journal of Adolescent Health*, p. 116-126

125 Taylor, M. & Qualye, E., (2003) *Child pornography and the Internet*, Brunner-Routledge, Hove and New York, N.Y.

126 The survey was conducted 2,574 law enforcement agencies from which information from 1,723 cases were obtained. See Wolak.J., Finkelhor.D., and Mitchell K.J., (2004) Internet initiated sex crimes against minors: Implications for Prevention based on findings from a national study, *Journal of Adolescent Health*, Vol. 35, No. 5, p. 424.

127 Supra.

128 Supra.

and young people to avoid unwanted exposure and solicitation whether the encounter (a) is by exposure to adult materials, or (b) by being solicited on-line for a subsequent off-line encounter.

4.6.4 Cyber-bullying

Next to sourcing and grooming, a second element of contact is cyber-bullying. We have observed from our investigations (1) the disagreements in definitions of bullying and (2) the variety of definitions. The disagreements are well documented in the literature (Berger, 2007[129]; Stein, 2001[130]). Moreover the definitions may vary in many ways such as in (2a) type (Crick and Werner, 1998[131]), (2b) intentionality (Naylor et al., 2006[132]), (c) degree of seriousness (Rigby & Johnson 2006[133]), and (2d) reference period (Solberg and Olweus, 2006). However for the purposes of our study, we will adopt the definition put forward by Coloroso (2003).

Coloroso (2003) defines bullying as a conscious, willful and deliberate activity intended (1) to harm, (2) to induce fear through threat of further aggression, and (3) to create terror.[134] In simple terms, we regard bullying on the one hand as persistent unwelcome behaviour which includes teasing, deliberately ostracising someone to assaults, and abuse.[135] Cyber-bullying on the other hand, comprises "the use of information and communication technologies to support deliberate, repeated, and hostile behaviour by an individual or group, that is intended to harm others" (Belsey, 2008).[136]

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129 Berger, K.S., (2007) Update on bullying at school, 2007 Science Forgotten Review, Vol. 27 p. 90-126 in Langdon, S.W and Preble, W., (2007) The relationship between levels of perceived respect and bullying in 5th through 12 graders, *Adolescence*, Libra Publishers, Inc. p. 1-13, available at http://www.accessmylibrary.com/coms2/summary_0286-35987533_ITM?email=lwong@cityu.edu.hk&library=

130 Stein, N. Introduction, What a difference a discipline makes, 2001, Bullying research and future directions, in *Bullying behavior: Current issues, research and interventions*, R. A. Geffner, M. Loring, & C. Young (Eds.), New York: Haworth Maltreatment and Trauma Press, Haworth Press, Inc.

131 Crick, N.R.,and Werner, N. E., (1998) Response decision process in relational and overt aggression, Child Development, 69, p.1630-1639 in Langdon & Preble.

132 Naylor, P., Cowie, H., Cossin, F., de Bettencourt, R., and Lemme, F., (2006) Teachers' and pupils' definitions of bullying. *British Journal of Educational Psychology*, 76, p. 553-576 in Langdon & Preble.

133 Rigby, K., & Johnson, B., (2006) Expressed readiness of Australian schoolchildren to act as bystanders in support of children who are being bullied, *Educational Psychology*, 26, p. 425-440 in Langdon & Preble.

134 Colorosa, B., (2003) '*The bully, the bullied, and the bystander: From preschool to high school-how parents and teachers can break the cycle of violence*'. HarperCollins, New York, N.Y.

135 See http://www.besafeon-line.org/English/bullying_on-line.htm

136 Belsey,B., (2008) Cyberbullying, Always Aware, Always On, 2008 available at wwwcyber-bullying.ca

Traditionally, bullying was restricted to a place, for example, (1) at school, or (2) at one's workplace. However, our observations revealed that the 'net generation kids' are increasingly using the Internet and their mobile phones to antagonize, and intimidate others. Virtual bullying amongst young people has become more pervasive with the onset of new technologies. This is observed as more children and youngsters make the Internet chatroom, bulletin boards, and instant messaging a central part of their daily lives, it is clear that more children and youngsters will either use the new technologies as bullies or be victims as a result of the technologies. The mobile phone, for example, has taken bullying into a whole new dimension: one can now bully 'on the go', anytime, anywhere away from the watchful eyes of the authority. As far as children are concerned, this makes it difficult for schools and teachers (1) to intervene, (2) to monitor bullying cases, and (3) to provide immediate adequate counseling services to victims of bullying. For those bullied, home is no longer a safe refuge.[137]

On-line bullying (also known as on-line harassment) can take a number of forms: (1) by sending threatening or insulting electronic mails and text messages, (2) spreading comments by postings on websites,[138] and (3) the creation of a web page for the purposes of targeting and victimising the child victim. It is apparent that as more new technologically advanced devices are being developed, on-line bullying utilising these new functionalities will become commonplace. For example, the image or video of a bullying incident can be captured on the mobile camera, and circulated amongst members of the peer. It is possible to torment the victim of the bully further by posting the images and video onto a website specifically created for the purpose. We see this in a study conducted by researchers Ybarra, Diener, and Leaf (2007) where they reported that 32% of on-line teens have experience some form of on-line bullying/harassment. 15% of the teens have reported that private material (text or electronic mail about them) was forwarded to others without their permission, 13% have received threatening messages, 13% said someone had spread rumours about them on-line and 6% had embarassing photos of them posted on-line without permission.[139]Researchers Ybarra, Mitchell, Wolak, and Finklehor revealed that more than half the bullies or harassers are adolescents between the ages of 13 years old to 17 years old with 8% of

137 Supra.

138 In Louisiana, a 15 year old was arrested in January and accused of cyber-stalking for posting photos of a male student on a website. See Swatz. J., "Schoolyard bullies get nastier on-line", USA Today March 7, 2005: available at http://www.usatoday.com/tech/news/2005-03-06-cover-cyberbullies_x.htm. See also 'Cyber-bullying in Flanders' at www.viwta.be/files/executive%20overview%20cyberbullying.pdf

139 Ybarra, M.L., Diener-West, M., Leaf, P.J., (2007) Examining the Overlap in Internet harassment and School Bullying: Implications for School Intervention, *Journal of Adolescent Health*, Dec 41 6 Supp 1, p. 42-50.

them in the age of 10-to-12-year-olds.[140] The statistics reflecting the incidence of bullying and harassment in youngsters increase with age (1) as the technology becomes more accessible and (2) as they become increasingly aware of how technology can be abused. 30% of the youth targeted by on-line bullying reported that they feel extremely upset or afraid because of the incident.[141] Criminologist Patchin opines that cyber-bullying can have an even more detrimental effect on the victim than conventional playground bullying since "It's school-yard bullying taken to the next level". This is because for on-line bullying the number of people who can view something that is posted on-line is far greater than when compared to a bullying incident in real life. This is supported by psychologist Kowalski when he correctly opined that "It would be bad enough to be cyber-bullied by one kid and nobody else knew about it, but a video seen by hundreds or thousands of your peers could be devastating".[142]

Thus, we observe that cyber-bullying is not a passing concern or merely an incident being a new kid on the block. We have seen the tragic consequences that stem from such an activity. There is thus an urgent necessity for the community and the regulators to identify (1) the causes, (2) the impact, (3) the measures that should be adopted to reduce the incidence of cyber-bullying, and (4) the assistance to be provided to victims of cyber-bullying.

4.7 COMMERCIALISM

Commercialism is the third heading related to child protection concerns. The world cannot exist without commerce. However with commerce comes marketing. Both commerce and marketing are co-existent elements of market economy. As consumers, our senses are continuously influenced by all forms of media marketing.[143] This can be in the form of (1) visual moving images as in television commercials, (2) audio by way of radio advertisements, and (3) print media: newspapers, magazines, and periodicals. Generally, media marketing is tolerated since they do play a role in information sharing. However, there comes a point when they are regarded as excessive and referred to as junk mail.

140 Ybarra, M.L., Mitchell, K.J., Wolak, J., and Finklehor, D., (2006) Examining charcteristics and associated distress related to Internet harassment: Findings from the Second Youth Internet Safety Survey, *Pediatrics* 118A (4) p.1169-1177

141 Supra Ybarra, Mitchell, Wolak, and Finklehor n. 139.

142 Kowalski, R., Limber, S., and Agatson, P.W., (2008) *Cyberbullying: Bullying in the Digital Age*, Wiley-Blackwell.

143 Coteanu, C., (2007) Electronic agents, Liber Amicorum, H. Jaap van den Herik, October 2007.

In this section, commercialism is discussed under the headings, spam in Subsection 4.7.1, premium-rate services in Subsection 4.7.2, and younger generation as market target in Subsection 4.7.3.

4.7.1 Spam

As in the real world, junk mail has become a nuisance to users of the on-line world.[144] Spam can be equated to the junk mail (messages) that we traditionally received by (1) post, (2) telephone (tele-marketing), and (3) fax.[145] An insidious problem that only seem to proliferate, we note a 2008 research carried out by comScore M:Metrics, which showed that a quarter of all mobile phone users reported that they noticed an increase in unsolicited text (SMS) messages in 2007.[146] The problem was particularly acute in France, where mobile spam increased by more than 60% in the last 12 months. We anticipate that there will be a steady rise in text (SMS) spam in correspondence with the rise in mobile messaging. This is confirmed in one other survey by Cloudmark, Inc. in 2008 which reported that users of text and multimedia messaging are encountering a corresponding increase in the number of unsolicited messages sent to their mobile devices.[147] Data is revealing that mobile operators across Europe admit that up to 20 per cent of their users are affected by mobile (SMS) spam. This has led to two thirds of customers reportedly considering to leave their mobile network because of spam. We opine that the risk of mobile spam is significant. We see risk accurately expressed by Neil Cook, head of technology services with Cloudmark, Inc.

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144 79% of respondents agree that spam costs significant time and money. Pew Internet survey reported in 2006, that 63% Internet users find that spam has made using the e-mail annoying and unpleasant. This is done from 67% in 2005. See also Nucleus Research: Spam costing U.S. businesses $712 per employee per year, April 2007; available at http://nucleusresearch.com/news/press-releases/nucleus-research-spam-costing-us-businesses-712-per-employee-each-year/

145 Spamming is the activity of sending copies of the same message through the use of electronic mails and SMS. The messages sent were neither requested by the recipient nor did the recipient consent to receiving them. Spam can be sent to newsgroups or to individuals. Newsgroup spamming involves sending an identical copy of the message to every newsgroup. It is also noted that the trend of using short message service (SMS) as a tool of trade is on the increase. See Young, D., How Spammers Are Targeting Mobile Phones In Asia, Technology-Reuters, February 2 2004 at http://story.news.yahoo.com/news?tmpl=story&u=/nm/20040203/tc-nm/telecoms_spam_dc_1

146 Beaumont, B., (2008) Mobile phone spam on the rise, November 2008, The Telegraph, U.K.; available at http://www.telegraph.co.uk/scienceandtechnology/technology/technologynews/3514107/Mobile-phone-spam-on-rise-study-finds.html. The research looked at the way people use their mobile phones in the UK, France, Spain, Germany and Italy.

147 Reading, D., (2008) Cloudmark survey: Operators ignore mobile spam, Security Dark Reading, December 15 2008; available at http://www.darkreading.com/mobility/security/showArticle.jhtml?articleID=212500427

> "As the problem grows beyond simple spam attacks to identity theft, phishing and fraud, customer safety will decrease, exacerbating dissatisfaction and churn. Without providing additional messaging security now, mobile operators will unnecessarily put their customers and businesses at risk".

Thus we do not view mobile spam as a passing phenomenon; instead we view mobile spam as a greater concern than on-line spam since the mobile phone has become a ubiquitous necessity.

4.7.2 Premium-rate services

A second cause for concern in commercialism, and related to spam, is premium-rate services. A service is called premium rate if the receiver of the service has to pay an additional amount of money for receiving the service. From our study, we note the increasing abuse of these services specifically with regards to children and young people. Below, we describe briefly how premium-rate services will continue to be an area of increasing concern if left unchecked.

A number of observations about premium-rate services are made. We mention two observations, branched into two versions each. (1) Premium-rate services have become payment methods for information and for consumption of services.[148] Already their use has grown to encompass applications, such as (1a) SMS voting for popularity shows and TV reality shows, and (1b) obtaining visa information from foreign embassies.[149] Often the payment amount is neither sufficiently transparent nor made clear to mobile users. (2) Premium-rate services can involve indiscriminate marketing by marketers and is also known to include mobile phone fraud. We state two ways in which this can happen. (2a) Often, a mobile spam consists of a SMS request to call a number. Unbeknown to the caller, the number is a premium-rate number. This means that the caller will be charged at a higher rate. (2b) A second tactic to lure and direct the caller to the premium rate number is to ring the caller and to end the call before the caller has a chance to answer the call. This will lead the caller to call the number shown on his mobile screen and thus be charged a higher rate for the call.

Moreover, we observed there are three concerns that come with the indiscriminate use of these services by marketers towards children and young people. (1) Premium-rate services are particularly appealing to the children and young people because (1a) of the wide variety of mobile ring-tones and logo downloads and (1b) they are made to 'feel' that they are treated like

148 Alhert., C., Nash, V., and Marsden, C., (2005) Implications of the Mobile Internet for the Protection of Minors, Preliminary Report of Working Group on Mobile Phones and Child Protection of EICN (April 2005), available at http://www.network.foruminternet.org.

149 Supra.

adults by being invited (1bi) to participate in non-existent competitions offering attractive prizes or (1bii) to be subscribed to a service of "goal alerts".[150] (2) Children and young people may not be able to distinguish between what is advertising and what is not. The youngsters are therefore particularly vulnerable to deceptive advertising practices and fraud. (3) There is always a risk that with the privacy and portability of mobile phones, children and young people may be able to access inappropriate material using these premium-rate services. These concerns are so real that a website: www.phonebrain.org.uk, to educate and provide information on premium-rate services targeted at children has been established.[151]

4.7.3 Younger generations as target market

In this subsection, we will examine two specific aspects of commercialism in relation to the younger generations by investigating how organisations are using the mobile phone to target children and young people. We observe they do so (1) by taking advantage of the youngsters' yearning for individuality and (2) by targeting children and young people as consumers. There are two reasons for this: (a) the younger generation is seen as early adopters of new technological devices and new lifestyles, and (b) they seem to express strong consumption habits and social behaviour. The latter relates to (1) where (as we have discussed in section 4.2) youths are open to experimentation, adopting what they like, and sharing their interests with their peers.[152] Adopting new technology is also a reason for the youth to interact more effectively with their environment.[153]

Youth is more inclined to express their individuality. As far as mobile phones are concerned this is mostly seen in fashioning their handsets as an extension of oneself and one's individuality. The entertainment industry is quick to recognise the trend, and provides a market niche with a view to strengthening the younger generation's individual identity. We observe, for example, how ring tones are the simplest yet the most popular product for personal expression.[154] In the UK, mobile phone users reportedly spend more on mobile content such as ringtones and wallpaper than any other European nation, with an average annual outlay of around £5.90 per person on mobile games, music downloads, video clips, and other entertainment for their

150 http://www.phonepayplus.org.uk/consumers/phonebrain.asp
151 The website was established in December 2006. See supra.
152 Going to Market: The Mobile Youth Market, April 10, 2006 at http://www.phonepayplus.org.uk/consumers/phonebrain.asp
153 Supra.
154 Akeny, J., (2008) Entertainment, Games top smart phones content sales, Fierce Mobile Content, September, available at http://www.fiercemobilecontent.com/story/entertainment-games-top-smartphone-content-sales/2008-09-17

phones.[155] In such circumstances, we see 50% who had paid for a ring-tone, 23% for wallpaper, 14% paid for music, and 23% had bought a mobile game. It was reported that in 2006 alone, youth worldwide spent US$ 130 billion of their disposable income on mobile. This is expected to rise to US$ 350 billion by 2010.[156] The statistics (1) indicate that children and youngsters are aiming at a personal expression of identity and (2) show their willingness to pay for it.

In addition to spending for purpose of expressing their identity, we observe that children and young people are increasingly being commercialised. They are seen as valuable market in themselves and as driving forces of market consumption.

Below we provide two examples, viz. (1) product offers, and (2) location-based services (LBS).

We observe that it is becoming common for commercial promotions by large multinational corporations like Coca Cola to target the younger generation by their product. For example, there was the "Coke COOL Summer" SMS promotion in China in 2002. The promotion was a national SMS-based interactive contest offering a one year's free supply of Coke & new Siemens mobile phones as prizes everyday. During the contest, over 4 million messages were exchanged over a 34-day period with consumers. It was reported that there were close to 50,000 downloads of the Coke ad jingle recorded nationally and 19,500 downloads of McDonalds Mobile coupons were downloaded by consumers in Shanghai and Beijing.[157] Coke's China SMS campaign was a phenomenal success. However, what is more evident was that the campaign demonstrated the growing importance of the mobile phone, an icon of the youth, as a vital marketing tool in shaping the younger generation's consumption habits. This is evidenced further from the recent agreement between Burger King, Virgin Mobile USA, and Warner Music Group.[158]

The second issue that has become an increasing concern for children and young people are location-based services (LBS). Location based services are services developed by the network providers and their partners to provide personalised services and offer products which are specific to the location. For instance, LBS can advise users of current traffic locations thus providing users navigational support, help users find nearby eateries, and mobile-tracking services. While LBS services come in three basic forms, i.e., (1) where the request

155 Supra Beaumont, n. 146.

156 Today's youth spend 10% of their disposable income on mobile. However in Japan, Korea and the Middle East, the figure is as high as 15% to 20%. See http://xendolev.typepad.com/xellular/2007/04/special_a_sneak.html

157 Coke pulls off SMS campaign success in China, Cellular News: available at http://www.cellular-news.com/story/7806.php

158 BK Value Menu concept to the mobile platform, offering subscribers a selection of ringtones for the same $1 price tag attached to bacon cheeseburgers, onion rings and five-piece chicken tenders. See Burger King serves mobile food for thought, May 2008, available at http://www.fiercemobilecontent.com/story/burger-king-serves-mobile-food-for-thought/2008-05-02

for LBS comes from the mobile user, (2) where the mobile user receives news, information, and updates from the service provider, and (3) tracking services, it is the mobile tracking services that has raised concerns. This is because privacy and security issues are highlighted with LBS since the services constitutes sensitive personal data of the mobile user. Sensitive data in this respect can include the mobile user's phone number, the location details, and the profile. An SMS message, for example, may be sent to the mobile phone user when he is within such a location that a product or service is on offer or promotion. This may entice a young user to purchase the products or services.

As an aside from using LBS to further a commercial activity, we mention as another related concern of LBS to potential hazards the use of LBS to facilitate the location of children and young people by paedophiles, child molesters, and bullies. It is conceivable that the services can be abused for the perpetration of illegal and unlawful activities.

Thus, we observe how such large multi-national corporations are taking advantage of the new communications technology platform as a new marketing strategy and are establishing partnerships with the mobile-content sector to target the youngsters. While this may generally be seen as beneficial for consumerism as a whole, we opine that applications like LBS may add further risks to the already existing potential hazards to children and young people.

4.8 CHAPTER CONCLUSION

The foregoing sections provide an examination of the protection concerns for children and young people that arise as a result of the exposure of materials accessible via the use of mobile phones. These concerns are neither new nor are they created as a result of technological innovations. Rather, the concerns are "old" or are common concerns in the real world but they are transposed onto a new environment and setting. Having seen the technological development so far, we may conclude that it is worthwhile to examine the impact of the concerns raised and particularly to form the research on children and young people.

5 Mobile communication: its impact on children and young people

This chapter is devoted to the effect that the concerns as described in Chapter 1 and elaborated in Chapter 4 have on children and young people. In this chapter, we aim to answer RQ1. With this in mind, we pose two interesting sub-questions: (RQ1a) "Is the impact of the concerns on children and young people, greater in the on-line world than in the real world?" and (RQ1b) "Will the use of mobile phone increase the concerns?" In combination, these two questions will lead us to the answer of RQ1: *"What (sociological, cognitive, mental and psychological) impact does the rise in the use of mobile technology have on children and young people?"* We repeat here briefly the remark made in Chapter 1 that we mainly focus on the sociological impact. However, for a good understanding of this notion, we must also pay attention to the cognitive, mental, and psychological impact.

The purpose of this chapter, thus, will be to consider the two interesting sub-questions above more closely. We do this by investigating the impact (Section 5.1) that the use of mobile technology has on children and young people in the three key areas of concern, namely (a) content, (b) contact, and (c) commercial. We will address the areas of concern in the following manner. In Section 5.2, we deal with (1) content in terms of (1a) exposure to pornography, and in Section 5.3 with (1b) violence in mobile gaming; in Section 5.4 with (2) contact in terms of cyber-bullying and in Section 5.5 with (3) commercialism in terms of (3a) mobile spam and (3b) aggressive marketing strategy in Section 5.6. All in all, we identify three key areas, containing five elements that are important for answering RQ1. Chapter conclusions are made in Section 5.7. Finally, Section 5.8 contains an answer to RQ1.

5.1 Impact of the use of mobile technology

The impact comes from the three areas of concern raised in Chapter 4 viz. content, contact, and commercial. We briefly inform the reader of our focus. First, we have observed that the mobile content market, i.e., infotainment, games, and applications is a creatively vibrant sector and it has yet to reach its saturation point. What we see is (1a) a rapid and continuing development of new applications and (1b) a continuous content change that meets and challenges the insatiable demands of the consuming public. Second, we have seen and discussed that (1) mobile phones are no longer considered as optional

items fit for communication but rather a necessity for all-day contact and (2) mobile phones ownership is no longer restricted to people over 18. Contact is meant for all ages. Moreover, we have observed that the age and cost of ownership for mobile phones is progressively getting younger and cheaper. Third, it is the younger generation who is more adept at finding their way around the numerous commercial applications on the mobiles. The corresponding effect thus is the opening of new avenues for social interaction in which aggression and anti-social behaviour can occur and the possibility of victimisation of youngsters increased.

5.1.1 The lack of research and publications

Let us start by mentioning here two significant issues revealed during our investigations: lack of research and lack of publications. First, the lack of research available on the extent of the stated problem. For example, the European Commission (EC) has been engaged in a similar study and had to rely on research available with respect to Internet usage by children.[1] Second, there has been no recent published study results (at least that I am aware of) of the children and young people's exposure to *inter-alia* (a) mobile pornographic or sexually explicit content, (b) inappropriate activities such as unwanted solicitation, grooming, and cyber-bullying, and (c) violent content and its impact on this vulnerable sector.[2] However, we firmly believe that the mobile phone's characteristics of mobility, interactivity and portability can lead to an exacerbation of concerns and pose a greater threat to children and young people as a result of the lack of continuous open supervision and control. Given the limitations, research findings and experience are thus drawn from the *impact* that the materials and activities have on children and young people from being exposed to on-line communication via a fixed location such as the personal computer.[3] The main question here is: how do we measure the impact?

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1 Protecting Minors from Exposure to Harmful Content on the Mobile Phones, European Internet Co-Regulation Network, July 2005, available at http://www.foruminternet.org/specialistes/international/IMG/pdf/reco-mobile-20050728.pdf. See also ECPAT's Child Pornography and Sexual Exploitation On-line, (2008) World Congress III against Sexual Exploitation of Children and Adolescents, Rio De Janeiro, Brazil, November, available at http://www.ecpat.net/worldcongressIII/PDF/Press_Release/ECPAT_WCIII_ENG.pdf

2 Vincent, J., Examining Mobile Phone and ICT Use amongst Children aged 11-to-16, (2005), Digital World Research Centre, University of Surrey, available at http://www.surrey.ac.uk/dwrc/People/Vincent.htm. Vincent's recent study suggests there is little evidence that children make significant use of their mobile phones to access the Internet or to download commercial content. According to Vincent, this could be due to the cost charged by the network providers for the services.

3 Alhert., C., Nash, V., and Marsden, C., Implications of the Mobile Internet for the Protection of Minors, Preliminary Report of Working Group on Mobile Phones and Child Protection of EICN (April 2005), available at http://www.network.foruminternet.org.

5.1.2 *Three definitions*

In considering the impact of the hazards on children and young people, we have chosen to use the three definitions of harm as already suggested by McQuail and Windahl (1993) when considering the impact that the materials have on children and young people. In their opinion, harm is defined by (1) changed beliefs, (2) changed behaviour, and (3) emotional responses. The corresponding definitions are (1) changed beliefs are seen in attitudes affecting the individual (e.g., fear of crime) and affecting the society, (2) changed behaviour is focused on the propensity to harm others (e.g., aggressive behaviour damaging both the perpetrator and the victim) or self harm (e.g., anorexia, obesity, or suicide), and (3) emotional responses affecting both, the person's self and others; the responses include fear, depression, and hate.[4]

5.2 EXPOSURE TO PORNOGRAPHY

For the key area of content, we deal with two topics (seen as elements for RQ1), viz. exposure to pornography and violence in mobile gaming. The first topic is the subject of this subsection. While examining this topic, we attempt to find an answer to RQ1a which reads "Is the impact of the concerns on children and young people, greater in the on-line world than in the real world?" The consequences of pornography are discussed (Subsection 5.2.1). A comparison is made with old observations in Subsection 5.2.2 and in Subsection 5.2.3, we draw our conclusions for the on-line world.

We have in Chapter 4, raised and discussed two aspects of the incidence of exposure to pornography (see Subsection 4.5.5). We have further concluded that available research studies have revealed a proliferation and an increased consumption of adult materials, and an upward trend in the incidences of unwanted exposure to pornography and unwanted sexual solicitation (contact). We remark that while the concerns raised had existed prior to the advent of the Internet and new communication technology, studies by Wolak, Mitchell and Finkelhor (2007)[5], Mitchell (2007)[6], White, Gregory and Eith (2008)[7] and

4 McQuail, D. and Windahl, (1993) *Communication Models*, 2nd Edition, Longman, New York, N.Y. referred to in Hargrave A.M. and Livingstone S., *Harm and Offence in Media Content: A Review of the Evidence*, (2006), Intellect Books, Bristol, U.K.; available at http://www.lse.ac.uk/collections/media@lse/pdf/Harm%20and%20Offence,%20summary.pdf

5 Wolak, J., Mitchell, K., and Finklehor, D., (2007), Unwanted and Wanted Exposure to On-line Pornography in a National Sample of Youth Internet Users, *Pediatric*, Vol. 119, No. 2, p. 247-257.

6 Mitchell, K.J., (2007) Trends in Youth Reports of Sexual Solicitation, harassment and unwanted exposure to Pornography on the Internet, *Journal of Adolescent Health*, p. 116-126.

Byron (2008)[8] have revealed that the Internet (and new communication technology) may have exacerbated the concerns. For example, the Internet is used as a way of furthering contact crimes against children (sourcing and grooming for offline abuse, see Sub-section 4.6.1). It is also a means to access and share abusive images. However, the harms posed by new technologies are not restricted to the exploitative adult use of child pornography or the solicitation of children. The evidence has revealed that exposure to images depicting children engaging in sexually explicit activity can seriously damage the mental, physical, and psychological well being of the child.[9] Once these images are posted in a public domain such as the Internet, they can be easily accessed, re-distributed, and consumed by paedophiles globally.[10] Consequently, we do not see child exploitation as a one-off incident in the production of the material but rather as a continuing abuse of the child depicted.[11] Thus, we remark that the child does suffer (in more ways than one), whether the child is exposed to sexually explicit materials or is abused by a paedophile. We reiterate our position that while the concerns are not new and are not the creation of the Internet and new communication technologies, the evidence does indicate that the Internet and new communication technologies exacerbated the harms and made it much harder to protect children and young people.

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7 White, L., Gregory, C., and Eith, C., (2008) The Impact of Accidental Exposure to Cyberpornography on Sexual Offending Among Youth: A Case Study, Paper presented at the annual general meeting of the American Society of Criminology, Royal York. Toronto, November, 2008; available at http://www.allacademic.com/one/www/research/index.php?cmd=www_search&offset=0&limit=5&multi_search_search_mode=publication&multi_search_publication_fulltext_mod=fulltext&textfield_submit=true&search_module=multi_search&search=Search&search_field=title_idx&fulltext_search=%3Cb%3EThe+Impact+of+Accidental+Exposure+to+Cyberpornography+on+Sexual+Offending+Among+Youth%3A+A+Case+Study.%3C%2Fb%3E&PHPSESSID=fffaec3085fffe269730b1d91108f6fa

8 Byron, T., (2008) Safer Children in a Digital World, A Report on the Byron Review, March 2008, available at http://www.dcsf.gov.uk/byronreview/pdfs/Final%20Report%20Bookmarked.pdf

9 Taylor, M., & Quayle, E., (2005) *Abusive images of children*, in Cooper, S., Giardino, A., Vieth, V., & Kellogg, N. (Eds.) Medical and Legal Aspects of Child Sexual Exploitation, GW Medical Publishing, Saint Louis p.268-269 referred to in Violence Against Children in Cyberspace, ECPAT International, available at http://www.ecpat.net/temp/ecpatx/ecpatx/Newsite/PDF/ICT/Violence_in_Cyberspace_ENG.pdf

10 Carr, J., Child abuse, Child pornography and the Internet at www.nch.org.uk, see also T, Palmer., & Stacey, L., (2004) Just one click: Sexual abuse of children and young people through the Internet and mobile phone technology, February 2004, Barnado's, U.K. referred to in Violence Against Children in Cyberspace, ECPAT INTERNATIONAL, available at http://www.ecpat.net/temp/ecpatx/ecpatx/Newsite/PDF/ICT/Violence_in_Cyberspace_ENG.pdf

11 Supra Carr.

As we note the lack of investigation into the mental and psychological development of victims of child pornography,[12] we suggest that it might be possible to have an insight into some of its effects by evaluating the mental and psychological effects of victims of sexual abuse.[13] Thus, a child forced to make abuse imagery may suffer ill-effects that are common to sexual abuse and exploitation.[14] Amongst the effects and symptoms documented that a child victim of sexual abuse may experience are depression, low self-esteem, restlessness, hunger, exhaustion, concentration difficulties, aggressive behaviours, and repressed anger.[15] The child also feels guilty, experiences fear for the safety of themselves and of others.[16] Further, it is not uncommon for victims of sexual abuse to feel confused and to lose trust in people.[17] This might lead the child to inflict self-harm, through the misuse of substances.[18] Evidence has further indicated that in some cases, a child victim might suffer post-traumatic stress disorder.[19] With these wide ranging physical, emotional, and psychological effects, we believe that the impact on a child who is a victim of sexual abuse (and in this sense, we regard a victim of child pornography as a victim of sexual abuse) is not significantly dissimilar from on-line experiences since these incidents involve nothing less than physical, mental, and psychological abuse on a young and vulnerable individual. In fact, we believe that the effect is more profound and far-reaching. We say this since the technologies have contributed to greater harm caused in terms of the number of youngsters exposed and the severity of harm caused. At this point, we would like to state that the impact of concerns in the on-line world is at least as great as in the real world.

5.2.1 The consequences

As with victims of child pornography, little is known about the consequences for children of seeing sexually explicit content. Research with adults has indicated an effect on behaviour and attitudes. However, because of ethical issues with regards to conducting similar research on youngsters, the impact of such content on children and young people is not a well researched area.

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12 Taylor, M., and Quayle. E., (2003) *Child Pornography – An Internet Crime*, (2003), Brunner-Routledge, Hove and New York.

13 Supra. See also Carr n.10 and Childnet's policy documents at http://www.childnet-int.org/publications/policy.aspx

14 See Violence Against Children in Cyberspace, ECPAT International, available at http://www.ecpat.net/temp/ecpatx/ecpatx/Newsite/PDF/ICT/Violence_in_Cyberspace_ENG.pdf

15 Supra.

16 Supra.

17 Supra.

18 Supra.

19 Supra.

Thus, its impact will be harder to gauge.[20] Limited data shows that depictions of sexual behaviour may be emotionally disturbing to children who encounter them. They may be shocked, troubled or disturbed by premature or inadvertent encounters with sexually explicit material. Research that has been done suggests that children will typically report that they are distressed, disgusted, offended or bothered by sexually explicit material. The responses by children includes notions such as feeling "sick", "yuck", "disgusted", "repulsed", and "upset".

However, in the last five years there has been a growing body of evidence on the effects of sexually explicit materials on attitudes, values, and beliefs. For example, Peter and Valkenburg (2006) have found amongst male adolescents, the correlation between exposure to sexually explicit on-line content and attitudes towards sex specifically in relation to respect towards women.[21] There have also been consistent studies which showed the consumption and exposure to pornography increase male aggression towards women.[22] Indeed, there are many instances where children's disturbed, aggressive or sexualised behaviour can be traced back to the influence of exposure to pornography or extreme violence on the Internet viewed in the home with or without parental supervision.[23]

A further study by Peter and Valkenberg (2008) has also revealed a link between the use of sexually explicit on-line material and the development of adolescents' sexual self. For example, the researchers found that the exposure to sexually explicit on-line materials is associated with greater sexual uncertainty amongst adolescents in that the material "presents sexual beliefs and values that differ from the values and beliefs that adolescents are taught in families and schools".[24] They suggest that the exposure of sexually explicit on-line materials might lead to changes in adolescent sexuality with a shifting

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20 Byron Review: *Children and New Technology*, (2008); available at http://www.dcsf.gov.uk/byronreview/pdfs/Final%20Report%20Bookmarked.pdf

21 Peter, J and Valkenberg, P., (2006) Adolescents' exposure to sexually explicit material on the Internet, 2006, *Communication Research*, Vol. 33, No. 2, p. 178-204. See also Peter, J and Valkenberg, P., (2007) Adolescents' exposure to a sexualized media environment and notions of women as sex objects, *Sex Roles,* 56, p. 381-395.

22 Millwood Hargrave, A., and Livingstone, S., (2006) *Harm and Offence in Media Content: A Review of the Evidence,* Intellect, Bristol, U.K., See also Flood, M and Hamilton, C., Regulating Youth Access to Pornography, 2003 Discussion paper, The Australian Institute Ltd; available at http://www.tai.org.au/index.php?option=com_remository&Itemid=36&func=select&id=2&orderby=2&page=5

23 SupraTaylor and Qualye, n. 12 and Wolak.J., Finkelhor.D., and Mitchell K.J., (2004) Internet initiated sex crimes against minors: Implications for Prevention based on findings from a national study, *Journal of Adolescent Health*, Vol. 35, No. 5, p. 424.

24 Peter, J and Valkenberg, P., (2008) Adolescents' exposure to sexually explicit Internet material, sexual uncertainty, and attitudes towards uncommitted sexual exploration: Is there a link? *Communication Research,* 35, 569-601.

away from "sexual permissiveness with affection to attitudes towards uncommitted sexual exploration".[25]

To-date, studies have revealed that the accidental exposure to pornography (1) can lead children to consider sexual abuse as normal behaviour, and (2) can damage the child's psycho-sexual development.[26] For example, Mitchell, Finkelhor, and Wolak in their research studies on the exposure of sexually explicit materials on children and young people have found that 25% of children accidentally exposed were extremely upset. 20% had some apparent stress symptoms that they connected to the incident.[27] The stress symptoms included (1) feeling jumpy, (2) irritable, (3) having a hard time falling asleep, (4) losing interest in things you usually care about, (5) staying away from the Internet, and (6) thinking about what happened so much that you could not stop.[28] 21% also said that they were extremely embarrassed. The researchers reported further that only 2% of youth with unwanted exposure returned to the site of the exposure. Many of the youths failed to report the incident to persons in authority or mention the incident to friends and peer members, suggesting a feeling of guilt.[29] In fact, Mitchell, Finkelhor, and Wolak (2003) in one of their studies opined the following.

> "Such unwanted exposure, may affect attitudes about sex, attitudes about the Internet, and young people's sense of safety and community. It may also have effects by creating family conflicts and generational tensions, if, for example, some of the distress may be due to guilt feelings and a belief among children that the revelation of these incidents would prompt parents to curtail their Internet privileges".[30]

5.2.2 A comparison with old observations

In this respect, we note the following observations by researcher Brooks (1995), which- although we accept that it is dated – does express the significant effect pornography can have on children.

> "A child's sexual development occurs gradually through childhood. Exposure to pornography shapes children's sexual perspective by providing them information on sexual activity. However the type of information provided by pornography does not provide them with a normal sexual perspective. (…), pornography is instructional, (…) that information is not an accurate portrayal of human sexuality. (…). Unlike learning provided in an educational setting, exposure to pornography is

25 Supra.
26 Supra Taylor and Qualye, n. 12 and Supra Wolak, Finklehor, and Mitchell.
27 Mitchell, K., Finkelhor, D., and Wolak, J., (2003) The exposure of youth to unwanted sexual material on the Internet, March , *Youth & Society*, Vol. 34, No. 3.
28 Supra.
29 Supra.
30 Supra.

counterproductive to the goal of healthy and appropriate sexual development in children".[31]

As an aside, we mention a study by researchers Shim, Lee, and Bryant (2007), which suggests a number of factors that play a significant role on an individual's response to Internet pornography.[32] The factors include an individual's gender, a person's attitude towards sex[33] and the level of one's anti-social disposition.[34] Although the results of the survey suggests that personality characteristics such as sexual and anti-social dispositions are related and might influence an individual response to unsolicited Internet pornography, proved to be informative, we argue that the sample studied was not a sample of children and young people; hence, we posit that the relevance of the study is restricted. The study might be useful, however, in providing a clue to predicting a better way in investigating the impact of such materials on children and young people and the response of children and young people.

5.2.3 Conclusions for the on-line world

We remark that while the youngsters are exposed to explicit materials in the real world and can become victims of child pornography in the real world, the risk may be higher in the on-line world. And the harm caused more significant. We attribute this on the one hand, to the rapid development of new technologies and applications (for example, bulletin board systems, messaging, video uploading and downloading, social networking, peer-to-peer sharing in sourcing and grooming young victims for child pornography – see discussion in Section 4.5) and on the other hand, in the easy accessibility and availability on the Internet of inappropriate on-line materials. As far as our study of explicit materials and mobile phones is concerned, we state that since supervision and parental control is less on mobile phone usage, the corresponding risk to youngsters is significantly greater. So the exposure to inappropriate materials whether the exposure is (a) intentional, (b) solicited (c) unwanted or (d) accidental can, and does have a profound and long lasting if not, per-

31 Brooks, G., (1995) *The Centerfold Syndrome*, Jossey-Bass, San Francisco referred to in Stock, P., (2004) The harmful effects on children of exposure to pornography, Canadian Institute for Education on the Family.

32 The study used the Sexual Opinion Survey scale and the Self report Psychopathy scale (SRP-III) to measure college students' sexual and antisocial dispositions. See Sim, J.W., Lee, S.W., and Bryant, .P., (2007) Who responds to Unsolicited Sexually Explicit Materials on the Internet?: The Role of Individual Differences, *CyberPsychology & Behaviour*, Vol. 10, No. 1

33 Khoo, P.N., and Sern, C.Y., (2004) Not wanted in the inbox! Evaluations of unsolicited and harassing e-mail, *Psychology of Women Quarterly*, Vol. 28, p. 204-214 referred to in Sim, J.W., Lee, S.W., supra n. 26.

34 Bogert, A.F., Personality, individual differences, and preferences for the sexual media, *Archives of Sexual Behaviour*, 2001, Vol.30 p.29-53 referred to in Sim, Lee and Bryant, supra n.31.

manent scar on a child's overall cognitive, emotional, and attitudinal development. From the above, we are tending to conclude in answer to RQ1a, that the effect on children and the youth maybe greater in the on-line world than in the real world.

5.3 VIOLENCE IN MOBILE GAMING

The second topic with respect to content is violence in mobile gaming. An interesting observation is made by researcher Jansz of gaming. Jansz (2008) opined that playing games fulfills individuals' needs in that the investment in time and effort (pain) results in enjoyment (pleasure).[35] According to Jansz, an individual may have a need (a) for competition (to win), (b) for control (to be in charge), (c) for fantasy (escapism), (d) for social interaction (related to (a)), (e) for interest (to understand), (f) for excitement (related to (a) and (c)), and (f) for diversion (a pastime).[36] While the observation may be true, existing research points to the fact that exposure to violence from "traditional forms of technology" (television, movies, and computer-based gaming) may increase the risk of violent behavior.[37] The study by Hopf, Huber and Wei (2008), for example, showed that the more frequently children view horror and violent films during childhood and the more frequently they play violent electronic games at the beginning of adolescence, the higher will the children's violence and delinquency at the age of 14 years.[38] In so far as video games are concerned, many societal concerns of the violent nature of video games and its corresponding impact on children and young people have been established in on-line games accessed on the personal computer, or in games played over the games console. There is little research into the impact of these games on this vulnerable group if the games are played over the mobile platform. However, it is observed that the most persistent question concerning video games is the influence that the games might have on children and young people's aggressive and social misbehaviour. It can be inferred that the interactive nature of the video games would make such violent video games more potent than similar visual content on passive medium of television. Research findings on the impact of violent games tend to indicate an increased level

35 Jansz, J., Being seduced by digital entertainment games: risk or challenge? Gaming forum: Different perspective of gaming. Fair Play, Stockholm, November 2008, available at http://www.fair-play.se/pdf/GamingForum_Jansz.pdf

36 Supra.

37 See for example, Hopf, W.H., Huber, G.L., and WeiB, R.H., Media Violence and Youth Violence: A Two Year Longitudinal study, Journal of Media Psychology, Vol. 20, Issue 3, 2008, p. 79-96. and Olson, C., Kutner, L.A., Warner, D.E., Almeriji, J.B., Baer, L., Nicholi, A.M, and Beresin, E.V., Factors correlated With violent video games use by adolescent boys and girls, *Journal of Adolescent Health*, Vol. 14, Issue 1, 2007, p. 77-83.

38 Supra Hopf, Huber and WeiB.

of aggression, anti-social behaviour, and hostility amongst children and young people. These findings have been put forward by US psychologists Anderson, Gentle, and Buckley (2007) and Comstock and Scharrer (2007).[39] The psychologists measured the short term effects of aggressive behaviour by looking at (a) aggressive words used, (b) violent attitudes, and (c) punishment levels. The study conducted amongst children between the age of 9-to-12 revealed that children tend to use more aggressive words, have more violent attitudes and give higher punishment immediately afterwards compared to the group who played non-violent games.[40]

We also found it worthwhile to refer to a scientific study by Carnagey (2007). According to Carnagey (2007), aside from aggression, another consequence for the brain of viewing violent and unpleasant images as a result of gaming is de-sensitisation to images of violence.[41]

We remark that de-sensitisation can be one of the long-term effects of media violence. Research by Huesmann (2006), for example, has revealed the short-term and long-term effects of media violence on youngsters. Huesmann (2006) opine that short-term effects on the one hand, are due to (1) priming processes, (2) arousal processes, and (3) immediate mimicking of specific behaviours while long-term effects on the other hand, can be due to (1) observational learning of cognition and behaviour and (2) de-sensitisation process.[42] We find it useful here to repeat Huesmann's views on the short-term effect of mimicking and his long-term effect of observational learning and de-sensitisation process since these are some of the effects we see arising in children and young people's exposure to potential hazards. For the short-term effect of mimicry, Huesmann (2006) points to evidence that human and primate young have an innate tendency to mimic whomever they observe.[43] Observation of specific social

39 Anderson, C., Gentile, D., and Buckley, K., (2007) *Violent Video Game Effects on Children and Adolescents, Theory, Research and Public Policy*, Oxford University Press, Oxford and Comstock, G., and Scharrer, E., (2007) *Media and the American Child*, Academic Press in Hargrave and Livingstone, supra n.18.

40 Supra. The findings confirm earlier research findings by researchers Dill and Dill, and Bensley and Eenwyk. Dill. K.E., and Dill. J.C., (1998) Video game violence: A review of the empirical literature, Aggression and Violent Behaviour, 3(4), p.407- 428 and Bensley. L., & Van Eenwyk, (2001) Video games and real life aggression: Review of literature, Journal of Adolescent Health, Vol. 29, p. 244-257 referred to in Lin, C., & Atkin, D., (eds.) (2007) *Communication Technology and Social Change*, Lawrence Erlbaum & Associates, Inc, Publishers, Mahwah, New Jersey.

41 Carnagey, N., Anderson, C., and Bartholomew, B., (2007) Media Violence and social neuroscience, *Current directions in Psychological Science*, Vol. 16, p. 178-182.

42 Huesmann, L.R., (2007) The Impact of Electronic MediaViolence: Scientific Theory and Research, Vol. 41, Issue 6, *Journal of Adolescent Health,* p. 1 -11 and Bushman, B.J and Huesmann, L.R, (2006) Short-term and long-term effects of violent media on aggression in children and adults, (2006), *Archive Pediatric Adolescent Medicine,* No. 160, p. 342-352.

43 Meltzoff, A.N and Moore, M.K., (2000) Imitation of facial and manual gestures by human neonates: Resolving the debate about early imitation, in Muir, D., and Slater, A., *Infant Development: The Essential Readings,* Blackwell Publishers, Malden, Massachussets.

behaviours around them increases the likelihood of children behaving exactly that way. Huesmann suggests that as children observe violent behaviour, they are prone to mimic it.[44] In organisational learning, Huesmann (1998) states.

> "(…) that a person's social behavior is controlled to a great extent by the interplay of the current situation with individuals' emotional states, their schemas around the world, their normative beliefs about what is appropriate, and the scripts for social behavior that they have learned."[45]

Thus, Huesmann opines that children encode in memory social scripts to guide behavior through observations of family, peers, community, and mass media. Consequently, observed behaviours are imitated long after they are observed. Huesmann (2006) suggests that extensive observation of violence and anti-social behavior has been shown to bias children's world schemas toward attributing hostility to others' actions and as children mature further, normative beliefs about what social behavior is appropriate become crystallised.[46] For desensitisation, Huesmann (2006) continues by stating "Negative emotions experienced automatically by viewers in response to a particular violent or gory scene decline in intensity after many exposures."[47] We remark that with repeated exposures, the negative emotional response habituates, and the child becomes "desensitised". The child can then think about, and plan proactive aggressive acts without experiencing a negative effect.[48]

We state that existing studies tend to demonstrate the co-relation between violence and aggression. However, there is some evidence to suggest that violent video games may benefit children and families (Kutner and Olson (2008), Olson, Kutner and Warner (2008)).[49] According to Kutner and Olson, the benefit may stem from using violent video games as a safety outlet for fear and anger towards another person. For example, a player may play a violent game in order to have the power to do anything he wants to over another individual. The player may express his fear and anger by repeatedly shooting a character in the game, imagining the character is the person he hates. The player recognises that violent behavior and activity is only a fantasy,

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44 Supra Huesmann, n.42.

45 Huesmann, L.R., The role of social information processing and cognitive schema in acquisition and maintenance of habitual aggressive behavior in Geen, R. G., and Donnerstein, E., (1998) *Human Aggression: Theories, Research and Implications for Social Policy*, (eds.) Academic Press, New York, N.Y referred to in Huesmann supra n. 42.

46 Supra Huesmann, n.42.

47 Supra Huesmann, n. 42.

48 Supra Huesmann, n.42.

49 Kutner, L., and Olson, C., (2008) *Grand Theft Childhood: The Surprising Truth About Violent Video Games*, Simon and Schuster; Olson, C., Kutner, K., and Warner, D., (2008) The role of violent game content in adolescent development, *Journal of Adolescent Research*, Vol. 23, No. 1, p. 55-75.

a video game.[50] Thus, we remark that it is possible that the player is using the violent video games as a means of 'emotional escapism'.

As far as violence in mobile gaming is concerned, we may tentatively conclude while some there may be some benefit to violent video games, the general reaction is that the consumption of violent and sexually explicit content may be a contributory factor to the creation of a "sense of emotional detachment". We expect these concerns to be exacerbated when gaming migrates onto to the more portable, unsupervised mobile platform. This is because there is a real likelihood for children and young people to 'indulge' in obsessive gaming when they are left unsupervised. In our opinion, this expectation is the start of our answer to RQ1b.

5.4 THE POWER OF CYBER-BULLYING AND UNWANTED SEXUAL SOLICITATION

For the second key area, contact, we investigate more closely the devastating power of cyber-bullying and unwanted sexual solicitation. We start the Section with seven effects of cyber-bullying in Subsection 5.4.1. Subsection 5.4.2 deals with on-line bullying; in Subsection 5.4.3 with tragic incidents and suicide whilst in Sub-section 5.4.4 deals with unwanted sexual solicitation.

A culture of on-line harassment and cyber-bullying has emerged with the advent of new technologies. The phenomenon of "happy slapping", for example, can be said to be a direct result of the incorporation of the digital camera into telephones. Happy slapping is where an unsuspected stranger is deliberately assaulted while the assault is being filmed by an accomplice. While happy slapping started off as a comical act at the expense of the victim, the level of violence in recent incidents has increased.[51] The virtual facilitation of bullying via the use of new communication technologies intensifies the experience of abuse from the victim's perspective.[52] The analysis below provides a first step to answering RQ1b. For ease of reference, we repeat RQ1b which reads as follows: "Will the use of mobile phone increase the concerns?"

We remark that in addition to the mobile phone's mobility and portability, we have seen the reasons (in Section 4.2) why mobile phones are so highly valued by children and young people. However, the mobile phone has taken on-line harassment and bullying into a whole new dimension: one can now harass and bully 'on the go', anytime, anywhere away from the watchful eyes

50 Supra.

51 Teen girl detained over "happy slapping" death, March 2008, Reuters U.K., available at http://uk.reuters.com/article/idUKL1884088120080318

52 Mishna, F., (2007) The Current State of Cyber-bullying, Cyber Abuse Initiative, Factor Inwentash, Faculty of Social Work, University of Toronto, available at http://www.governmentevents.ca/ypo2008/presentations/633.pdf

of the authority (cyber-bullying is discussed in greater detail in Subsection 4.6.4).

The devastating consequences of bullying have been well documented in numerous studies. We mention here Salmon, Jones, and Smith (1998),[53] Einarsen and Mikkelsen (2003),[54] Rigby (2003),[55] Hoel and Beale (2006),[56] and Arsenault (2008).[57] The studies indicate that the effects of bullying are just as severe and damaging whether it occurs at the workplace, school, or on-line. However, there is increasing concern on the impact that cyber-bullying can have on the mental and psychological make-up of children and young people as the incidence of cyber-bullying becomes more pervasive and prevalent. This is the more so, since children and young people are at a critical development stage where traumatic experiences will more likely leave a psychological scar compared to an adult victim of bullying.

5.4.1 The seven effects of bullying

There is evidence to suggest that bullying can have seven effects on the victim. The seven effects can be partitioned into two groups. First, bullying creates (1) fear, (2) anxiety, (3) inferiority complex, and (4) isolation. Fear is a means by which all abusers and bullies dis-empower and control their victims.[58] Bullies seek to undermine an individual's self esteem as the attack is made on the individual's self confidence. A series of prolonged attacks on a victim's self esteem and confidence will result in the victim's loss of 'self worth'. Anxiety and stress, for instance, can be experienced by victims when (a) their humiliation is witnessed by a large audience in cyberspace or (b) as a result of mass phone texting among their peers.[59] The anxiety and stress can lead the victim to establishing a feeling of being inferior in relation to his peers

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53 Salmon. G., Jones. A., and Smith, D.M., (1998) Bullying in Schools: Self reported anxiety and self esteem in secondary school children, *British Medical Journal*, 317 (7163), p. 924-925.

54 Einarsen, S., Mikkelsen, E.G., (2003), Individual effects of exposure to bullying at work, in Einarsen, S., Hoel, H., Zapf, D., Cooper, C.L. (Eds.), *Bullying and Emotional Abuse in the Workplace*: International Perspectives in Research and Practice, Taylor & Francis, London, p. 127-144.

55 Rigby, K.., (2003) Consequences of Bullying in Schools, *The Canadian Journal of Psychiatry*, Vol. 48, p. 583 -590; available at www.cpa-apc.org/Publications/Archives/CJP/2003/october/editorialCredits.asp

56 Hoel, H., and Beale, D., (2006) Workplace Bullying, Psychological Perspectives and Industrial Relations: Towards a Contextualised and Interdisciplinary Approach, *British Journal of Industrial Relations*, Vol. 44, p. 231-262.

57 Bullying harms kids mental health: study, Reuters, February 2008; available at http://www.reuters.com/article/healthNews/idUSCOL67503120080206?feedType=RSS&feedName=healthNews; archives of *Pediatric and Adolescent Medicine*, February 2008.

58 Bullying and Fear in Bullying On-line Stress injury to health trauma, PTSD, available: http://www.bullyon-line.org/stress/fear.htm

59 See Violence Against Children in Cyberspace, ECPAT International, available at http;//www.ecpat.net/temp/ecpatx/ecpatx/Newsite/PDF/ICT/Violence_in_Cyberspace_ENG.pdf.

and his environment thus resulting in the isolation of the victim and an increase feeling of helplessness. Second, bullying also creates (5) anger, (6) depression, and (7) self inflicted injury.[60] Tremendous anger is normally experienced by victims of bullying. Questions such as "Why me?" are often left unanswered.[61] Quite often, we are never taught how to manage anger. Therefore, in circumstances of extreme anger, we tend to internalise the anger rather than to make the attempt to work out the emotion positively.[62] Victims can become severely depressed at being unable to control the situation. Additionally, child victims may experience (1) psychosomatic symptoms, (2) feel socially awkward, and (3) may have interpersonal difficulties at school.[63]

5.4.2 *On-line bullying*

For on-line bullying, the consequences may be more harmful than conventional bullying for the following four reasons: (1) the adherence to a code of silence, which states "What goes on on-line, stays on-line",[64] (2) as long as the child has a mobile phone, the bullying can continue into the child's bedroom, seen as the child's sanctuary, (3) unlike real-life bullying, victims of cyber-bullying may not know the identity of the bully, thereby creating (3a) increased frustration, (3b) fear, and (3c) feelings of helplessness.[65] (4) victims may tend to suffer in silence more since they may not tell their parents about the problem due to their fear of losing their mobile phones.[66] The experience can be devastating to children and young people. We provide two examples of the experience from the victim's perspective.

> *Example 1:*
> "You feel as if no one can help you," says Alyssa, 14, who waited two weeks before telling her mother she was being bullied by a boy who called her a 'loser' and 'stupid' in instant messages. "It's a lonely, scary feeling."[67]

60 Supra
61 Supra n. 52.
62 Bullying and Self harm in Bullying On-line Stress injury to health trauma, PTSD, available at http://www.bullyon-line.org/stress/selfharm.htm
63 Campbell, M.A., (2005) *Cyber-bullying: An old problem in new guise*, Australian Journal of Guidance and Counselling, No. 15, p. 68 -76
64 Willard, N., Executive Director of the Center for Safe and Responsible Internet Use in Swatz. J., Schoolyard bullies get nastier on-line, USA Today March 7, 2005: available at http://www.usatoday.com/tech/news/2005-03-06-cover-cyberbullies_x.htm
65 Muscari, M., (2008) How Can I Help Teens Who Are Victims of Cyber-bullying?, September, Medscape Today, available at http://www.medscape.com/viewarticle/579988
66 Supra.
67 Supra Swatz, n. 64.

Example 2:
Michael, 11 years old, did not use the computer for six months after his brush with an on-line bully. Michael recounts his experience in a chat room after he beat another player in an on-line game: "If I find you, I will beat you up." "It scared me, it was the first time, I was bullied."[68]

5.4.3 *Tragic incidents and suicide*

Consequently from our investigations, it is not unusual for victims of bullying to represent a high proportion of statistics who commit suicide. Statistics have indicated that people who attempt suicide are those who do it 'out of despair'; most of them seeing suicide as 'a logical step'.[69] We provide three examples of tragic incidents that was the result of cyber bullying.

1 Ryan Halligan was taunted for months. Classmates spread rumours via instant messaging that the 13-year-old boy was gay. A popular female classmate pretended to like him and chatted with him on-line only to copy their personal exchanges and share them with her friends. Unable to cope, Halligan, of Essex Junction, Vermont, killed himself.[70]
2 Gail Jones, a 15-year-old from Tranmere near Liverpool in the UK took her life after receiving, at one point, 20 silent calls on her cellphone every 30 minutes. Her father, Glyn, suspects that a final call in the middle of the night pushed her over the edge.[71]
3 One other tragic case which drew the attention of many was the suicide of a 15-year- old girl who was 'pushed over' the edge with her tormentors continuously hounding her over her mobile phone. The victim died of an overdose of painkillers with her mobile phone in her hands.[72]

While we accept that the above examples are anecdotal rather than derived from empirical research, it does indicate an urgent need to provide adequate legal rules to protect the children and young people from the devastating effects of cyber-bullying.

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68 Supra Swatz. n.64.
69 Supra Swatz, n.64.
70 Cyber-bullying: The Ryan Halligan story, available at http://www.inobtr.org/parents/cyber-bullying-the-ryan-halligan-story/
71 McKenna, P., (2007) The Rise of Cyber-bullying, July 2007, New Scientist Tech, available at http://www.newscientist.com/article/mg19526136.300-the-rise-of-cyberbullying.html?full=true
72 Stokes, P., (2001) Teenage victim of phone bullies died clutching mobile, The Telegraph, U.K. June 19, 2001, available at http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2000/08/19/ndani19.xml

5.4.4 *Unwanted sexual solicitation*

While there is no anecdotal or empirical evidence (at least that we are aware of) of unwanted sexual solicitation which has led to suicide and death, a study by researchers Mitchell, Wolak, and Finklehor (2007)) revealed that 31% of respondents were reportedly feeling very distressed as a result of being solicited sexually. We concur with researchers Mitchell, Ybarra, and Finklehor who suggest that youths who are targeted by unwanted sexual solicitations experience a myriad of concurrent psycho-social problems off-line. The psycho-social problems experienced include behaviourial problems such as (a) symptoms of depression, (b) substance and alcohol abuse, (c) delinquent behaviour, and (d) weapon carrying at school.[73]

5.5 MOBILE SPAM

The third key area is commerce or commercialism. In this subsection, we focus on the element of spam. In Subsections 4.7.2 and 4.7.3, we dealt with premium-rate services and the younger generation as target market. The aim of the current section is to contribute to answering RQ1 with respect to the mental overload and psychological impact that spam might have.

Mobile spam refers to unsolicited messages sent to mobile phones with the aims of (1) trying to sell a product of service, (2) asking the caller to return call to premium rate number, (3) sending messages that may be harmful or attempt to change the mobile settings, or (4) sending messages that are threatening or intrusive to privacy.[74] The concerns raised in Subsection 4.7.1 in relation to real-world spam are similar to those experienced by mobile phone users. This includes but is not restricted to (1) the increased cost incurred in managing and addressing consumers' complaints, and (2) significant loss of revenue if the mobile spam problem is not resolved by the mobile service operators. A *Pontis report* released in 2007 revealed that two thirds of the users in the UK are (a) annoyed at receiving spam and (b) hate receiving spam on their mobile phones.[75] 70% of these surveyed found the mobile marketing campaigns totally irrelevant to them. Only 11% has bought products as a result of receiving the offer from their mobile phone operators.[76] In addition to the

73 Mitchell, K.J., Ybarra, M., Finklehor, D., (2007) The relative importance of on-line victimsation in understanding depression, delinquency and substance use, *Child Maltreatment* 12 (4) p. 314-324

74 Brodt, T., and Hee, J., Insights into mobile spam, University of St. Gallen, Switzerland; available at www.mobilespam.org

75 The Pontis survey report was commissioned by GfK NOP amongst a sample of 752 mobile phone users.

76 Users Fed Up with Marketing Spam from Mobile Service Providers, available at http://www.cellular-news.com/story/25342.php

concerns of increase consumer complaints and revenue loss, the *Pontis report* indicated a current trend amongst mobile service providers, i.e., that the providers themselves are (1) allowing their platform to be used in indiscriminate marketing by advertising agencies, and (2) the mobile operators themselves are sending out the on-line promotional offers. These surveys indicate that despite the abhorrence of spam, spam will continue to proliferate. What the case, here we may conclude that, having seen the rise of spam and the figures of the messages, the mental overload and the psychological impact are considerable. These are elements which certainly will stimulate researchers for further research. Yet, this is beyond our scope.

5.6 Aggressive marketing strategy

The second point on the issue of commercialism is the aggressive marketing strategy (e.g., premium-rate services) as adopted by the entertainment industry, and as adopted by the content providers towards the younger generation. Thus, two concerns arise in consideration of the aggressive marketing strategy: (1) the increasing pressure on children and young people to consume and (2) the inappropriateness of the marketing strategies adopted, such as (2a) strategies that fail to respect children's privacy, and (2b) unsuitable marketing tactics. The aim of this section is, of course, directly related to answering RQ1.

5.6.1 Research performed so far

There has been research looking at on-line marketing and children. We mention here the research by researchers Fielder, Gardner, Nairn, and Pitt (2007) on on-line commercialism via the use of children websites.[77] Since mobile marketing and children is a relatively new area, Fielder et al.'s (2007) study will be used as our reference point. We attempt to examine to what extent the concerns are raised as a result of on-line commercialism when access takes place via a computer. The question will be analagously investigated as if access is made via the use of mobile phones.

77 Fielder, A., Gardner, W., Nairn, A., and Pitt, G., Fair Game? Assessing commercial activity on children's websites and on-line activity, (2007) available at http://www.childnet-int.org/downloads/fair-game-final.pdf. These sites included own brand toys sites such as Barbie, Disney, Cartoon Network, television related sites such as Nicklelodeon, games and virtual world, Habbo and Neopets, entertainment sites such as YouTube, social networking sites such as MySpace, and Bebo and messaging sites, MSN hotmail and yahoo.

5.6.2 *Four important findings*

Below we provide four important findings by the researchers Fielder, Gardner, Nairn, and Pitt (2007). They found that:

1 at least 25% of the advertisements are for products and services that are prohibited in the UK (this including gambling and dating advertisements);
2 more than half of third-party advertisements on the websites was in one way or another misrepresented. (an example of misrepresentation is that the websites claim to offer something for 'free', with no apparent strings attached);
3 where the offers are genuine, some of these offers were found inappropriate for children (these offers included free credits for gambling or free registration for dating services), and
4 some websites breach data protection laws.[78]

The findings provide a clear indication that insufficient regard is paid to the correctness and the legality of the marketing material. This suggests that the same, if not more serious flouting of the rules may exist when children and young people are targeted as marketing objects via their mobile phones. Indeed, the seriousness of misleading website advertisements provided the impetus for a major clampdown conducted across 27 member states.[79] Called "the EU Sweep", the clampdown was conducted by enforcement authorities in two phases. (1) the EU Sweep on Airline ticket selling websites and (2) EU sweep on mobile phone content services.[80] Our focus is on EU sweep on mobile phone content services. Indeed, initial investigations revealed that websites do take advantage of the children's lack of consumer experience and credulity. The sweep's results revealed a rate of 80% irregularities in comparison to that of sites oriented towards adults.[81] We remark that despite the technical limitations of smaller screens and reduced storage space on mobile phones as compared to the computer, the portability of the handheld devices together with the interactivity of the applications will make mobile phones, a unique and pervasive marketing medium. Adopting unethical marketing strategies when targeting the younger generation is known as youth commercialism via mobile phones or "mobile youth commercialism", and although it is in its embryonic stage, we believe the results of the EU sweep is the tip of the iceberg – it is certainly a concern that should not be overlooked or neglected.

78 This is normally done by encouraging the child to give away their friends' details whether or not in return for a free game or download. See supra.
79 EU crackdown on ring-tone scams, July 2008, available at http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/516
80 Supra.
81 Supra.

5.6.3 Consumption habits

Perhaps, what society is currently, most concerned with, is the consumption habits and spending choices of children and young people. Castells et al. (2007) have observed that the pursuit of children during their pre-teen and teen years is to have fun, and when they make spending choices, entertainment is the key.[82] This is reflected in their consumption habits where a high percentage of the youngsters spend a considerable amount downloading ring tones, music, screen savers, and video clips. The costs are unknown to these youngsters, since the cost implications of these services are rarely made known to them. As discussed earlier, the assertion of their individuality and independence resulting in them personalising their handsets is a major contributing factor. In addition to personalisation of their mobile phones, a number of other services are seen as generating keen interest. They are likely to be sectors for high revenue growth for the younger generation. Here we mention mobile gaming, mobile music, messaging and multimedia services, and gambling.

Whilst the entertainment industry and content providers are not to be faulted for taking advantage of the situation to satisfy market demands, the concerns are four-fold. We reformulate the four concerns into four questions.

1 To what extent is indiscriminate marketing affecting the consumption habits of children and young people?
2 What protection is afforded to this vulnerable sector with respect to, for example (a) the cost of downloads, (b) the quality of the content downloaded, and (c) the appropriateness or suitability of the content downloaded?
3 What measures are in place to ensure that children and young people are getting what they are paying for?
4 What protection is provided for children and young people with respect to LBS? how adequate is the protection against abuse?

In relation to these concerns, (1) further research must be conducted and (2) a comprehensible review of the existing regulations to address the four-fold concerns should be made. In our opinion, proactive measures should be undertaken by the regulators. They will be seen as a step in the right direction in the interest of the consuming public.

5.7 CHAPTER CONCLUSIONS

Below we would like to answer our two questions posed earlier, viz. (RQ1a) Is the impact of the concerns on children and young people, greater in the

82 Castells. M., M., Fernandez-Ardevol, M., LinChuan, J.Q., and Sey, A., (eds) (2007) *Mobile Communication and Society*, The MIT Press, Cambridge Massachusetts, London, England.

on-line world than in the real world?" and (RQ1b) "Will the use of mobile phone increase the concerns?". From the investigations of the foregoing sections, we may conclude that for RQ1a, the impact of the hazards on children and young people can pose a greater risk on-line than they do off-line. This is due to the (1a) proliferation of new communication devices and applications, (1b) the possible disregard of good marketing ethics, and (1c) the shroud of anonymity prevalent in the use of the new technologies. For RQ1b, it holds that the portability and the varied functionality of the applications will lead to an increased usage of mobile phones; this may lead to an increase in the concerns raised.

Below we partition the section on chapter conclusion into two subsections, viz. results of our investigations (Subsection 5.7.1) and our conclusions (Subsection 5.7.2).

5.7.1 Results of our investigations

In our investigations, we have seen a new generation of children and young people emerging as (a) a major social group and (b) an important consumer sector. This emerging group is easily adapting to fresh technological ideas and is embracing innovations in their daily lives. For this group, the mobile phone is more than a device for communication. It is an icon of the youth. Mobile ownership amongst the younger generation is seen as a symbol of responsibility that comes with the 'coming of age' of the child. The coming of age of this social group is also seen in the use of the mobile phone by children and young people in establishing their own (1) culture, (2) identity, (3) norms, and (4) language. The mobile phone provides the social group, the independence and privacy they crave.

Our investigations have also revealed that whilst the entertainment and mobile content industries strive to take a solid and commercially acceptable advantage of this largely untapped and important consumer segment, there is an increasing concern that the challenges presented by the growing mobile ownership amongst the young generation remains unresolved. One main concern is the impact of the exposure of inappropriate materials on children and young people. We observe that the exposure of illegal content and harmful materials does have a damaging and indeed, a traumatic (and in some instances) permanent impact on both the physical and mental development of children and young people who are relentlessly exposed to these unsolicited materials.[83] The solicitation, contact and abuse of the child off-line (upon contact first made on-line) can, and does have a severe effect on the victim's overall social development, for instance, in developing trust and interacting confidently with individuals. Furthermore, if the sexual abuse images of the

83 Supra Valkenberg and Schouten n. 24, Wolak, Finklehor and Mitchell, n.23 and Mitchell, Finklehor and Wolak n. 27.

child victim are disseminated in the public domain such as the Internet, the abuse of the child will be an on-going process since it will be difficult to recover and account for each and every image, and to delete all the images satisfactorily. Consequently, the child victim will feel guilty, humiliated, angry, and suicidal. We believe that the increase ownership of mobile phones amongst youngsters will significantly exacerbate the existing and yet unresolved concerns of fixed Internet.

5.7.2 Our conclusion

From our observations on the effects of the potential hazards, we may arrive at three conclusions. The first conclusion is in terms of our first concern, content. By the evidence given above, we may conclude that repeated exposure to pornography and violence has a detrimental effect on children and young people. The impact is illustrated in the youngsters mimicking the activities and the violence. For example, there are numerous reports (see ECPAT International Working Draft on Cyberspace as a Locale of Violence, (2005)[84] and Child Abuse, Child Pornography and The Internet, (Carr 2003[85])) of boys entering their early teens, who are reported to have raped young girls in mimicry of what they had witnessed in video games and pornographic materials. There is evidence has shown that repeated exposure to sexually explicit materials and violent gaming can contribute to a sense of de-sensitisation and 'emotional detachment'.[86] While the reports are anecdotal and not the result of empirical research studies, we believe that the anectodal evidence should not be dismissed since it is impossible and unethical to create similar conditions to derive the required results. What we have seen so far is that technology has created a culture whereby the youngsters are not able to distinguish between role playing and reality. This is especially true in obsessive on-line gaming amongst children and young people.

The de-sensitisation and emotional detachment is also an important factor in our second main concern, contact. We look at it in terms of cyber-bullying on the one hand and unwanted sexual solicitation, on the other hand. We remark that the anonymity of the technology lends courage to cyber-bullies by providing distance between the bullies and the victims so that there is no emotional interaction with the victim. With this emotional detachment, children and young people cannot 'see' the pain and the harm caused by their bullying, and thus may not understand the wrongfulness of their actions. Rather, they

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84 Working Draft on Cyberspace as a Locale of Violence, ECPAT International, available at www.ecpat.org.

85 Carr, J., Child Abuse, Child Pornography and the Internet, available at www.nch.org.uk.

86 Stande-Muller, F., Bliesener, T., and Luthman, S., (2008) Hostile and hardened? An experimental study on de-sensitisation to violence and suffering through playing video games, *Swiss Journal of Psychology*, Vol. 67, Issue 1, p. 41-50. Supra Carnagey n. 41 and Huesmann n. 42.

may put their bullying antics down to play-acting. From this observation, we may conclude that technology may have contributed to the negative cognitive development of youngsters. We may also draw similar conclusions on the children and young person's psychological development. This seen in unwanted sexual solicitation where a number of psycho-social problems and behaviourial problems are experienced by youngsters off-line who have been the victims of on-line sexual solicitation.

Our final concern is commercialism. While youngsters may be tech-savvy, they may not be astute consumers. Thus, premium-rate services and mobile spam is a growing area for concern. For example, we see the cost and destabilising effects of real world spam migrating over onto the mobile platform. We have also seen the use of aggressive and unethical marketing tactics used to lure and to induce youngsters to spend and consume. Further, with applications such as location-based services becoming commonplace, there are concerns that without adequate regulations, the application will be (1) indiscriminately used by marketers to push their products and services to the younger generation and (2) abused by paedophiles, child molesters, and bullies to locate and intimidate children and young people.

In Subsection 5.6.3, we had posed four continuing concerns that require further research and investigation. We remark that while we regard the recent EU sweep as a positive measure in sending a warning to unscrupulous traders, we believe that greater measures can be adopted to protect unsuspecting children and young people from mobile youth commercialism.

5.8 An answer to RQ1

Below we answer RQ1: *"What (sociological, cognitive, mental and psychological) impact does the rise in the use of mobile technology have on children and young people?"* From the findings of this chapter, we may conclude that mobile telephony and its applications do have a significant transforming impact on children and young people. We admit that the notion of 'significant' is only used by measuring the percentages of use, and not by providing statistics only. Yet, we believe that from the numbers (as given in percentages) and the number of publications cited, it is clear that we may agree with the notion 'significant'.

The transforming impact on children and young people has both positive and negative effects. As with all forms of media and technology, new and old, there are two sides of the same coin to mobile telephony, the good and the bad. The good side is represented by (1) convenience, (2) personal safety, and (3) social networking, whilst on the bad side, we are looking at the hazards that already exist on the fixed Internet and are now migrating to the mobile platform. We have seen how the personal and portable nature of the mobile

phone has contributed to its rapid diffusion and exacerbated societal concerns of potential hazards.

From our investigations, we may conclude that (1) the hazards are real and (2) the impact on children and young people is damaging. Here, we need to remain mindful that the beneficial effects of mobile technology cannot be effectively separated from its negative effects. Instead in managing those hazards, we need to ensure that the approach which the society adopts (1) neither stops the development of innovative technology, nor (2) have a disproportionate and unintended impact on the positive effects for children and young people. Both issues deserve to be investigated more closely. The research entails an evaluation of the various platforms on how mobile content can be delivered followed by some counter-measures and to what extent the existing laws offer adequate protection to this vulnerable group. These research topics are the tasks that result when investigating RQ2 which is addressed in Chapter 6.

6 Regulatory arrangements and the protection of children

This chapter introduces the second part of our thesis, i.e., its legal perspective by evaluating the existing regulatory framework. In this chapter, we address RQ2 which reads: *"To what extent does the regulatory framework of Hong Kong protect children and young people from harm and abuse? Or otherwise stated, how adequate is that protection?"* In relation to RQ2, we pose two sub-questions. (RQ2a): Are there regulatory arrangements in Hong Kong to manage the potential risks? and (RQ2b): Assuming regulatory arrangements exist in Hong Kong, what is the adequacy of the arrangements? The answers to (RQ2a) and (RQ2b) will lead us to answer RQ2.

In Chapter 4, we described three areas of concern, namely, content, contact, and commercialism. The current chapter starts with an evaluation of the type of regulatory arrangements in place to meet the challenges posed by the concerns. In evaluating regulatory arrangements, we opine that since the underlying objective of any regulatory arrangement is control, we commence by viewing *regulatory arrangements* from the point of control (see Section 6.1). In our view, there are three main control arrangements which can exist for mobile content delivery. They are (1) control within the *MNOs' portal*, (2) control via *contractual agreements*, and (3) control via *legislative initiatives*. In Section 6.2, we focus on the third control arrangement, the legislative initiatives. They address RQ2a. In fact, three Ordinances are discussed. The two main Ordinances which regulate content in Hong Kong are the Control of Obscene and Indecent Articles Ordinance (COIAO) (Section 6.3) and the Prevention of Child Pornography Ordinance (PCPO) (Section 6.4). The third Ordinance regulates commercialism and is called the Unsolicited Electronic Message Ordinance (UEMO). It is addressed in Section 6.9. They start addressing RQ2b. The COIAO is discussed in Section 6.3, thereafter we analyse its penalties and appeals together with a selected number of cases decided in Sections 6.4, 6.5, and 6.6 respectively. The Hong Kong Internet Service Providers Association (HKISPA) code of practice is described in Sections 6.7. It is followed by Section 6.8 which deals with the PCPO, its offences, defences, and the courts' application of the PCPO via judicial decisions. As stated above, the Unsolicited Electronic Messages Ordinance (UEMO) is dealt with briefly in Section 6.9. Here we see the procedure of searching for answers to RQ2b contained. Further, as part of contact (cyber-bullying) and commercialism, we deal briefly with the concerns of location-based services and the regulatory regime for privacy in Section 6.10. We summarise the period 2000 – 2009 in Section 6.11. Section 6.12

is devoted to unresolved matters. An answer to RQ2 is provided in Section 6.13.

6.1 POINT OF DEPARTURE IS CONTROL

Below we will examine existing regulatory arrangements from the perspective of control. That is to say, the extent and level of control that can be exercised over 'content, contact and commercialism' created and transmitted by MNOs, and consumed by mobile phone users. With this approach in mind, it is possible to view mobile content from a different perspective. Before we discuss the control arrangements that can be applied (see 6.1.2) we find it useful to provide first a brief description of Wong and Hiew's (2005) segmentation of mobile entertainment (Section 6.1.1).

6.1.1 Three segments of mobile entertainment

Wong and Hiew (2005) view content in respect of what the end user does with mobile technologies. They treat mobile content as a form of entertainment. Then they segment mobile entertainment[1] with the understanding that "increasing revenue from mobile entertainment services in the future depends ultimately on the successful development of an end user market rather than technical development" (Wong and Hiew, 2005).[2] Wong and Hiew continue their ideas by offering a segmentation of mobile entertainment as provided in Figure 6.1.

Segment 1	*Segment 2*	*Segment 3*
Watch a streaming video on mobile device Send MMS to a friend's mobile phone Download music to a mobile phone	Share downloaded video clip with friends via Bluetooth Transfer pictures and video files to a friend's mobile phone	Record video clip on mobile phone equipped with a camera Take pictures with mobile phone equipped with camera Listen to music files transferred from PC to MP3 player

Figure 6.1: Wong and Hiew – Segmentation of Mobile Entertainment.[3]

1 The main forms of mobile content categories in mobile entertainment are music, video, images, games, gambling and adult entertainment. See www.dcita.gov.au_data/assets/word_doc/15437/ADMA.doc

2 Wong, C.C and Hiew, P.L, (2005) Mobile Entertainment: Review and Redefine, Proceedings of the International Conference on Mobile Business (ICMB '05), IEEE Computer Society; available at http://csdl.computer.org/dl/proceedings/icmb/2005/2367/00/23670187.pdf referred to in Wilson supra n.21

3 Supra.

In the segmentation of Figure 6.1, Wong and Hiew describe segment 1 as an intersection between mobile commerce and mobile entertainment in which the consumption of content is exchanged for monetary value with the service providers.[4] Thus content in Wong and Hiew's segment 1 would include pre-existing content, for example, streaming video, downloaded music or images, produced by service providers.[5] The content would be available at a cost from the service providers. The content in segment 2 is exchanged between mobile phone users at no cost; so, there are in principle no commercial agreements. Although there is no interaction with service providers, and therefore no service provider's costs are involved, the cost of telecommunication networks still exists.[6] The content in segment 2 can include content offered by content providers. In such cases, commercial agreements may be involved. Content in segment 3 is content created by mobile phone users using the capabilities of the latest applications and functionalities of the device.[7] The consumption of mobile content in segment 3 does neither require wireless connection nor does it involve any transaction of economic value.[8] In consideration of content in all three segments, it may be assumed that content in all three segments are transmitted and exchanged via the use of telecommunication networks, that is using SMS and MMS.

6.1.2 Control exercised over mobile content

One of the objectives of using Wong and Hiew's (2005) segmentation of content as described above in relation to viewing content from the perspective of the mobile users is to assess the extent or level of control that the relevant parties have over the content. Control in this sense is seen in terms of (1) a walled garden, or (2) a contractual agreement.

For example, in segment 1 we can assume that downloaded content from the network or from the portals of the service providers in exchange of monetary consideration (usually regarded as premium-rate services) (a) originate from, and (b) are produced by the MNOs, CSPs, and MVNOs. We have previously provided in Subsection 2.4.1, content services that can be offered by a MNO. A further example of content services offered by One2Free is provided in Appendix B. So having a commercial agreement is a logical consequence.

Content in segment 2 might be sourced by mobile phone users externally, that is, beyond the network or the service providers' portal or (beyond a 'walled garden'). The external content may be provided by content providers

4 Supra.
5 Supra.
6 Supra.
7 Supra.
8 Supra.

and MVNOs offering their own branded content and services via websites or downloadable services established for this purpose. In such circumstances, it is possible for the billing of such services as agreed upon with the MNO and as arranged by them. Thus, a commercial relationship exists between the MNO, the content providers, and the MVNOs. In comparison to the content offered by the MNO over its own portal, the level of control is much reduced. As with the provision of billing services provided by the MNOs, we can assume that the revenue arrangements for the provision of content and the type of content provided are the subject of contractual (commercial) agreements between the parties. Consequently, it is possible to exercise control on content providers by way of an agreement to ensure that only suitably appropriate content is offered and made available to the subscribers of MNOs.

In comparison with the earlier two segments, that is where content is provided within a MNO's walled garden or where it is provided by CSPs or MVNOs pursuant to a commercial agreement, the level of control over the provision of content in segment 3 is seen to be the most difficult. The experience of the Internet with content provided over an open network has shown that although regulations are formulated and can be enforced, they have not proven to be reliably effective. The discourse on how best to regulate content over the Internet, and how to improve the regulation of mobile content via a more efficient regulatory framework is dealt with separately in Chapters 8, 9, and 10.

6.2 Two legislative initiatives

In this section, we examine control in the form of two legislative initiatives. It means that we start investigating RQ2a. For this purpose, a selected number of cases are provided as an illustration of the courts' position in the application of the legislative initiatives.

We remark that in addition to walled gardens and contractual agreements as forms of control, there are two legislative initiatives to regulate content. The two legislations are the Control of Obscene and Indecent Articles Ordinance (COIAO) (Cap. 390) and the Prevention of Child Pornography Ordinance (PCPO) (Cap. 579). We must emphasise that both COIAO and PCPO are general legislations in that both legislations were not enacted to deal specifically with the regulation of content in a mobile environment. The two legislations, however, do deal with publication and display of inappropriate materials. We mention the COIAO in particular: it regulates obscene and indecent content in all forms of media including print, films, video tapes, VCDs, DVDs, sound recordings, and the electronic publications. From the above, we may assume that regulatory arrangements exist in Hong Kong, albeit, not particularly for a mobile environment. Starting by this assumption, we focus on RQ2b in order to establish the adequacy of the arrangements. Sections 6.3

up to 6.6 describe the COIAO and its working in detail. Section 6.7 describes the HKISPA's code of practice. The PCPO deals specifically with the more objectionable aspect of such materials, being the publication of child pornography. It is described extensively in Section 6.8.

6.3 Regulatory framework under the Control of Obscene and Indecent Articles Ordinance (COIAO)

As mentioned above, the COIAO is one of the two main legislations in the Territory with regards to content regulation. Although the Ordinance applies to all types of media content, we note that the Territory's first attempt at reviewing the Ordinance via a public consultation exercise was specifically directed at the regulation of obscene and indecent materials transmitted over the Internet. The principal concerns of the consultation exercise included

1 the need to preserve free flow of information, and yet to safeguard an individual's rights and freedom of access to information and expression,
2 the protection of public morals and young people,
3 the impact of regulation on the development of information technology, and
4 the enforcement and effectiveness of any regulatory scheme.[9]

In the light of the prevailing concerns, the Territory decided not to introduce any form of regulatory controls on the Internet. However, the Attorney General's Chamber unequivocally confirmed the Ordinance's application in its present form to the control of obscene and indecent materials published electronically.[10]

We use a public consultation exercise initiated in 2008 for a comprehensive review of the COIAO. The review focuses on a number of main issues. We mention six of the issues here as (1) definitions, (2) adjudication system, (3) classification system, (4) new forms of media, (5) enforcement, and (6) publicity and public education. Of particular relevance to our study are (1) definitions, (3) classification system, and (4) roles of three government departments in relation to new media forms. In Subsection 6.3.1, we will outline the scope of COIAO, then we pay attention to the issues (1), (3) and (4) in the Subsections 6.3.2 to 6.3.4.

9 See Paper for LegCo Panel on Broadcasting, Culture and Sport and LegCo Panel on Information Policy, Regulation of Obscene and Indecent Materials Transmitted Through the Internet; available at www.cedb.gov.hk/ctb/eng/paper/doc/english.doc

10 Supra.

6.3.1 Scope of COIAO

The COIAO restricts the publication of all obscene and indecent 'articles'. An 'article' is defined as anything consisting of or containing material to be read or looked at or both read and looked at, sound recording, film, video tape, disc, and any articles published by electronic means.[11] From the definition provided, it is clear that the Ordinance does neither apply to films regulated by the Film Censorship Ordinance (FCO) (Cap. 392) nor does the Ordinance apply to television broadcasts which are governed by the Television Ordinance (Cap. 52).

6.3.2 Definitions

In this Subsection, we will deal with the terms 'obscene' and 'indecent' as provided for in the COIAO. We opine that an accurate and comprehensive definition of the term is necessary since a definition will greatly assist mobile users, members of the community, interested stakeholders, and the government in content regulation at their respective levels.

Under the COIAO, an article is regarded as *obscene* if by reason of its obscenity it is not suitable to be published to anyone.[12] An *indecent* article under COIAO is an article which is not suitable to be published to a juvenile.[13] "Obscene" and "indecent" is defined under the Ordinance as to include "violence, depravity and repulsiveness".[14] The definition proves to be overly simplistic. However, we do observe that the definition of "obscenity" and "indecency" is one of the issues under review.[15] Two suggestions have been made in relation to the definition:

1 to enhance the clarity of the definition by providing a more concrete explanation for the terms "obscene" and "indecent", and
2 to provide clearer and additional guidelines for determination by the Obscene Article Tribunal (OAT).[16]

However, we posit that the terms "obscene" and "indecent" are not terms that can be defined comprehensively since perceptions of obscenity and indecency are relative and are subjective. The perception of what might be regarded as obscene and indecent to one individual might not seem obscene and indecent to another. The perception is also known to change (a) from time to time, (b)

11 Section 2 COIAO.
12 Section 2(2) COIAO.
13 Supra.
14 Supra n. 12.
15 Review of the Control of Obscene and Indecent Articles Ordinance, available at http://www.coiao.gov.hk/en/welcome.htm
16 Chapter 1 Definition, Consultation documents, 2008; available at http://www.coiao.gov.hk/pdf/eng_booklet/E01_Definitions.pdf

from locality to locality, and (c) from culture to culture. Notwithstanding, the Tribunal relies on the lay adjudicators who are appointed from members of the community.[17] The adjudicators' views are intended to reflect the standards of morality accepted by reasonable members of the community. Under the existing regulations, the OAT in determining whether the article is obscene or indecent, must have regard to the following guidelines which *inter-alia* includes (1) the dominant effect of the article as a whole, (2) the class or age of the likely recipients, (3) the location at which the matter is displayed, and (4) whether the article has an honest purpose.[18] As mentioned, the guidelines are under review and we expect clearer guidelines to be determined and further incorporated.

6.3.3 Classification categories

Under the existing COIAO, an article must be classified under one of three categories: (1) Class I – neither obscene nor indecent, (2) Class II – Indecent, or (3) Class III – Obscene. The determination of whether an article is obscene or indecent lies in the hands of an OAT.[19] The articles are submitted voluntarily to the OAT for classification. Figure 6.2 illustrates the three categories.

Class I	Class I articles may be published without restriction
Class II (indecent)	Class II articles must not be published or sold to persons under the age of 18. Publication of Class II articles must comply with specified statutory requirements, including sealing such articles in wrappers and the display of a warning notice.
Class III (obscene)	Class III articles are prohibited from publication

Figure 6.2: Classification categories under COIAO.

It is observed that the principles underlying the classifications are three-fold: (1) to ensure that materials which seriously offend against community standards be banned, (2) to ensure a restriction on access to materials which might harm children, and (3) to provide warnings to consumers as to the contents of the material.

Our investigations reveal that the Film Classification Ordinance (FCO) also maintains a three-tier classification system. An illustration of the classifications under the COIAO and the FCO is provided in Figure 6.3.

17 The Tribunal is a judicial body comprising of a presiding magistrate and 2 or more members of the public drawn from the community to serve as lay adjudicators. There are currently 125 adjudicators.

18 Section 10(1) (a) –(e) COIAO.

19 Sections 6 and 11 COIAO. The latter section provides for the Tribunal's powers.

COIAO		FCO	
Class I	Neither obscene nor indecent	I	Suitable for all ages
Class II	Indecent	IIA IIB	Not suitable for children Not suitable for young persons and children
Class III	Obscene	III	Persons aged 18 and above only

Figure 6.3: Classification categories under COIAO (on the left) and FCO (on the right).

One of the main concerns raised in the review of the COIAO is the confusion caused by the classification systems under the COIAO and the FCO.[20] Indeed it has been suggested that there should be consistency in the standards applied and an improvement be made to the nomenclature in the systems. This has led to a proposal that the nomenclature under the COIAO be changed to "Unrestricted" (for Class I, "Neither obscene nor indecent"), "Restricted to 18 and above" (for Class II "Indecent"), and "Banned" (for Class III "Obscene").[21]

6.3.4 Roles of three government departments

In so far as the regulation of obscene and indecent materials on the Internet are concerned, we observe the roles played by three government departments, i.e., (1) the Television, Entertainment and Licensing Authority (TELA), (2) the Police, and (3) the Customs and Excise Department (C&ED) in the enforcement of the COIAO.

Figure 6.4 shows the responsibilities of the three government departments in relation to materials on the Internet.

Departments	*Responsibilities*
TELA	deals with indecent articles transmitted on the Internet through monitoring sites and following up on complaints.
Police	deals with obscene materials transmitted on the Internet.
C&ED	deals with obscene and indecent materials at physical entry points

Figure 6.4: Responsibilities of TELA, the Police, and C&ED.

From our investigations, we provide two observations of TELA.

First, although TELA adopts a complaint-driven approach, they do not prosecute publishers of indecent articles on the Internet. Instead, TELA will ask the webmaster or the host of the site (a) to add the required statutory

20 Chapter 3, Classification systems, Consultation documents, 2008,; available at http://www.coiao.gov.hk/pdf/eng_booklet/E03_ClassificationSystem.pdf

21 Supra.

warning, or (b) to remove, or (c) to block access to the indecent articles. If the complaint relates to obscene articles, the matter is referred to the Police for enforcement.

Second, TELA's existing enforcement priorities are on the traditional entertainment and print media such as VCDs, DVDs, local newspapers, and magazines. They do so by conducting inspections and monitoring publication in sale and retail outlets.

We opine that given (1) the wide spectrum of their current responsibilities, and (2) the nature of electronic publication, it is impracticable for TELA to monitor adequately and enforce effectively the publication and distribution of obscene and indecent articles under the COIAO.[22] Thus, we propose that it would be prudent if the roles of the TELA, the Police, and the C&ED be reviewed to ensure effective monitoring and regulation under the COIAO.

6.4 PENALTIES UNDER THE COIAO

In this Section, we will briefly describe the penalties that can be imposed and the defences that can be raised under the COIAO.

A: Penalties

A contravention of the COIAO is an offence punishable by imprisonment. For example, the (a) publication, (b) possession, and (c) importation of obscene materials for the purpose of publication is an offence resulting in a fine of HKD 1,000,000 (approximately 91,000 euros) and a term of imprisonment of 3 years upon conviction.[23] Publishing an indecent material to a juvenile (a person under the age of 18 years) will attract a fine of HKD 400,000 (37,000 euros) and a term of imprisonment of 12 months for the first conviction. The fine increases to HKD 800,000 (74,000 euros) with a 12-month term of imprisonment for second or subsequent convictions.[24]

So, the question reads what amounts to publication under the Ordinance? The Ordinance provides that a person publishes an article if he "whether or not for gain, distributes, circulates, sells, hires, gives or lends the article to the public or a section of the public".[25] The section is wide enough to cover material that is provided (1) by MNOs within their walled garden, (2) by content providers and subscribed to by mobile users, and (3) by user-generated content of mobile phone users.

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22 See for example, the briefing by the Secretary for Commerce, Industry and Technology, available at http://www.legco.gov.hk/yr03-04/english/fc/fc/minutes/citb-ct-min-e.pdf

23 Section 21(1) COIAO.

24 Section 22(1) COIAO.

25 Section 4(a) COIAO.

B: Defences

A defence under the Ordinance for the defendant is to prove that (1) he had reasonable grounds for believing that the article was not obscene, or (2) that under the charge of publishing the article to a juvenile that he had inspected the identity card, or passport of the juvenile and had reasonably believed that the person was not a juvenile. The latter defence, however, seems to be appropriate for MNOs, MVNOs, and CSPs since they are in a better position to verify and enforce the age restriction requirement on users when entering into an agreement with the subscriber. By way of note, a general defence of public good that 'such publication or display was in the interests of science, literature, art or learning or any other object of general concern' is also available.[26] However, it does not seem that this defence will be applicable in the context of our study of inappropriate material and its potential harm to children and young people.

6.5 APPEALS UNDER THE COIAO

Although the Ordinance does provide for the Court of First Instance to hear appeals against the decision of the Tribunal, numerous cases have indicated the court's reluctance in interfering with the Tribunal's decisions.[27] As an example, we mention two cases: (1) *East Touch Publishers Ltd v TELA*[28] *and (2) Three Weekly Ltd v Commissioner for TELA.*

In *East Touch*, the plaintiffs were appealing against a decision by the Tribunal that an article in a magazine entitled "Festival of Pornography" was indecent. The plaintiffs argued that the article which depicted photographs of sexual organs reproduced in plastic or chocolate was not intended to offend or be taken seriously. However, the appeal was dismissed. The court reiterated that the Obscene Appeals Tribunal was the sole arbiter of whether an article is indecent.[29] The court's position on non interference was confirmed in *Three Weekly Ltd v Commissioner for TELA.*[30]

In *Three Weekly*, the plaintiffs were appealing against the decision of the Tribunal which had ruled that the nude photograph of an actress which accompanied the report in the magazine was indecent. The photograph was lifted from the cover of an album of nude photographs of the actress. The plaintiffs argued that "the photograph rather than being indecent was of artistic value because it came from the actress's book". The Court of First Instance

26 Section 28 COIAO.
27 Section 30 COIAO.
28 1996 HKLY 41.
29 Eastweek loses indecency appeal, October 28 2004, South China Morning Post supra.
30 HCAL 42/2003 and HCAL 43/2003 available at http://legalref.judiciary.gov.hk/lrs/common/ju/ju_body.jsp?DIS=53036&AH=&QS=&FN=&currpage=

in confirming the jurisdiction of the Tribunal in deciding the standard of morality acceptable to society held that

> " (…) there comes a point where a depiction in an article of cruelty, torture, violence, crime, horror, disability, sexuality or indecent or offensive language or behaviour would offend the standards of morality, decency or propriety generally accepted by reasonable members of the community to such an extent that it renders the article indecent or even obscene."

Thus the court held that the level of nudity in the photograph surpassed the level of morality accepted by reasonable members of the community. In evaluating the courts' decisions, we may conclude that the successful raising of defences under the Ordinance will not easily surpass the Tribunal as 'guardians of society's morality'.

In our evaluation of the COIAO, we also rely on a survey conducted in 2006 by the TELA.[31] The objective of the survey known as the Public Opinion Survey on the Control of Obscene and Indecent Articles Ordinance was two-fold:

1 to gauge and to analyze the prevailing standards of morality, decency, and propriety acceptable to the community, and
2 to collect public views on
(2a) the OAT, its compositions, and its function,
(2b) the penalties under COIAO, and
(2c) the standards of classification under COIAO.[32]
Three findings were reported in the survey.
3 Although the majority (88.3%) of those surveyed considered the composition of the OAT as appropriate, 11.5% expressed concerns about three potential differences arising from the OAT's member.[33] The differences are

31 The survey, Public Opinion of the Operation of the COIAO, was conducted as part of the government's public consultation for the review of the COIAO, available at http://www.tela.gov.hk/english/doc/whatsnew/2006COIAOPOS(ES).pdf

32 The survey was carried out using a door to door household survey of 1,800 HK residents and a focus group from a cross section of the general public. Each focus group consists of at least 40 members and discussions were held to collect the group opinions on the standard of article classification under COIAO. The household survey and the focus group were asked to consider a number of articles which should be prohibited from publication to the public and the standard of classification (Class I, II, or III) the participants consider best fit the articles. The articles for the participants consideration included amongst others photographs of female performing oral sex for a male, photographs of a male sex organ in turgid state, a column introducing pornographic websites and VCD, sarcastic sex cartoon, comics depicting necrophilism, and literal description of sexual intercourse.

33 Supra n. 31.

(1a) the differences in moral standards (67.2%),
(1b) lack of relevant knowledge of correct classification, (60.6%), and
(1c) cultural differences (60.5%).[34]

4 Of those respondents who were aware of the penalties imposed on breach of he COIAO, 43.8% considered the penalties appropriate and 46.9% considered the penalties as inappropriate. As to those who had considered the penalties inappropriate, it was reported that 97.6%, i.e., 45.6% of those aware of the penalties opined that the penalties were too lenient.[35]

5 Four in five respondents (81.3%) found the assessment criteria applied by the OAT to determine the classification of articles based on the standards of morality, decency, and propriety that were acceptable by the general members of the community appropriate.[36] This is evidenced from a comparison made between (a) the respondents' views on the moral standards with (b) the prevailing standards of the OAT classifications. In the comparison made, 14 out of 22 articles already classified by the OAT were sorted out in the same class as the OAT by the respondents.[37] However, we observed that the respondents' standards were stricter than the OAT's standards of classifications when comparing obscene articles to articles with indecent elements.

What was significant in the 2006 survey, were the responses gathered in relation to respondents' views on moral standards. It was observed that there were apparent differences by gender and by education attainment. For instance, female respondents were found to have a higher tendency to apply stricter standards than the male. We mention four reasons for the higher standards that are relevant to children and young people: (1) "to protect the under-aged" (83.3% of the respondents),[38] (2) "the articles may induce under-aged persons to commit crime" (73.2%), (3) "the articles are against moral standards of the community"(71.6%), and (4) "the articles are sickening and disturbing" (67.5%).[39]

We remark that despite the conclusions and recommendations made to the Secretary for Commerce, Industry and Technology upon conclusion of the survey, the government decided not to pursue the recommendations that would involve significant amendments to the COIAO. A fresh public consultation is under way to review the COIAO.[40] Many people are hopeful that at the end of the consultation, the government will take heed of the proposals

34 Supra n. 31.
35 Supra n. 31.
36 Supra n. 31.
37 Supra n. 31.
38 Supra n. 31.
39 Supra n. 31.
40 Consultation documentation for a Review of the COIAO 2009, available at http://www.coiao.gov.hk/en/consultation_doc.htm

and recommendations so as to ensure a viable and effective regulatory framework is in place for content regulation.

6.6 JUDICIAL DECISIONS

In our study of the COIAO, we opine that no evaluation of an Ordinance is complete without an assessment of the decisions made in the application of the Ordinance. Hence, we provide in Figure 6.5, a sample of cases decided by the courts with a view to evaluate the application of the COIAO. In Figure 6.5, HKSAR means the Hong Kong Special Administrative Region. Figure 6.5 reflect cases which dealt mainly with the publication and/or possession of obscene articles that were decided before the enactment of the Prevention of Child Pornography Ordinance (PCPO) in 2003. Upon enactment of the PCPO, the creation, reproduction, publication, possession, and advertisement of child pornographic materials are regulated under the PCPO.

Year	*Case details*	*Facts*	*Result*
2002	*HKSAR v Chung Yee-yung*[41]	Defendant charged with publishing an obscene material when he uploaded child pornographic movies on to a New Jersey website.	Convicted and sentenced to 14 months imprisonment
2001	*HKSAR v Choy Wing Wah*[42]	Defendant was charged with two charges of possessing 1,724 pornographic VCDs for purposes of publishing obscene articles and possession of 1,608 pornographic VCDs.	Pleaded guilty and sentenced to 18 months imprisonment
2001	*HKSAR v Poon Wing Yan*[43]	Defendant charged with three counts of publishing obscene articles and one count of possessing obscene articles. The materials were child pornographic materials involving adults and children between the ages of 6 and 12 years and were compiled by the defendant from the Internet. The defendant made HKD 400 selling them to customers who had responded to his advertisements on the Internet.	Pleaded guilty and sentenced to 18 months imprisonment

41 NKCC5804/2002.
42 [2001] 3 HKLRD 381.
43 [2001] HKEC 1289 The term of imprisonment was 6 months imprisonment on each charge. The magistrate on making the sentences concurrent imposed a total sentence of 18 months imprisonment.

Year	*Case details*	*Facts*	*Result*
2001	*HKSAR v Yiu Chi Yan*[44]	The defendant was charged for the possession of obscene articles for the purpose of publication which he had intended to use for exchange over the Internet. The articles included videos and photos contained in a CD-ROM format showing explicit sexual acts between adults and children as young as 6 years old. The defendant pleaded guilty. The court held that any substantial quantity of material involving children even in the possession of the first offender would attract a starting point of 30 months imprisonment.[45]	
1998	*HKSAR v Hiroyuki Takeda*[46]	The defendant kept on his website for the purposes of publication, 43 obscene pictures depicting children in sexual activities, group sex, homosexual activities, and other sexual activities.	The defendant pleaded guilty and was sentenced to 21 months of imprisonment.

Figure 6.5: Sample cases decided under the COIAO.

In evaluating the cases we provide four observations.

1 The COIAO does neither provide any guidelines nor lay down factors which the court should take into consideration when meting out a penalty. Instead the matter is left to the sole discretion of the courts. Thus, we surmise that in the enforcement of the COIAO, there is a serious lack of consistency in the imposition of penalties. This, we opine, is not a favourable position since inconsistency breeds uncertainty and lack of confidence in the system.

2 Although the cases do not deal with the display and distribution of obscene materials over the mobile phone, they do deal with the public display and distribution of the material over the Internet and thus reflect the courts' repulsiveness to such displays, publication, and distribution. Accordingly, the courts have seen it fit to penalise the offenders with nothing less than custodial sentences.

3 The penalties imposed have been below the statutory maximum under the COIAO. We do not view this state of affairs as encouraging since (a) it does not send the right message to the community and (b) it indicates a lack of seriousness on the part of the enforcer (the courts) in dealing with the offences committed. While we note there are proposals to increase the

44 [2001] 3 HKLRD 521.

45 Deputy Judge McMahon citing with approval, *HKSAR v Hiroyuki Takeda* [1998] 1 HKLRD 931.

46 [1998] 1 HKLRD 931.

maximum financial penalty and term of imprisonment,[47] we opine that what is important is not the level of penalty to be imposed but the actual imposition or enforcement of it by the courts. Further, while we accept that the imposition of a maximum term of imprisonment may not be regarded as necessary, we argue that what is important is to send the right message to society and to the offenders that a breach of the COIAO will be dealt with severely.

4 No cases have yet come before the courts in respect of displays or publication of obscene or indecent materials over the mobile phone.

Nonetheless, we believe that the above cases can and do provide a useful guide as to the courts' position in such matters. We may thus conclude that it is likely that the courts' position will be more inclined towards a more severe custodial penalty if the personal nature of the mobile phone, its connectivity, portability, mobility, and its functionalities are abused by individuals who display, publish, and distribute obscene and indecent materials.

In the following section, we will evaluate the HKISPA's code of practice.

6.7 CODE OF PRACTICE

Following a public and industry consultation, the government worked with the Hong Kong Internet Service Providers Association (HKISPA) to develop a Code of Practice. The Code of Practice, known as the Practice Statement on Regulation of Obscene and Indecent Materials' objective was to address the community's concern on the transmission of obscene and indecent materials over the Internet.

Essentially, the Code requires its members to take reasonable steps to prevent users of their services from posting or transmitting by using the Internet, materials likely to be classified as obscene.[48] The steps include

1 advising subscribers that access to the Internet by persons under 18 years be supervised by those over 18 years,
2 informing users that material classified as indecent should not be made available to persons under 18 years, and
3 advising content providers and distributors to have an on-screen warning notice (on the web page) if the material put up by them is classified as indecent under the Ordinance.[49]

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47 Chapter 6, Penalty, Consultation document, 2008; available at http://www.coiao.gov.hk/pdf/eng_booklet/E06_Penalty.pdf

48 See Practice Statement on Regulation of Obscene and Indecent Materials, Appendix 5, Consultation Paper on 2000 Review on the Control of Obscene and Indecent Articles Ordinance, available at www.cedb.gov.hk/ctb/eng/paper/doc/cwhkt.doc; also available at www.hkispa.org.hk/Obscene_e.htm

49 Supra.

The Code stipulates that a warning notice should clearly indicate the offensive nature of the material and that the material should not be *inter-alia* distributed, shown, played to a person under the age of 18 years. Members are regarded as having taken reasonable steps, if their users have been informed they shall not place obscene materials on the Internet.[50] However, if a member becomes aware that such material has been posted on a website or other content database under the control of the member, the member must promptly block access to the website, or to the content database, and inform users that in addition to a breach of the subscriber's agreement, the user's conduct constitutes an offence under the Ordinance.[51] The user's account can be cancelled if the user ignores or repeatedly posts such materials despite of being notified to refrain from doing so.[52] The user's conduct may also be reported to HKISPA, and to the Police for further action. Similar requirements apply if the member is aware that the users have placed indecent materials without the appropriate warning notice.[53] In addition, the Code provides for a complaint handling procedure. HKISPA is established to handle promptly and conscientiously complaints made by members of the public, TELA, and the police.[54] Members who failed to comply or adhere to the Code of Practice are subjected to disciplinary action.[55]

We opine that while the guide does provide useful guidance, it is wholly lacking in effectiveness. For example, although the Code provides for disciplinary action against members who breach the Code, we remark that there is neither information as to the manner and form the disciplinary action will take nor is there a proper and transparent record kept of the disciplinary actions taken.[56] The latter can also act as a reference point for information and assistance to members and the users.

6.8 The Prevention of Child Pornography Ordinance (PCPO)

In addition to the COIAO and in view of the increasing availability of child pornographic materials on the Internet, the Prevention of Child Pornography

50 Supra n. 48.
51 Supra n. 48.
52 Supra n. 48.
53 Supra n. 48.
54 Supra n. 48.
55 Supra n. 48.
56 See Item 26 and 27 of the Code of Practice, Practice Statement Regulation of Obscene and Indecent Material, Revision 1.1, September 2003, available at http://www.hkispa.org.hk/Obscene_e.htm

Ordinance (PCPO) (Cap 579) was enacted on 19 December 2003.[57] Under the PCPO, section 2 defines child pornography as *inter-alia* "a pornographic depiction of a child (…) made electronically or otherwise and includes data stored in a form that is capable of conversion into a photograph, film, image or pornographic depiction; a child being a person under the age of 16".[58] The section further provides that a pornographic depiction is a visual depiction of a person engaging in explicit sexual conduct or a visual depiction of the genitals or anal region of a person or the breast of a female person in a sexual manner or context.[59] In line with the advances in technology which enables the facilitation of computer-generated images using software such as Photo Shop Editor, resulting in pseudo photographs and images, we note that the Ordinance does provide and deal with the creation of such images which does neither use nor involve real children. Such images are covered in PCPO's definition of child pornography in "*a photograph whether made or generated by electronic or other means, whether or not it is a depiction of a real person (…)*".[60] Thus, an image that has been graphically manipulated, and created with the aid of computer software that depicts a person as being under 16 being engaged in explicit sexual activity or depicts the genitals or sexual organs of a child in a sexual manner will be treated as child pornography in Hong Kong.

Having considered the COIAO and the HKISPA's code of practice, we examine the offences under the PCPO in Subsection 6.8.1, defences under Subsection 6.8.2, and decisions under the PCPO in Subsection 6.8.3.

6.8.1 Offences under the PCPO

In section 3 of the PCPO, four offences are enumerated relating to child pornography, namely (1) the creation, reproduction, import, and export of child pornographic materials, (2) the publication, (3) the possession, and (4) the advertising of child pornography.

1 The section effectively criminalises the creation, reproduction, import, and export of all child pornographic materials whether created electronically or in its traditional form.
2 Further, any person who publishes child pornographic materials by distributing and circulating the materials can be convicted under the Ordinance.[61] In respect of these offences, it is irrelevant whether a reward

57 Article 34 of the Optional Protocol to Convention of the Rights of the Child requires state parties to adopt measures to prevent the inducement or coercion of a child to engage in any unlawful activity and the exploitative use of children in prostitution or other unlawful sexual practices. See www.unicef.org/crc/crc/html
58 Section 2(1)(a) & (b) PCPO.
59 Supra.
60 Section 2(1)PCPO.
61 Section 3(2) and (4)PCPO, section 2(2)(a) PCPO.

is received for the publication, the provision catches the mutual exchange of child pornographic materials.

3 Possession is arguably the most important offence under the PCPO. Prior to the enactment of the PCPO, there was no offence of possession. Section 3(3) provides that any person who has in his possession any child pornography (…) is liable upon conviction on an indictment to a fine of HKD 1 million (approximately 91,000 euros) and a term of imprisonment of 5 years or a fine of HKD 500,000 (45,500 euros) and a term of imprisonment of 2 years on summary conviction. However in so far as our study is concerned, we state that in addition to possession, the offences of creation, reproduction, publication, and distribution are equally important since the objective of these offences is to prohibit the creation and distribution of child pornographic materials as illegal materials. Thus, any individual found creating, reproducing, possessing, publishing and distributing child pornographic images using the functionalities and applications of the mobile phone will, in our opinion, be criminally liable under the Ordinance.

4 Here we do not pay attention to the advertising of child pornography.

6.8.2 Defences

We note a number of defences are provided for under the PCPO. For example, it is a defence if one can prove the child pornography has (1) artistic merit, or (2) that it is for educational, scientific, or medical purpose, or (3) that it serves the public good, or (4) if one can establish inter-alia that he has not seen the child pornographic material, or (5) did not know it to be child pornography.[62]

Further, a defendant who is charged with possession can also raise the defence that "he had not asked for any child pornography and he had endeavoured to destroy it a reasonable time after it came into his possession".[63] For the offence, the prosecution need only prove physical possession of the pornographic images. It is unnecessary to prove defendant's knowledge. Once physical possession of pornographic images is proven, the burden shifts to the defendant to establish the defences under section 4(3)(c)-(e) on the balance of probabilities.[64] In such circumstances, the defendant is taken to have established the defence if the prosecution is unable to prove, beyond reasonable doubt the defence to the contrary.[65]

62 Section 4(2)(a)-(d) PCPO.

63 Section 4(3)(d) PCPO. In this section 'endeavoured' can be taken to mean 'took all reasonable steps'.

64 Section 4(4) & (5)(b) PCPO.

65 *HKSAR v Tsang Kwok Hin*, HCMA 327/2005.

6.8.3 Decisions under the PCPO

As with the COIAO, a number of decisions have been made by the courts under the PCPO. Although admittedly, the decisions were mostly based on the possession and consumption of pornographic materials obtained over the Internet, the decisions are useful in providing a guide as to the courts' position in the enforcement of the Ordinance.

Figure 6.6 provides a selection of cases reflecting the courts' application of the PCPO.

Year	*Case details*	*Result*
2007	*Secretary For Justice v Man Kwong Choi*[66]	Convicted with 6 months imprisonment; suspended for 2 years and a fine of HK $20,000. (1,800 euros)
2007	*Secretary For Justice v Ho Yan Kiu*[67]	Convicted: 200 hours of community service.
2006	*Secretary For Justice v Chung Yui Hung*[68]	Convicted with 4 months imprisonment.
2004	*HKSAR v Chow Wai Yung*[69]	Convicted with a term of imprisonment of 4 months; suspended for 2 years and a fine of HK $20,000. (1,800 euros)
2004	*HKSAR v Ng Dean Yew*[70]	Convicted: imposition of a fine of HK $50,000 (4,500 euros)
2004	*HKSAR v Surasak Calvin Netraprajaq*	Convicted: imposition of a Community service order 200 hours
2004	*HKSAR v Cheng Siu Ming*[71]	Convicted: imprisonment of 2 months; suspended for 3 years, and a fine of HK $50,000 (4,500 euros)
2004	*HKSAR v Sam Ma Chi Sum*[72]	Convicted: imprisonment term of 4 months.

66 CAAR 8/2007.
67 CAAR 9/2007.
68 CAAR 11/2006.
69 ESCC2038/2004.
70 ESCC2041/2004.
71 KCCC6089/2004.
72 KTCC 3357/2004.

Year	*Case details*	*Result*
2004	*HKSAR v Peter Colin Bower*[73]	Convicted: imprisonment term of 3 months; suspended for 3 years and a fine of HK $10,000 (900 euros)
2004	*HKSAR v Ho Man Kit*[74]	Convicted: imprisonment 2 months; suspended for 3 years and a fine of HK $15,000 (1,350 euros)
2004	*HKSAR v Chan Sai Kit*[75]	Convicted: probation order for 18 months

Figure 6.6: A sample of cases decided under the PCPO.

From the cases listed, we observe that the sentences meted out by the courts were generally non-custodial. Similar non-custodial sentences were also imposed in a number of other cases.[76] It seems that it was only in *HKSAR v Sam Ma Chi Sum* that a custodial sentence was imposed. The defendant in *Sam Ma Chi Sum* was found in possession of 3,476 erotic pictures and erotic posing images on his computer. He was sentenced to 4 months imprisonment after he admitted to the court that

1 he had subscribed to child pornography websites with his credits cards,
2 he knew that the images portrayed naked bodies of children of less than 10 years old, and
3 he had a continued interest in children when he backed up the images in his old computer and had them transferred to his new computer.[77]

Aside from *Sam Ma Chi Sum*, we note the 2006 case of *Secretary for Justice v Chung Yui Hung* in which the defendant was imprisoned for 4 months. However, in *Chung Yui Hung* we posit that a custodial sentence was imposed on the defendant as the defendant was also convicted of unlawful sexual intercourse with a girl under the age of thirteen contrary to section 123 of the Crimes Ordinance. In such circumstances, no greater weight should be placed on *Chung Yui Hung* than is necessary.

Our investigations have revealed that sentencing under the PCPO have varied in terms of (1) the types of sentencing imposed, i.e., whether custodial or non-custodial, and (2) the severity of the sentencing. The inconsistency was

73 KCCC6766/2004.
74 KTCC3357/2004.
75 TMCC3473/2004.
76 *HKSAR v Lin Chun-kwok, Addie* KCCC6077/2004, NKcc3510/2004, *HKSAR v Chan Yiu Kei* STCC663/2004, *HKSAR v Tsang Kai Chung* TMCC367/2004, *HKSAR v Ho Wing Lun* TWCC1451/2004, *HKSAR v Tsang Kwok Hin* TWCC1482/2004.
77 KTCC 3357/04.

acknowledged and accepted by the courts and provided the impetus for a review of sentencing in 2008.

In 2008, the Court of Appeal upon review of the sentences meted out in relation to *Secretary for Justice v Man Kwong Choi* and *Secretary for Justice v Ho Yan Kiu*, made three main recommendations:[78]

1 possession of child pornography should attract an immediate custodial sentence;
2 although the Court of Appeal found the UK's Oliver 5 level classification useful,[79] the court will adopt a 4 level classification instead;
3 the courts should take into account both mitigating and aggravating factors in determining sentencing.

We provide in Figure 6.7, a table which lays down (1) the 4 levels of classification, (2) the suggested sentences to be imposed, (3) the mitigating factors and (4) aggravating factors that should be taken into account.

Level 1	Images depicting erotic posing with no sexual activity	Less serious category. Where 20 or less images, CSO, P or F is appropriate. Where a number of images are greater, a custodial sentence of 1 to 6 months is appropriate. (CSO – community service order, P – probation and F – fine)	Aggravating factors include: (1) Previous record of similar offences against children
Level 2	Sexual activity between children or solo masturbation	Depending on the number of images, an immediate custodial sentence of 9 months is appropriate.	(2) Age of children in images depicted.

78 *Secretary For Justice v Man Kwong Choi* and *Secretary For Justice v Ho Yan Kiu*, 2008 5 HKLRD 519.

79 The Oliver classification was laid down in *R v Mark David Oliver and Ors* (2003) 2 Cr App R 64 when the provided 5 levels of classification of pornographic depiction of children. The 5 levels are (1) images depicting erotic posing with no sexual activity; (2) sexual activity between children or solo masturbation by a child; (3) non-penetrative sexual activity between adults and children; (4) penetrative sexual activity between children and adults; and (5) sadism or bestiality.

Level 3	Non-penetrative sexual activity between adults and children	Depending on the number of images, sentences between 6 and 9 months is appropriate.	(3) The purpose of the images, e.g., whether it was intended to be distributed for commercial or non commercial gain or for further publication.
Level 4	Penetrative sexual activity between children and adults, or sadism or bestiality	Most serious category. Custodial sentences will range from 12 months to 36 months even for possession of a few images.	(4) Number of images is a relevant factor.

Figure 6.7: Four levels of classification for determining sentencing under the PCPO together with aggravating factors.

While we accept that the PCPO bears no direct relevance to content regulation per se, we opine that the consideration of the PCPO should not be ignored since

1 understanding the Ordinance's implications, and its enforcement in terms of the penalties imposed is relevant when dealing with illegal material that may be created or accessed, possessed, and stored on the mobile phone for the mobile user's consumption, dissemination, and further publication;
2 The Ordinance is complementary to the COIAO, and provides an additional regulatory measure for content regulation in the Territory.

6.9 The Unsolicited Electronic Messages Ordinance (UEMO)

In this section, we deal with spam or unsolicited electronic messages as one of the three mentioned areas of concern, i.e., commercialism.

The practice of sending unsolicited electronic commercial messages via the computer and the mobile phone is on the rise in Hong Kong. As with electronic mail marketing, using the mobile phone as a marketing medium is increasing. We have seen in Chapter 4, how the mobile phone is being targeted as a new marketing platform. The electronic messages are often seen as intrusive and an invasion of the mobile phone users' privacy. This is more keenly felt, with the mobile phone regarded as a more personal device; it is seen as an extension of a user's individuality rather than a personal computer.

Prior to the recent enactment of the Unsolicited Electronic Messages Ordinance (UEMO), the MNOs had agreed on a Code of Practice on Handling of Unsolicited Promotional Inter-Operator Short Message Service (IOSMS) under

the Code of Practice for IOSMS.[80] The Code for Unsolicited Promotional IOSM provides the guidelines for sending promotional SMS between MNOs and MVNOs. Under the Code, promotional IOSMS are those inter-operator short messages which are promotional in nature whilst unsolicited promotional IOSMS are promotional IOSMS which the mobile user (recipient) has not given his explicit prior consent to receive. Promotional IOSMS shall only be sent with the mobile phone user's prior consent. Thus, the Code incorporates an opt-in rather than an opt-out mechanism for the services. The Code then requires mobile phone users to pay for the promotional messages.

Under the Code, a recipient of an unsolicited promotional IOSMS has two remedies:

1 he may file a complaint with his MNO whereby the recipient's MNO may then work with the sender's MNO to suspend the short message service of the sender;
2 the recipient's MNO may also implement blocking measures against the sender of the message.

The Code provides for the guidelines to be incorporated in the MNO's service agreement with their subscribers, thus facilitating the exercise and implementation of the guidelines against the MNOs.

Our investigations revealed that due to the rise in the spam mail, the government recognises the urgency of promulgating legislation to deal better with the hazard of spam. This led to the enactment of the UEMO which came into effect in November 2007. The Ordinance adopts a technology neutral approach and applies to all forms of electronic messages including e-mail, fax, voice and video calls, and mobile phone messaging services such as SMS and MMS. Essentially, the Ordinance requires senders of commercial electronic messages

1 to provide clear and accurate sender information in the message;
2 to provide an unsubscribe facility (an opt-out regime)[81] and an unsubscribe facility statement in the message;
3 to honour unsubscribe requests within ten (10) working days after the request has been sent;
4 not to send commercial electronic messages to any telephone or fax number registered in the Do-not-call Registers[82] starting from the tenth (10) work-

80 See Handling of Unsolicited Promotional IOSMS under *The Code of Practice for Inter-Operator Short Message Service*, available at ww.ofta.gov.hk/en/upism/13-2-2006-eng.pdf

81 The 'opt out' regime requires the sender of electronic messages to provide a functional unsubscribe facility through which the recipient can request to stop receiving further electronic messages.

82 The 'do not call' register aims to provide (a) the users with a means to notify the sender of electronic messages that they do not wish to receive such messages, and (b) the senders with a means to ascertain whether a user of a particular electronic address does not wish to receive electronic messages.

ing day of its registration, unless consent has been given by the registered user of the relevant telephone or fax number;

5 not to hide the calling line identification information when sending messages from telephone or fax numbers; and

6 not to send email messages with misleading subject headings.[83]

Under the UEMO, we observed that commercial electronic message is defined as "an electronic message the purpose of which is to offer or promote goods, services, or opportunities for the furtherance of a business".[84]

The UEMO aims to regulate the sending of unsolicited electronic messages of a commercial nature which has a 'Hong Kong link', i.e., the commercial electronic message originates either from Hong Kong, or is sent from overseas to a Hong Kong electronic address.[85] Thus, if the spamming occurs outside Hong Kong but is directed to a recipient in Hong Kong, then the UEMO will apply if the activity contravenes the Ordinance. According to the government, the provision was to send the right message to the overseas spammers that their activity will not be tolerated. However, whilst seen as a positive measure, the effectiveness of its enforcement is questionable.

An enforcement notice will be issued if any of the rules pertaining to the sending of commercial messages is contravened. A contravention of the enforcement notice may attract a fine of HKD 100,000 (9,100 euros) on the first conviction. In addition, the UEMO empowers anyone who has suffered loss or damage as a result of the contravention to commence individual civil action against those who committed the contraventions irrespective of whether they have been convicted.[86]

We remark that while the Ordinance is a positive step in providing useful regulatory framework for regulating spam in the Territory, we fail to elicit evidence as to its success in proving its effectiveness in reducing the aggressive nature of marketers in their marketing tactics. We also remark the Ordinance is a legislation which deals generally with commercial messages. There are no provisions in the Ordinance that provides for the sending of unsolicited commercial messages to children and young people. We opine that separate and distinct rules should be formulated to deal with the increasing hazard

83 The Unsolicited Electronic Messages Ordinance, available at http://www.ofta.gov.hk/en/uem/main.html

84 Supra.

85 See Australia's Spam Act 2003, available at http:scaleplus.law.gov.au/html/pasteact/3/3628/top.html

86 It should be noted further that the Ordinance prohibits with criminal sanctions the use of electronic address harvesting software or addresses harvested in this manner, dictionary attacks that automatically generate e-mail address and the use of proxy servers that disguise the origin of messages. See www.ofta.gov.hk/en/uemo/uemo_g.pdf

of spam mail on children and young people's consumerism because of their immaturity and vulnerability. As such, we may conclude that the UEMO is inadequate in that respect

6.10 Regulatory regime for privacy

In this section, we deal with privacy issues vis-à-vis contact and commercial. We argue that children and young people's personal space and privacy is invaded (1) when the youngsters are harassed (via cyber-bullying), (2) when they are the victims of unwanted sexual solicitation, or (3) when they receive unsolicited commercial messages.

We have previously discussed that one of the main related hazards of new communication technology is the invasion of privacy. We observe that with regards to the use of mobile phones, the most prevalent concern is the use of location-based services (LBS). LBS is an information and entertainment service accessible with mobile phones through the mobile network and utilising the ability to make use of the geographical position of the mobile phone.[87] The service can be used to identify the location of an individual or an object. For example, the whereabouts of a friend, the nearest restaurant, cinema or an ATM machine. The service can be used by parents to track the whereabouts of children and youngsters. Location information constitutes sensitive personal data. The sensitive data may be abused in such a way as to harass individuals. While the original purpose, i.e., to monitor the whereabouts of children and young people is noble, we find that as with new applications, abuses of new technology are not uncommon and does lead to more dire consequences such as the invasion of privacy.

As LBS is emerging as a new application, we observe that only quite a few jurisdictions legislations in place that regulates the use of LBS. Our investigations reveal that in so far as Hong Kong is concerned, the right to privacy is protected in three ways: (1) under the Basic Law, (2) under the Bill of Rights Ordinance (BORO), and (3) under Personal Data (Privacy) Ordinance (PDPO). The Basic Law serves as a constitutional document of the Hong Kong Special Administrative Region of the People's Republic of China.[88] Thus, the Basic Law accords the right to privacy (namely privacy in terms of personal, territorial, and communications privacy) constitutional protection.[89] In addition to the Basic Law, Article 14 of BORO replicates Article 17 of the International Covenant on Civil and Political Rights (ICCPR) in that it stipulates that (1) no-one shall be subjected to arbitrary or unlawful interference with his privacy,

87 Schiller, J., and Vosard, A., *Location-Based services*, (2004) Elsevier, San Francisco, CA.

88 The Basic Law came into effect upon the return of sovereignty of Hong Kong to China on July 1 1997. See http://www.basiclaw.gov.hk/en/index/

89 See Articles 28, 29 and 30 of the Basic Law, supra.

home, or correspondence, (2) no-one shall be subjected to unlawful attacks on his honour and reputation, and (3) everyone has the protection of the law against such interference or attacks. An ordinance more specific to privacy right is the PDPO. The PDPO lays down the regulatory framework for the processing of an individual's personal data in accordance with six privacy data collection principles. We briefly provide the six principles: (1) the purpose and manner of collection, (2) accuracy and duration of retention, (3) use of personal data, (4) security of personal data, (5) information to be generally available, and (6) access to personal data.[90]

While there are provisions in place for the protection of privacy, we opine that in so far as invasion of privacy in terms of LBS is concerned, the provisions are inadequate for two reasons.

1 Aside from Article 30 which protects the freedom and privacy of communications, the Basic Law does not address interference with an individual's privacy by the monitoring of that individual's geographical location. The freedom and privacy of communication in Article 30 suggests freedom from surveillance via the telephone (wire-tapping), e-mail surveillance or physical surveillance by the security and enforcement personnel. Although it may be argued that the provision is wide enough to cover LBS, we have not found any evidence to suggest that such argument has been raised.
2 The PDPO's primary objective is to ensure the data user (i.e., the person who (…) controls the collection, holding, processing or use of the data) does so in accordance with the data collection principles prescribed.[91] However, we observe there is no provision restricting the disclosure and sharing of location data or tracking information, that may be compiled from, or is the result of the application, and use of LBS. This is because the PDPO is intended to protect information privacy. It was not intended to protect personal privacy nor 'location privacy', or location-based sensitive data.[92] Further, while location data can be regarded as personal data, this argument has not been raised nor considered in Hong Kong. We further state that although Article 14 of BORO might apply to protect general interference with one's privacy, it is questionable whether the provision might adequately protect the invasion of privacy due to the abuse of a LBS application. As with the argument of treating location data as personal data, the argument whether Article 14 might apply has yet to be raised in the courts in Hong Kong. It does seem that the practical course of action is for the parents to ensure that the option to utilise LBS to track and monitor the youngsters' whereabouts be considered carefully. Further, we

90 See PDPO; available at http://www.legislation.gov.hk/eng/home.htm
91 See definition of data user in section 2(1) PDPO. Also note the definition of data as "any representation of information (including an expression of an opinion) in any document, including a personal identifier".
92 See *Eastweek Publisher v Privacy Commissioner for Personal Data* 2000 1 HKC 692.

surmise that it is incumbent for parents and youngsters alike be educated as to (1) the potential risks of LBS application, and (2) how best to manage and minimise the risks.

6.11 FROM 2000 TO 2009

The rapidly developing capabilities brought on by new communication devices such as the mobile phone raise a heighten concern over the impact of potential hazards on children and young people. This chapter was premised on the existing regulatory arrangements in Hong Kong and its adequacy in dealing with potential hazards under the three main areas of concern, content, contact, and commercialism. Below, we argue that the existing regulatory arrangements under the COIAO, PCPO, and UEMO are wholly inadequate in addressing the potential hazards and its impact on children and young people.

A: COIAO

There are two legislations which deal with content regulation in Hong Kong. The main legislation however is the COIAO, which regulates content over all forms of media. One glaring flaw of the 2000 consultation paper on the review of the COIAO is the view of the consultation committee.

> "Unlike some other forms of publication, the chances of Internet users being involuntarily exposed to pornographic material are relatively low. A great majority of the information and materials transmitted over the Internet are benign."[93]

The view is clearly flawed on one of the following grounds:

1 the consultative committee is in self denial in that the exposure to inappropriate materials including obscene pornographic materials to youths is very real, or
2 the volume and gravity of inappropriate materials in 2000 was not as high as it currently is (2009). Still, we find the explanation weak and thus cannot be sustained.

Further, the committee proposed to strengthen the existing guidance to the Tribunals by adding the following factors to the list:

(a) whether an article describes, depicts, expresses or otherwise deals with such matters such as sex, horror, crime, cruelty or violence in manners not accepted by reasonable members of the community;

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93 Protection of Youth from Obscene and Indecent Materials, Consultation Paper on the 2000 Review of the Control of Obscene and Indecent Articles Ordinance, by the Information Technology and Broadcasting Bureau, April 2000.

(b) whether an article advertises services which are not considered acceptable to reasonable members of the community in terms of public decency; and
(c) whether an article is considered by reasonable members of the community to be harmful to persons below 18 years of age.

While the above proposals represent a step in the right direction in an attempt to address the potential hazards that can arise as a result of inappropriate content that might be accessible over the mobile phone, we remark that the proposals were never adopted since no amendments were made to the COIAO after the review. The proposals if they had been adopted would have provided the Tribunal with a greater scope in reflecting the community's standards when classifying materials.

A criticism of the COIAO is that there is no requirement for articles to be submitted to the Tribunal for classification before publication. Publishers may voluntarily submit articles for classification ruling if they are in doubt. It is apparent that the practice does not promote consistency nor achieve the necessary certainty that the law requires. To what extent can content be effectively regulated if strict compliance with the Ordinance is neither a pre-requisite? Indeed, the practice might only be used by responsible and legitimate parties. Consequently, we opine that the practice is not helpful and its effectiveness, doubtful in regulating content adequately.

B: PCPO

The multi-functional mobile device is making the sourcing and grooming of a potential child victim easier. Criticisms are therefore levied against the PCPO in that the Ordinance makes no provision for criminalising the activity of sourcing and grooming. We further observe in our study of the PCPO that with respect to the Crimes Ordinance on the topic of cyber-bullying, no reviews were made and therefore also no amendments were made.

C: UEMO

The UEMO does not deal with the regulation of content. Rather it was enacted as part of a global trend in using legislations to regulate unsolicited commercial messages. Although laudable, Hong Kong's UEMO is based on opt-out approach, an approach which is seen as providing support to small and medium businesses to enable the businesses to use a more cost efficient medium for marketing purposes. While this may be seen as beneficial, the same can neither be said to recipients of the unsolicited messages nor to young immature consumers. Mobile phones users will continue to receive the messages unless they take the conscious effort to opt out and register. We opine that the opt-out and register mechanism might be more appropriate for adult consumers, but certainly we do not see the measure as protecting the interests of children and young people. This means that the possibility of receiving inappropriate and unwanted messages such as dating, adult services,

and other consumable content services, remains attractive for unethical merchandisers to send to youngsters. Further, since mobile services in Hong Kong follow a receiving party scheme, the cost of such unsolicited messages will be borne by the young mobile users. We view the government's position on the UEMO as surprising and a major set-back to tackling the hazard, considering the opt-in approach previously adopted under the Code for Unsolicited Promotional IOSM, a code of practice that the industry players have developed.

6.12 OTHER UNRESOLVED MATTERS

Having discussed the inadequacies of the COIAO, the PCPO, and the UEMO, we opine that the inadequacy of the existing regulatory framework runs deeper than that. We thus devote this section to raising other matters that remain unresolved.

While we note that Hong Kong has various regulatory arrangements in place to deal with potential hazards and we state them here briefly as (1) the COIAO and the PCPO to deal with content, (2) the Basic Law, BORO, and PDPO to deal with contact and commercialism (in terms of invasion of privacy), and (3) the UEMO to deal with commercialism (spam), we re-iterate our position that the arrangements are inadequate to manage successfully the hazards raised in Chapter 4. This is because there are no regulatory mechanisms to deal with, for example, (a) cyber-bullying and unwanted sexual solicitation (contact) or (b) unethical marketing tactics. We strongly believe that both (a) and (b) are sufficiently important concerns to deserve proactive measures. As such, we surmise that in view of the detrimental effect, cyber-bullying[94] and unwanted sexual solicitation can have on children and young people, it is appropriate for the Crimes Ordinance (Cap. 200) to be reviewed to take into account the increasing concerns of both these activities. Further, in so far as unethical and aggressive mobile marketing tactics are concerned, although Hong Kong has a range of consumer protection legislations covering consumer contracts, consumer credit, consumer health, consumer safety, and trade practices,[95] there is, as far as we know, no legislation which specifically deals with deceptive and misleading mobile marketing tactics.

94 Pang, D., Cyber-bullying alarm raised, The Standard, April 2008, available at http://www.thestandard.com.hk/news_detail.asp?we_cat=4&art_id=64756&sid=18584289&con_type=1&d_str=20080421&fc=1

95 See Hong Kong consumer protection legislations, available at http://www.consumer.org.hk/website/ws_en/legal_protection/hk_consumer_protection_legislations/Cap362.html

6.13 AN ANSWER TO RQ2

The answer to the two questions posed at the beginning of Chapter 6: (1) are there regulatory arrangements in Hong Kong to manage the potential risks? and (2) assuming regulatory arrangements exist in Hong Kong, what is the adequacy of those arrangements? are given in this Chapter.

RQ2a is answered in Section 6.2. In brief, the answer reads that there are three legislative arrangements, the COIAO, the PCPO, and the UEMO. They are not particularly focusing on a mobile environment. Yet, they can be applied to it, although we encourage a review of the specific content and many (small and larger) amendments.

The answer to RQ2b is given in many details in the Sections 6.3 to 6.11. In summary, we may state that the arrangements are not fully adequate. The answers of RQ2a and RQ2b lead us to answer RQ2. From our findings, we may conclude that (1) the Territory has the necessary regulations in place, that (2) we do not view the regulations as sufficiently adequate, and that (3) we do not consider the regulation effective to protect the interests of the younger generation.

In the next chapter, we set ourselves the task of considering the regulatory frameworks of other jurisdictions with a view of learning from their experiences.

7 Comparative jurisdictions

In this chapter, we address RQ3: *"what lessons can we derive from other jurisdictions in the formulation of a viable regulatory strategy?"* To assist in answering RQ3, we list three broad criteria for measuring the efficacy of a framework. The criteria for measurement are

1 the appropriateness of the regulatory approach;
2 is the approach sufficiently clear?
3 is the regulatory approach subject to regular review?

Under the broad criteria of (1) appropriateness of the regulatory approach, we aim to consider six issues, i.e., (1a) the regulator's responsiveness to challenges of mobile communication technology, (1b) whether the social objective of protection of children and young people is clearly defined and recognised, (1c) political or government support, (1d) whether there was active industry input and participation, (1e) whether there was active encouragement of user responsibility, and (1f) establishment of independent regulator.

Under (2) we will consider whether there were (2a) clear procedural provisions and complaints mechanism, and (2b) the provision of ease of access and clarity of information.

The three broad criteria were established based on our study and observations of the weaknesses of regulatory approaches. For example, while the social objective of protection of children and young people may exist, the objective may not receive the necessary political or government support to enable it to achieve its desired outcome. Similarly, procedural provisions may be out-dated and complaints mechanisms cumbersome and not user-friendly.

The regulatory approaches adopted in Australia and the European Union will be investigated in the light of the criteria listed. The primary objective of the investigation is to evaluate the measures adopted in their attempt to regulate the challenges raised by the potential hazards described in Chapter 4.

We have chosen Australia in our study of the regulatory approaches since, Australia has shown its proactive commitment towards addressing the potential hazards. This is evidenced in the measures adopted by the Australian authorities in their attempt to address inappropriate Internet content. We have chosen the European Union since the collaborative partnership can considered as stemming from various initiatives taken by national Member states.

In answering the RQs, we remain mindful of the three key areas of societal concern that can be brought about by mobile phones. These concerns have been previously raised and discussed in Chapter 4. We briefly describe them here as

1 inappropriate content;
2 contact in the form of sourcing, grooming, and bullying; and
3 commercialism seen in form indiscriminate marketing strategies targeting children and young people.

The chapter starts with the regulatory approach adopted in Australia (Section 7.1). Section 7.2 introduces the new content services code under Schedule 7 of the Broadcasting Services Act 1992 (BSA 1992). Having considered the Australian regulatory approach, we turn our attention to the position undertaken in Europe in Section 7.3. In Section 7.4, we examine content regulatory models. In Section 7.5, we measure regulatory efficacy against the three criteria. We deal with the regulatory reality in Hong Kong in Section 7.6. An answer to RQ4 is provided in Section 7.7. Then we propose two contributory factors for Hong Kong's existing regulatory framework by taking into account the influence of culture and politics on the formulation of policies and regulation in Section 7.8. In Section 7.9, we provide Chapter conclusions.

7.1 AUSTRALIA

In this section we examine the regulatory approach adopted in Australia under five sub-headings. Subsection 7.1.1 describes control over content, Subsection 7.1.2 explains Schedule 5 Australia's Broadcasting Services Act 1992 (BSA 1992). Subsection 7.1.3 gives the codes of practice. Subsection 7.1.4 details the complaints mechanism and Subsection 7.1.5 provides classification schemes.

In Australia, the BSA 1992 is the basis of the regulatory framework for broadcasting, data-casting, and Internet content.[1] The objective of Australia's regulatory approach is to maintain consistency between content that is offered both on-line and offline. Thus Australia's regulatory position is centred upon "what is illegal offline remains illegal on-line". As such, the emphasis is (1) on the content, and (2) on the level of control over content. It is not on the delivery platform of content. However, we do not intend to treat the items (1) and (2) separately as we do not view them as separate. Content and the level of control exercised over content, are in our opinion, co-related and inextricably inter-related. Thus a discussion involving (1) content, or (2) the

1 See http://www.austlii.edu.au/au/legis/cth/consol_act/bsa1992214/; and the Australian Government Review of the Regulation of Content Delivered Over Convergent Devices, (2006) available at http://www.archive.dbcde.gov.au/__data/assets/pdf_file/0011/39890/Final_Convergent_Devices_Report.pdf

level of control over content, or the regulation of one without the other achieves nothing.

7.1.1 Control

In Australia, control is seen in two main forms: (1) in a form exercised by service providers over content services provided directly by them over their proprietary networks, and (2) in the form of contractual agreements.

In (1), the control is effected through the type of content and services offered, and made available via the service providers' content portal. Mobile content services are accessible and downloadable by subscribers either for free or by subscription.

Where services are developed by those other than service providers, control is reflected in (2), i.e., in contractual agreements between the parties (that is, between the service providers and the content providers). In so far as contractual control is concerned, we regard such control as a weaker form of control (a) since it is only as effective to the extent of due compliance with the terms and conditions of the agreement by the third party content provider, and (b) in default of compliance of the terms thereof, in the effectiveness of the enforcement mechanisms.

Despite its drawbacks, we do see contractual control as a better form of control when compared to 'little or no control'. This is reflected in situations where Internet access is provided by service providers via Internet-enabled mobile devices. In such circumstances, mobile service providers (MSPs) have no more control over the content accessed by their subscribers than Internet service providers have over their registered users. Thus, the control by MSPs and ISPs, if any, will be solely grounded on the subscriber's agreement with their respective service providers. This invariably could take the form of *inter-alia*,

1 the prohibition of any form of infringement of a third party's intellectual property rights in relation to content available on the open forum without the owner's prior approval; and
2 the prohibition of the posting and distribution of material considered to be illegal, racial, derogatory, harmful or offensive to other subscribers.

7.1.2 Schedule 5

Further and in addition to control via service providers' portals and contractual agreements, a framework for the regulation of Internet content (an on-line content scheme) was established by the Australian BSA (under Schedule 5 of

the Act). The objectives of the on-line content scheme[2] were laid out in section 3 of the BSA and they include

1 to provide a means of addressing complaints about Internet content;
2 to restrict access to Internet content where such content is likely to cause offence, and (3) to protect children from exposure to unsuitable Internet content.[3]

It is apparent that the objectives of the scheme were premised on the community's increasing concern in respect of the availability and the easy accessibility of inappropriate content over the Internet.

Our analysis of the Schedule has revealed that content regulation under the BSA is co-regulatory. This is more aptly reflected in three key elements which are apparent within Australia's co-regulatory scheme. These elements are

1 the regulation of ISPs and Internet content hosts via (1a) self-regulatory codes of practice, and (1b) a complaints mechanism;
2 the codes of practice are underpinned by conventional prescriptive laws which criminalises the use of Internet carriage service to menace or harass another person, or in such a way as would be regarded by a reasonable person to be offensive;[4] and
3 the facilitation of other self-help measures such as media literacy and awareness programs.

The codes are developed by the industry, in this case, the Internet Industry Association, (IIA). Members of IIA include not only the main players such as telecommunications carriers, content creators and publishers, web developers, solutions providers, hardware vendors, and systems integrators but also other stakeholders such as Internet law firms, ISPs, educational and training institutions; Internet research analysts; and a range of other businesses providing professional and technical support services. The developed codes are registered with the Australian Broadcasting Authority[5] and are subsequently enforced

2 Internet content has been regulated under the on-line scheme since January 2000. The scheme was established by Schedule 5 to the BSA and was introduced in response to mounting community concerns about the accessibility of inappropriate Internet content to children.

3 (1), (2), and (3) are listed as (k), (l), and (m) in section 3 of the BSA. Section 3 provides a list of objects for the enactment of the BSA, 1992. Internet content is defined in Clause 3 of Schedule 5 as information that (a) is kept on a data storage device; and (b) is accessed or is available for access, using an Internet carriage service; (c) but does not include (d) ordinary electronic mail; or (e) information that is transmitted in the form of broadcasting service.

4 See Commonwealth Criminal Code in the Schedule to the Criminal Code Act 1995.

5 Clause 62 Division 4 Schedule 5 Broadcasting Services Act, available at http://www.austlii.edu.au/au/legis/cth/consol_act/bsa1992214/sch5.html . Division 4 deals with industry codes and clause 62 provides for the registration of the industry code with ACMA.

by the Australian Communication and Media Authority (ACMA), a separate and independent regulator.

7.1.3 Codes of practice

Industry codes of practice are a major element of the Australian regulatory framework. The codes require both the ISPs and the Internet content hosts (ICHs) to take appropriate steps to protect the public from prohibited and potentially prohibited content. A range of matters are to be dealt with under the codes. Some of these matters include
(a) procedures restricting access to persons over 18 years of age,
(b) assisting subscribers in dealing with spam, and
(c) providing information about, and access to filtering technologies.[6]

While we observe that compliance with the industry codes are not mandatory, Schedule 5 of the BSA does provide that once ACMA directs an ISP or ICH to comply with the code, it must do so or commit an offence.[7] In addition to the matters that the code must deal with, ISPs and ICHs are required to (1) provide information about filtering mechanisms, and (2) to make available to subscribers of their services, filtering products on a cost price basis.

From our investigations, we may provide as a tentative conclusion, the *importance* placed by Australia's regulatory regime in ensuring the *community is consulted*, and their *grievances heard*. We see this reflected not only in the formulation of the codes of practice (as described above) but also in the establishment of a complaint mechanism (discussed in the Subsection 7.1.4 below).

7.1.4 Complaints mechanism

Below we investigate the importance Australia places on having a viable complaint mechanism. The complaints system is administered by the regulator, ACMA; its purpose is to examine complaints in respect of inappropriate content over the Internet. The complaints mechanism provides an avenue for users to complain to the ACMA if they believe prohibited content is accessible. The mechanism provides for ACMA (i) to investigate upon receipt of a complaint, and (ii) to order the content to be taken down if the content is considered to be prohibited and is hosted in Australia.[8] In cases where content is considered to be illegal or sufficiently inappropriate for the consumption of the general public or particular sections of the public, ACMA will refer the content to the police for further investigations. In circumstances where the content was not

6 Supra Clause 60, Division 3, Schedule 5 Broadcasting Services Act.
7 Supra Review of Regulation of Content Delivered over Convergent Devices, n. 1 at p. 59.
8 Supra Part 4 Schedule 5 Broadcasting Services Act, n. 5.

hosted in Australia but originated out of Australia, ACMA may notify the relevant overseas counterpart.[9]

Although we are acutely aware that Schedule 5 relates to the regulation of Internet content, we find it useful to provide a brief description of the framework since the framework provides (1) the foundation for regulating on-line content, and (2) covers on-line content accessible via Internet-enabled mobile phones. In fact, our investigation indicates that the framework had indeed incorporated provisions that might apply to mobile carriage service providers who are (1) members of the Internet Industry Association (IIA) and (2) who provide mobile content services. These provisions include (a) prohibiting content which would be classified as X18+ (X18+ applies to films which contain only sexually explicit content or content that will be refused classification), and (b) restricting access by requiring subscribers to opt-in for content classified as R18+ or MA15+. R18+ means high level content restricted to 18 years and over and MA15+ means the content is strong and is not suitable for people under 15. Those under 15 must be accompanied by a parent or an adult guardian (see Figure 7.1 below).

As to (a) and (b), and from the study of the Australian regulatory regime, we note the importance of classification schemes. Indeed, classification schemes are not specific to Australia. Most jurisdictions do have their own national classification system. We regard the classification systems as forming the backbone of content regulation since its primary purpose is "to promote informed choice by adults about the content they access and to limit the risk of exposure to inappropriate content by children and young persons".[10] As no international classification system currently exists, each jurisdiction devises its own national system to reflect its national standards of morality, decency, and proprietary.

7.1.5 Classification schemes

In Australia, the national classification system is provided under the Classification (Publication, Film, and Computer Games) Act 1995. Under the Classification Act, a classification board and classification review board are established; their functions being to classify and review classification decisions in relation to films, computer games, and publications, respectively. The classification board classifies films and computer games into G, PG, M, MA 15+ and RC. (see Figure 7.1)[11] In addition, films have two additional classifications and that is, R 18+ and X 18+.[12] In so far as publications are concerned, the classifi-

9 Supra n. 5.
10 Supra n. 5.
11 See The Australian Government Classification Website at http://www.classification.gov.au/special.html
12 Supra.

cation categories are Unrestricted, Unrestricted M, Category 1-Restricted, Category 2-Restricted and RC. RC (restricted content) are prohibited and cannot be shown, sold or hired in Australia. The relevant classification categories and symbols may only be applied once the material has been classified by the Classification Board.[13] Figure 7.1 provides a table reflecting the classification categories.

Films and computers		*Publications*	
G	General	Unrestricted	
PG	Parental guidance Unrestricted	Unrestricted M	Unrestricted but not recommended to those under 15
M	Recommended for mature audiences	Category 1	Equivalent to R18+;
MA15+	Not suitable for under 15s.Under 15s must be accompanied by parent/adult guardian	Category 2	Restricted to adults; Sold only in premises accessible to adults
R18+	Restricted to 18 and over	RC	Restricted content; Prohibited material – Cannot be legally sold
X18+	Restricted to 18 and over. This rating applies to sexual content.		
RC	Restricted content; Prohibited material – cannot be legally shown, sold or rented		

Figure 7.1: Classification categories for films, computer games, and publications.

On the one hand, the classification board also classifies Internet content referred to them by ACMA.[14] On the other hand, the classification review board reviews classification decisions and makes new classification decisions. However in this case, only the Minister, the applicant for classification, the publisher of the published material, or an aggrieved person may apply for a review of the decision.[15]

In our investigations we found that the Australian Classification Act provides a National Classification Code which in turn provides for the making of Guidelines for the classification of films and computer games. The Office of Film and Literature (OFL) is responsible for all decisions relating to the classification of content. Amongst the principles which guide classification decision-making, we find the following two principles of particular significance: (1) that everyone should be protected from exposure to unsolicited material

13 Supra.
14 Supra.
15 Supra.

that they find offensive, and (2) the need to take into account community concerns that condone or incite violence.[16]

Moreover, we note the OFL's decision that content which has been classified for free-to- air television broadcasting need not be re-classified if the content is provided as part of the service providers' content portal. The position is different in respect to subscription-based content services whereby we observe that the control is more permissive. While we understand that this is due to the subscriptive nature of the service coupled with the provision of freedom of choice to subscribers, we opine that the provision of, and the access to subscription-based services should be subjected to age-verification measures and restrictions. We believe that the measures are useful in prohibiting the access of, for example, adult services or other inappropriate material that may be offered over the mobile service provider's portal.

Having considered the regulatory strategy in Australia, we may conclude that Australia has in place a comprehensive regime which attempts to address the potential hazards that are accessible on-line. Australia's strategy is significant in that it adopts an approach which represents a close collaboration between an independent regulator, i.e., the ACMA, the industry (the IIA), and the community. Further, classification schemes are presented in a clear and informative way so as to inform the community adequately as to the type of content that is being offered. This facilitates the community in making informed choices as to what might be considered harmful and/or inappropriate for children and young people.

7.2 AUSTRALIA'S NEW INDUSTRY CONTENT CODE

A new Content Services Code (the Code) developed by the IIA was approved by the ACMA in July 2008.[17] Under the Code, all on-line and mobile phone content likely to be classified as MA15+ or above must be assessed and classified by trained content assessors, hired by content providers.[18] The Code is part of the new legislation (new Schedule 7 to the Broadcasting Act 1992)

16 See Guidelines for Classification of Publications; available at http://www.comlaw.gov.au/comlaw/Legislation/LegislativeInstrumentCompilation1.nsf/0/641231640D2B08F5CA25741200010315?OpenDocument

17 The code was developed as an industry code pursuant to clauses 80-84 of Schedule 7. See Paragraph 5.4 of the Content Service Code, available at http://www.acma.gov.au/webwr/_assets/main/lib310679/registration_of_content_svces_code.pdf

18 Supra Paragraph 8.1, Part B Assessment of Content and Classification, Content Services Code. Note that a trained content assessor is an individual who has in the preceding 12 months a) completed training in the making of assessments as referred to in Schedule 7 and giving advice of a kind referred to in the Schedule and b) the training was approved by the Director of the Classification Board – see paragraph 4.2. The trained assessor may be an employee of the service providers or are contracted or engaged by them.

mandating a new regulatory framework for all content delivered on-line (Internet content) or via mobile phones.[19] The new schedule replaces Schedule 5 and the interim content arrangements that had applied to content providers of mobile content under the Telecommunications Service Provider (Mobile Premium Services) Determination 2005.[20] We deal briefly with the new code under the following subsections: access restriction (Subsection 7.2.1), take-down order, (Subsection 7.2.2), chat services (Subsection 7.2.3), complaints mechanism (Subsection 7.2.4) and the Code's compliance (Subsection 7.2.5).

7.2.1 Access restriction

Under the new content regulatory framework, mobile content providers are prohibited from distributing content rated MA15+ and R18+ unless access restrictions have been satisfied. The access restrictions include (1) distributing the material only if the subscriber has requested for the material (opt-in), and (2) after ascertaining and verifying the age of the subscriber. Age-verification is most commonly carried out by (2a) obtaining a credit card in the name of the subscriber, in writing, electronically or orally, or (2b) having sight of the original or copy of the subscriber's identification card issued by the tertiary education institution, license or permit issued by the Commonwealth, State or Territory law, the subscriber's passport, or birth certificate which shows the birth date of the subscriber.[21]

7.2.2 Take-down order

In so far as stored content is concerned, content providers must have in place take-down procedures in the event a complaint is lodged about the unsuitability of the material.[22] Stored content is defined as content kept on a data storage device. Thus, a take-down procedure will not affect transitory content, such as content arising by nature of the services provided, for example, chat rooms. This is dealt with in the following subsection.

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19 Schedule 7 came into effect on 20 January 2008.

20 See ACMA approves industry code of practice to protect children from unsuitable on-line and mobile phone content, ACMA media release 88/2008 – 16 July; available at www.acma.gov.au/WEB/STANDARD/pc=PC-311247

21 Supra paragraph 19, Age verification and risk analysis under Part F Restricted Access Systems of the Content Services Code, n. 17.

22 Supra paragraph 10, Part D Take Down Regime and Annexure – Diagrammatic summary of take down procedure; n.17.

7.2.3 Chat services

The regulation of chat services is provided separately in Part G of the Code. Part G provides for a consideration of a number of appropriate safety measures for chat services. We note four safety measures that may be implemented.

1 age restriction of chat services to users of 18 years and above;
2 the provision of human monitoring and human moderation of chat services;
3 the blocking of other users of the chat services; and
4 preventing search results that return matches for individuals under 18.[23]

We view these measures are proactive and if adopted, may prove effective in reducing the abuse of the service by exploitative adults and other youngsters.

7.2.4 Complaints mechanism

As with the Schedule 5 on-line content scheme, a complaints mechanism is provided for in the Code. The procedure provides two separate yet interrelated measures, i.e., (1) investigation, and (2) notification. The first measure requires the content providers to investigate the complaint but only need to do so provided the complaint is made in good faith, is not frivolous or vexatious.[24] The second measure encourages content service providers to notify and advise the other content service providers (a) of the availability, and nature of content that is prohibited, or (b) that the content is potentially prohibited content, in situations where the first content service providers are not aware of the nature of the content, they are making available.[25] Whilst the notification system is not intended to impose a monitoring scheme amongst content providers, we find the 'buddy system' innovative in facilitating a more vigilant industry.

7.2.5 The Code's compliance

In so far as compliance with the Code under Schedule 5 and Schedule 7 BSA is concerned, ACMA as the independent regulator may direct an ISP or an on-line content service provider to comply with the Code. We note there is a graduated range of enforcement mechanisms and sanctions to allow flexibility in dealing with breaches depending on the seriousness of the circumstances. The Code's enforcement mechanisms include compliance mechanisms, such

23 Supra paragraph 23.1 and Annexure Two – Safety Measures To Deal With Safety Issues Associated With Access To And Use Of Chat Services, Content Services Code, n.17.
24 Supra paragraph 9, Part C, Content Services Code, n.17.
25 Supra paragraph 16, Content Services Code, n. 17.

as withdrawal of industry association rights or privileges, and compliance incentives, such as the right to display compliance symbols.[26]

The graduated range of enforcement mechanisms we opine, is an illustration of Ayers and Braithwaite's (1992) 'tit for tat' strategy where compliance is more likely if the least interventionary form of regulation is applied first with a threat of more severe sanctions if the least interventionary form fails to produce the desired result (see discussion in Section 8.4 and Figures 8.4 and 8.5). As posited by Ayers and Braithwaite, regulatory cultures can be transformed by clever signalling by regulatory agencies (in this case, the ACMA) that every escalation of non-compliance by the industry or collective group can be matched with a corresponding escalation in the punitiveness by the state, thus resulting in a more interventionist regulatory strategy.

Our investigations of the Code indicates that the Code provides a comprehensive guide to industry players in Australia as to their social responsibilities in protecting society from illegal and/or inappropriate content. This can be seen specifically in the provision of safety measures for mobile chat and other interactive services which can potentially lead to inappropriate contact with children and young people.

In so far as the extent to which the regulatory objectives of the Australian BSA have been met, we may conclude from our investigations that the objectives are broadly satisfied in that the regime

1 provides a consistency between the regulation of new and old media;
2 imposes greater obligation on service providers that have better control over content accessible via their networks;
3 instills a respect for community standards with a view to protecting the vulnerable sectors of society;
4 provides an easy to follow complaints procedure for inappropriate material; and
5 assists individuals to make informed choices about content and self-help mechanisms (such as filtering technologies) by promoting media literacy.[27]

While we note that there are concerns whether the industry, i.e., the ISPs, ICHs, and the MSPs should be responsible for regulating content, we hold the view that the industry players are indeed the best sector/people to provide the lead that is required. They are seen to be in the greater position to understand the rapid changes in communication technology, and the demands of users. Consequently, they would be best placed to creatively advise and educate the consuming public, civic society, and the regulators.

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26 See ACMA: Content service provider's responsibilities, available at http://www.acma.gov.au/WEB/STANDARD/pc=PC_90156

27 Corker, J., Nugent, S., and Porter, J., (2000) Regulating Internet Content: A Co-Regulatory Approach, UNSWLJ 5, available at http://www.austlii.edu.au/au/journals/UNSWLJ/2000/5.html

7.3 EUROPE

In this section we will briefly describe and consider the framework adopted in Europe. More specifically, we will consider the position adopted in the UK.

In Europe, the European Union (EU) is strongly committed to the protection of children. Kierkegaard suggests that the mission of the EU is to protect children and young people against any infringement on their health and their psychosocial development. Moreover, Kierkegaard continues that it is in compliance with Article 29 of the Treaty of the European Union and Article 24 of the Charter of Fundamental Rights.[28]

We remark that a number of initiatives in the form of EU Directives have been adopted addressing the challenges of digital content in the Information Society *vis-a-vis* the protection of children and implemented in varying degrees in member states.[29] A telling example from 2006 is the European Parliament and the European Council[30]'s adoption of the Recommendation on Protection of Minors and Human Dignity in Audiovisual and Information Services and on the Right of Reply. The Recommendation 2006/952/EC which was adopted on 20 December 2006 builds upon an earlier 1998 European Council Recom-

28 Kierkegaard, S., On-line Child Protection: Cybering, on-line grooming and ageplay, 2008, Computer Law & Security Report, Vol. 24, p.41-55.

29 An older example of a EU Directive related to the protection of children and young people is the Council's Framework Decision 2004/68/JHA on combating the sexual exploitation of children and child pornography. The Directive was enacted to harmonise legislative and regulatory provisions of member states with a view to combating trafficking of human beings, the sexual exploitation of children and child pornography. The latter is relevant in terms of one of our three Cs, contact, in Chapter 4. See Articles 1 for the definition of a "child" and "child pornography". Note Article 2 which sets out the behaviour that are punishable.

30 The European Council is a consultative branch of the governing body of the European Union (European Community, (EC)), an economic and political confederation of European nations, and other organizations (with the same member nations) that are responsible for a common foreign and security policy and for cooperation on justice and home affairs. It defines the general political direction and priorities of the European Union. However, it does not exercise legislative functions. With the entry into force of the Treaty of Lisbon on 1 December 2009, it has become an institution. The European Council is composed of the heads of government of the EU nations and their foreign ministers, in conjunction with the president and two additional members from the European Commission, branch of the governing body of the European Union invested with executive and some legislative powers. Located in Brussels, Belgium, it was founded in 1967. It meets at least twice a year. Meetings of the European Council often emphasise political as well as economic cooperation among EU nations; for example, the impetus for the move to have the members of the European Parliament, a branch of the governing body of the European Union. At its first meeting of the European Council in 1974, the ministers decided to establish the European Parliament elected directly by universal suffrage. The European Parliament convenes on a monthly basis in Strasbourg, France; most meetings of the separate parliamentary committees are held in Brussels, Belgium, and its Secretariat is located in Luxembourg. The Council was given legal definition by the Single European Act 1987.

mendation.[31] An important element of Recommendation 1998 is that it offered guidelines for the development of national self regulation regarding the protection of minors and human dignity. According to the Recommendation, self-regulation is based on three key elements: first, the involvement of all the interested parties, i.e., (government, industry, service and access providers, user associations) in the production of codes of conduct; second, the implementation of codes of conduct by the industry, and third, the evaluation of measures taken. We note that the Recommendation was implemented successfully. The measure of its success was seen in a number of member states' commitment to the Recommendation in the establishment of hotlines and industry codes of conduct, the launch of awareness campaigns, and the creation of Internet filters.[32]

Under Recommendation 2006, member states are to adopt measures, *inter-alia*, to enable minor's responsible use of audiovisual and on-line information services in particular through media literacy, to draw up codes of conduct in cooperation with professionals and regulatory authorities at both national and Community level, and to promote measures to combat all illegal activities harmful to minors on the Internet. Additionally, the Commission's Safer Internet programme will educate the public about the benefits and the risks of the Internet, how to use the Internet safely and responsibly, how to make complaints, and how to activate parental control.

A follow-up of the Recommendation is the Audiovisual Media Services Directive (AVMSD) which covers both linear and non-linear services such as the television and video-on-demand (the Internet). The AVMSD, for example, empowers member states to restrict the broadcast of unsuitable content by restricting the transmission of on-demand audiovisual content regarded as inappropriate.[33] This may be relevant in broadcasting of on-demand audiovisual material on Internet-enabled mobile phones. A two-step safeguard in the form of a cooperation procedure and a circumvention procedure is established for receiving countries.[34] Article 3h of the Directive specifically restricts access to children content which might seriously impair children's development. The provision ensures that measures such as access codes must be in place so that children are protected from inappropriate content.

Further, we mention the European Parliament and the European Council's adoption and implementation of the Safer Internet programmes. The programme is a three year action programme aimed at the protection of children by promoting safer Internet use and use of new on-line technologies. For example, the Safer Internet Action Plan 1998–2001 was renewed in 2002 and

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31 Recommendation 1998 was presented in a Communication (Com (97) 570 final).

32 See Evaluation Report to the European Council and European Parliament on the application of Recommendation 1998, COM (2001) 106 final.

33 See Article 2 (4) – (6) AVMSD 2007/65/EC.

34 See Article 3(2) – (5) AVMSD.

expired in 2004.[35] It was replaced by the Safer Internet Plus Programme 2005–2008. The current programme, the Safer Internet Programme (2009–2013) aims to fight illegal content and harmful conduct such as grooming and bullying.

In addition to the European Parliament and the European Council, we see an equally important player in the protection of children against all forms of abuse in the form of the Council of Europe[36] (COE). The COE's work to protect children against sexual exploitation and abuse stems from Article 34 of the UN Convention on the Rights of the Child. This also includes the Optional Protocol to the Convention on the Sale of Children, Child Prostitution, and Child Pornography. Both Article 34 and the UN Optional Protocol have been ratified by all member states of the COE. As such, member states shall take all appropriate measures, whether national, bilateral and multilateral, to prevent (a) the inducement or coercion of a child to engage in any sexual activity; (b) the exploitative use of children in prostitution or other unlawful sexual practices; and (c) the exploitative use of children in pornographic performances and materials.

The COE has been in the forefront of combating sexual exploitation of children.[37] The organisation has, for example, adopted Recommendation (91)11 on sexual exploitation, pornography and prostitution of, and trafficking in, children and young adults. With technological evolution and the increased use and abuse of the Internet, the Committee of Ministers reviewed Recommendation (91)11 and adopted Recommendation (2001) 16 on the protection of children against sexual exploitation. In 2001, the Convention on Cybercrime was adopted wherein Article 9 provides offences relating to child pornography.[38] While the Convention on Cybercrime was useful in providing guidance for criminalising pornography, it failed to deal with other forms of sexual abuse against children such as "grooming". We note that the loophole was plugged with the adoption of the Convention on the Protection of Children

35 Europe's Information Society, Safer Internet Programme history, available at http://ec.europa.eu/information_society/activities/sip/policy/programme/early_prog/index_en.htm.

36 The Council of Europe was established in 1949. It is an international organization with 46 member states, with the aim to protect human rights, plurarist democracy, and the rule of law. Any European state can become a member of the Council of Europe provided that it accepts the Councils fundamental principles and guarantees human rights and fundamental freedom to everyone under its jurisdiction. The Council of Europe should not be confused with the European Union. The two are distinct. However, the 25 European member states are all members of the Council of Europe. The Council of Europe headquarters is in Strasbourg, France.

37 It should be noted that the COE in addition to establishing and reviewing Recommendations and Conventions, had actively participated in World Congresses against Commercial Sexual Exploitation of Children held in Stockholm in 1996 and Yokohama in 2001.

38 (ETS 185). The Cybercrime Convention came into force in 2004.

against Sexual Exploitation and Sexual Abuse in October 2007.[39] The Convention criminalises various forms of sexual abuse of children including "grooming or solicitation of children".[40]

In the European Parliament and the European Council's Decision 1351/2008, a Community programme ('the Programme') was established to promote safer use of the Internet and other communication technologies particularly for children and to fight against illegal content and harmful material. The Programme recognises other forms of evolving communication technologies and shifts in societal behaviours which are leading to new risks for children.[41] The European Parliament and the European Council stated that action should be aimed at preventing children from being victimised by threats, harassment, and humiliation via the Internet and/or interactive digital technologies, including mobile phones.[42] We note the Programme's position that measures and actions should be combined in a multi-faceted and complementary way. The Programme further provides four action lines to be addressed, i.e., (a) ensuring public awareness; (b) fighting against illegal content and harmful conduct on-line; (c) promoting a safer on-line environment; and (d) establishing a knowledge base.[43] So, in our brief study of the Programme, we can elicit five salient points.

1 In the Programme's pursuit of its objective to promote safer use of the Internet and other communication technologies, the Programme will encourage multi-stakeholder partnerships.[44]
2 The Programme's activities will increase public awareness (through media literacy) on the use of on-line technologies and the means to stay safe on-line. The activities will also empower users to make informed and responsible choices by providing them with information and with precaution on how to stay safe.[45]
3 The Programme's activities will reduce the amount of illegal content circulated on-line and deal adequately with harmful conduct on-line with a particular focus on the distribution of child sexual material, grooming, and cyber-bullying.[46]
4 The Programme will encourage the design, development, and promotion of effective technological tools to deal adequately with illegal content and to fight against harmful conduct on-line. Some of the measures will include (i) adopting a quality label for service providers thus enabling users to check if the providers had to subscribe to a code of conduct, (ii) the use

39 See http:// conventions.coe.int/Treaty/EN/Treaties/Html/ExplChildren.htm.
40 See Articles 18-23 of the Convention.
41 Supra.
42 Supra.
43 See Article 1 (2) of Decision 1351/2008.
44 See Annex I Actions.
45 Supra.
46 Supra.

of filters, and (iii) supporting and providing measures to encourage positive content for children.[47]

5 In addition to improving co-operation, harmonising approaches and enabling the exchange of best practices, stakeholders are encouraged to develop and implement self and co-regulatory mechanisms.[48]

Thus, what we have seen in our study is the strong political and social commitment by the EU in ensuring that measures are adopted to protect the physical, mental, and moral integrity of children and young people, which may be impaired by their increasing access to inappropriate content.[49] Most of the legal instruments seem to address the abuse of children and young people via the use of computers and the Internet. While this may be so, we note the establishment and the working of the European Framework for Safer Mobile Use which focuses on mobile phones in the following manner. The brief establishment of the European Framework for Safer Mobile Use is dealt with in Subsection 7.3.1. The guiding elements of the European Framework is considered in Subsection 7.3.2, shared collective responsibility in Subsection 7.3.3, a classification scheme in Subsection 7.3.4, and self regulation in Subsection 7.3.5.

7.3.1 The European Framework for Safer Mobile Use

The European Framework for Safer Mobile Use by young teenagers and children (the Framework) was signed by leading mobile operators and content providers in 2007.[50] Our study revealed that the EU wide framework was an accumulation of national initiatives developed by the European signatory mobile providers in conjunction with content providers to ensure safer use of mobile phones by children and teenagers. Thus, one of the main objectives of the Framework was to encourage all relevant stakeholders to support safer mobile use by implementing the measures and key recommendations. Thus, the Framework essentially lays down the principles and measures that signatories to the Framework must commit to implementing nationally throughout Europe by February 2008.

47 Supra.

48 Supra.

49 See Decision No. 1351/2008/EC of the European Parliament and of the Council of 16 December 2008 establishing a multiannual Community programme on protecting children using the Internet and other communication technologies; available at http://eur-lex.europa/LexUriServ/LexUriServ.do?uri=CELEX:32008D1351:EN:NOT

50 See brief background to Safer Internet Programme's focus on child safety and mobile phone at http://ec.europa.eu/information_society/activities/sip/mobile_sector/index_en.htm

7.3.2 *Guiding elements of the European Framework*

A review of the Framework indicated (a) an active collaboration, and (b) a firm commitment between mobile operators and content providers in formulating the Framework. Both parties had in developing the Framework, paid tribute to four main guiding elements. These guiding elements are

1 the acknowledgement and recognition of potential hazards that can arise in the consumption of mobile content services;
2 the importance of available and easy to understand parent and child friendly information;
3 the necessity of classifying content according to national standards of morality, decency, and propriety; and
4 the suitability of industry self-regulatory approach.[51]

We note that these guiding elements were derived from the consultation conducted by the European Commission on Child Safety and Mobile Phones in 2006 and were dealt with in the European Framework as recommendations.[52] The recommendations are (1) access control mechanisms, (2) raising awareness, (3) classification, and (4) combating illegal content.

Our study further revealed that an Implementation Report (The GSM Europe Implementation Report) has been completed setting out (a) the status of implementation of the Framework in the respective member states and, (b) the compliance status of national codes of conduct against the recommendations of the Framework on a country to country basis.[53] The Implementation Report proves useful in two ways: first, it provides a brief overview of the stages of implementation of the EU's Recommendations in member states, and second, the report reflects a positive indication of the proactiveness and the commitment of the EU in their collective responsibility towards addressing the potential hazards with a view to protect children and young people.

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51 Summary of the Results of the Public Consultation on Child Safety and Mobile Phone Services, available at http:ec.europa.eu/information_society/activities/sip/docs/public_consultation/public_consultation_rsults_en.pdf

52 Supra.

53 GSM Europe: European Framework For Safer Mobile Use by Younger Teenagers and Children: One Year After, March 6, 2008; available at http://www.gsmworld.com/gsmeurope/documents/gsma_implementation_report.pdf. The report was published in March 2008 detailing the extent the key recommendations adopted by member states nationally. According to the report, 24 industry signatories covering 27 member states have signed the Framework. This is in contrast to 10 member states before the establishment of the Framework. It is indicated that the industry signatories in the member states serve approximately 550 million subscribers customers. This represents 96% of all EU mobile customers.

7.3.3 Shared collective responsibility

In response to the numerous hazards brought about by the use of mobile phones, including but not limited to harassment and bullying, grooming and sexual discussions, risks to privacy, exposure and access to illegal and harmful content, and high expenses, fraud and spam, the respondents to the consultation[54] acknowledge that the responsibility of ensuring safe mobile use amongst children and young people rests not solely on the shoulders of one stakeholder but numerous stakeholders. We thus arrive at shared collective responsibility wherein we firmly believe that responsibility must be shared between (1) mobile phone operators and service providers, (2) parents and care givers, and (3) public authorities.

The importance of shared responsibility cannot be denied. This concept is best applied in the provision and facilitation of user awareness measures. The facilitation and provision of user awareness measures can broadly encompass two essentials: (1) the necessity for mobile operators to provide to parents and care givers user friendly and accessible information concerning potential risks arising from the use of mobile phones by children, and (2) to develop a user friendly mechanism for parents and care givers to control the access of inappropriate content. The latter would require educating parents and child carers with regards to the various mobile applications and functionalities. We surmise that mobile phone manufacturers, suppliers and mobile application developers and providers should actively participate in sharing the responsibility, for example, by sponsoring education and awareness programs in conjunction with mobile operators. We can justify this suggestion by stating that since it is apparent that these parties have immense economic interest in the provision and supply of hardware, software and services for mobile phones, it is our opinion that it should be part of the stakeholders' social responsibility to undertake and/or to sponsor the program. Public authorities can further contribute by facilitating and supporting the organisation of public awareness campaigns of new media literacy.

7.3.4 A classification scheme

As with Australia, the classification of mobile content in accordance with a national member state's classification scheme is an important element. As previously discussed, the classification of content and the labeling used for

54 Supra public consultation, n. 51. The report was published in March 2008 detailing the extent the key recommendations adopted by member states nationally. According to the report, 24 industry signatories covering 27 member states have signed the Framework. This is in contrast to 10 member states before the establishment of the Framework. It is indicated that the industry signatories in the Member states serve approximately 550 million subscribers customers. This represents 96% of all EU mobile customers.

classification of content must be consistent with that applied to content available over traditional media so as not to result (a) in confusion, and (b) disparity in treatment. We provide as an example, the UK's Independent Mobile Classification Body (IMCB), discussed further in Subsection B which applies a classification framework that is consistent with the standards used and applied in other media.

7.3.5 Self regulation

The rapidly evolving nature of mobile communication technology renders self regulation as an appropriate mechanism that can be adopted as an effective and efficient means in ensuring adequate protection for children and young people. Indeed, we note that a self- regulatory approach formed the basis of the European Framework in that "[…] it is a EU wide common framework for national self regulation".[55] Thus to implement the Framework, signatory operators and content providers are required to develop national self-regulatory codes. In fact, our observations reveal that most national member states have developed their respective codes of practice.[56]

In the following section, we consider UK's code of practice in relation to regulation of mobile content as an illustration to describe the code of practice developed and adopted by the mobile service providers in the UK The UK is chosen as an illustration for two reasons:

1 self regulation is not a new regulatory strategy in their regulatory framework in that historically self regulation has been applied with much success in the UK In this regard, we provide two examples of self regulatory success: (1a) the Independent Mobile Classification Body (IMCB) and (1b) Internet Watch Foundation (IWF).
2 Hong Kong was a former British Colony; thus, the UK experience might prove useful to the Territory.

The structure of the section is as follows: Subsection A provides a brief description of the UK's code of practice. This is followed by two illustrations of self-regulatory mechanism: (1) the IMCB (Subsection B) and (2) the IWF (Subsection C).

A: The UK code of practice

The UK's Office of Communication (OFCOM) was established as a body corporate by the Office of Communication Act 2002.[57] Its responsibilities includes
(a) ensuring a high quality and a wide range of television and radio services;

55 Supra n.31.
56 'Safer Mobile Use'; available at http://www.gsmworld.com/gsmeurope/safer_mobile/national.shtml
57 See www.ofcom.gov.uk

(b) ensuring that a wide range of electronic communications services including high speed data services is available throughout the UK;
(c) maintaining plurality in broadcasting; and
(d) ensuring adequate protection against offensive and harmful materials for the audience.

However, it is observed that although OFCOM is the content and broadcast regulator in the UK, OFCOM does not regulate electronic content accessible via the Internet or Internet- enabled devices.[58] These services are regulated via self-regulatory codes of practice.

Of particular significance is the regulation of content available via mobile phones. In this regard, we note the existence of a separate code of practice for mobile content services. The code was developed in 1994 by six mobile operators namely: Orange, O2, T-Mobile, Virgin Mobile, Vodafone, and Hutchinson 3. It identified five areas for which the provisions of the code will apply namely (1) commercial content, (2) Internet content, (3) illegal content, (4) unsolicited bulk communications, and (5) malicious communications.[59]

We observe that the focus of attention of mobile operators is on commercial content. In the circumstances, commercial content can include mobile content services such as (a) visual content, (b) on-line gambling, (c) mobile gaming, (d) chat rooms, and (e) Internet access. We surmise that depending on the (i) type of content and (ii) the frequency of the content transmitted (for unsolicited bulk communications) mobile content services can, and do fall within the other identified areas of the code. In such circumstances, the mobile services will be regulated under the code.

B: IMCB

A content classification framework was set out by mobile providers and operators when they established the Independent Mobile Classification Body (IMCB). Subsequently, it was IMCB's key components, elements of the code and its content classification framework that influenced the EU's European Framework for Safer Mobile Use by Young Teenagers and Children.[60]

IMCB is an example of a self-regulatory framework. It is an independent classification body for the purpose of classifying commercial content that is regarded as unsuitable for customers under the age of 18.[61] The established

58 Supra.
59 Supra n.35
60 Supra n.31.
61 The Classification Framework has been drawn up taking account of the need to be consistent, as far as is possible, with standards for other media produced the Agreed Bodies such as the British Board of Film Classification (BBFC) and Interactive Software Federation of Europe (ISFE)/Pan-European Game Information (PEGI) for Mobile Games. See 'Section One: Classification Framework – General'; available at http://www.imcb.org.uk/classificationframe/section1.asp

framework is consistent with standards used in other media in that it will treat as "18 content", all content that would receive an 18-type classification for equivalent material in magazines, video and computer games, and films. In this context, we should note that commercial content is content provided by commercial content providers to their mobile customers. The content can include pictures, video clips, mobile games, music, and experiences, such as gambling. Thus, services which falls within IMCB and the framework's remit are services of a commercial nature (i.e., neither private nor personal nor in return for profit or gain). They include services such as still pictures, video and audio-visual materials, and mobile games. A provision is made for mobile operators to self-classify against the framework, their own content (whether the content was developed directly or provided for by third party content providers). Thus on the one hand, if commercial content has been classified 18,[62] mobile operators must place the commercial content so classified behind access controls.[63] In such circumstances, the content can only be made available to subscribers who have convinced the mobile operator that he is 18 years or over (age verification). The age verification process is also required for non-moderated chat rooms.[64] On the other hand, if commercial content is not classified as 18, it is to be treated as unrestricted content.

In so far as Internet content is concerned, our investigations made it clear that since the content (1) is immense and diversified, and (2) not within the control of mobile operators, it is sufficient for mobile operators to provide filtering applications to parents and child-carers to ensure that access to content available over the Internet via Internet-enabled mobile phones is restricted.[65] In this respect, the code requires that filtering mechanisms be set at a level such that content which is regarded as being equivalent to content classified as 18 is restricted.[66] It is worth noting that the position adopted here differs from the position of an ISP ('an information society provider' in Art. 42 Directive on Electronic Commerce 31/2000) where an ISP is not held liable under the Directive if it has neither knowledge nor control over the contents transmitted or stored, i.e., where they are acting merely as conduits of information.[67]

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62 According to IMCB framework, content classified as 18 if it contains "full frontal nudity, especially where depicting the pubic area and/or genitals".

63 U.K. code of practice for self regulation of new forms of content on mobiles; available at http://www.gsmworld.com/gsmeurope/documents/eu_codes/uk_self_reg.pdf

64 Non-moderated chatrooms are chatrooms not moderated either by human moderators or computers.

65 Supra n. 63.

66 Supra n. 63.

67 See Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce), available at http://www.legi-internet.ro/direcommerce.htm

In so far as illegal content is concerned, in addition to having in place 'notify and take-down provisions', it is incumbent for mobile operators to work closely with law-enforcement bodies. We note that this is especially so if mobile operators provide web-hosting services.[68]

From our observations, we note two elements underlying IMCB. (1) commitment and (2) requirement.

1. Commitment

We mean the UK mobile operators' commitment in implementing the content controls and ensuring strict compliance as envisaged in the code. For example, a colour-coded scheme was established to reflect the number of times the code has been breached and the severity of the breach. Thus, an initial breach of the code results in a warning (yellow card).[69] Any subsequent breach of the code can result in a sanction (red card). Repeated failures to comply with the code may lead to termination of future business.[70] The colour-coded scheme has been welcomed as a highly effective compliance mechanism by both mobile operators and the content suppliers. In fact, it has been recommended that the sector should notify; (a) IMCB of all information pertaining to the number of cards issued, and (b) the information published on IMCB's website.[71]

2. Requirement

We mean the implicit requirement that mobile operators and service providers remain vigilant in (2a) monitoring mobile content that is being offered or transmitted, and (2b) maintaining the objectives of the code.

Below we examine both elements reflected in the code's provision for mobile operators, in that mobile operators (1) must continue to take action against (1a) unsolicited bulk communications (spam), and (1b) other forms of malicious communications, and (2) regularly review the code to ensure the code remains relevant to its subscribers.[72]

Indeed, we note that IMCB had taken on the responsibility of maintaining and regularly reviewing the classification framework in consultation with mobile operators and other stakeholders. This proactive measure by IMCB is a step in the right direction (1) to ensure the framework reflects the objectives for which it was set up, and (2) to take into account the changing technological landscape.

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68 Supra n.41.

69 OFCOM's U.K. code of practice for self regulation of new forms of content on mobiles; available at http://www.ofcom.org.uk/advice/media_literacy/medlitpub/ukcode/

70 Supra.

71 Supra OFCOM's consultation paper, n. 57 & n. 69.

72 Supra.

C: IWF

A second example of a successful self-regulatory approach is the Internet Watch Foundation (IWF). We find IWF useful since the IWF provides an example of (1) the one pointed focus for which the organisation was established and (2) the measures the organisation undertakes to adopt achieve its objectives.

One of IWF's main objective is to minimise the availability of potentially illegal Internet content based on three main themes: (1) child abuse images hosted anywhere in the world, (2) criminally obscene content hosted in the UK, and (3) incitement to racial hatred content hosted in the UK[73] The IWF has been immensely successful. Five factors have been identified as contributing to its immense success.

1 tough laws that prohibit any form of possession or distribution of child abuse images with strong sanctions for transgression;
2 a sophisticated system to transfer intelligence and information from the IWF to the police for the police to investigate;
3 a committed and effective Internet content service provider community who remove any potentially illegal content found on their services immediately when notified;
4 an informed public who report on-line if they are exposed to potentially illegal on-line content;
5 continued support of IWF by a diverse range of industry funding members.[74]

Further, in our investigations we noted that OFCOM in assessing whether to employ a self-regulatory or co-regulatory approach, suggested that self-regulation is more likely to be effective in three situations, i.e., in those markets

1 where companies recognise that their future viability depends not only on their relationship with their current customers and shareholders, but also that they operate in a environment where they have to act responsibly within the societies in which they operate;
2 where companies recognise and acknowledge the identified problems which may cause harm or market failure that impede citizens or consumers; and
3 where companies individually and collectively acknowledge the need to reduce the identified harm or market failure, since this will improve the ability of those companies to determine the interests of citizens or consumers and, potentially, society as a whole.[75]

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73 Initial assessments of when to adopt self regulation or co-regulation, OFCOM consultation paper, March 2008; available at www.ofcom.gov.uk/consult/condoc/coregulation/condoc.pdf
74 Supra.
75 Supra n. 73.

While we have studied and seen the merits of cost benefits, and the flexibility of adopting such an self-regulatory approach in Chapter 8 in comparison to direct government intervention, regulators must be certain that self regulation is the appropriate approach to adopt having taken into consideration the specific industry environment and market circumstances. We opine that for self regulation to be effective in a new communications technology and media sector, in addition to the fear of direct government intervention, it is vital for industry players themselves to be committed to the social well-being of society, and to share in greater public responsibility and commitment towards protecting society from harm. This can be done by

1 acknowledging potential hazards that can be accessible via the provision of mobile services;
2 identifying inappropriate mobile content;
3 providing users with an accessible yet easy to use information to assist users in making informed decisions; this should include classification of mobile content, and filtering mechanisms;
4 providing a user friendly dedicated hotline for lodging complaints on inappropriate materials;
5 establishing an openness and transparency in a decision making process.

In the following section, we briefly consider the content regulatory models that most accurately reflect the content regulatory strategy of Australia and the UK.

7.4 Content regulatory models

Two regulatory models (1) a broadcasting-centric model and (2) a converged content model for regulating content were devised by researchers Hargrave, Lealand, and Stirling (2006).

A: Broadcasting-centric model

Using the regulatory models devised, we assume that the UK's content regulatory model is an appropriate example of a broadcasting-centric model.[76] According to Hargrave, Lealand, and Stirling (2006), the defining characteristics of a broadcasting-centric model is that the model regulates broadcasting but does not directly regulate electronic content delivered via other platforms, such as the Internet or the mobile phone. For these platforms, self-regulatory systems are in place. This is well reflected in the UK model discussed in Subsection 7.3.5 A. Thus for non-broadcasting content such as the Internet and mobile telephony, a self-regulatory approach, i.e., codes of conduct for use

76 Hargrave. A.M, Lealand. G, Stirling. A., (2006) Issues facing broadcast content regulation, available at http://www.bsa.govt.nz/publications/IssuesBroadcastContent-2.pdf

by the UK's ISPs, and the IMCB are applicable.[77] We reproduce a table from Hargrave, Lealand, and Stirling (2006) (Figure 7.2) indicating the (1) strengths and weaknesses, and (2) the opportunities and threats of a broadcasting-centric model.

STRENGTHS	*WEAKNESSES*
Thorough understanding of and expertise in dominant content platforms	More limited regulatory power over or knowledge of new market Increased resource required by industry on new platforms
OPPORTUNITIES	*THREATS*
Create market benefits for audiences/users and industry Ability to react quickly in a dynamic new platform market Lighter form of content regulation possible	Unexpected sources of harm could emerge and cause embarassment for political and regulatory authorities

Figure 7.2: Broadcasting-centric model.[78]

B: Converged content model

In comparison to the broadcasting-centric model, the model adopted by Australia is a converged content regulation model. Thus Australia's regulatory framework covers both the regulation of broadcast content and content delivered over other media devices (such as the Internet and the mobile phones). As described in Section 7.1, ACMA is the combined content and platform regulator. Figure 7.3 adopted from Hargrave, Lealand, and Stirling provides the strengths and weaknesses of a converged content regulation model.

77 See www.ispa.org.uk and www.imcb.org.uk

78 Supra Hargrave, Lealand and Stirling n. 76.

STRENGTHS	*WEAKNESSES*
Better understanding of multiple platforms and their potential impact by main regulator (intellectual capital)	Too much control over industry – regulatory burden
Use of industry for understanding of both industry and consequent audience/user objectives growth	Regulatory capture and slowing of market
OPPORTUNITIES	*THREATS*
Buy-in by industry with concomitant commitment	Loss of innovation potential consumer choice and benefits
Lighter form of content regulation possible	Consumers feel unnecessarily constrained in choice

Figure 7.3: Converged content regulation model[79]

Upon analysing both models, we observe that the broadcasting-centric model (model A) on the one hand, represents the more traditional form of regulatory framework in that it has its emphasis on broadcasting of content rather than on the delivery of electronic content via other new media devices. Since delivery of electronic content is regulated via self regulation, model A has the advantage of being free of regulatory burden, thus enabling the industry to act more expediently. This in turn encourages innovation. However, as discussed in Chapter 9, if the self-regulatory mechanism fails to achieve its desired objectives, it will provide the opportunity for the regulator to intervene.

The convergent content regulation model (model B) on the other hand, acknowledges new converging services that can be delivered over convergent devices. However its 'imposing' regulatory backdrop provides fertile ground for regulatory capture. Researchers Hargrave, Lealand and Stirling (2006) opined that neither of these models are mutually exclusive since both these models share a number of common strengths.[80] Six strengths have been identified by the researchers. Both models (1) answer key social and cultural objectives, (2) are supported by the regulator, (3) are independent from the government and industry, (4) have a thorough understanding of what is required and expertise in dominant content, (5) provide clear and consistent objectives for the industry and the users, and (6) establish protection mechanism for users.[81]

79 Supra n. 76.
80 Supra n. 76.
81 Supra n. 76.

With the strengths common to both broadcasting-centric and convergent content regulation models, we may tentatively conclude that there is no standard regulatory model that (1) can provide a resolution to all the uncertainties and challenges that has arisen (or will arise in the future) or that (2) adequately address the challenges of the potential hazards made available via mobile communication technology. The task for the regulators and the various stakeholders is to work out the best approach taking into consideration, inter-alia (a) the technological environment, and (b) the state's public policy, social and economic objectives. The approach adopted will no doubt differ from one jurisdiction to another.

From the above discussion, a comparative analysis will be made with the regulatory framework currently in force in Hong Kong.

7.5 Measuring regulatory efficacy

In measuring the efficacy of regulatory approaches, we provide Figure 7.4 which encompasses the three broad criteria for measuring the efficacy of the regulatory approaches adopted in Australia, the UK, and Hong Kong. For ease of reference, we list the three criteria here again.

1 The appropriateness of the regulatory approach.
2 Is the regulatory approach sufficiently clear?
3 Is the regulatory approach subject to regular review?

We further detail the three criteria as follows.

1 an appropriate regulatory approach contains
   (a) the regulator's responsiveness to challenges of mobile communication technology;
   (b) the social objective of protection of children and young people clearly recognised;
   (c) political or government support;
   (d) active industry input and participation;
   (e) encouraging user responsibility;
   (f) the establishment of an independent regulator.
2 the clarity of the approach contains
   (a) clarity of information for users and interested parties;
   (b) ease of user access;
   (c) provision of complaint mechanism.
3 is the regulatory approach subject to regular review?

Country	*Australia*	*The UK*	*Hong Kong*
Regulatory approach	Co-regulatory	Self-regulatory	Self-regulatory
1. Appropriateness of the regulatory approach			
(1a) regulatory responsiveness to challenges of mobile communication technology	Yes, On-line content scheme: Schedule 5 and & 7 BSA	Yes, Code of Practice for Self Regulation of new forms of content for mobiles	None
(1b) social objective of protection of children and young people clearly recognised	Yes	Yes	Unclear
(1c) political or government support	Yes	Yes	None
(1d) active industry input and participation	Yes, IIA members and mobile carrier service providers	Yes, mobile network operators	None
- Method	Yes, industry code of practice	Yes, Code of practice: applies to all mobile phone operators	HKISPA code of practice not applicable to mobile phone operators
	No mandatory compliance but is an offence if ACMA's direction to comply with code ignored	Code has full support of mobile phone operators	Not applicable
(1e) encouraging user responsibility	Yes	Yes	No
(1f) establishment of independent regulator	Yes, ACMA	Yes, OFCOM but complaints of access to inappropriate material outside its remit outside	Pending outcome of government's consultation

Country	*Australia*	*The UK*	*Hong Kong*
2. Clarity of regulatory approach			
(2a) clarity of information for users and interested parties	Yes, user friendly link: www.acma.gov.au/ hotline	Yes, user friendly link: www.imcb.org.uk	Yes, www.ofta.gov.hk
(2b) ease of user access	Yes	Yes	Yes
(2c) provision of complaint mechanism	Yes, administered by ACMA	Yes, based on Content Classification Framework by IMCB: complaints to be resolved initially by mobile operators	Yes
3. Regulatory approach subject to review	Yes, review introduced Schedule 7 on-line content scheme in 2008	Yes, review of code and framework in completed in 2008. See www.ofcom. org.uk/advice/media_ literacy /medlitpub/ukcode/ ukcode.pdf	Pending outcome of government's consultation

Figure 7.4: Measuring the efficacy of regulatory approaches

From the above, we may draw two conclusions.

1 The regulatory approaches adopted by Australia and the UK demonstrate that different jurisdictions have chosen different approaches to suit their cultural specificities.
2 While the regulatory approaches differs considerably, the approaches adopted does acknowledge the potential hazards of new communication technology and seeks to address the challenges posed by establishing a clear and appropriate regulatory structure for mobile content regulation.

Our aim is to arrive at a regulatory approach which ensures that children and young people are sufficiently protected as young consumers. We see this being accomplished in the use of a combination of two approaches with three explicit additions, viz (1) in the case of Australia by collaboration with the regulator or upon strong industry initiative (as in the UK), in the establishment of an industry code of practice, (2) the establishment of an independent regulator to oversee and monitor the regulation of mobile content, and (3) the provision of adequate, clear information of classification schemes, procedural provisions, and complaints mechanism.

In comparison to the approaches in Australia and the UK, we observe from Figure 7.4 that the regulatory approach adopted in Hong Kong (1) does not measure up to the criteria listed, and (2) is evidently weak and deficient for

the reasons in that the existing framework is fragmented, and lacks focus. We provide a detailed discussion for the weakness in the Section 7.7.1.

7.6 HONG KONG: REGULATORY REALITY

In so far as the regulatory structure of the Territory is concerned, Hong Kong was a former British colony, she thus inherited the British tradition of multiple regulators or sector-specific regulatory regime as her regulatory model. That is to say a separate regulator exists for different industry sectors. Thus, as previously described in Chapter 4, Hong Kong has the Telecommunications Authority (the TA) as the regulator for the telecommunications sector, and the Broadcasting Authority (the BA) as the regulator for the broadcasting sector. Accordingly, we remark that the regulatory model for Hong Kong follows a broadcasting-centric model. However despite the fact that (1) the multiple regulators model was regarded as "inflexible" to deal with the challenges of the converging era and market integration, and (2) a number of jurisdictions have seen the merits of having a unified regulator, Hong Kong's proposal for a unified regulator remains under consideration.[82] The complete proposal resulting from the Consultation Paper should be noted as further and in addition to the proposal for the establishment of a unified regulator. The Consultation Paper (2006) also proposed a review of the existing sector-specific regulatory regime legislations with a view to consolidate them into a unified communications regulation. Thus, it seems that there will neither be a review of the existing regulatory structure nor relevant legislations as a follow up of the consultation. While this might be seen as positive on the one hand as providing the opportunity for a more rigorous review of the Territory's position, we remark that on the other hand, this proves unsatisfactory since we have not elicited any positive indications that the review will be completed in the near future.

In comparison to the regulatory approaches adopted in Australia and the UK, we posit that the Territory's regulatory strategy is deficient (Subsection 7.6.1). We support our position by evaluating the existing content regulatory system (Subsection 7.6.2). We do this by making our observations of the Control of Obscene and Indecent Articles Ordinance (COIAO) (Subsection 7.6.3) and the Hong Kong Internet Service Providers' Association (HKISPA) code of practice in Subsection 7.6.4.

82 The proposal for the establishment of a Communications Authority was first made after a public consultation in 2006. Two reasons were given for the proposal (1) the provision of 'one-stop-shopping' in which interested parties need only to deal with one organisation for matters relating to communication industries, and (2) the provision of regulatory consistency leading to operational synergy and efficiency See Public Consultation on the Establishment of the Communication Authority, Government Printer, Hong Kong SAR Government 2006 and Chapter 4.

7.6.1 A deficient system

It cannot be sufficiently stressed that Hong Kong needs to create a framework that enables her to recognise and react proactively to changes that are rapidly present itself in the new communications and new media environment. While we agree that the Consultation Paper's proposals do provide positive steps by the government to move away from the traditional regulatory structure to a converging regulatory trend that is being adopted in other jurisdictions, we opine that what is required is significantly more than 'window dressing' measures. Indeed, in comparison with the regulatory regimes of Australia and the UK, we may tentatively conclude that the Territory's regulatory framework is deficient in failing to show firm commitment towards protecting children and young people. Moreover, we opine that the Territory has not taken adequate, positive, and proactive measures to incorporate the important elements that we articulate are crucially essential for an efficient regulatory framework. We discuss the elements in greater detail in Chapter 10. For now, we provide below a summary of the Territory's regulatory weaknesses:

1 the absence of a clear objective to protect children and young people from the potential hazards as described in Chapter 4;
2 the failure to recognise, the potential hazards that can arise via the use of converging devices, such as mobile phones;
3 the failure to address the social objective of consumer protection and privacy, specifically with regards to the protection of children and young people in relation to the potential hazards;
4 the absence of a comprehensive protective regulatory framework which primarily addresses the challenges of the potential hazards accessible via mobile communication technology; this includes but is not limited to
   (a) the development of a relevant and proactive industry code of practice in active collaboration and consultation with mobile service providers, mobile virtual network providers, and third party content provider;
   (b) the establishment of an independent regulator to regulate the provision of, and the delivery of mobile content services in the Territory, and to oversee, and monitor the strict compliance of the code of practice;
   (c) supporting the need to educate mobile phone users (whether parents, child carers or children) on risk management issues in relation to mobile phones; this includes the proper use of mobile phones, its applications, and functionalities, and the potential hazards that can arise from such use (or abuse).
   (d) the establishment of a protection mechanism for mobile users by providing
   (i) assistance to mobile phone users to make informed choices about the suitability of content via classification schemes,
   (ii) self-help mechanisms (such as filtering technologies),

(iii) a hotline service for the purposes of reporting inappropriate content, and
(iv) a transparent complaints mechanism to address the concerns of users and to deal formally with complaints.

7.6.2 *The existing content regulatory regime*

In Chapter 6, we have described the regulatory regime for content regulation in Hong Kong. Before we proceed further, we find it appropriate to justify the importance that we placed in considering the regulation of Internet content.

We regard the consideration of such Internet content regulations as having significant value for two primary reasons. We opine that (1) the treatment of such issues reflects the legislative position and attitude of the regulator, and (2) the consideration of such content regulation provides a pre-cursor to any discussion on the formulation and design of regulations pertaining to material that is available electronically.

Thus, upon examination of the Territory's existing legal framework, we arrive at two observations.

1 The regulation of the Internet in Hong Kong has been minimal in that unlike Australia's Broadcasting Services Act which does provide, and deal with Internet content, Hong Kong has adopted a liberal hand, by not dealing with it. As such, no specific Internet content regulation has been enacted in the Territory. Our investigations however reveal that the regulation of inappropriate content is provided for by primarily two main Ordinances. (a) the Control of Obscene and Indecent Articles Ordinance (COIAO), a regulation that controls obscene and indecent articles in all media, and (b) the Prevention of Child Pornography Ordinance (PCPO). We note however that the scope and application of the PCPO is restricted in that it was enacted to deal with activities relating to child pornography. As the regulation of content encompasses more than child pornographic activities and materials, we do neither view the PCPO as sufficiently adequate nor competent in addressing the hazards of the converging media. Notwithstanding, there is in addition to the two main Ordinances, the Hong Kong Internet Service Providers' Association (HKISPA) code of practice which although minimal, provides a useful guide in the regulation of content.
2 The enactment of the COIAO and the development of the HKISPA code of practice were not aimed at addressing (2a) the potential hazards of mobile usage nor (2b) the inappropriateness of mobile content services.

We do this by making our observations of the COIAO in Subsection 7.6.3 and the HKISPA's code of practice in Subsection 7.6.4.

We do this by making our observations of the COIAO in Subsection 7.6.3 and the HKISPA's code of practice in Subsection 7.6.4.

7.6.3 Observations of the COIAO

From our study and observations of the COIAO, we opine that the COIAO has been less than satisfactory in three main ways.

1 The COIAO was enacted in 1987. Although there have been minor amendments since 1987, i.e., in 2000 and 2003, we opine that the law remains obsolete and does neither reflect nor deal with challenging issues presented by the new communications technology and new media. The primary objective of the COIAO is to *inter-alia*, "control articles which consist of or contain material that is obscene or indecent (including material that is violent, depraved or repulsive) (…)".[83] We remark that it was neither the intention of the legislature in the enactment of the COIAO nor was it envisaged that the Ordinance would cover the electronic publication, transmission, and distribution of articles. We use as an illustration of the Ordinance's obsoleteness at the interpretation section of the COIAO. Section 2(1) of the Ordinance defines an article as "anything consisting of or containing material to be read or looked at or both read and looked at, any sound recording, and any film, video-tape, disc or other record of a picture or pictures". This apparent concern of the Ordinance's "failure to keep up with the times" was not addressed despite amendments made in 2003.

2 As the crux of the COIAO is grounded on the issue of "obscenity" and "indecency", we have found that the guidance provided on what constitutes an obscene or an indecent article is wholly inadequate and exceedingly vague. For instance, Section 2(2) of the COIAO provides
"For the purposes of this Ordinance-
(a) a thing is obscene if by reason of obscenity it is not suitable to be published to any person; and
(b) a thing is indecent if by reason of indecency it is not suitable to be published to a juvenile.

3 For the purposes of subsection (2), 'obscenity' (淫褻) and 'indecency' (不雅) include violence, depravity and repulsiveness".
Although we agree that providing a comprehensive definition of the terms is an insurmountable task, it would prove helpful to the community and the Obscene Articles Tribunal[84] (OAT) to have a useful guide as to what

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83 See the Long Title of the Control of Obscene and Indecent Articles Ordinance. The other objectives of the Ordinance includes " (…) to establish tribunals to determine whether an article is obscene or indecent, or whether matter publicly displayed is indecent, and to classify articles as obscene or indecent or neither obscene nor indecent (…)"; available at www.legislation.gov.hk/eng/home.htm

84 See section 6 of the COIAO at www.legislation.gov.hk/eng/home.htm

articles might be considered obscene or indecent. In this regard, we suggest providing clarity to the terms "obscenity" and "indecency" by drawing examples of what might or might not be considered obscene and indecent.

4 Criticisms have also been levied on the current classification system by the OAT. In determining whether an article is obscene or indecent, the OAT is to have regard to inter-alia, "the standards of morality, decency and propriety that are generally accepted by reasonable members of the community".[85] We posit that standards of morality, decency, and propriety change over a period of time, place, and culture. The latter is particularly significant considering that Hong Kong is "a melting pot of cultures". In such circumstances, we strongly believe that a regular review of the community's moral fiber is required. This we surmise was not undertaken. We may tentatively conclude that the guidelines provided for under the COIAO do not accurately reflect the standards of morality, decency, and propriety of the community. The continuing use of the guidelines without review will result in an inaccurate representation of the Territory's standard of morality, decency and propriety. We have previously described in Chapter 6, the government's launch of a first round of public consultation on the review of the COIAO in October 2008. We still believe many expect that the review will be conducted in a robust manner with meaningful proposals considered, and adopted. More importantly, we still expect that the exercise is not a window dressing exercise.

7.6.4 Observations of the HKISPA's code of practice

The Hong Kong Internet Internet Service Providers' Association (HKISPA) code of practice is an example of a self-regulatory approach adopted in the Territory.[86]We have in Chapter 6 described the provisions of the code and the steps to be taken by members (including an on-screen warning) relating to the posting or publishing of material which are likely to be classified as Class III (obscene) material or Class II (indecent) material under the COIAO. A closer look at the code reveals the following provisions:

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85 See section 10(a) of the COIAO; the other requirements include b) the dominant effect of an article or of matter as a whole;
(c) in the case of an article, the persons or class of persons, or age groups of persons, to or amongst whom the article is, or is intended or is likely to be, published;
(d) in the case of matter publicly displayed, the location where the matter is or is to be publicly displayed and the persons or class of persons, or age groups of persons likely to view such matter; and
(e) whether the article or matter has an honest purpose or whether its content is merely camouflage designed to render acceptable any part of it.

86 See Code of Practice, Practice Statement on Regulation of Obscene and Indecent Materials, Revision1.1, September 2003. See also Chapter 3.

1 members will encourage the Platform for Internet Content Selection (PICS) tagging and promote the tagging technology of the ICRS Project operated by HKISPA;[87]
2 members will inform parents and other responsible persons of various options and precautionary steps they can take, including the content filters of the ICRS Project;[88]
3 the provision of a complaints handling procedure.

The procedure of (3) provides for (a) any member of the public, (b) the Hong Kong Police Force and (c) the Television and Entertainment Licensing Authority (TELA) to lodge a complaint with a member of HKISPA with regards to material considered to be Class II or Class III. The complaint will be referred to the member concerned if the complaint was first lodged with HKISPA. This effectively makes the member ISP the first point of contact in any complaint. The member upon receipt of the complaint must act promptly and conscientiously on the complaint with a view to resolving the complaint in compliance with the COIAO. In circumstances where the complaint cannot be resolved, TELA may in collaboration with the relevant enforcement agencies, consider instituting legal action against the relevant party(ies).[89] It is observed that the procedure laid out does not preclude the enforcement agencies from taking direct enforcement action against a member if the circumstances so warrant.

However despite the provisions in the HKISPA code, we posit four misgivings about the code.

1 There is no provision for the code to apply to mobile network and service providers who provide Internet access via mobile phones. These providers are therefore neither bound nor regulated in the same way as ISPs. A regulatory gap thus exists in that although the HKISPA code is dated and weak in enforcement, guidelines exist as a reference point for the industry.
2 It is apparent that the code only applies to ISPs and to members of the HKISPA. Despite the non-application of the code to non-members, we do not see a strict requirement for ISPs to be members of the HKISPA. As such, we note that while there are 168 ISPs in Hong Kong, there are only 57 registered members of the HKISPA.
3 To an observer, the language used in the code portrays leniency. We see this reflected in the words used in the code, for example, (a) the code "(…) recommends guidelines (…)", and (b) "the members will inform (…)", or (c) "the members will advise (…)", or (d) "the members will encourage (…)".
4 While the code does provide that sanctions will be imposed on a defaulting member, the provision does neither comprehensively provide either on

87 Supra item 13, HKISPA code of practice.
88 Supra item 14, HKISPA code of practice, n. 86.
89 Supra items 16-21, HKISPA code of practice, n. 86.

HKISPA's website or by way of a hyperlink, (3a) the type and severity of the sanction to be imposed or (3b) an appeal mechanism for defaulting members. It is our opinion that this is important as it provides the necessary transparency in the decision–making process, thus promoting accountability. This measure if adopted is a step in the right direction in promoting and instilling the trust and confidence of mobile users and the community as a whole.

7.7 An answer to RQ3

For RQ3, *"what lessons can we derive from other jurisdictions in the formulation of a viable regulatory strategy?"*, we may conclude by laying down eight lessons learnt. Three additional elements are given after the eight lessons learnt.

A: Eight lessons

(A1) The formulation of objectives. We believe that the formulation of clear and achievable objectives is the mainstay of an efficient and forward looking regulatory framework. With this in mind, we suggest that the objectives should include (a) the reduction of availability, (b) the restriction of access, and (c) the increase of resilience of children and young people to potential hazards. The objectives should not be seen in isolation. Rather they are inter-related and are inter-dependant. As such, we suggest that the measures adopted by regulators in respect of (a), (b), and (c) respectively should be inter-dependant and complementary. The measures should thus include (i) reviewing and enacting (where appropriate) regulations to deal with the availability of inappropriate materials, (ii) having in place a comprehensive classifications system and access control restrictions, and (iii) an education and media awareness program to adequately educate and inform society at large in particular children and young people of the inherent hazards of new communication technology. It is crucial that once policy objectives and measures have been identified and formulated, they should be effectively communicated to all stakeholders.

(A2) An independent organisation to deal with content regulation. To establish a comprehensive regulatory framework which focuses on content regulation delivered over new converging media platforms. The framework should adopt a co-regulatory approach and an independent body should be established to regulate, oversee, and manage issues relating to content regulation. It is envisaged that one of the functions and responsibilities of this independent body would be to establish a user friendly and transparent complaint mechanism. In this regard, it is important that (a) the decision-making process, (b) the schedule for penalties to be imposed if provisions are breached, and (c) the

decision made and the penalty imposed be consistent, made transparent and accessible.

(A3) The content regulatory framework to be supported by strong regulations. The content regulatory framework is underpinned by regulations that should be reviewed regularly to deal adequately with the challenges of rapid advancement in new media and communications technology. A case in point is the Prevention of Child Pornography Ordinance (PCPO) (Cap. 579). The PCPO does not provide for the offence of grooming. As previously discussed in Chapter 4, children can be solicited on-line and groomed for sexual activities, the activity thus progressing to a contact crime. In addition to a review of the PCPO, we propose that the Crimes Ordinance (Cap. 200) be reviewed to take into account (a) unwanted solicitation, (b) unwanted harassment of those under 18 years, and (c) the activities of cyber-bullying.

(A4) A classification mechanism. A separate body responsible for the classification of mobile content services should also be established. The existing classification scheme under the Broadcasting Act should be reviewed to see if it is appropriate for the scheme to be extended to cover mobile content services.

In the classification of content, it is incumbent for the classification body to distinguish content that can be appropriately classified, filtered, or monitored. For instance, content available over the mobile service or network provider's portal (stored content) should be classified whereas it may not be expedient for the mobile operators and providers to monitor adequately all transient content arising from chat services. In such circumstances, consideration should be given to the viability of whether human or computer monitoring mechanism be adopted to monitor mobile chat services. In so far as Internet content that is accessible via Internet-enabled mobile devices are concerned, we state that an efficient mobile filtering mechanism be developed and adopted to filter content classified as unsuitable for children and young people.

Furthermore, we find it appropriate that

(a) the classification body develops an appropriate certification mark. The certification mark will be granted by the independent body to mobile service operators and providers (i) who adhere strictly to the principles of content regulation, and (ii) who exhibit social responsibility by participating actively in media literacy awareness and education programs.
(b) an appeal system be in place to address appeals against the classification of content.

(A5) Access control mechanisms. We view access control an integral part of content regulation. As such an efficient and effective age verification mechanism must be in place. We opine that all mobile network and service providers offering mobile content and mobile services must agree as to the type and application of such mechanisms. For instance, it is more cost efficient and less

cumbersome if there is an agreement to require children and young people to provide a copy of their Hong Kong identity card to verify their age before subscribing to mobile content or mobile services classified as inappropriate by the classification body. The identity card will prove an ideal document for age verification purposes as (1) the document indicates the individual's date of birth and (2) every individual in Hong Kong above the age of 11 years and above must possess a Hong Kong identity card.[90]

(A6) A code of practice. An industry code of practice should be developed by mobile network operators, mobile virtual network operators, mobile service providers and third party content providers (relevant interested parties and stakeholders) wherein it must be made a mandatory requirement for relevant parties and stakeholders to adhere strictly to the provisions of the code specifically in relation to (a) the development, (b) publication, and (c) dissemination and transmission of digital content. We suggest that this be made a condition in the existing fixed and mobile carrier licenses or in the new unified carrier license scheme. A breach of the code in relation to the provision of content regulation requirement and complaints against any of the interested parties and stakeholders should be dealt with seriously by the independent body (the regulator).

We believe that for the code to be workable, it is necessary that code of conduct adopted by relevant parties and stakeholders be the product of genuine consultation between government and the industry. It is vital that the code is further strengthened by a meaningful dialogue with non-governmental groups and the interested public. In our opinion it is especially important to ensure that the code be understood by those who are limited by its provisions as well as those who are seeking its protection. The codes must also be backed up by clear lines of accountability and monitoring.

(A7) Media literacy programs and campaigns. We have in our earlier chapters recommended the development of an aggressive media literacy awareness program and campaign in partnership with interested parties and relevant stakeholders. We view such programs and campaigns as crucial in encouraging and increasing user or community responsibility. Thus, it is proactive and positive on the part of the regulator to have in place risk- management measures to educate the community as to (a) the functionalities and applications of the mobile phone, (b) the potential hazards of mobile usage, and (c) the safeguards that can be implemented with a view to reducing the incidences of exposure to the hazards. A crucial part of the program is to ensure that such awareness program and campaign is to be targeted at parents, child carers, teachers, educators, and the children and young people themselves.

90 See Public service: application for a Hong Kong identity card by a person under 18 years and below, see http://www.immd.gov.hk/ehtml/hkid_b18.htm

(A8) Self help mechanisms. In line with (A7) media literacy programs and campaigns, we strongly advise (1) to provide self-help mechanisms, such as security features, filtering technology, and control tools that has been agreed upon by the relevant stakeholders and (2) to educate parents, child carers, teachers, and educators how to use them effectively. So it is proposed that developers of hardware (mobile devices) develop security features (as a default mechanism) in the mobile device itself such that content that has been classified as not suitable for children and young people, cannot be displayed or accessed. It will benefit parents immensely if they are adequately aware of self-help mechanisms and if the application methodologies for security features are couched in a language that is easier for parents and child carers to understand and apply.

We believe that the eight lessons learnt can accurately reflect the necessary ingredients of a combined 'mixture of control' regime. The mixture of control regime or combined control regime is articulated in greater detail in Section 10.7 (see also Figure 8.2) as being essential in the design of a regulatory framework.

B: Three additional elements

Further and in addition to the lessons learnt above, we propose three additional elements of which we advocate that they should be considered in the formulation of a new content regulatory framework: (B1) children and young people's input, (B2) the establishment of content advisory committees, and (B3) the use of incentives. A brief explanation of each element follows.

(B1) Children and young people's input. We believe there should be greater appreciation in the necessity of consulting children and young people for their input on technological change and use. We opine that their input would greatly assist the government and the independent body in achieving the desired outcome and the social objective of consumer protection. In line with this element, we are mindful of the rights of children as enunciated, for example, by international instruments such as the United Nations Convention on the Rights of the Child (CRC).[91]

The CRC promotes the idea of children as people with rights that have to be respected by adults, society, and all institutions that deal with children's affairs. Children are entitled to be respected and treated with dignity simply because they are human, whatever their age.[92] No doubt, this represents a distinct change in attitude and perception towards children and young people.

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91 See Convention on the Rights of the Child at http://www.crin.org/resources/treaties/CRC.asp?legal&ID=6

92 See www.unicef.org/crc/. The CRC was adopted in 1989 and since then has been widely ratified in all countries save and except in Somalia and the U.S. In fact, the CRC is seen as one of the most quickly ratified international human rights instruments.

Traditionally, children and young people are perceived as objects rather than rightful subjects of the law. This is because the vast majority of adults, from parents as guardians and care providers to teachers, doctors and priests have themselves been brought up and educated as children perceived as objects that are required to obey adults unconditionally.[93] This perception is aptly reflected in the traditional parental maxim "Children are to be seen, not heard."

In changing our perception and treating children as the subjects of the law, we note one guiding principle of the Convention of the Rights of the Child (CRC), Art. 3, which provides:

> "The best interests of children must be the primary concern in making decisions that may affect them. All adults should do what is best for children. When adults make decisions, they should think about how their decisions will affect children. This particularly applies to budget, policy and law makers".[94]

It is our contention that government and regulators should be mindful of the principles enunciated by the CRC when making policy decisions, and promulgating laws for society and the community. In fact, if we look at Art. 12 of the CRC, we note that when adults are making decisions that affect children, children have the right to say what they think should happen and have their opinions taken into account.[95] In providing for such right, the Convention recognised that the level of a child's participation in decisions must be appropriate to the child's level of maturity.[96] It is not uncommon for adults in the circumstances to give greater weight to the opinions of the children as they mature. Ideally, a child's input on matters affecting him as an individual should be encouraged, when framing policies, and in decision-making processes.

However, we believe that this rarely happens. For example, we have seen popular social networking sites such as MySpace, Friendster and Facebook blocked in the US by filtering software in schools and colleges because of the possibility that the sites are used by on-line predators.[97] Although we agree that the decision was taken to protect children and youngsters from the possibility of harm from such predators, it is uncertain whether the views of the younger members of society had been considered or whether viable alternatives had been explored before a decision was taken. This re-inforces the point that children and young people are subjects of the law and are entitled to a certain degree of freedom and privacy. The CRC recognises this autonomy in terms

93 See Convention on the Rights of the Child at http://www.crin.org/resources/treaties/CRC.asp?legal&ID=6
94 Supra.
95 Supra n. 91.
96 Supra n. 91.
97 U.S. seeks to block social networking sites, August 1 2006; available at www.tech2.com/india/news/antivirus-security-internet/us-seeks-to-block-social-networking-sites/1086/0

of a child's right to access to information and material from a range of sources, rights against arbitrary or unlawful interference with his privacy, family, home or correspondence and the right to freedom of expression.[98] In respect of the latter, it includes the right to seek, receive, impart, and share information regardless of the medium concerned. This therefore includes the peer to peer communications via *inter-alia*, chat rooms, and social networking sites. Thus, we remark that the input from the perspective of the child and young person may positively influence the design of content regulation.

(B2) The establishment of content advisory committees. We opine that in addition to the youngster's input, it will be highly beneficial for regulators to keep abreast with, and be better informed of the changes that are occurring (a) within technologies, (b) within the applications and how the applications are being used, and (c) within the usage in the community (for example, changes in social attitudes and/or reaction to new technology and content choices). This will provide the necessary advice and guidance to the regulator so as to ensure that the strategy adopted remains efficient, viable, and up-to-date.

(B3) The use of incentives. Our investigations have indicated that the provision of incentives for interested parties and stakeholders will be a positive measure in the right direction to encourage compliance and support for the new content regulatory framework. A common form of incentive envisaged is tax benefit. Tax benefits can thus be granted upon proof that viable and effective measures have been adopted in compliance with lessons (5) access control mechanisms, (6) adherence to the code of practice, (7) active sponsorship in media literacy awareness and education programs/campaigns, and (8) the adoption of self help mechanisms.

7.7.1 The Hong Kong position

As an aside from the lessons learnt from our comparative observations of other jurisdictions, and the elements which we regard as significant value, we provide in Section 7.8, possible reasons for the Territory's 'position' on its existing content regulatory framework. We advocate that the reasons are compelling since they provide a brief insight as to

1 how the lessons derived from other jurisdictions can be readily understood in its proper perspective, and
2 whether the lessons might effectively be applied in the formulation of a viable content regulatory framework for Hong Kong.

98 Articles 13, 16 and 17 of CRC; available www.ohchr.org/english/law/crc.htm

Essentially, we remark that the lessons learnt cannot be transposed automatically in the Hong Kong case. Rather, an understanding must be made of the local culture and the community to ensure the regulatory framework best reflects the requirements of the community in its need to protect children and young people. We re-iterate that there is 'no one size fits all' solution to regulatory and societal concerns that arise. The design and formulation of a legal and regulatory framework is unique to each jurisdiction, and must be shaped by a combination of local legislations, economics, culture, and politics.

7.8 Our proposals

It is apparent from our investigations that social concerns, such as those raised in our RQ1 in Chapter 4 with regards to (1) the potential hazards of mobile communication technology, and (2) the impact that such hazards have on children and young people (Chapter 5), are issues that neither receive sufficient coverage nor invite rigorous debate in Hong Kong as compared to countries in the European Union or Australia. Indeed, we observe that the Territory's regulatory regime for content regulation is (a) fragmented, (b) exhibits signs of general lethargyness, and (c) lacks focus. This lack of regulatory direction is distinctive when compared to the "active" participation and expression of ideas and policies prevalent in the European Union, and Australia. Our observations lead us to indicate two contributory factors that led to the absence of discourse on the ills of modern communication technology: (1) the historical origins of the Hong Kong Chinese community, and (2) the Territory's style of governance. We believe that these factors have considerable influence on our proposals and also on the follow-up of the lessons learnt. In the Subsections 7.8.1 and 7.8.2 we provide a brief discussion of the factors (1) and (2).

7.8.1 The historical origins of the Hong Kong Chinese community

The ancestral origins of the Hong Kong Chinese can be traced back to the early years when Hong Kong was viewed as a stepping stone to a better life. This could be partly due to (a) the desire to escape poverty and oppression in China, and (b) the Territory's liberal trading policy. Many early migrants also saw Hong Kong as a temporary transit country with a view to finding 'permanent residence' in third countries such as the United States, United Kingdom, and Taiwan. This as S.K Lau (1984) suggested, had a significant impact that originated from their socio-political, socio-cultural, and socio-economic point of view since their normative orientation was (1) short term, (2) material-

istic, (3) valuing social stability above political participation, and (4) securing their families' longer term futures.[99]

Hong Kong is an administrative region. Before its sovereignty was reverted to the Peoples' Republic of China on 1 July 1997, Hong Kong had been a British colony for 154 years. Thus, the Hong Kong Chinese was governed socially, economically, and politically by a small community of European elite. S.K Lau (1984) further suggested that with the exclusion from the political sphere of all but a smaller circle of Chinese elite provided them with no opportunity (a) to influence civic affairs, or (b) to invite or encourage a vibrant debate on matters that affect the private and public lives of the local community. One consequence of this 'ethos of the Hong Kong Chinese' was low participation in political and civic affairs. In fact Y.C Lau (2005) suggested that the exclusion from the political sphere of all but a small group of Chinese elite provided them with no opportunity to influence civic affairs.[100] According to Y.C Lau this led to a lack of lively public debate and general civic apathy around controversial areas such as the new media, the Internet, and the impact of such medium on public and private life. Thus, discussions on the protection of children with regards to potential hazards of mobile communication, such as how the new media and communication technologies should be monitored, policed, or regulated to protect children and young people are painfully weak or virtually non-existent.

7.8.2 Hong Kong's style of governance

The Territory follows a top down governing structure with the power to govern firmly in the hands of the Chief Executive (CE) (before the handover in 1997, the Govenor). The CE is supported (a) by Executive and Legislative Councils of which roles are mainly advisory, (b) a by vast network of administrative officers who were encouraged (i) to make policy assessments and decisions and (ii) to assume responsibility from a young age in preparation for their eventual rise to heads of departments and policy branches, and (c) by consultative and advisory bodies that by and large consist of wealthy entrepreneurs from the trade, business, financial, and industrial sectors.[101]This leads to Lau's (2005) suggestions that three prevailing principles underline the Territory's style of governing i.e., (1) maintaining Hong Kong as a free trading port, (2) maintaining stability, and (3) maintaining prosperity.[102] Thus the government primarily adopted a laissez-faire attitude in that, unless a

99 Lau, S.K., *Society and Politics in Hong Kong*, 1984, Chinese University of Hong Kong Press, Hong Kong p. 67-71.

100 Lau, Y.C., Governance in the Digital Age: Policing the Internet in Hong Kong, in *Cyber-crime: The Challenge in Asia*, Broadhurst, R., and Grabosky, P., (eds.) 2005, Hong Kong University Press, Hong Kong.

101 Supra.

102 Supra.

serious potential risk is perceived to threaten social order and its economic status, the government will be reluctant to intervene. We believe that this attitude indicates and reflects a general lack of enthusiasm on the part of the Territory to react proactively on regulatory issues.

However, the scholars He Z and Zhu Jonathan J.H (2007) suggest that the general lack of enthusiasm is a characteristic of the model of transactional regulation.[103] In comparison to the model of manipulative control, He and Zhu (2007) view the transactional regulation as a regulatory undertaking characterised by (a) a lack of vision, (b) a continuous swing between extremes, and (c) the regulators efforts to trade regulations and laws for political support or for justification of the government legitimacy and achievements.[104] The scholars continue by opining that in political terms, the Territory is striving for recognition and legitimacy. This is contributed by the fact that the CE is elected by a small group of people, a practice legitimised by the Basic Law.[105] The CE is in a difficult position of having on the one hand, to meet the rising expectations of the local people in the wake of abolished colonial rule and yet on the other hand, having to please the Chinese Central Government. He and Zhu (2007) offer an explanation that suggests Hong Kong's regulatory model is a transactional model. According to He and Zhu (2007), the Hong Kong economy is dominated by few oligopolies and billionaires who have successfully supported and had the support of the Central Government. The billionaires either themselves or through their representatives represent the force behind the elite group that elects the CE. It is apparent that the special dynamics of this elite group and other business interest groups have considerable political influence and clout in Hong Kong thereby resulting in a significant impact on Hong Kong's regulatory model.[106]

7.9 CHAPTER CONCLUSION

From the discussion above, we may conclude that the Territory's social, cultural, and political norms have a significant resultant impact on the community's serious lack of (a) public knowledge and (b) public debate on non-economic and non-commercial issues. In particular, we may add, a serious level of public knowledge and of public debate on the social impact of mobile phone usage on children and young people. We opine that with better understanding and knowledge of the capabilities and hazards of mobile usage, the

103 He, Z., and Zhu, J.H. Jonathan., Regulating the New Media in China and Hong Kong: Manipulation and Transaction, available at Policy and Regulation in New Media: www.newmedia.cityu.edu.hk/cyberlaw/gp1/intro.html

104 Supra.

105 The Basic Law is a mini constitution of Hong Kong.

106 Supra He and Zhu, n. 103.

community as a whole will be able to participate actively and contribute creatively to a framework that best reflects the local culture, circumstance, and standard of morality, decency, and propriety.

Whilst we observe that weak political will and public support due to the lack of public knowledge and public debate may be the result of (1) the Territory's political tradition of a non-democratic form of governance which, we opine breeds democratic immaturity and (2) the Territory's social and cultural norms which neither promotes the expression of collective public opinion nor encourages active community participation, we opine that the lessons we derive from the other jurisdictions are invaluable, and will provide a comprehensive guiding framework from which we can derive essential elements for the formulation of a viable framework for mobile content regulation.

In the next chapter, we set ourselves the task of considering various regulatory theories.

8 Regulatory paradigms

This chapter provides an overview of the different theories of the regulation of cyberspace. It describes paradigms and deals with the limitations of the theories. We start with a general introduction.

Changes in contemporary life happen quite rapidly. We state that such changes occur predominantly in the area of new technologies. These technologies promulgate great social change and create such a powerful impact on the society in both economic and social terms that it is inevitable that they create new social challenges which require a regulatory response. Historically, this revolutionary impact can be seen from the three main areas of communication: (1) the print media, (2) the common carriage (telecommunications), and (3) broadcasting. We discuss them all three briefly below.

First, the mid-fifteenth century saw the print revolution which was in some sense closely associated with the printing of the Gutenberg Bible.[1] It led to rapid social advances in literacy and learning. The advances were made possible through the mass distribution of the printed word. Bruno (1987) described printing as one of the most important inventions in human history by the following reasoning.

> "it made it possible to put more information in the hands of more people in less time and at lower costs and thereby spread literacy and learning more widely and rapidly than ever before".[2]

Second, for common carriers, the mode of communication is perhaps best defined by (1) the right of access and (2) the obligation to serve all without discrimination. Thus, common carriers include the modes of telecommunications as we know them, such as the telephone, the telegraph, and the postal system. These modes of communication have played a significant role in transforming global communities in three broad areas: (1) sociologically, the common carriers have allowed communities to share their lives, experiences, and culture; (2) economically, the common carriers belong to the integral spokes in the wheels of international and domestic trade; (3) politically, the

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1 What is the Gutenberg Bible?; available at http://gutenberg-bible.com/

2 Bruno, M., Printing, (1987), Vol. 14, McGraw-Hill Encyclopedia of Science and Technology, McGraw-Hill, New York, N.Y.

common carriers can be seen as the impetus for political changes and even revolutions.

Third, in contrast to the common carriers, the right to broadcast is based on a scarcity of frequencies in the radio spectrum. So broadcasters are subjected to a harsher regime. This is generally seen in terms of licensing arrangements. However, it is argued that it is not the mere medium of these modes of communication, but rather the creation of new communities and the expansion of old communities by these technologies that gives rise to (1) new social trends, (2) legal demands, and (3) legal challenges. As opined by McLuhan (1967), technologies are first and foremost an extension of our human selves, which extend our human capacities.[3] Obviously, the truth in McLuhan's opinion is illustrative and clearly relevant in terms of the implications brought upon by new communication technologies, such as the Internet and the Internet accessible hand-held devices like 3G mobile phones.

It is apparent that the new communication technology and media enable, form, and limit the individuals' choices and subsequent actions. The enabling aspect creates individual empowerment, provides fertile ground to encourage, promote, and invigorate human interaction resulting in conduct and activity which the state regulator views as appropriate to regulate. We see this in the form of frequent uses of bulletin boards, discussion groups, and blogs spaces for purposes of expressing political dissention.[4]

However, together with the benefits of more profound human interaction, increased community participation, and greater individual empowerment, we have seen in Chapter 4, two main concerns of the new communication technology:

1 the negative effects of the technology, in particular with regards to (1a) the hazards of the Internet and (1b) the hazards brought about by the new generation of mobile phones such as bullying, location-based services,[5] and grooming activities and
2 the migration of (1a) from a fixed personal computer location to a more mobile and less supervised platform via the use of an Internet enabled mobile phone.

In addition to the two main concerns, there is a third and that is, the significant impact the hazards (both (1a) and (1b)) can have on children and young people (this is dealt with more appropriately in Chapter 5).

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3 McLuhan, M., (1967), *Understanding Media: The Extension of Man*, Bantam, New York, N.Y. p. 23.

4 In fact, it is not unusual in recent times to see blog spaces being utilised as an extension of political parties propaganda. See, for example, 'Abdullah sets up propaganda team in cyberspace', South China Morning Post, July 9, 2007.

5 While location-based services do not in itself pose a threat to children, its use (or abuse), may lead to possible threats.

We thus need to examine and evaluate the existing regulatory framework to see how best we might be able to address its inadequacies with regards to the protection of this vulnerable group. We have done so by focusing our attention on the legal perspective in Chapters 6 and 7. We will continue to do so in the remaining chapters.

In this chapter, we specifically aim to examine and evaluate two issues. The first issue: is how does the intangible nature of the new environment affect the existing framework? The second issue: is what appropriate regulatory measures might be adopted to regulate the hazards mentioned previously? Both issues take into account the on-line world's non-physical attribute and how this attribute undermines traditional hierarchically structured systems of control. Accordingly, we start by considering regulatory paradigms propounded by legal theorists.

The contents of this chapter, thus, are as follows. We start with the cyberlibertarian theory (Section 8.1), followed by wither state control? – inherent limitations (Section 8.2). Then we would like to define (or at least to delineate) the space by describing de facto borders (Section 8.3), followed by Internet fluidity and regulatory arbitrage (Section 8.4). The role of regulation and its strategies is dealt with in Section 8.5. Thereafter, we focus on the types of regulation itself, by considering the command control theory in Section 8.6, the underlying theory of four modalities of regulation in Section 8.7. Regulation by code, for instance through filtering, its merit and de-merits are briefly dealt with in Section 8.8. Section 8.9 considers a critique of filtering, i.e., the freedom of speech. The privacy of children and young persons is considered in Section 8.10. The chapter continues with Murray and Scott's hybrid theory in Section 8.11, and the relevance of their theory in Section 8.12. From these descriptions, we arrive at the fragmentation of the society and its subsystems (Section 8.13). Then we consider the strengths and weaknesses of the theories propounded in Section 8.14 and conclude the chapter in Section 8.15.

8.1 CYBERLIBERTARIAN THEORY

Understandably, from the initial haphazard development of the Internet early cyberlibertarians may have seen the Internet as an independent and unregulated social space. The defenders of civil liberties saw the Internet, its communication protocols, and the establishment of on-line communities within this social sphere as a new regime; a regime beyond the regulatory control of the conventional hierarchical structure of state sovereignty. This position was no more obvious and more pronounced than in John Barlow's (1996) declaration of (cyberspace) sovereignty.

> "Governments of the Industrial World (…). You have no sovereignty where we gather (…). Our world is different (…). You have no moral right to rule us nor do you possess any methods of enforcement we have true reason to fear (…). Your

> legal concepts of property, expression, identity, movement and context do not apply to us. They are all based on matter and there is no matter here".[6]

Admittedly, we do see some truth in Barlow's words. So, there is certainly a scientific position for the cyberlibertarian theory. However, it is not our position. We will argue below why we do not adhere to this position.

As indicated above, the state is accustomed to controlling the communication via the modes of communication, albeit that some modes of communication are more strictly regulated than others. This control is exercised via a licensing regime; for example, in the communication and dissemination of information. We mention the distribution of informational tangible products, such as books, films, and sound recordings. However, when these informational products cease to become tangible and become nothing more than the transmission of streams of bits and bytes, the regulatory task becomes more challenging. Even so, we do see assertions of control and regulatory efforts at international and national level made on nearly every digitised human activity. On the international level, the assertions of control and regulatory effort can be seen reflected in the form of international organisations and in the form of treaties and policies adopted such as the Internet Corporation for Assigned Names and Numbers (ICANN),[7] the United Nations Commission on International Trade Law (UNCITRAL),[8] the World Intellectual Property Organisation (WIPO),[9] and the European Convention on Cybercrime,[10] and the Uniform Domain Name Dispute Resolution Policy (UNCRP). Assertions of control have also been made at national level. This is more aptly considered in Section 8.2.

Notwithstanding these assertions of state control and regulatory efforts, our studies do indicate that there have been some successful attempts at asserting the liberties of the on-line space, in the sense of achieving 'freedom' from state control. We provide two examples as illustrations. The first example is the proceedings against the United States Secret Service for unlawful search and seizure initiated by the Electronic Freedom Frontier (the Steve Jackson game case). The Steve Jackson game case is a pivotal case as it illustrates that the electronic mail, which is seen as nothing more than an Internet-based activity, can be afforded the same protection as a real-world telephone call. This is so when the court held as unlawful, the access and deletion of electronic

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6 Barlow, J., (1996) A Declaration of Independence of Cyberspace, available: www.eff.org/~barlow/Declaration-Final.htm

7 See www.icann.org

8 See www.uncitral.org

9 See www.wipo.int

10 See http://conventions.coe.int/Treaty/EN/Treaties/Html/185.htm

mails by the US secret service.[11] The second example, is Lessig's 'information commons' or 'creative commons' (CC).[12] We see Lessig's CC as an attempt to 'route around' the increasingly restrictive intellectual property regime (IPR) which Lessig sees as is "a culture in which creators get to create only with the permission of the powerful, or of creators from the past".[13] The creation of CC is thus premised on the provision of necessary support for individuals and organisations for existing creative works to be legally built upon and shared, via licensing.[14]

In the author's opinion, despite the achievement of some success in the form of (1) protection of an Internet-based activity and (2) the use of CC as an alternative to an "all right reserved" strict copyright regime, cyberlibertarian theory in its purest form cannot be held. Filtering, for instance, as a form of on-line control is a mechanism that will be considered in Section 8.8.

8.2 WITHER STATE CONTROL? – INHERENT LIMITATIONS

Legal systems exist in every jurisdiction. Legal systems represent law, order, and control. The objective of a legal system is clear, that is, to regulate social conduct. As opined by Ellickson (1994), the government (the state) is the controller of the law that members of the social group (the community) employ to achieve social order.[15] The government performs its functions by ensuring that the rules (the law) are adhered to. In the event that the rules are breached, the sanctions arising from such a breach are state enforced.[16] However, legal systems, law, order, and control are strictly confined to the physical place in which they are established. In Subsection 8.2.1, we briefly describe the constraints of the law and in Subsection 8.2.2 the attempts by the state to regulate them for on-line situations beyond their state borders. In Subsection 8.2.3, we argue that the laws are more effective when applied domestically.

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11 *Steve Jackson Games Inc v US Secret Service,* 36 F 3d 457 (5th Circuit 1994). In this case, the U.S. secret service in an attempt to prevent the spread and further disclosure of an illegally obtained E-911 document seized the plaintiff's computer and deleted the email. The E-911 documents were documents describing the functioning of the 911 emergency system.

12 See www.creativecommons.org

13 Lessig, L., (2004), Free Culture, Penguin Press, New York, N.Y.

14 The licences allow the creators to communicate which rights they reserve and which rights they waive. According to Lessig, Creative Commons work to counter what it considers to be dominant and increasingly 'permissive culture'.

15 Ellickson, R., (1994), The Aim of Order Without Law, *Journal of Institutional and Theorectical Economics,* 150/1, p. 97-100.

16 Supra Ellickson.

8.2.1 Territorial nature of laws

'All law is prima facie territorial'.[17] Territorial borders delineate areas within which different sets of rules apply.[18] In the real world, sovereignty and therefore control can only be exerted by the state within its physical borders. In fact, the states are accustomed to and are comfortable with exercising control and sovereignty over individuals and their activities within the demarcated space, evidenced by physical territorial borders. The behaviour and activities of individuals in distinct areas such as the individuals' rights and liabilities under *inter-alia* contract law, criminal law, commercial law, intellectual property law, and privacy, are governed within the defined borders. This is reflective of the legal centralists' view (such as Coase's view) that private ordering cannot begin until the sovereign has specified property rights.[19] For example, by using the Parable of the Farmer and the Rancher, Coase (1960) stated that the legal system should determine whether the farmer will be entitled to recover damages for cattle trespass.[20] Coase's parable was intended to explicate the relations between liability rules and land use. The question asked by Coase is how the behaviour of a farmer and a neighbouring rancher would be affected by whether the rancher was responsible for damage caused by straying cattle. In one of the first statements of what came to be called the Coase Theorem, Coase concluded that, as long as the parties could readily bargain with each other over their actions, the legal rule would affect the pattern of side payments--who had to pay what to whom--but not the use of the land.[21] It is apparent that the legal centralists' view such as Coase's view applies in a well demarcated space. Thus, within this demarcated tangible space, the state defines the rights of individuals, enforces its rules, and imposes sanctions to rein in those who breach or violate the law. Within such a regime, the adjudication of disputes and the enforcement of regulatory policies and decisions are territorially restricted.[22] It is only through the allegiance and consent of individuals residing within the demarcated space, that the laws within this space achieve legitimacy. Thus, in Lessig's (1999) example, gambling laws of state A cannot be imposed on individuals residing in state B, and even

17 *American Banana Co v United Fruit Co*, 213 US 347, 357 (1909). See also Johnson, D., and Post, D., (1997), The Rise of the Global Network, at p. 4, in Kahin, B and Neeson, C., *Borders in Cyberspace, Information Policy and the Global Information Infrastructure*, (eds.), MIT Press, Cambridge, Massachusetts, U.S.

18 Supra Johnson & Post.

19 Ellickson, R., (1994), The Aim of Order Without Law, 1994 *Journal of Institutional and Theorectical Economics*, 150/1, p. 97-100.

20 Coase, R., (1960), The Problem of Social Cost, 3 *Journal of Law and Economics*, p. 1-44.

21 Ellickson, R., (1991), Less Law Than Meets The Eye in *Order without Law*, Harvard University Press, Cambridge; Book review by David Friedman available at http://www.daviddfriedman.com/Academic/Less_Law/Less_Law.html

22 Reidenberg, J., (1996), Governing Networks and Rule Making in Cyberspace, 45 *Emory Law Journal* 911.

if so imposed, they will not be recognised and enforceable in state B unless state B promulgates the same law.[23]

8.2.2 Causing the rippling effect

However, the discourse of sovereignty of law does not sit well in the on-line world since there are no recognisable and enforceable physical borders. Conversely, within the on-line social sphere, individuals are able to engage in a variety of activities with greater autonomy. The myriad activities conducted within this sphere are not tied specifically to any geographical location.[24] Thus, if state A imposes a law which prohibits gambling in the real world and in the on-line world, in that gambling is not viewed as being a positive and a healthy activity for the residents of state A, so too must the law of other states be imposed on the respective states' own citizen against on-line gambling and other inappropriate on-line activities. If this argument holds, we are stating that every state has the right to regulate whatever activities its citizens are able to access via the Internet.

Theoretically, this is correct since the sovereignty of each state empowers it to do so, but while the state may gain control via various infrastructures and industries within its borders, it has no leverage over the whole network system.[25] Such control serves nothing more than a false sense of security. Further, aside from the issue of enforcement which poses a major concern on every state, we are asserting the sovereignty of every state over activities conducted on the Internet. Surely this cannot be correct. So, the question remains: what is the meaning of territoriality in an on-line world?

The above argument poses a further concern, that is, it is quite impossible for a state to regulate any part of the Internet or its activities without it causing a rippling effect.[26] An example can be seen in the US case of *New York v Vacco*.[27] In *Vacco*, the Golden Chips Casino is a subsidiary of a New York corporation but it set up its operation as an Antiguan corporation. It was licensed to run a gambling establishment and operated its website from Antigua. Its website was accessible to users in New York. The New York Supreme Court held that Golden Chips Casino violated New York's anti-

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23 Lessig, L., (1999) , Codes and Other Laws of Cyberspace, Basic Books, New York, N.Y.

24 Supra Johnson & Post, n. 17.

25 Selin, S., (1996), Governing Cyberspace: The Need for an International Solution, 32 *Gonz. L. Rev*. 368-369, see also Goldsmith, J., (2000), Unilateral Regulation of the Internet: A Modest Defense, 11 *EJIL* No. 1 139.

26 Bauchner, J.S., (2000), State Sovereignty and the Globalization Effects of the Internet: A Case Study of the Privacy Debate, 26 *Brooklyn Journal of International Law*, p. 695-696. In fact, according to Goldsmith, such spillover effects remain the central problem of modern conflicts of laws,: Goldsmith. J, (1998) Against Cyberanarchy, 65 *University of Chicago Law Review* 1199, p. 1205 -1211.

27 Supreme Court No 404428/98, 22 July 1999.

gambling laws and prohibited the company from continuing its activities. In this case, the court's decision was enforceable as the directors and employees of the Golden Chips Casino were in the US The case however should be compared with the case of *Gutnick v Dow Jones*.[28]

In *Gutnick,* Mr Gutnick, a successful business sued Dow Jones in Victoria, Australia for defamation over an article entitled "Unholy Gains" which was published on the magazine's internet site "Barron's On-line" located at www.wsj.com. The article suggested that Mr Gutnick had manipulated US stock prices and had laundered money through a number of charities. There was evidence which showed that the hard copy of the magazine had sold over 300,000 copies with 14 copies in Victoria alone. The website was shown to have 550,000 subscribers with 300 registered in Victoria. One important issue was whether the Supreme Court of Victoria can exercise its jurisdiction over Dow Jones as being the appropriate forum. Dow Jones argued that the alleged defamatory material was uploaded onto the Dow Jones server in New Jersey. As such, the appropriate forum for determining defamation if any, is in the US The argument was rejected by the court which held that publication occurs when an article is downloaded from the Internet. Therefore, a plaintiff has the right to raise defamation proceedings in any jurisdiction where the offending defamatory statement is accessed. This is only so provided the plaintiff has proven to have sufficient connection to that jurisdiction. It is without doubt that the case serves as a warning to those who publish defamatory materials on the Internet. Publishers should be aware that they can be sued for defamation in those jurisdictions in which the material is accessible. More importantly, the Gutnick case is seen as a prime example of the Australian courts not only in reinforcing their right to exercise jurisdiction over the matter but also in attempting to impose domestic legal standards on foreign Internet conduct.

In addition to Gutnick, it is noted that there have also been numerous attempts by various states (regulators) in establishing some form of electronic borders (barriers). This can be seen in illustrated examples provided by Johnson and Post, such as (1) that of German authorities ordering Compuserve to disable access by German residents to global usenet newsgroups for violation of Germany's laws against distribution of pornographic materials, (2) an electronic mail warning by the Minnesota Attorney General's office to Internet users and providers that any material transmitted by persons outside the state of Minnesota which will be disseminated in Minnesota shall be subject to both civil and criminal laws of the State of Minnesota,[29] and (3) Canadian Human

28 2002 HCA 56. See also www.hcourt.gov.au/media/dowjones.pdf.

29 Johnson & Post supra n. 17 at p. 6. See also the decision of the Ontario Court on a similar point in *Kitakufe v Oloya* 1998, O.J. No 2357 Gen Div (QL). In Kitakufe, the Ontario court found Ontario to be a convenient forum for an internet defamation action even though the defamatory material was published in an Ugandan newspaper, part of which was

Rights Commission ordered Ernst Zündel, a former Canadian resident now living in the US, to remove anti-Semitic hate speech from his California-based Internet site.[30]

Thus we may tentatively conclude that the state accustomed to the tangible element of the physical world is 'at loss' when dealing with cyberspace, and the activities carried out within that on-line sphere. Various incursions into cyberspace are made with a view to attempt to regulate, and at least control what the state opines and regards, is their jurisdiction, or within their jurisdiction, that is, the control of the users residing within their jurisdiction, and their on-line activities. Whatever the case, we may conclude that the attempt at best (1) is a weak measure and (2) provides a false sense of security.

8.2.3 Out of range, out of control

It is apparent that laws are generally not as effective as it could be in situations where (1) the issues to be addressed are not local or domestic and (2) the activities occurring are seen not to be within the control of state authorities. Law garners much better respect when it reflects local realities and concerns. Further, local authorities who understand the local community have typically been able to work more effectively with their neighbours to resolve social disorder, misunderstanding, and conflicts. This can be seen more clearly when comparing law-making, enforcement, and adjudication in a small village or county community to big city communities and the global virtual on-line community of the Internet.

The difficulties involved in controlling individuals and communities and their activities from afar are compounded in cyberspace when the virtual world exists only by reason of transcending physical geographical borders. Indeed from our investigations, we can surmise that the law is most effective when applied domestically to local circumstances rather than to situations beyond domestic or regional settings. This no doubt reflects the fallibility of law to life in the on-line world.

8.3 DE FACTO BORDERS

From the above discussion, we may appreciate the significance of borders. Be it in the real world or the on-line world, borders and boundaries are

available on the Internet. Another case in point is *Yahoo v Licra* 379 F.3d 1120 (9th Circuit) in which the French court ordered U.S. company Yahoo to render impossible the access by French citizen to a website displaying Nazi memorabilia.

30 *Citron v. Zündel*, Canadian Human Rights Commission (2002), *available at* ww.chrt-cdp.gc.ca/decisions/docs/citron-e.htm

essential, as (1) they demarcate space, and (2) with the demarcation of space, we know the limitations placed upon us within that space.

Notwithstanding the above, as far as the on-line world is concerned, we cannot say that borders do not exist at all. There are borders that delineate the on-line world from the real world. Although the argument that cyberspace exists independently of its physical location still holds true, we can also argue that its borders are determined and demarcated by computer screens, usernames, and passwords. In fact, we can further argue that boundaries are also created by network service providers, such as America On-line, BTinternet, Netvigator, and the like, through a contractual agreement with subscribers. The arrangements would determine the availability, and the conditions of access for connecting onto the network.[31] Accordingly, although we accept that such de facto borders are 'borders' delineating us from the on-line world, it is clear that Barlow's (1996), and Johnson and Post's (1997) reference to borders is not with reference to computer screens, usernames, and passwords but to physical geographical space within which the state controls all behaviour and activities arising within. Thus, they contend that traditional state sovereignty based upon the notions of physical borders cannot function in cyberspace.[32] Accordingly, traditional concepts based on territorial borders are neither appropriate nor can they be applied to the Internet.[33] This is aptly stated by US District Court Judge, Nancy Gertner.

> "Physical boundaries typically have farmed legal boundaries, in effect creating signposts that warn that we will be required after crossing to abide by different rules (…). To impose traditional territorial concepts on … the Internet would have dramatic implications (…)".[34]

Hence, borders and boundaries can be regarded as 'fences'; the purpose of fences being, depending on which side of the fence you are in, 'to keep things in' or 'to keep them out'. The fences are a means of separation and control. Thus although this chapter focusses mainly on state (territorial or physical) fences of separation and control, we are mindful that these fences are not the only fences we are subjected to.

Notwithstanding our discussion on de facto borders, we are appreciative of the limitations and the challenges that confront the state (regulators). Thus, taking into account the limitations of physical regulations being inextricably linked to physical borders, two questions are: how must the state handle and

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31 Supra Reidenberg, n. 22.

32 Supra Johnson. D, and Post. D n. 17.

33 Note however that Johnson & Post's view is not shared by Goldsmith who insist that cyberspace transactions are no different from real space transactions and that there is no argument that supports immunization of cyberspace activities from territorial regulation. See further Goldsmith at supra n. 26.

34 *Digital Equipment Corporation v Alta Vista Technology Inc*, 1997, 960 F. Supp. 456.

what can the state do to protect youngsters in the best way from the hazards of the new communication technology?

8.4 INTERNET FLUIDITY AND REGULATORY ARBITRAGE

In this section, we investigate how the design of the Internet contributes to the ineffective application and enforcement of the law. The section further notes the challenges made to this discourse by the possibility of making choices in the system design of Internet. We thus discuss Internet fluidity in Subsection 8.4.1 and two possible regulations in Subsection 8.4.2.

8.4.1 Internet fluidity

A characteristic stemming from the design of the Internet which poses immense challenges to the state is its fluidity. The Internet's fluidity enables individuals to move either themselves or their activities seamlessly from one regulatory regime or system to another.[35] Johnson and Post (1996) viewed the Internet as a medium that would foster regulatory arbitrage and undermine traditional hierarchically structured systems of control.[36] Longworth (2000) observed that

> "users can move between environments and adopt cyber-profiles or personae. These features could pre-empt any successful attempts by nations or sovereign authorities to impose their own view as to which values, rights and policies should prevail in a global cyberspace community".[37]

In such circumstances, it is possible for an individual to 'route around' a prohibited communication simply by reconfiguring the connection to make it appear as if he is residing in another state thereby avoiding the regulatory regime. According to Murray (2002), the problem of regulatory arbitrage emerges whenever subjects of regulation have sufficient mobility in their operations or activities that they can choose to be regulated by one regime rather than another.[38] Thus, any regulatory system would be determined by the freedom of individuals to move and to choose those rules which best suit their requirements. This is because, as Post (1997) succinctly relates

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35 Froomkin, M., The Internet as a Source of Regulatory Arbitrage, available at www.miami.edu~froomkin/articles/arbitr.htm

36 Johnson, D. and Post, D., (1996), Law and Borders – The Rise of Law in Cyberspace, 48 *Stan. L. R* 1367.

37 Longworth, E., (2000), The Possibilities for a Legal Framework for Cyberspace, in *The International Dimensions of Cyberspace Law*, Vol.1, UNESCO Publishing.

38 Murray, A. and Scott, C., (2002), Controlling the New Media: Hybrid Responses to New Forms of Power, Vol. 65, 4 *MLR,* p.491-516.

> "cyberspace does not merely weaken the significance of physical location it destroys it (...). They do not cross geographical boundaries, (…). They ignore the existence of boundaries altogether".[39]

With the elements of physicality lost and the ability to regulate impaired, it will be difficult to regulate, if at all, without the consent and willingness of those to be regulated since such a regulation will result in the movement of those individuals to alternative regulatory systems. Consequently, it is inconceivable that the only possible system of regulation would be one that is dependant on the consensus of the inhabitants of the globally networked social space.[40]

8.4.2 Two possible regulations

After abandoning the cyberliberatarian's position wherein it is propounded that no regulation at least in the terms of geographical borders can be applied, we may tentatively conclude that regulatory arbitrage is a feature of the on-line world. However, we surmise that the Internet and the activities of the on-line world can be regulated (1) via the infrastructure itself, i.e., system design choices by developers of technology, and (more importantly, we opine) (2) via legitimising regulations to enable a greater community participation and compliance. In the following sections, we consider these two main issues. First, in Section 8.5, we consider the purpose of regulation by analysing the role of regulations. Second, in Section 8.6 to 8.14 we discuss the regulatory strategies propounded in an attempt to find a strategy that best protects children and young people from the hazards of the new communication technology.

8.5 THE ROLE OF REGULATION AND ITS STRATEGIES

This section starts with a straightforward definition of regulation (Subsection 8.5.1). It then continues with the purpose of regulation followed by an evaluation of the concepts and theories of regulation propounded in a wider view on regulation by using a regulatory strategy (Subsection 8.5.2).

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39 Post, D., (1997) *Governing Cyberspace*, 43 *Wayne Law Review* p. 155.

40 Johnson, D. and Post, D., (1998), The New Civic Virtue of the Internet: A Complex Systems Model for the Governance of Cyberspace', in the *Emerging Internet*, Firestone, C (ed.). also available at http://www.temple.edu/lawschool/dpost/Newcivicvirtue.html. See also Reidenberg, supra n. 22.

8.5.1 A view on regulation

We contend that before we can appropriately consider regulatory theories and strategies, we must answer the questions: (1) what is regulation? and (2) how is regulation carried out? Perhaps, these questions can be best answered by looking at the role of regulation within society. Regulation can be loosely defined as a form of control, and a means of exerting power or authority. Philosophically, regulation generally refers to control or the imposition of certain restrictions upon behaviours, whether individual or institutional.[41] It can be seen as every force, or external controls exerted upon those to be regulated.[42] Regulation describes the laws and the associated legal and administrative structures that states use to regulate a sector of the economy or society. In fact, Daintith as cited by Graham and Prosser (1991) defines regulation as a term which reflects four elements. First, regulation is a device for controlling, governing or directing by any actor in accordance with certain rules or a system of rules. Second, regulation is an activity of the state that alters the operation of the market. Third, regulation is used to support and accelerate the economic policy of the state. Fourth, regulation refers to the legal order, which expresses the domain of the state over society as a whole through orders, which are characterised by their command nature.[43] Thus the term 'regulatory regime' is used to describe the overarching design, intent, and performance of the regulatory system.[44]

This opinion is generally accepted by prominent lawyers. For instance, Kelsen sees regulation as a means of social ordering. He says,

> "The living together of human beings is characterised by the setting up of institutions that regulate this living together. Such an 'institution' is called an "order". (…) Society is ordered living together, or, more accurately put, society is the ordering of the living together of individuals. The function of every social order is to bring about certain mutual behavior of individuals; to induce them to certain positive or negative behavior, to certain action or abstention from action. To the individual the order appears as a complex of rules that determine how the individual should conduct himself. These rules are called norms".[45]

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41 Latifulhayat, A., (2007), The Independent Regulatory Body: A New Regulatory Institution in Privatised Telecommunication Industry, conference paper presented in December, 2007.

42 Supra Murray and Scott, n. 38.

43 Graham, C. and Prosser, T., (1991), *Privatising Public Enterprises: Constitution, the State, and Regulation in Comparative Perspective*, Clarendon Press, Oxford, England, p. 175.

44 Hirst, M. and Harrison, J., (2007), The Governance, Regulation and Ethnics of Mass Communication Media in *Communication and New Media: From Broadcast to Narrowcast*, Oxford University Press, Oxford, England, p. 166

45 Kelsen, H., (1941), The Law As a Specific Social Technique, *U Chi L Rev* 75.

Thus, regulations are regarded as any form of social control imposed by those higher in authority. As "the function of every social order is to bring about certain mutual behavior of individuals; (…) whether action or abstention from action",[46] regulations can be created or designed for man's own individual protection and for the protection of others as members of a society.

We are not alien to regulations having been subjected to them in one form or another since the day we were born. Nearly all forms of daily activities conducted are regulated, from home-based activities, work-related activities, to economically-related activities, and socially-related activities. It is apparent that the purpose of such control is to regulate human conduct and behaviour and to discharge different social functions. We list inter-alia five social functions as provided by Summers (1971). They are: (1) reinforcement of family, (2) maintenance of community peace, (3) provision for redress of wrongs, (4) recognition of and ordering of property ownership, and (5) protection of privacy.[47] We believe the discharge of social functions as being more important when living as part of a wider community. Thus, neither the control of social behaviour nor the discharge of social functions can be viewed as vital to the well-being of a community if, for example, one lives alone on an island. In such circumstances, it does not matter whether you drive on the wrong side of the road or take fruits from another part of the island.

In contrast to the socially related activities, economic activities are regulated to combat market concentration and unfair trade practices. A myriad of regulations are in force to ensure transparency of ownership in the face of, for example, mergers and acquisitions, to ensure the promotion of healthy competition amongst the industries and to protect intellectual property rights. Thus, regulations are useful to control activities within complex systems and communities. Already Fuller (1962) defined law as "the enterprise of subjecting human conduct to the governance of rules".[48]

8.5.2 A wider view on regulation by using a regulatory strategy

Goldberg, Prosser, and Verhurst (2002) saw regulation as a wider concept.[49] They characterise regulation as technological regulation concerned with infrastructure and standardisation, economic regulation concerned with market structure, remuneration and finance, and social regulation of content and user protection.[50] Their conceptual idea of regulation is similar to that proposed by Baldwin (1999) and Lessig (1999) as we shall see in Section 8.7. However,

46 Supra.
47 Summers, R.S., (1971), The Technique Element in Law, *California Law Review*, p. 733-751.
48 Fuller, L., (1962), *The Morality of Law*, Yale University Press, New Haven, CT , p. 106
49 Goldberg, D., Prosser, T., and Verhulst, S., (2002), *Regulating the Changing Media*, Clarendon Press, Oxford, England.
50 Supra.

despite the various concepts propounded, for the purposes of our study, we find the concept of regulation by Baldwin and Cave (1999) as the most appropriate in that they described regulations as (1) a presentation of rules and their subsequent enforcement (usually by the state), (2) any form of state intervention in the economy of social actors, and (3) any form of social control whether initiated by the central actor such as the state.[51] Following on from the concept of regulation, a number of regulatory strategies have been developed. Baldwin and Cave (1999) have listed eight strategies namely

(a) the command and control theory,
(b) self regulation,
(c) incentives,
(d) market harnessing controls,
(e) disclosure,
(f) direct action,
(g) rights and liabilities law, and
(h) public compensation.[52]

Each one of these strategies can be applied independently or in combination with the other. For example, the classical command control strategy can be used together with the incentives strategy to encourage right behaviour or to achieve the desired outcome. When used together with regulations, incentives are seen as 'a carrot', complementary to 'the stick' approach wherein incentives can soften the blow to encourage the right sort of behaviour.[53] In this sense, we observe that incentives can include tax credit and subsidies. For example, in order to change the mindset and culture of tax payers to file their annual tax returns electronically rather than using the traditional method of paper based submissions, the Inland Revenue provides tax payers an automatic one month extension of time for the filing of annual returns. Conversely, a fine is imposed if a tax payer does not submit his returns whether on-line or otherwise within the time stipulated. The advantage of using incentives is that the regulator achieves its objectives while leaving those regulated free to make the choice. Thus from the example, we see how a combination of strategies can produce a desired result. Our investigation reveals how the adoption of a combination of strategies might perhaps address the inadequacies of the existing regulatory framework that we have previously described. This is dealt with in greater detail in Chapters 9 and 10. Having considered the role of regulation in society, and some strategies the following six sections deal with the types of regulation available. They emphasise the characteristics, the benefits and the drawbacks.

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51 Baldwin, R., and Cave, M., (1999),*Understanding Regulation*, OUP, Oxford, England.
52 Supra Baldwin and Cave.
53 Incentives: Using sticks and carrots, in Imaginative Thinking for Better Regulation; available at www.brtf.gov.uk

8.6 THE COMMAND CONTROL APPROACH

The command control approach is also known as prescriptive (state) regulation or classic regulation. The command control form of regulation is a regulation that is promulgated informing those subjected to the regulations what can and cannot be done. Generally, legal theory proceeds from the premise that only the sovereign endowed with coercive powers can make, apply, and enforce the law.[54]

According to Austin (1832),[55] law is an expression of a sovereign's desire (seen as a command) backed by threat of sanctions. The subjects will be penalised by the force of sanctions if the sovereign's desire is not obeyed. Thus, compliance with the law is obtained as a result of the fear of punishment. In Austin's view, a sovereign is able to exercise this absolute power over his subjects because he has total control of the geographical space and the individuals within it. The sovereign reigns supreme in this geographical space and there are no others that exercise command over him. However, questions of the sovereign's authority and the legitimacy of the threat of sanctions were never dealt with by Austin.

Law can also be seen in terms of a coercive order (Kelsen, 1952). Kelsen defines law as

> "(…) providing for socially organized sanctions and these can be clearly distinguished from a religious order (…) and a moral order (…). As a coercive order, the law is that specific social technique which consists in the attempt to bring about the desired social conduct of men through the threat of a measure of coercion which is to be taken in the case of (…) legally wrong conduct".[56]

Thus, the fundamental idea of the process of regulation is to ensure compliance. As Hart (1994) posits, this can be done through rules, standards, and principles which are seen as instruments of social control.[57]

8.6.1 Challenges to the command control approach

While the command control approach is a common regulatory strategy for regulating social conduct, regulation using Austin's approach only makes sense if those regulated are able to comply. The state (regulators) adopt this approach because it wants those regulated (the regulatees) to behave in a certain way.

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54 Grewlich, K.W., (1999), Governance: Stakeholders, Jurisdiction, Principles-Implementation, Chapter 10 in *Governance in Cyberspace: Access and Public Interest in Global Communications*, Kluwer Law International, The Netherlands.

55 Austin, J., (1832), *The Province of Jurisprudence Determined*, (reprinted 1995, Cambridge University Press), Cambridge, England.

56 Kelsen, H., (1952), *Principles of International Law*, New York, N.Y.

57 Hart, H.L.A.,(1994), *The Concept of Law*, Clarendon Law Series, Oxford, England.

However, not every individual will do so. Seen in terms of the state, the command control approach is a compulsory form of state intervention. From this perspective, Daintith had acknowledged the difficulties of getting the regulatees to change their behaviour when the state wishes to solve policy problems.[58] Daintith continues by stating that one way of changing people's behaviour is the use of the command of law.[59] The state commands its subjects to meet specific policies, standards, and norms either directly through laws (whether state made or judge made), and controls its behaviour and activity through the threat of sanctions. The rationale behind this approach is the theory of deterrence under which compliance is treated as a function of (1) the probability of an offender being punished, and (2) the severity of the penalty.[60] The negative sanctions provide the regulated community with a strong incentive to avoid transgressions.[61] However, there are two factors that can affect the level of compliance. The first is the cost of compliance. If the cost of compliance (for example, the licence fee) is seen to be higher than the cost of non compliance (the imposition of a fine for operating without a licence), there is a greater likelihood of non compliance. The second factor is the level of enforcement. It is inter-related to the first factor in the following way: if the enforcement is weak, and the level of enforcement (the fine) is less than the level of compliance, then it makes more sense not to comply.

Furthermore, we note that the (1) attempts to increase the detection of violations, (2) the punishment, and (3) the severity of punishment to ensure that the punishment is sufficiently high to reduce the possibility of deviance have not been 100 per cent perfect to call the enforcement a success. The deficiencies in the approach can be seen. Examples are: (1) the limited resources which prevent the adequate enforcement, and (2) the many instances, in which we see (2a) not a timely detection of offences, (2b) the authorities' reluctance to prosecute, (2c) a reluctance of the courts to impose the maximum penalty, and (2d) the possibility of getting away without being penalised. In such circumstances, what we encounter is a situation whereby "the dog's bark is worse than its bite".

While the above reasoning reflects regulatory challenges of the command control theory in the real world, we opine that the same reasoning can be used in re-inforcing our position that a strict application of the theory on its own cannot be effectively applied to address the challenges of protecting children and young people from hazards posed by the new communication techno-

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58 Daintith, T., (2007), The Executive Power Today: Bargaining and Economic Control, in Jowell and Oliver (eds.), *The Changing Constitution*, 6th ed, Oxford Univerity Press, Oxford, England.

59 Supra.

60 See Tietenberg, T.H., (1992), Innovation in Environmental Policy: Economic and Legal Aspects of Recent Developments in *Environmental Enforcement and Liability*, (eds.), Edward Elgar Publishing Ltd, Aldershot, Hants. See also Sinclair, D., (1997), Self Regulation versus Command and Control? Beyond False Dichotomies, *Law & Policy* Vol. 19 Number 4.

61 Supra Sinclair, at p. 534.

logies. As previously stated, this is due to the difficulty in application and enforcement of prescriptive regulations in an environment which is characterised by its fluidity and intangibility as well as by its non-recognition of physical boundaries.

Consequently, in the light of such deficiencies, it becomes abundantly clear that in introducing regulations based on the traditional approach, the state (regulators) must ensure that everything that is necessary for compliance including monitoring activities for compliance and enforcement is in place, effective, and viable.[62] Little is achieved if this is not so, since monitoring and enforcing compliance of regulations is expensive and complicated in terms of cost, time, and resources.

8.6.2 Benefits of the command control approach

Notwithstanding the constraints, we do accept that the classic regulation has its benefits. To substantiate them, we mention three of them. We observe that the traditional approach provides the certainty that society needs (1) to guide society as to how society should behave, (2) to lay down the possible outcomes and consequences when one contravenes the prescribed rule, and (3) to (subject to certain exceptions) afford a level playing field in that the approach applies to all who are within its scope and not to those who choose to opt in.[63] However, the question to be answered here is whether the benefits provide a sufficiently strong basis or argument for the state (regulators) to continue to adopt this regulatory approach? In our opinion, we doubt it and we would like to argue that measured along our discussion it does not, since from a cost-benefit perspective, the cost clearly outweighs the benefits attributed to it.

Having observed (1) the state's failure to deter and reduce inappropriate activities and (2) the state's futile attempts to regulate and control on-line activities to protect youngsters adequately, from one dimension, we may conclude that although the objective behind Austin's command control approach, and the theory of deterrence is purposeful, the approach, the theory, and the basis upon which most states promulgate laws is not the most cost effective approach in relation to its benefits. Moreover, we believe that it is neither the most appropriate nor the most effective and efficient form of social control. Considering the state's futile attempts to regulate and control on-line activities to protect youngsters adequately, we claim that they are caused by (1) the ineffectiveness and the inefficiency of Austin's theory and (2) the failure of the theory of deterrence to deter and reduce inappropriate activities. So, we should investigate other modalities of regulation.

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62 Imaginative Thinking for Better Regulation, Better Regulation Task Force 2005 report, available at: http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/imaginativeregulation.pdf

63 Supra.

8.7 MODALITIES OF REGULATION

This section provides a brief examination of the requirements for a viable control system to exist. We introduce three essential elements in Subsection 8.7.1. Subsection 8.7.2 deals with four modalities, Subsection 8.7.3 describes Benkler's three-layer model and Lessig's 'Code is Law' theory while Subsection 8.7.4 discusses the relation between Benkler and Lessig.

8.7.1 Three essential elements

Despite the fallibility and the inadequacy of the command control theory strategy, the strategy cannot be ignored altogether. Instead Hood, Rothstein, and Baldwin (2001) suggested that to be a viable control system within the control theory, a control system must have the following three essential elements: *standard setting, information gathering*, and *behaviour modification*.[64] In such circumstances, standard setting can include law, standards, and principles. To ensure efficiency and viability of the system, some manner and form of how information about the system is gathered will be necessary. Provision should also be made for modification of behaviour to bring it back within the acceptable limits of the systems standards.[65]

8.7.2 Four modalities

A variation of Hood, Rothstein, and Baldwin's (2001) elements of a control system is observed in Lessig's modalities of regulation. As with Baldwin and Cave (1999), Lessig (1999) proposes his modalities of regulation. They may be used individually or collectively. Lessig's modalities include (a) law, (b) market, (c) architecture, and (d) norms in which he views these modalities as constraints on an individual's actions.[66] For example, law constrains one's behaviour through the threat of punishment. The threat of punishment is traditionally imposed by the state as a result of laws made by the state (legislature). The examples by Lessig on how law regulates behaviour in cyberspace includes copyright, defamation, and obscenity laws.[67] The market (the second modality) according to Lessig is constrained through price and price-related measures. Physical constraints mark the architecture modality. It is by this third modality, that Lessig's maxim 'Code is Law' became significant. According to Lessig, the physical constraints are the features of the Internet archi-

64 Hood, C., Rothstein, H., and Baldwin, R., (2001), *The Government of Risk: Understanding Risk Regulation Regimes*, Oxford University Press, Oxford, England, p. 21-27.
65 Supra.
66 Lessig, L., (1999), *Codes and Other Laws of Cyberspace*, Basic Book, New York, N.Y.
67 Lessig, L., (1997), The Law of the Horse: What Cyberlaw Might Teach, *Stanford Law Review*, available at http://stlr.stanford.edu/STLR/Working papers/97Lessig 1/article.htm

tecture, its software, network protocols or code. They constrain by imposing conditions or restrictions on the way in which users operate on-line. Examples of constraints include passwords, encryption mechanisms, and filtering options.

In contrast to the law, social norms (the fourth modality) are neither formal nor are they made by judges or the state. Rather they are the result of social customs, conventions, and practices. The three types of norm (social customs, conventions, and practices) constrain individuals through ostracism and social rebuke. Lessig (1997) opines that rather than being enforced in a centralised authority such as the government, norms influence in a decentralised manner.[68] Users within an on-line community will respond and enforce on-line community customs and etiquette via the use of technology to discourage certain behaviours through the threat of decentralised sanctions.[69]

8.7.3 Benkler's three-layer model and Lessig's 'Code is Law' theory

We have seen a few criticisms raised with respect to the cyberlibertarian theory. Here, we remark that one other major critic was by Reidenberg who introduced "regulation by technology" or the concept of Lex Informatica.[70] According to Reidenberg, control in the form of rules albeit in an indirect form can be imposed on users. Reidenberg refers to the rules imposed on network users by technological capabilities and system design choices suggesting that the primary source of such default rule making are the developers of technology such as software designers.

If Reidenberg's theory is accepted, then we may conclude that the theory of Internet seen initially as inherently not regulable, cannot stand. On the contrary, due to its design and architecture, the Internet can be regulated and this can be done by influencing certain changes to its architecture.

Obviously, Reidenberg's (1998) *Lex Informatica* stating that the Internet is regulable via its design choices and architecture has inspired Lessig's, 'Code is Law' theory. As it is described, Lessig's 'Code is Law' theory was based on Benkler's (1996, published in 2000) three-layer model of architectural structure of the Internet, i.e., (1) the physical infrastructure layer, (2) the connective layer (the logical infrastructure), and (3) the content layer.[71] Within this three-layer network, regulation may be introduced by vertically regulating from the bottom up, that is, from the physical infrastructure layer upwards. The content layer is dependant on the protocols, operating systems, and

68 Supra.
69 Supra n.67.
70 Supra n. 22; Reidenberg, J., (1998), Lex Informatica: The Formation of Information Policy Rules Through Technology, 76 *Tex L Rev* 553.
71 Benkler,Y., (2000), From Consumers to Users: Shifting the Deeper Structures of Regulation Towards Sustainable Commons and User Access, 52 *Fed Comm L.J,* 561.

browsers of the connective layer which layer is then dependant on the physical structure of the network.[72]

8.7.4 The relation between Benkler and Lessig

Lessig (1999) adapted Benkler's (1996, published in 2000) three layer model and renamed them, the physical layer, the code layer, and the content layer (see Figure 8.1). As a consequence, it was meant that any changes introduced to the architecture would have a direct effect upon society's behaviour. Examples of constraints imposed on the architecture can be seen in locked doors, barbed fencing, or low bridges segregating the wealthier sections of the community from the poorer sections of community.[73]

BENKLER	LESSIG
Content layer	Content layer
Logical infrastructure	Code layer
Physical infrastructure	Physical layer

Figure 8.1: A comparison of the three-layer model by Benkler (left) and Lessig (right).

Thus, any regulatory strategy introduced in the code layer, for example, will affect the materials that are stored and can be made accessible to users. In this regard, Lessig (1999) draws upon Reidenberg's (1998) design regulations in the form of content blocking through filtering and the use of technical protection measures, data encryption, and digital rights management to explain his 'Code is Law' theory.[74] Lessig, notes

> "using code, copyright owners restrict fair use; using Digital Millennium Copyright Act (state law), they punish those who would attempt the restrictions of fair use that they impose through code. Technology becomes a means by which fair use can be erased: the law of DMCA backs up that erasing. This is how code becomes law".[75]

The modalities of regulation formulated by Lessig have been propounded in the terms of constraints imposed. His 'Code is Law' theory is based on physical

72 Lessig, L., (2001), *The Future of Ideas: The Fate of the Commons in a Connected World*, Random House, New York, N.Y., p. 148.

73 Winner, L., (1985), Do artefacts have politics? In Mackenzie, D. and Wajcman, J. (eds.) *The Social Shaping of Technology*, p. 26-38.

74 Reidenberg, supra n. 70.

75 Lessig, L., (2004), *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity*, Penguin, New York, N.Y., p. 160. See also Lessig, L., (1999), *Codes and Other Laws of Cyberspace,* Basic Book, New York, N.Y.

constraints introduced in the infrastructure and the design of the Internet. At this point, we do see a clear relevance in Lessig's 'Code is Law' theory to our study in that the theory can be applied in the form of filtering by way of mobile content blocking to be imposed by network operators and by a handset manufacturers' default setting on mobile handsets. To what extent these ideas fit into our final conclusions is still open, but that they are an element of serious consideration is certain. In the following section, we provide a brief description of filtering followed by the merits and de-merits of such form of constraints.

8.8 INTERNET FILTERING

An indirect mechanism for states to regulate indirectly activities within their 'borders' is to re-create artificial borders within the networked environment by erecting a technological barrier, such as filtering to restrict or stop the flow of data. The objectives and the reasons for implementing a filtering mechanism may vary between the states and can include rendering the website inaccessible to users, causing the website to be unreliable or deterring users from attempting to gain access. A study conducted by Faris and Villeneuve (2008), revealed that states around the world are blocking access to Internet content for three reasons: (1) political and national security reasons, (2) religious reasons, and (3) social and moral reasons.[76] The categories of topics which are subjected to Internet filtering can therefore include (a) free expression and media freedom, (b) political transformation and opposition parties, (c) political reform, legal reform, and governance, (d) militants, extremists and separatists, (e) insurgency (political and national security reasons), minority faiths, religious conversions, commentary and criticism (religious reasons), and (f) pornography, gay/lesbian content, gambling, gaming, alcohol, and drugs (social norms and morals reasons).[77] The core focus in so far as our study is concerned is the latter, i.e., (f) social filtering.

While Internet filtering can be implemented at four different levels, namely at (1) the Internet backbone level, (2) ISP level, (3) organisational level, and (4) personal computer level, we intend to deal briefly with technological filtering at the backbone level and at the ISP level.

First, backbone filtering is normally carried out at the international gateway. This form of filtering can affect the citizens' 'right' to access the free flow of information on the Internet. A prime example of this is the extensive form

76 Faris, R., and Villeneuve, N., Measuring Global Internet Filtering, in Deibert, R., Plfrey, J., Rohanzinski, P., and Zittrain, J., (2008), (eds.), *Access Denied*: *The Practice and Policy of Global Internet Filtering*, MIT Press, Cambridge, p. 1-27.

77 Supra Faris and Villeneuve.

of filtering (censorship) seen in Myanmar.[78] For instance, during the 2007 crackdown on Burmese monks and protesters, the military junta employed a technique said to be more crude than a firewall by cutting of Internet access altogether in Yangon and Mandalay.[79] This shutting down of Internet access with intermittent periods of connectivity was ordered by the State Peace and Development Council which made use of its complete control over the country's Internet gateways.[80] Further, in an attempt to restrict Internet usage and to enhance the government's monitoring capabilities, the government also restricts upload speeds to half the download speeds for Internet subscribers and implements slowdowns in Internet access speeds.

Second, we remark that there are three principal techniques used to block access. They are: (a) IP (Internet Protocol) blocking, (b) Domain Name Server (DNS) tampering, and (c) Uniform Resource Locator (URL) blocking using proxy.[81] These techniques are used to block access to specific web pages, domains or IP addresses.[82] Since it is a common requirement for the issuance of ISP licences that ISPs implement filtering, it is not difficult for the state to obtain the support and assistance of the ISPs in implementing filtering mechanisms. In following subsection, we deal briefly with the merits and de-merits of filtering.

8.8.1 The merits and de-merits of filtering

While it is acknowledged that the Internet does provide immense opportunities for greater innovation, creativity, and access to information, it is also accepted that states must exercise some control over the content and/or activities of the users within the state's physical borders. As previously stated, the manner and objective of filtering is dependent on various state motivations (reasons). Researchers Zittrain and Palfrey (2008) provided two reasons in favour of filtering.[83] (1) Filtering is seen as a legitimate expression of the sovereign authority of states and (2) a state has the right to protect the morality of its citizens. As such, without filtering, an unfettered access to the use of the Internet undercuts public morality in myriad ways.[84]

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78 Crispin, S., Burning down Myanmar's Internet Firewall, Asia Times On-line, September 2007, available at http://www.atimes.com/atimes/Southeast_Asia/II21Ae01.html

79 The brave citizen journalist of Myanmar, September 2007, available at http://opennet.net/blog/2007/09/the-brave-citizen-journalists-myanmar

80 OpenNet Initiative Bulletin, Pulling the Plug: A Technical Review of the Internet Shutdown in Burma, November 2007, http://opennet.net/research/bulletins/013/

81 OpenNet Initiative, About Filtering, available at http://opennet.net/about-filtering http://opennet.net/about-Filtering

82 Supra.

83 Zittrain, J and Palfrey, J., Internet Filtering: The Politics and Mechanisms of Control, in Deibert, R., Plfrey, J., Rohanzinski, P., and Zittrain, J., (2008), (eds.), Access Denied: The Practice and Policy of Global *Internet Filtering*, MIT Press, Cambridge, p. 28-56.

84 Supra Zittrain and Palfrey.

Notwithstanding the merits, technical filtering suffers from three main criticisms. (1) It is not able to filter with precision, intended websites and vice versa, in that sites that are not meant to be filtered are filtered and those meant to be filtered are not. (2) The extent to which filtering is successful is dependent on establishing a list of websites to be blocked.[85] Because of the growing number of websites on the Internet, there is great difficulty in establishing and maintaining a current up-to-date list. (3) Internet filtering is seen as infringing the basic human right of freedom of speech and expression. While all three criticisms are valid, the latter criticism merits a brief discussion. This is dealt with in Section 8.9.

8.9 FREEDOM OF SPEECH

A direct corollary to the issue of controlling the flow of information and the activities between linked computers (filtering or censorship) is a discussion on the freedom of speech. However, we argue that censorship and freedom of speech are two sides of the same coin. While the two issues deserve a separate in-depth discourse, they are dealt with briefly here.

Censorship can be defined as the change in the access status of the material distributed. The change in access status can encompass restriction of access, prohibition of display of materials, age restriction, and classification measures. It is true to state that whenever media is present, censorship follows closely behind. We have seen this applying in conventional forms of communication media and we see this applying in newer forms of communication, such as the Internet. While the term "censorship" has been used in the same breath as content regulation, for our study, we have chosen to apply the term, "content regulation".

The primary objective of content regulation has been to protect the innocent and the weak minded. The question is whether this is a sufficient reason to constrain and infringe an individual's right to free speech by any form of regulation in respect to Internet content? The question cannot be adequately addressed without reference to the debate in the US, specifically with regards to the enactment of the Communication Decency Act 1996 (CDA)[86] and the Child On-line Protection Act 1998 (COPA)[87] vis a vis the First Amendment which provides "Congress shall make no law (…) prohibiting the free exercise

85 For example, a white list is a list of approved sites users are allowed to have access to and a black list is Intended to restrict users' access by blocking sites.

86 *ACLU v Reno* 929, F Supp 824 (1996) wherein the Plaintiff opposed two prohibitions in the Act: (1) 233(a) where it is illegal knowingly to send a minor material which is legally 'obscene' or 'indecent'; and (2) s. 233(d) prohibits knowing, sending or displaying patently offensive messages, according to community standards in a manner that it is available to a person under 18 years.

87 *ACLU v Reno II (Ashcroft),* 217 F 3d 162 (2000).

of (…) or abridging the freedom of speech (…)". Essentially, both CDA and COPA were struck down by the US courts for unduly restricting adult access to materials.[88]

Thus, while we accept that freedom of speech is a basic human right recognised and entrenched in most jurisdictions, we argue that it is not an absolute right in that there are instances where freedom of speech may be curtailed. Such instances include child pornography, derogatory remarks, racist statements, and political dissension. We support our argument on two grounds: (1) new technology and its ability to influence and (2) the harm principle.

First, we state that new technology is empowering consumers in a way that allows users to select and control what the user wants to view, share, and experience. The reality check therefore is that technology is 'pushed' towards society and the younger generation. While the younger generation may physically be growing faster and experiencing greater things as compared to earlier generations, they may not be maturing as rapidly in tandem with the advancement of technology. For example, although the Internet allows users to post information, it does not allow those who post information to control who receives it. Here, we remark that in comparison to the conventional forms of media communication, the Internet and new communication technology has a greater degree of influence on children and young people.

Second, (while not restricting our argument to the US position), we argue that any limitation on the freedom of speech is based on Mill's (1978) Harm Principle which states that

> "the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others".[89]

Mill (1978) suggested that it is only when speech causes a direct and clear violation of rights that it can be limited. Consequently, we can invoke Mill's harm principle by arguing for example, that pornography and cyber-bullying (discussed as two main areas of concern, i.e., content and contact, see Chapter 4) causes harm to children and young people (discussed in Chapter 5 as impact of potential hazards on children and young people).

Moreover, we draw support for our argument that freedom of speech is not an absolute right from the German Compuserve judgment.[90] While Germany has a constitution that respects individual's rights and liberties, the

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88 Note however in *Ginsburg v New York*, 390 U.S. 629 (1968) where the court held that the prohibitions on selling obscene material to a minor even when the material is able to be sold to an adult will not offend the U.S. First Amendment.

89 Mill, J.S., (1859), *On Liberty*, (Reprint, 1978) Hackett Publishing Press, Indianapolis, p. 9.

90 CompuServe judgment (Somm's Case) (1998), available at http://www.kuner.com/data/reg/somm.html. In Somm's case, the defendant, a managing director of a highly respected ISP was held responsible for the distribution of child pornography and other illegal materials on his company's server.

CompuServe judgment indicates the court's willingness to adopt a restrictive approach to the protection afforded to freedom of speech in on-line content.

Closer to home, we see the protection of children and young people as an argument taking an even more drastic step when the Mainland Chinese government issued a directive requiring all personal computers sold in the Mainland (including those imported into the Mainland) to be pre-installed with the Green Dam filtering software (see further discussion in Subsection 3.9.5).

Thus, while we do not see the dust on the global debate between the freedom of speech and the content regulation settling in the near future, we see no appropriate reasons why each jurisdiction should not adopt its own regulatory stance in terms of access to on-line material in light of each jurisdiction's morality, standard of propriety, cultural specificity, and community tolerance. Indeed, as stated earlier filtering for social and moral reasons is merely a state's exercise and an expression of its sovereignty.

We may tentatively conclude that Lessig's 'Code is Law' theory is relevant in that it offers a technological solution by introducing a technological constraint to the infrastructure and the design of Internet. Hence, applying Lessig's theory, it is possible to establish a filtering mechanism in the form of mobile content blocking. Mobile content blocking can be imposed at the mobile network and service provider's level and by handset manufacturers as a default setting on mobile handsets.

8.10 Privacy of children and young people

While the area with respect to freedom of speech and the Internet is a well debated area, the same cannot be said for the area relating to privacy and the protection of children and young persons. We admit however, that the focus is gaining momentum.

Before we proceed further, we wish to re-iterate two points. First, the presence of children and young people on-line (whether via the personal computer or a mobile phone) is increasing rapidly. Second, we argue that the concept of privacy encompasses the right to control one's own personal information, whether the individual is a child or an adult. In fact, we remark that children and young people are placed in a special position; a position we surmise that warrants greater protection as compared to adults as a result of their immaturity and their inability to make fully informed choices and decisions. Children's unique position was well recognised, for instance, in the US case of *Belloti v Baird* where the Supreme Court held

> "We have recognised three reasons justifying the conclusion that the constitutional rights of children cannot be equated with those of adults: the peculiar vulnerability

> of children; their inability to make critical decisions in an informed, mature manner; and the importance of the parental role in child rearing".[91]

The special position and rights of children was also accorded international recognition under the UN Convention on Rights of the Child (CRC). For example, Article 4 of the CRC, provides that governments have a responsibility to take all measures to make sure that children's rights are respected, protected, and fulfilled.[92] Ratifying countries thus are required to review their laws relating to children and to ensure minimum standards set by the Convention are being met. In addition, Article 16 specifically addresses children's rights to privacy. The Article requires the law to protect children from attacks against their way of life, their good name, their families, and their homes.[93] As a human being, the child has a right to privacy.

Thus, we opine that the unlawful collection and use of children and young people's personal information without verifiable consent from their parents or guardians is an area of increasing concern. In this respect, we briefly consider two issues, (1) social networking sites and (2) marketing activities.

8.10.1 Social networking sites

An area of increasing concern for children and young people *vis a vis* the Internet and privacy is social networking sites (SNS). The European Union Commissioner, Vivianne Reding had acknowledged the dangers of this new phenomenon when she said

> "(…) although children have been very quick in making the most of on-line services such as social networking sites and mobile phones … many still underestimate the hidden risks of using these (…)".[94]

Boyd and Elison defines SNS as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the

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91 443 U.S. 622 (1979). The case concerns the reconciliation of a woman's constitutional right to terminate her pregnancy and the interest of the State in encouraging the unmarried pregnant minor to seek parental advice and consent in a manner that does not burden the woman's right to seek an abortion.

92 See Fact sheet: A summary of the rights under the Convention on Rights of the Child; available at http://www.unicef.org/crc/files/Rights_overview.pdf http://www.unicef.org/crc/files/Rights_overview.pdf

93 Supra.

94 European Commission, IP/08/207, Let's listen to children: they know how to make the Internet a safer place, Press release, Brussels, 12 February 2008.

system.[95] What is unique about SNS is that it enables users to articulate and make visible their social networks. Although SNS enables a user to make new friends and perhaps, restore old friendship, the basis of SNS, we argue, is it facilitates the communication and is another form of "staying in touch". The latter is a factor which we raised as an attractive feature to children and young people. There are a number of SNSs. We mention three of the more popular SNSs, i.e., Bebo, Facebook, and MySpace. A number of features exist on an SNS. In addition to displaying a user's profile, users can list their friends, leave comments, send private messages, and share photos and videos. Some SNSs may have built-in blogging and instant messaging technology. There are mobile-specific SNSs, for example, Dodgeball and there are some web-based SNSs, for example, Facebook, and MySpace that supports limited mobile interactions.

The concern for SNSs arise when children and young people disclose personal information about themselves without realizing, understanding, or appreciating the value of their personal information and, for example, the innumerable purposes for which the information may be used. Since a SNS requires a user's personal profile to be displayed, the user will be required to provide the user's personal details such as age, location, interests, and an 'about me' section. Most sites also encourage users to upload a profile photo. While it is possible for users to restrict disclosure of their profiles, the issue is whether a child is sufficiently mature to appreciate the risks that arise in the disclosure. Further, we opine that it is inherently difficult to verify with certainty that a child is indeed a child as stated in his profile. On SNS, it is possible to generate a profile claiming that you are a child (pseudo- profiling). In such circumstances, we surmise it is possible for paedophiles and adult abusers to pose as youngsters on SNS to meet children for unsavory activities. Thus, the key issue is the sharing of the 'genuine' child's personal information with other users, who may be 'a pseudo-child'.

8.10.2 Marketing activities

In Chapter 6, we have discussed the invasion of children and young person's privacy in terms of location-based services. In this Subsection, we will briefly deal with the youngster's privacy in terms of marketing activities. In this regard, we have in Chapter 4 discussed the importance of children and young people as a growing consumer sector. The collection of youngsters' personal data generally in exchange for free games download, ring-tones, or mobile coupons as incentives for the purposes of consumer profiling can be seen as a 'lucrative' business venture. The question to be answered is, "whether there

95 Boyd, D.M., and Ellison, N.B., (2007) Social Networks Sites: Definition, history and scholarship, *Journal of Computer-Mediated Communication,* 13 (1), Article 11; available at http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html

is protection against the collection of data on-line for children and young people's data"?

We will answer this question by briefly considering the position in the US and in Europe.

A: The position in the US

Aware of the need to regulate the collection, use, and disclosure of personal information from children on-line, the US promulgated the Child On-line Privacy Protection Act, (COPPA) in 2000. Briefly, COPPA empowered the Federal Trade Commission (FTC) to prohibit unfair and deceptive practices in connection with the collection, use, and disclosure of personal information from and about children on-line. COPPA divides websites into (a) websites targeting children and (b) website that do not, i.e., general audience websites. For (a), COPPA applies to commercial websites and on-line services that target children under the age of 13-years-old. In so far as (b), i.e., general audience websites are concerned, the websites must have actual knowledge that they are collecting information from children and young people. We note that it is necessary for website operators to display a clear and prominent notice on-line of the site's information practices. The notice will include *inter-alia,* notice of what information will be collected from children, how the operator will use the information, and the website operator's disclosure practices for the given information, such as sharing the information with a third party. Additionally, COPPA requires the operators to obtain verifiable consent from the children and young people's parents before the collection, use or disclosure of the youngster's personal information.[96] In this case, consent is normally verified by the provision of the parent's credit card details. The information collected by the website operators is reviewable by the parents' where necessary.

From our study, we may state that the COPPA is not a 'paper tiger'. Since its enactment, COPPA has been enforced in a number of cases. For example, it was reported that the website, Xanga, was fined US $1 million for repeatedly allowing children under the age of 13 to sign up for the service without getting their parent's consent.[97] Similarly, UMG Recordings, Inc. was fined US $400,000 for COPPA violations in connection with a website that promoted the then 13-year-old pop star, "Lil Romeo" and hosted child-oriented games and activities. Further Bonzi Software, which offered downloads of an animated figure, "Bonzi Buddy" that provided shopping advice, jokes, and trivia was fined US $75,000 for breaching provisions of COPPA.[98] The US's commitment to pro-

96 Section 1303 (b) (I) (A) Children's Privacy Protection Act 1998.

97 FTC fines Xanga for violating kid's privacy – US$ 1 million penalty against social networking site is the largest under 1998 law, September 2006; available at http://www.msnbc.msn.com/id/14718350/.

98 UMG Recording Inc, to pay US$ 400,000, Bonzi Inc to pay US$ 75,000 to settle COPPA civil penalty charges, September 2006; available at http://www.ftc.gov/opa/2004/02/bonziumg.shtm.

tection children's privacy on-line can also be seen in the FTC's unequivocal position that the requirements of COPPA will apply to foreign-operated websites if such sites "are directed to children in the US or knowingly collect information from children in the US.[99]

B: The position in Europe

In Europe, the collection and processing of personal data is regulated by the European Direction on the Protection of Individuals with regard to Personal Data.[100] By and large, it can be said that the Directive broadly encompasses the data collection principles enunciated by the OECD in that the Directive requires companies collecting and processing personal data to publish their data protection policy in clear terms. The data protection policy must include information of the purpose for which the data is collected, that data must be kept up-to-date and is accessible by the data subjects. In so far as marketing activities are concerned, the Directive grants the data subject the right to object to the processing of personal data which may be used for purposes of direct marketing. However, while it does seem that Europe have the necessary legislations in place for the protection of data, we note that as compared to the US, the Directive does not deal specifically with the collection and processing of children and young person's personal data.[101]

We note that the position may change in the near future by the adoption of a working document on the protection of children's personal data.[102] An important point made by the Working Party is the data protection needs of the child in terms of (a) the varying levels of maturity which determine when children can start dealing with their own data and (b) the extent to which representatives have the right to represent minors in cases where the disclosure of personal data would prejudice the best interests of the child. We note that the Working Paper continued with suggestions as to how the existing rules of the Directive could best be applied to ensure that children's privacy is adequately and effectively protected.[103]

As an aside from legislative initiatives to protect children and young people's on-line privacy, we take cognizance of a recent decision taken by the European Court of Human Rights (ECHR) in the case of *K.U. vs Finland*.[104]

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99 See www.ftc.gov/privacy/coppafaqs.htm.

100 95/46/EC.

101 Although the Directive does not deal explicitly with the privacy rights of children and young people, the Directive's provisions apply to all natural persons and this would include children and young people.

102 Working document of protection of children's personal data (general guidance and the special case of schools), Article 29, Data Protection Working Party, 00483/08/EN WP 147; adopted iN February 2008; available at http://ec.europa.eu/justice_home/fsj/privacy/docs/wpdocs/2008/wp147_en.pdf.

103 Supra Paragraph 2 (a), (b) (c) and (d).

104 Application No. 2872/02, 2 December 2008; available at http://legi-internet.ro/index.php?id=305&L=2.

The ECHR held that Article 8 of the European Convention of Human Rights places member states under a positive obligation to protect an individual against grave interferences with their private life by others on the Internet. In that case, an unknown person placed an advertisement on a dating site on the Internet in the name of the applicant without his consent or knowledge. The applicant was only 12 years old at the time. The advertisement claimed that the applicant was looking for an intimate relationship with a boy of his age or an older person to "show him the way". The advertisement provided the applicant's year of birth, detailed description of the applicant's physical appearance and a link to the web page the applicant had at the time that has the applicant's photograph. The applicant became aware of the advertisement when he received an email from a man, offering to meet him and "then to see what you want". The applicant's father requested the police to identify the person who had placed the advertisement to incriminate him. The court held that grave interferences with the right to private life must be criminalised. Article 8, the court, continues implies that there is a need to form a way to identify offenders and bring them to justice. The court made a poignant point when it held,

> "Although freedom of expression and confidentiality of communications are primary considerations and users of telecommunications and Internet services must have a guarantee that their own privacy and freedom of expression will be respected, such guarantee cannot be absolute and must yield on occasion to other legitimate imperatives, such as the prevention of disorder or crime or the protection of the rights and freedoms of others".[105]

The case thus illustrates the extent the ECHR will go to protect the physical and moral welfare of children and other vulnerable individuals.

8.11 Murray and Scott's hybrid theory

A different perspective of Lessig's modalities of regulation is introduced below. It is a hybrid theory of regulation which is considered with reference to Murray and Scott's approach[106] that explores Lessig's modalities of regulation in combination with Hood, Baldwin, and Rothstein's elements of a control system.

As with other theories, we remark that although Lessig's (1999) modalities of regulation were well founded and are often points of reference, they were not without criticism. Murray and Scott (2002), for example, stated that Lessig's theory is too simplistic in that a control system can and do encompass a wider

105 Supra, Paragraph 49.
106 Supra Murray and Scott, n. 38.

range which appear as a hybrid of two or more modalities of regulation.[107] Murray and Scott's hybrid theory introduces four types of control system namely hierarchical control, community-based control, competition-based control, and design-based control. As can be seen from Figure 8.2, Murray and Scott (1) re-label Lessig's modalities of regulation and (2) incorporate Hood, Rothstein, and Baldwin's (2001) elements of a control system of standard setting, information gathering, and behaviour modification. Consequently, as far as Murray and Scott's theory is concerned, Lessig's (1) law, (2) market, (3) architecture, and (4) norm has taken the form of (1a) hierarchical control, (2a) community-based control, (3a) competition-based control, and (4a) design-based control. Thus with the elements of the control system introduced, under a community-based control system, social norms is the standard set. Information can be gathered on the effectiveness and viability of the community-based control by interacting with the members of the community and if the standard of the community-based control system is breached, the conduct or behaviour can be modified by applying informal non-legal rules, such as disapproval and ostracism. Conversely, under the hierarchical control system, the standard is set by law, information is gathered by agency or third party monitoring, and modification of deviant behaviour by strict enforcement.

What is important to note under Murray and Scott's (2002) theory is that the hierarchical control system better illustrates the different types of (a) regulator and the degrees of control they may exercise than Lessig's theory.

A good example of this is provided by Murray and Scott themselves, regarding the duties and functions of ICANN. ICANN is an example where an organisation is the regulator in the allocation of the scarce resource of domain names. Hence, while Lessig's theory was a theory that looked to the form of control which sees law as being made by the state legislature and the judges, and enforced by state-appointed law enforcers, Murray and Scott theory looked to "the plurality of forms which hierarchical control structures can take".[108] As stated by Brownsword (2005), what Murray and Scott have done is not merely a matter of re-labelling but rather an attempt to formulate a theory which encompasses a wider range of regulatory strategies.[109]

107 Supra Murray and Scott n. 38.

108 Supra.

109 Brownsword, R., (2005), Code, Control and Choice: Why East is East and West is West, *Legal Studies*, Vol. 2, No. 1, p. 1-21.

	A: CONTROL SYSTEM			
B: ELEMENTS	Hierarchical control	Community-based control	Competition-based control	Design-based control
Standard setting	Law or other formalised rules	Social norms	Price/quality ratio	Inbuilt design features and social and administrative systems
Information gathering	Monitoring by agencies or third parties	Social interaction	Monitoring by dispersed buyers, clients	Interaction of design features with environment
Behaviour modification	Enforcement	Social sanctions – ostracism, disapproval, excommunication	Aggregate of decisions by buyers, clients on purchase, location, etc.	As for information gathering (self executing)

Figure 8.2: Control System enumerated together with their elements (Murray & Scott, 2002).[110]

Thus we may conclude that Murray and Scott (2002) has provided us with a different perspective of a control system which we is (1) less restrictive and (2) better reflects the realities of social structure and control than Lessig's control system.

8.12 Relevance of Murray and Scott's hybrid theory

Having considered the types of regulation available, we surmise that Murray and Scott's (2002) hybrid theory has a clear application and relevance to our investigation, at least in two respects.

The first respect is as follows. Under a community-based control system, the emphasis is on the community and community participation. We see this in Hood, Baldwin, and Rothstein's (2001) second element of a control system – information gathering. As stated there "Information can be gathered regarding the effectiveness and viability of the system by interacting with the members of the community. If the standard is breached, the conduct or behaviour can be modified by applying informal non-legal rules, such as disapproval and ostracism". In our opinion, this reflects the self-regulatory mechanism; a regulatory strategy that we strongly advocate for regulating mobile content with the aim of protecting children and young people for the following two main reasons. (1) The self-regulatory mechanism has as one

110 Supra Murray and Scott, n. 38 at p. 504.

of its defining characteristics the specific knowledge and expertise of the industry or sector. With their hand on the pulse of the industry or sector, the relevant stakeholders are better able to design a regulatory framework that is efficient, viable, and less susceptible to non-compliance. (2) We remark that for a better efficacy of the regulatory measure, the measures should be regularly reviewed to ensure that the measures reflect the changes in the environment. In such circumstances, self regulation possesses the necessary flexibility to change. It is thus easier and less time consuming to review and amend a code of practice, for example as compared to an Act of Parliament. Here we reiterate that self regulation as a regulatory strategy is discussed in greater detail in Chapter 9.

The second respect follows below. Murray and Scott's recognition of "the plurality of forms which hierarchical control structures can take" underscores our position that the regulator can but need not necessarily be appointed by the state. We opine that with the participation of members of the community and other stakeholders, a suitably agreed independent regulator can be appointed. This, we opine, is of paramount importance since it is crucial to the success of a regulatory framework that a high degree of (1) respect for the authority and (2) compliance of regulations is achieved. We provide an extensive discussion on the importance of community participation in Section 10.4.

From the above analysis of Murray and Scott's hybrid theory in relation to our study, we may conclude the following.

1 We may conclude that the hybrid theory particularly the community-based control system can play a more important role in addressing the concerns of protection of children and young people. Since the focus of this form of social control is as a result of community input, collaboration, and participation, the control system may be a solution to the inadequacies of the existing regulatory framework which, as we have observed, is heavily skewed towards the command control approach.
2 We may conclude that inextricably linked with conclusion (1) a greater social or community participation and a 'culture of shared responsibility' between members of the community and stakeholders may be the regulatory antidote that is necessary in the new legal framework. Indeed, we firmly believe that the success of a regulatory framework hinges on two factors, viz. (2a) a greater consultation and genuine participation from and within the community, and (2b) an acceptance (whether active or passive) by the community and the relevant stakeholders that the responsibility for protecting children and young people is one that must be shared.

Thus, in so far as mobile communication is concerned, responsibility must be shared between the industry players (i.e., for example, mobile service providers, content providers), parents, child carers, and public authorities. We have discussed shared collective responsibility already in Subsection 7.3.2.

We find support in our two conclusions on Murray and Scott's hybrid theory in (1) Teubner's autopoietic theory and (2) Ayers and Braithwaite's theory of responsive regulation (see Sections 8.13 and 8.14).

8.13 Fragmentation of society and its subsystems

It is often thought that regulation is *the sole province* of the state and its state-appointed agencies. However, there are theories with an opposing character. In particular, we are facing the question whether this does hold for the Internet. We do not believe so, for the following reason. It is apparent that conventional systems of law and legal ruling cannot operate effectively in the fluidity of the on-line world. The cause is the networked information's intangibility and the continually changing form and character. Further, it has been observed that law is unsuited to the regulations of social systems. This arises as a result of the fragmentation of society into differentiated functional systems and subsystems such as law, politics, religion, and economy.[111]

In this section, we deal briefly with both Teubner's systems theory (Subsection 8.13.1) and Ayers and Braithwaite's theory (Subsection 8.13.2) with the purpose to arrive at conclusions on (1) the inappropriateness and (2) the inadequacy of the existing framework in addressing the challenges and the hazards of the mobile communication technological era.

8.13.1 Teubner's systems theory

In Teubner's systems theory (1983), society is viewed as a sum of interactive yet discrete subsystems such as law, politics, religion, and business.[112] According to Teubner (1993), social systems and subsystems are autopoietic in that they are self generating and self referring, producing and reproducing their own elements through interaction of those elements. In accordance to their own definition, the systems evolve in accordance to their own definition of themselves and their function. Thus, they may not acknowledge or appreciate their impact on other subsystems. Teubner (1993) argues that social systems become distinct from their social environment when they reach the threshold of normative closure in the sense that they begin determining their own rules.[113] The integrity of that system or subsystem is reflected and determined in the strength, degree, and structural sophistication of its

111 For the theory on autopoiesis, see King, M., (1993) The Truth about Autopoiesis, *20 Journal of Law and Society* 218.

112 Teubner, G. (1983), Substantive and Reflexive Elements in Modern Law, 17 *Law & Society Rev* 239.

113 Teubner, G. (1993), *Law as an Autopoietic System*, Blackwells, Oxford, England., Ch. 5.

normative closure.[114] Teubner's example of a legal system is as follows. A highly evolved social system will only recognise a norm as law if it is the product of highly specialised law making institutions. Teubner (1993) further argued that regulation usually fails: not because of a mismatch between market failure and the regulatory techniques, and also not because of the success of private interests in procuring regulation favourable to themselves, but it fails because of the inherent incompatibility of different subsystems.[115] Accordingly, it is unwise for the state in such circumstances to proceed by conventional command control regulation. Instead, the state needs to understand the incentives of the system it is trying to regulate and needs to structure the regulation accordingly so that it keys into the systems' incentives, inducing not commanding its outcomes.[116]

Consequently, Teubner argued that the role of law is to ensure that each system is responsive to its environment in that each system considers and takes into account its operations, the operations of other subsystems with a view to inducing integration between the various systems and subsystems.[117] This is the cognitively open aspect of Teubner's systems theory – that the system remains cognitively open in that they perceive and respond to their environment (which includes other social systems). Willkes (1992) observed that one of autopoiesis's implications is that no one system can declare its view as the only view and as binding on others.[118] If so, then law as a system cannot impose its views on other systems and require other systems to comply with its commands as pronounced by the command control theory of law. Its role thus would seem to be to ensure *social integration of systems* (author's emphasis) rather than to control and to demand allegiance through compliance. *Law needs to change its regulatory strategy from one of control to one of perhaps, indirect involvement through intervention* (author's emphasis). As posited by Teubner, "Operationally closed systems remain cognitively open through information and interference, and it is this which makes social regulation through law possible".[119]

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114 Teubner supra.

115 Teubner, G. supra n. 112 and 113. See also Black, J., (1996), An Economic Analysis of Regulation: One View of the Cathedral, *Oxford Journal of Legal Studies* Vol. 16, No 4 p. 709.

116 Teubner in Black supra p. 710. See also Ogus, A., (1994), Regulation: Economic Theory and Legal Form, Clarendon Press, Oxford, England., for his economic approach to regulation with the introduction of public and private interest theories. Ogus explains public interest theory on the basis that it is implemented to achieve collective goals that cannot be met by market operation. Essentially in so far as it justifies regulation, Ogus adopts the public interest theory and adds to it the efficacy of private law remedies in remedying market failure. It is only when private remedies are insufficient and where the regulatory costs will not be excessive is correction of market failure through regulation justified.

117 Teubner, G. (1993), *Law as an Autopoietic System*, Blackwells, Oxford, England., Ch. 5.

118 Willkes, (1992), Societal Regulation through Law, in Teubner and Febbrajo (eds.), *State, Law, Economy as Autopoietic Systems*, Guiffre, Milan.

119 Supra n. 113, p. 95-97.

Thus from the above discussion, we observe the relevance of Teubner's theory to our investigation in that in its application we can see how law can (a) indirectly intervene and (b) integrate between different social systems by looking at an alternative regulatory mechanism such as self regulation, enforced self regulation, and co-regulation. In fact, we may posit that a form of regulation that does not command but rather respects and responds to the changing needs and circumstances of the environment can be what is necessary.

8.13.2 Ayers and Braithwaite's theory

In Ayers and Braithwaite's (1992) theory of responsive regulation, we see the authors opining that responsive regulation is not about a clearly defined set of prescriptions concerning the best way to regulate but rather is an attitude that enables a blossoming of a wide variety of regulatory approaches.[120] The authors continue by suggesting that different regulatory strategies are identified and applied in particular situations depending on the legal, constitutional, social, and historical context.[121] We may thus conclude that regulations which respond to varying demands and changing environments, taking into account the workings and requirements of other social actors, do play a significant role in framing a regulatory framework. Ayers and Braithwaite's (1992) responsive regulation theory is described in greater detail in Chapter 9.

8.14 Strengths and Weaknesses of the Theories Propounded

In this section, we consider the strengths and weaknesses of the various theories propounded in the light of what might be the most appropriate regulatory approach to adopt for the protection of children and young people from the hazards described in Chapter 4.

We have seen from our discussions that although prescriptive state regulation *vis a vis* command control theory has the benefit of certainty that legal systems require and adheres to a level playing field, it is fraught with compliance and enforcement issues. In so far as regulation by technology, i.e., code, is concerned, we accept that code can arise to become "a kind of utopian sovereign to improve on the perceived failure of state regulation".[122] However, we do not see regulation by code as the only approach that can be adopted to the sole exclusion of other regulatory measures. For example, while code-based content filters may be used to restrict access to inappropriate

120 Ayers, I and Braithwaite, J., (1992), *Responsive Regulation: Transcending the Deregulation Debate*, Oxford University Press, Oxford, England.

121 Supra. See also Black, J., (1996), Constitutionalising Self Regulation, 1 *MLR* 59:1.

122 Wu, T., When Code isn't Law, (2003) *Virginia Law Review*, Vol. 89.

materials, we do not regard content filtering as an effective stand-alone regulatory measure. We have provided our reasons (seen as criticisms of filtering) for our position in Subsection 8.8.1. We briefly repeat our reasons here as (i) lack of precision in filtering websites, (ii) difficulty in establishing and maintaining an up-to-date list of websites to be filtered, and (iii) the infringement of freedom of speech and expression.

Thus, having considered the various regulatory theories propounded, we believe that what is required to address the challenges of potential hazards introduced by mobile communication technology *vis a vis* the protection of children and young people is an approach that (1) understands and accepts the fluidity and changing nature of the new environment and in so far as mobile technology is concerned, how the portability and the mobility of mobile phones increases the risk of the hazards and (2) accepts that in the new environment, regulating the regulated is no longer the sole exclusive right of the state but rather the 'right' of those who are to be regulated. In such circumstances, we believe what is required is a combined approach, (much like Murray and Scott's hybrid theory), i.e., an approach which incorporates (1) the hierarchical control, i.e., law and law enforcement, (2) community-based control in terms of community participation (input) and community responsibility, and (3) design-based control (technological default mechanisms and filtering).

8.15 Chapter conclusion

The continuous evolution of new communication technologies has become more than a passing concern to state regulators. It is certain that in the on-line world the state can no longer possess the degree of control it has always exerted in the real world. Traditional legal rules (be they private or public laws, domestic or international laws) have normally found themselves out of sync when applied to situations and circumstances arising in cyberspace. Much literature has been written and a plurality of theories has been propounded on the governance, regulation, and control of the Internet and its on-line activities.[123] The issue is, can law (in its traditional sense) still play

123 See for example Biegel, S., (2001), *Beyond Our Control*?, The MIT Press, Cambridge, Massachusetts, Lessig, L., (1996), Reading the Constitution in Cyberspace, 45 *Emory L.J* 869, Netanel, N.W., (2001), Cyberspace Self Governance: A Skeptical View from Liberal Democratic Theory, in *Law, Information and Information Technology*, (eds.) Lederman and Shapira,, Kluwer Law International, The Netherlands, p. 173-230. In the latter, Netanel presents and analyses the claims of cyberpopulist's, cybersyndicalist's and cyberanarchist 's vision of cyberspace self governance in terms of liberal democracy. Froomkin, M., (1997), The Internet as a Source of Regulatory Arbitrage', in *Borders in Cyberspace*, (eds.) Kahin. B and Neeson (detailing the Internet's resistance to control), Dyson, E., (1997), A Design for Living in

a role in the ever changing landscape of new communication technologies or as posited by Goldberg (2002), will law wither away in favour of the unregulated market?

In our opinion, the answer is obvious. Legal regulation will continue to have an important part in the new landscape, perhaps even more so in social regulation of content. The end of the law might only be seen as "outplayed" if we narrowly confine our interpretation of the law to that of command control theory. Needless to say, we have seen how this narrow view has been expanded through the prism of regulatory theories and modalities to include myriad forms of regulatory strategies that emphasise on persuasion and inducements through incentives. There is clear evidence that the regulatory role of the state, being the sole sovereign, needs to shift towards indirect means of governance with participatory roles of different participants and stakeholders. As stated by Reidenberg, "…governance should be seen as a complex mix of state, business, technical and citizen forces".[124] In this perspective we are seeing law in a softer role as a subsystem working in relation with other subsystems of society and integrating with them.

From the observations and the reasoning above, we may provide two conclusions: (1) the traditional state-control hierarchical regulatory approach *cannot* work in the new world, and (2) what is required is: the adoption of a less state interventionist approach, viz. a new regulatory technique. Abandoning the state regulation instead of adjusting it is a severe decision. Even if all kind of pointers indicate that the time is ripe to abandon the regulation, we must carefully consider the opportunities of implementing a new legal regime. My ideas coincide with ideas already developed elsewhere in the world, but new to Hong Kong; they are in the realm of self regulation. In itself, it may be an ideal development. However, it is difficult to implement. Yet, I claim that self-regulatory mechanisms in the form of co-regulation as a combination (or mixture) of the controls approach, is a viable and appropriate means of achieving social, policy, and regulatory objectives. This entails (1) an evaluation of self-regulatory mechanisms, its benefits, and its criticisms, and (2) an investigation of the appropriateness of codes of practice as a form of co-regulation. The tasks (1) and (2) are discussed in the following chapter.

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the Digital Age, 43, p. 104-105. Dyson contends that state regulation will stifle the community spirit required for cyberspace self governance.

124 Supra Reidenberg n. 70.

9 Self Regulation

After the consideration of the various regulatory theories in Chapter 8 and after the conclusion of that chapter that self regulation might be a viable regulatory mechanism necessary to silence the echo of regulatory inflation concerns, this chapter looks toward the mechanism itself. A prevailing question is: how to run the state or an organisation with due regard to the interest and welfare of the regulated persons and institutions? We view this as an important factor since the adoption of an efficient regulatory measure requires an understanding of the regulatory options available, and the way how the regulated might react to the measures adopted.

In the design of law in so far as cyberspace is concerned, we opine that it is prudent for regulators to consider and appreciate the characteristics of cyberspace. We repeat here the characteristics which are aptly stated by Johnson and Post (1996).

> "Cyberspace radically undermines the relationship between the legally significant on-line phenomena and the physical location. The rise of the global network is destroying the link between the geographical location and
> (1) the power of local governments to assert control over on-line behaviour,
> (2) the effects of on-line behaviour on individuals and things,
> (3) the legitimacy of the efforts of the local sovereign to enforce rules applicable to the global phenomena, and
> (4) the ability of physical location to give notice of which sets of rules to apply".[1]

Given such characteristics, it is apparent that any form of 'top down' regulatory strategy will be futile.[2] To ensure legitimacy of regulations, and recognition of authority to the law making body, which, we argue, correspondingly results in greater compliance of regulations, it is incumbent on regulators to recognise but also to invite greater participation of those who are subjected to the regulations. This approach in effect translates to having the consent of those governed. With the benefit of greater compliance and lower enforcement costs, we consider self regulation as (1) a livid representation of the increasing

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1 Johnson, D., and Post, D., (1998) The New Civic Virtue of the Internet: A Complex Systems Model for the Governance of Cyberspace, in *The Emerging Internet*, Firestone, C. (ed.) Also available at http://www.temple.edu/lawqschool/dpost/Newcivicvirtue.html

2 Note the Johnson and Post proposal of a 'decentralised emergent law' might prove to be a more efficient form of governance.

aversion towards extensive state intervention and (2) an alternative form of regulation that is worth to be investigated more thoroughly.

Starting from this point of view, we focus our attention on four topics. We investigate what is self regulation (Section 9.1), the types of self regulation (Section 9.2), and the benefits of self regulation (Section 9.3). In Section 9.4, we provide two illustrations of the failure and the inefficiency of hard laws to provide an adequate child protection mechanism. The illustrations are seen in the form of (1) the case of *ACLU v Reno* and (2) the *Prevention of Child Pornography Ordinance* (Cap. 579). Criticisms of adopting a self-regulatory approach are dealt with in Section 9.5. In Section 9.6, we define the conditions that must be in place for effective self regulation. A combination of approaches is discussed in Section 9.7. In Section 9.8 we deal with the criticisms of responsive regulatory theory. Code of practice as a form of a self-regulatory approach is considered in Section 9.9. We complete with a chapter conclusion in Section 9.10.

9.1 SELF REGULATION – WHAT IT IS AND WHAT IT IS NOT

For a proper definition of self regulation, we might start by looking at what regulation means. Regulation refers to the conduct of the individual or institution to be regulated. Thus regulation encompasses three components: (1) legislation – where rules are defined, (2) enforcement – where appropriate actions are initiated against the rule violaters, and (3) adjudication – where consideration is made if the rules had indeed been breached, and where the appropriate sanctions for such breach are determined. In so far as 'self regulation' is concerned, it is envisaged that the industry or sector is charged with the three components mentioned. There is, however, no one all-encompassing definition of self regulation as its meaning differs from person to person, from industry to industry, and also from sector to sector. For instance, US Assistant Secretary of Commerce, Larry Irving (1997) said that

> "the term 'self regulation' itself has a range of definitions. At one end of the spectrum, the term is used quite narrowly to refer to only those instances where the government has formally delegated the power to regulate, as in the delegation of securities industry, oversight to the stock exchanges. At the other end of the spectrum, the term is used when the private sector perceives the need to regulate itself for whatever reason – to respond to consumer demand, to carry out ethical beliefs, to enhance industry reputation or to level the market playing field – and does so".[3]

3 Irving,.L, (1997), Introduction to Privacy and Self Regulation in the Information Age, in *Privacy and Self Regulation in the Information Age,* U.S. Department of Commerce, NTIA 1997; available at http://www.ntia.doc.gov/reports/privacy/privacy_rpt.htm

In fact as opined by Gunningham and Rees (1997) "regulation can be perceived on a spectrum ranging from a detailed government command and control regulation to "pure" self regulation, with different points in the continuum encapsulating various kinds of co-regulation".[4] Following on from Gunningham and Rees, we provide in Figure 9.1, an illustration of the extent of state involvement varying from non involvement to full involvement.

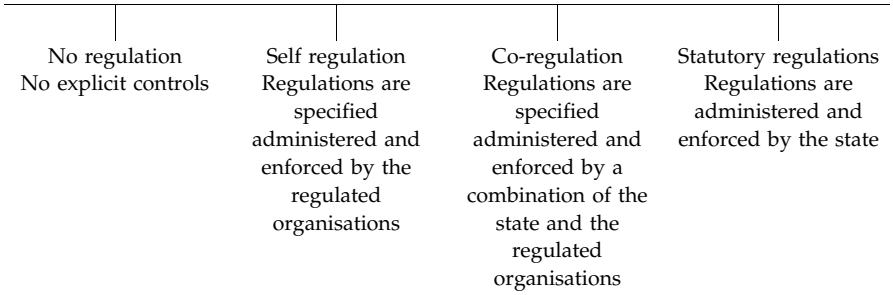

Figure 9.1: Regulatory spectrum.[5]

Quite simply, we may continue to investigate the literature, but the more definitions, the more the concept fades away. Therefore, we have chosen a definition, viz. one by Graham (1994), for use in our study.

Definition of Self Regulation: "Self regulation can be seen as the delegation of public policy tasks to private actors in an institutional form with one of the main objectives being the regulation of markets (industry) by the participants (players) within".[6]

9.2 FIVE TYPES OF SELF REGULATION

After providing the above definition, we are still faced with a variance of what self regulation can mean. A good starting point would be to determine if the 'self' in 'self regulation' relates to self as an individual or self as a collective body of persons. Despite the word 'self', which implies an individual, it is more common for self regulation to refer to the regulation of the conduct of a group of persons. The notion of 'self' therefore seems to imply a process

4 Gunningham, N., and Rees. J., (1997), Industry Self Regulation, An Institutional Perspective, *Law and Policy*, Vol. 19, Issue, p. 363-414; see also Bartle, I., and Vass, P., (2005) Self Regulation and The Regulatory State: A Survey of Policy and Practice, Research Report 17, Centre for the Study of Regulated Industries, School of Management, University of Bath, England.

5 Supra Bartle and Vass.

6 Graham, C., (1994), Chapter 8, Self Regulation, in Richardson, G., and Genn, H., (eds.), *Administrative Law and Government Action, The Courts and Alternate Mechanisms of Review*, Clarendon Press, Oxford, England.

that is both voluntary and not subject to external constraint. However, individualised self regulation does exist, since this form of regulation is tailored towards the individual firm.[7] A first group of five categories of self regulation is provided by Bartle and Vass (2005). We list the five categories below together with their meaning.

1 Co-operative: where they see the category as encompassing "cooperation between regulator and regulated on the operation of statutory regulation"[8];
2 Delegated: this includes the delegation of the implementation of statutory duties by a public authority to self-regulatory bodies;
3 Devolved: this is the devolution of statutory powers to self-regulatory bodies and may include the specification of self-regulatory schemes in statutes;
4 Facilitated: although not directly backed by statute, this category envisages explicitly state-supported self regulation;
5 Tacit: this category is the closest representation to pure self regulation.[9]

It seems that Bartle and Vass's (2005) categories of self regulation were viewed from the point of the regulator, i.e., whether the regulator is co-operative, facilitating, or tacit in their roles. Below, we provide a second group of five types of self regulation:

1 consensual self regulation;
2 enforced self regulation;
3 co-regulation;
4 mandated self regulation;
5 sanctioned self regulation.

We view the five types of self regulation as based on the degree of state intervention. In this regard, we find it useful to provide a spectrum of self regulation taken from the perspective of the National Consumer Council (NCC).

These may vary from tacit threats of state sanctions to close monitoring and enforcement by a state agency.[10] As posited by Baldwin and Cave, (1999) "There is not, (…) a clear contrast or choice between self regulation and a regulation by a state agency".[11] Instead, as Ogus (1994) suggested "(…) a spectrum of institutional arrangements containing different degrees of legislative constraints, outsider participation in relation to rule formation or enforce-

7 Black, J., (1996), Constitutionalising Self Regulation, *1 Modern Law Review* Vol. 59, No.1 at p. 26.
8 Supra Bartle and Vass, n. 4.
9 Supra.
10 Baldwin, R., and Cave, M., (1999), *Understanding Regulation: Theory, Strategy and Practice*, Oxford University Press, Oxford, England.
11 Supra at p. 136.

ment (or both) and external control and accountability".[12] Below we discuss our five types in greater detail.

Type 1: consensual self regulation

Ogus (1995) refers to 'consensual self regulation' by providing an example of what an individualised self regulation is.[13] Ogus's approach stresses on achieving consensus by open participation of those involved. For example, Ogus posits that at the heart of consensual self regulation, compliance with general regulatory objectives should primarily be achieved by agreement between employers and employees through consultation and negotiation. According to Ogus, the consultation and negotiation stage must precede the issuance of formal regulations (seen in the terms of codes of practice and guidance notes).[14] Much benefit can be derived from this approach with resulting standards being better tailored to suit local circumstances and conditions. The parties from which protection is devised are themselves involved in a standard setting. Incentives to devise better and perhaps cheaper means of meeting the risks are preserved.[15]

Type 2: enforced self regulation

A second form of individualised self regulation is Ayers and Braithwaite's (1992), 'enforced self regulation'. This form of self regulation involves negotiations between the state and the individual firms to produce regulations which are particularised to each firm. Self regulation in this sense is 'enforced' in the following manner: first, each firm is required to propose its own regulatory standards to avoid harsher and less tailored standards imposed by the state – this is the self regulation aspect of enforced self regulation. Second, the rules are publicly ratified. This is necessary as in the event the private enforcement of these rules fail, the rules can be publicly enforced. Enforced self regulation is often used to distinguish it from co-regulation in the sense that in co-regulation the state initiates the move by establishing parameters or a framework within which the industry works. The state can also be said

12 Ogus, A., (1994), *Regulation: Economic Theory and Legal Form*, 1994, Clarendon Press, Oxford, England.

13 It should be noted that in addition to consensual self regulation, Ogus also describes competitive self regulation which he sees as appropriate in situations where the principal objection to self regulation is the ability of the self regulating body to exploit its monopolistic position. Ogus provides three models of competitive self regulation. The first is unconstrained market competition in which the firm adopts standards of product quality in response to consumer demands which may incorporate industry wide practices; independent agency assisted competition where an agency accredits the quality of a product and finally competition between such accrediting agencies. See further Black supra n. 7.

14 Ogus refers to the Health and Safety at Work examples in Re-thinking Self-Regulation, 1995, Spring 15 *Oxford Journal of Legal Studies*, p. 97.

15 Supra Ogus, p. 102.

to support co-regulation by providing prescriptive laws to ensure its due compliance.

Type 3: co-regulation

Co-regulation is industry-association or sector self regulation with some oversight and/or ratification by the state.[16] In plain terminology, co-regulation is a strategy where the state sets up the broad parameters of regulation and the industry concerned is then responsible for the development of detailed regulations; these regulations are then approved and administered by a regulatory agency. Co-regulation thus refers to the situation where the regulator and industry stakeholders work together, with the regulator setting the framework to work within. The industry stakeholders may be left to draft detailed rules within this framework and to take responsibility for implementation and enforcement. It also covers the situation where industry develops and administers a code and the government provides the ability to enforce the code by giving it legislative backing in some way.

Type 4: mandated self regulation

In most circumstances, self regulation is seen as substitutes for state regulation. As such, the components of self regulation are not dissimilar to the standard state regulatory process. The regulatory processes include determining governing principles, that is (1) policy making, (2) defining appropriate rules by legislating, (3) enforcing these rules against violaters, and (4) adjudication – deciding if a violation had taken place and if so, (5) imposing the appropriate sanction.[17] As can be seen, a number of relationships do exist in which the state does have an input. This is seen most clearly in circumstances where self regulation is the result of government threats (what Ayers and Braithwaite (1992) terms as enforced self regulation) or where the government's involvement is seen in supporting policy making and in enforcement. These relationships can take the form of mandated self regulation. The collective group or industry is required to formulate and enforce norms within a framework defined and provided by the state and coerced self regulation. The industry formulates and imposes the regulations not as a result of their own free will, but rather as a result of threats by the state of statutorily imposed regulations. These relationships are prime examples of enforced self regulation.

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16 Grabosky, P., and Braithwaite, J., (1986), *Of manners Gentle: Enforcement Strategies of Australian Business Regulatory Agencies,* Oxford University Press, Melbourne, Australia at p. 83.

17 The Concept of Self Regulation and the Internet, in Price, M., and Verhulst, S., (2005), *Self Regulation and the Internet*, Kluwer Law International, The Netherlands., see also Swire, P.P., Markets, Self Regulation and Government Enforcement in the Protection of Personal Information in Privacy and Self Regulation in the Information Age by the U.S. Department of Commerce, 1997 at p. 9; available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=11472

Type 5: sanctioned self regulation

A lesser form of state intervention is seen in sanctioned self regulation and voluntary self regulation. What warrants clarification is whether the term self regulation implicitly excludes all forms of state intervention. Although the term literally implies that state intervention is excluded, and pure voluntary self regulation with no state intervention, direct or indirect, does exist, we must admit that these are few. We provide as an example, 'Customer's Charter', where small businesses may develop a charter as a guide to good customer service. In fact, the majority of self regulations have some form of state input either by way of direct involvement or as a result of governmental pressure. In the sanctioned self regulation, the regulations are formulated by the collective group or industry. The regulations are then subjected to the government's approval. The latter (as its name implies) is where no active state intervention whether direct or indirect is involved.[18] Thus, despite the argument by Corn Revere (1998) who opines (1) that self regulation is best promoted by ending all direct and indirect government control, and (2) that the effort to promote government policies by means of threat, indirect pressure, and suggested industry codes are not true self regulation,[19] we argue in support of Price and Verhulst (2005) that most forms of self regulation exist with some degree of relationship with the state.[20] (In passing, we admit that individualised self regulation where the state rarely intervenes does exist. An example of this form of self regulation is the Customer's Charter). The state's interest may be passive in nature in that the interest may only be activated when circumstances are so dire as to warrant its attention.[21]

Figure 9.2 illustrates the eight categories of self regulation identified by the National Consumer Council (NCC) 2000.

18 Supra Ogus, n.12.

19 Corn-Revere, R., (1998), Self Regulation and the Public Interest in C.M Firestone., and Garner, A.K., (eds.), *Digital Broadcasting and the Public Interest: Reports and Papers of the Aspen Institute Communication and Society Program* 63 at http: //www.aspeninst.org/dir/polpro/CSP/DBPI/dppil4.html. See also Yun.Z, (2005), *Dispute Resolution in Electronic Commerce*, Kluwer Law International, The Netherlands.

20 Examples of some individualised self regulation can be seen in the form of netiquette where guidelines are established by users of the Internet for the posting of individual messages on newsgroups. These guidelines include keeping messages short, not using capital letters and the use of proper formats. Normally, a breach of these guidelines would be met with rebuke from other newsgroup users. See http://webopedia.internet.com/TERM/n/netiquette/html and www.dtcc.edu/cs/rfc1855.htm

21 Supra Bartle and Vass, n. 4.

Categories of self regulation	*Description*
Legal codes	these are imposed by the government or public authority under statute but do not have full force of the law
Official codes and guidance	the code of guidance is issued by the government or regulatory agency
'Recognised' codes	these codes have some form of statutory recognition empowering for example, professional bodies, such as the Law Society[22] to regulate its members
Trade association codes approved by the Office of Fair Trading (OFT)	these include codes developed and negotiated by the trade association in consultation with the OFT and subsequently approved by them
Negotiated codes	these codes are negotiated between the government, the industry, and consumer organizations
Unilateral sectoral Codes	as its name suggest, these codes are unilaterally adopted by the industry without any external consultation
Customer charters	charters are formulated by individual businesses to promote customer service initiatives
Unilateral codes of conduct	these codes are established when an individual business 'decides' to adopt and implement specific policies which amount to some form of self restraint on its conduct towards its customers.

Figure 9.2: NCC's self regulation spectrum (adapted version).[23]

At first glance, we note that the NCCs had not identified co-regulation as a method of self regulation in their self-regulation spectrum. We regarded this as odd since, as previously argued, 'pure' self regulation is a rare species. We subsequently discovered that it is only because NCC has not expressed it as such. We thus see (1) self regulation which is 'underpinned by legal regulation'[24] or (2) self regulation with a statutory element or clear involvement of a public authority in negotiated codes, trade association codes approved by OFT, recognised codes, official codes and guidance, and legal codes. These codes of conduct do have some degree of government intervention and can be compared with, for example, unilateral codes of conduct, customer charter, and unilateral sector codes which have no external input neither governmental nor non-governmental.

22 The Law Society is a representative body for solicitors in the U.K. For more information of the professional organization, please see http://www.lawsociety.org.uk/aboutlawsociety/whoweare/abouthistory.law

23 The diagram is taken from Bartle and Vass, supra n. 4. See also National Consumer Council, (2000), Models of Self Regulation: An Overview of Models in Business and the Professions, November 2000.

24 Supra Bartle and Vass, n.4.

Thus having examined the types of self regulation, we remark that it is a misnomer to say that self regulation is devoid of state intervention. Rather, it is more apt to determine their relationship with the state by considering the many questions that may emerge. We provide four example questions. They are:

1 will efforts to regulate start from within the industry or as a consequence of government action?
2 are the broad standards to be administered by the self-regulating body developed by the government or by the self-regulating body?
3 will users have a right of review within the self-regulatory process or will they have the right to review before a state judicial system?
4 will there be a duty or privilege of the regulating body to cooperate with the state's law enforcement agencies for the purposes of monitoring and providing information of violations of law?[25]

We further argue that the fact that a relationship exists between the law and self regulation also reflects Teubner's theory of law as an autopoietic system – where law is to ensure each system is responsive to its environment in that each system considers and takes into account in its operations, the operations of other subsystems with a view to inducing integration between the various systems and subsystems (see Subsection 8.11.1). Thus although self-regulatory bodies refer, generate, and produce (develop) their own standards, principles, and policies, they do so not in isolation and without due regard of the wider public interest. For example, a viable self-regulatory system for the Internet should include service providers and content providers as well as the interest of Internet users. It is therefore important that states that encourage self regulation must convince the industry, that effective implementation of self-regulatory measures is beneficial in that it may enhance the credibility of the industry amongst the consumers and reduce the threat of costly government regulation.[26]

9.3 BENEFITS OF SELF REGULATION

To many scholars such as Price and Verhulst (2005), Sinclair (1997), Streeck and Schmitter (1985), and Pitofsky (1998), self regulation offers a number of benefits that cannot be achieved sufficiently by the command control approach of regulation. From a public policy perspective, one of the most common benefits propounded is the reduction of costs in the implementation and compliance of state regulation. From the state's point of view, self regulation is more efficient as the regulatory costs are borne by the industry instead of

25 Supra Price and Verhulst, n. 17, p. 11-12.
26 Supra Price and Verhulst, n. 17, p. 13.

by the state. Although this may seem an over-simplistic way of attributing the benefits of self regulation, the argument does hold water especially when industries or a collective group of individuals do get together to form principles and standards for which they agree to be bound by. These principles and standards are generally developed by those who are technical experts or skilled personnel in the industry. The individuals are also individuals who have their hand on the pulse of the industry and thus know what would work, what would not, and what would land well with the community.[27] Compliance of regulations therefore is less cumbersome. Further, since the rules are designed by the industries and collective bodies, the rules would be more comprehensive in their coverage. The industries and the collective bodies would also be more committed to the rules.

In a similar vein, the state has often been criticised for information deficiencies when designing command control regulation. This deficiency stems from the lack of design or information input from those which the state intends to regulate.[28] Without doubt, this criticism is reduced by input from technical experts in the design process.

Self regulation is often characterised as being highly dependent on the goodwill and cooperation of those regulated (the regulatees) where strict compulsion as is evident of the command control approach is not generally advocated. Instead, what is encouraged is moral-suasion[29]; a moral commitment from the regulatees by using information, education, technology sharing, and peer pressure. In fact, the absence of compulsion and the preference amongst individuals to act on their own initiative rather than to be forced into a particular course of action is what attracts policymakers to self regulation.[30] Additionally, self regulation has the benefit of avoiding state intervention in sensitive areas of basic rights, such as freedom of speech and information while offering standards for social responsibility, accountability, and user protection from offensive material.[31]

Political scientists such as Streeck and Schmitter (1985) argue that self regulation could overcome the problems of implementation and legitimatisation

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27 Michael, D.C., (1995), Federal Agency Use of Audited Self Regulation as Regulatory Technique, 47 *Administrative Law Review*, 171 at p. 181-182.

28 In terms of environmental regulations, it is argued that this stand is supported on the basis that it will result in a level playing filed for all of industry and will facilitate access for new entrants. See Sinclair, D., (1997), Self Regulation versus Command and Control? Beyond False Dichotomies, *Law & Policy* Vol. 19, Number 4.

29 Moral-suasion is a persuasive tactic used by authorities to influence and pressure enterprises and organisations to adhere to policy.

30 Grabosky, P.N., (1995), Regulation by Reward: On the Use of Incentives as Regulatory Instruments, *Law & Policy* 17 p. 256-282.

31 Supra Price and Verhulst, n. 17 p. 9.

associated with state intervention.[32] In this sense, self regulation can be seen as a testing ground with measures adopted acting as forerunner to state regulation. Self regulation can be used to pave the way for a more formal regulation once the state has familiarise itself with the issues raised by the new technology and new media. Attempting to transplant the established real-world state regulation to the fluidity and intangibility of the virtual world is futile. Furthermore, state regulation is known to be highly inflexible, less adaptable, and less accommodative to the myriad changes brought about by the Internet. Conversely, by its nature, self regulation is better suited to facilitate the efficient coordination of policies and standards of activities in the virtual world. As observed by Pitofsky (1998), "*self regulation is more prompt, flexible and effective than government regulation*".[33]

Thus, in considering whether self regulation might be the solution to regulatory inflation concerns, we articulate five main factors that must be considered: (1) the risk of regulatory failure in terms of law-enforcement results; (2) ineffective cost of enforcement; (3) the rapidly evolving environment of new technologies; (4) the degree of responsibility that should be attached to various stakeholders; and (5) the importance of stakeholders' consultation and participation. In the Section 9.4, we provide by means of two illustrations (1) the state's inadequacy and (2) the ineffectiveness of the law in regulating content.

9.4 TWO ILLUSTRATIONS

Following on from our discussions above, we remark that regulation by hierarchical control approach (direct state regulation) where the standard is set by law and modification of deviant behaviour by strict enforcement (normally by imposition of penalties) is fraught by numerous constraints. The constraints include the efficacy and efficiency of such hard laws (1) to protect, for example, the privacy and the rights of individuals, and (2) to reduce the commission of the offences or the wrongful activities, which the laws were enacted to reduce. Below we provide the two promised illustrations.

9.4.1 The state's inadequacy

The first illustration deals with the attempts by the US to regulate on-line pornography. The attempt was first made with the passing of the *Communica-*

32 Streeck and Schmitter (1985), Community, Market, State and Association? The Prospective Contribution of Interest Governance to Social Order, Streeck and Schmitter (1998), (eds.) *Private Interest Government: Beyond Market and State,* Sage Publications, London., p. 22-25.

33 Pitofsky, R., (1998), Self Regulation and Anti-Trust, available at www.ftc.gov/OPA/1998/9802/SE;FREG.html

tions Decency Act (the CDA) in 1996.[34] The Act was challenged by the American Civil Liberties Union (ACLU) and was partially overturned by the Supreme Court. In upholding the decision of the District Court, the Supreme Court declared as unconstitutional two statutory provisions which were enacted to protect minors from 'indecent' and 'patently offensive' communications on the Internet in the *CDA* as a violation of both freedom of speech and personal privacy.[35] This was followed by the striking down of the *Child On-line Protection Act* in 1998 because the use of the term 'community standards' to determine harmful materials was found to be too broad and therefore unconstitutional.[36] Although, we accept that above situation might be peculiar to the US taking into account the strong support and protection accorded to the First Amendment to the US Constitution, we opine that the case is illustrative of the many difficulties encountered by regulators in the design and formulation of regulations.

9.4.2 The ineffectiveness of law in regulating content

Below we look at the often weak attempt of the law to address adequately and deal effectively with the rising concerns. In this regard, we look again at the discussions of Chapter 6 on regulatory arrangements and the protection of children, wherein we have raised and discussed the *Prevention of Child Pornography Ordinance* (Cap. 579) on two issues (1) the failure of the Ordinance to address the hazard of 'on-line grooming', and (2) the ineffectiveness of the state's enforcement of its hierarchical control strategy by the imposition of

34 The Act attempted to ban the transmission of obscene and indecent materials over the Internet.

35 See *ACLU v Reno,* 1997, 521 U.S. 844. The Supreme Court held that the CDA was an unconstitutional restriction on the Internet, a "unique and wholly new medium of worldwide human communication" deserving of full First Amendment protection. Because only obscenity is regulable, the regulations would effectively reduce the constitutionally protected material available to adults "to only what is fit for children."

36 Also known as *ACLU v Reno II,* 00-1293. The Child On-line Protection Act (COPA) makes it unlawful to make any communication for commercial purposes by means of the World Wide Web that is available to minors and that includes material that is "harmful to minors", unless good faith efforts are made to prevent children from obtaining access to such material. 47 U.S.C. 231(a)(1) and (c)(1) (Supp. IV 1998). COPA relies in part on "community standards" to identify material that is "harmful to minors." 47 U.S.C. 231(e)(6) (Supp. IV 1998). The question presented is whether the court of appeals properly barred enforcement of COPA on First Amendment grounds because it relies on community standards to identify material that is harmful to minors. The Supreme Court found that the government has not shown that there are no "less restrictive alternatives" to COPA, and that "there is a potential for extraordinary harm and a serious chill upon protected speech" if the law goes into effect. See http://supreme.lp.findlaw.com/supreme_court/briefs/00-1293/2000-1293.pet.aa.html

non-custodial sentences.[37] As a follow up, we have also discussed in Chapter 8, how the effectiveness of the measures is dependent upon whether an individual can benefit more either (1) by ignoring the measures undertaken (in this case, the law), or (2) by complying with it. Thus, if the conventional command control approach is adopted with a view to facilitate and ensure compliance, what compliance can we expect to see from society if the penalty imposed is (1) insufficient to result in the deterrence of the offender and (2) seems to send implicitly the wrong message to the rest of the community?

9.4.3 Four benefits point towards self regulation

The two illustrations provide a sample of the constraints of the hierarchical control approach. We remark that effective self regulation can offer four main benefits in comparison to direct state regulation. (1) Self regulation utilises the expertise of the regulated. (2) With the support and input of relevant stakeholders within the industry, consensus of the regulated and therefore, compliance is more likely to be secured. (3) The flexibility of self regulation enables it to adapt more easily and rapidly to changing market conditions and technological innovations. (4) Self regulation can play an important role within the whole regulatory framework and that is "risk identification". Self regulation can assist by identifying areas of concerns within the industry practice, consumer knowledge, and government policies.

Despite the benefits of self regulation *vis-a-vis,* state regulation, self regulation has attracted wide criticisms. Section 9.5 provides a brief description of the criticisms of adopting a self-regulatory approach.

9.5 CRITICISMS OF ADOPTING A SELF-REGULATORY APPROACH

There are five main criticisms of adopting a self-regulatory approach. The first is its anti-competitiveness. Although industries and groups may come together to develop standards and principles, they do so mainly with their own interest in mind rather than the general public's. For example, the principles and standards developed may act as entry barriers to the market and industry. Thus, the policies may not be geared towards the greater benefit of the consuming community as a whole but they are rather sector specific or industry specific.

Second, self regulation has been criticised as being used by interested parties to feather their own nest in what is regarded as 'regulatory capture'. Regulatory capture is a concept used to describe a situation whereby regulators become tools of the industry they regulate in the sense that the regulators risk

37 In Chapter 6, under section 6.8, we had considered the effect of the PCPO and evaluated the judicial decisions made under the Ordinance.

being captured by those they are supposed to regulate.[38] This can occur as industries or individuals with interest in the outcome of a policy or a decision focus their efforts in ensuring they obtain the outcome or benefit they prefer. We state that while this may be true of self regulation, it is an affliction which affects state regulators as well. The vulnerability of regulators to political influence and corruption at the expense of the community is nothing new and is seen as one of the major shortcomings of state regulation.[39]Indeed, Sinclair (1997) suggests that one proposed solution is to remove as far as possible, industry and government from the regulatory process.[40] In such circumstances, we remark that unless an independent body exists which monitors and supervises these self-regulatory bodies, it is questionable to what extent and in what way the public will benefit.

The third criticism is the enforcement of such standards and principles against violaters. Again, unless the self-regulatory body is backed up by the state, it is difficult to see how, and to what extent a regulatory body can ensure compliance. A high rate of violation and non-compliance of its standards and principles will no doubt create distrust and a loss of public confidence in the self-regulatory body as well as in self regulation as a regulatory mechanism. There are a number of enforcement measures. One example is expulsion or the withdrawal of privileges, such as the denial of the right to display a quality seal or a trust mark.[41] While quality seals and trust marks are positive enforcement measures, the effectiveness of these measures, are dependent on whether a company or an organisation can make greater profit by ignoring self regulation or by complying with it.[42]

The fourth critique is related to the criticism of enforcement. It is the 'free-rider' problem. We state that the extent of the effectiveness of self regulation depends on full industry coverage and participation. In such circumstances, the mechanism can substantially weaken if it emerges that the self-regulatory

38 The term was created by Richard Posner who argued that "Regulation is not about the public interest at all, but is a process, by which interest groups seek to promote their private interest ... Over time, regulatory agencies come to be dominated by the industries regulated." See http://www.economist.com/research/Economics/alphabetic.cfm?letter=R

39 Anderson, T., and Leal, D., (1992), Free Market versus Political Environmentalism, *Harvard Journal of Law and Public Policy* 15 p. 297-310. Sinclair supra n. 28 resolves this by proposing making the regulatory design process open and transparent as possible to outside scrutiny and by inviting open participation in the negotiations by the community and environmentalists.

40 Supra Sinclair, n.28.

41 A trust mark is a logo displayed on the website of a trader, which informs the customer that the trader is committed to certain qualitative standards or best practices. The purpose of trust marks and quality seals is to build confidence in the traders who display the trust marks or quality seals. See www.trustmark.org.uk

42 See Perritt, H., Regulatory Models for Protecting Privacy in the Internet, in *Privacy and Self Regulation in the Information Age,* supra n. 3 at p. 110.

scheme fails to attract the support of all industry members in terms of participation and/or adherence to the agreed rules.

A fifth critique arises if the self-regulatory scheme does not encompass vigorous accountability mechanisms in that, for example, the decisions taken by self-regulatory bodies are not transparent and reviewable.[43]

Given that a self-regulatory strategy is an alternative form of regulatory strategy, an appreciation and proper understanding of its benefits and criticisms will assist in providing the right conditions that must exist for the optimal implementation of industry self regulation.

9.6 CONDITIONS FOR EFFECTIVE SELF REGULATION

In this section, we define the conditions that must be in place for self regulation to be effective. This is followed by a brief examination of whether the conditions exist in Hong Kong for self regulation to be successfully implemented (Subsection 9.6.1).

Having considered the benefits and concerns of self regulation as an alternative regulatory approach, we can briefly define six key conditions that need to be in place for self regulation to be effective.

(1) A common industry interest: Industry self regulation can only work if there is sufficient mass of common interest to pursue a common objective. In so far as our study is concerned, we state that there must be a critical mass of common interest within the industry and amongst the industry players (the MNOs, the MVNOs, mobile service providers) to protect children and young people from hazards that are accessible via Internet-enabled mobile phones.

(2) Industry commitment: We believe that co-related to common industry interest is the extent of the industry's commitment towards harnessing the common interest in enlisting support from stakeholders such as the state (government agencies), NGOs, and consumer organisations. Moreover, we believe that sincere commitment to the address child protection concerns amongst these stakeholders is vital rather than promoting the adopting of measures as 'a window dressing exercise' to gain economic and political mileage. This is important since it is anticipated that significant resources would be required to support the successful establishment, compliance, and enforcement of self-regulatory mechanism.

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43 Supra Black, n. 7; see further Cane, P., (1986), Self Regulation and Judicial Review, *Civil Justice Quarterly* 24, and Pannick, D., (1992), Who is subjected to Judicial Review and in Respect of What?, *Public Law* 1 at p. 4-5.

(3) The development of clear objectives: The objectives of the self-regulatory mechanism must be sufficiently clear to all the stakeholders. This can be best achieved if the self-regulatory mechanism is developed in consultation and in collaboration between industry, government agencies, NGOs, and consumer organisations.

(4) Wide industry coverage: We believe for self regulation to be successful and effective as a regulatory alternative, it is necessary that the mechanism applies to all industry members. This makes sense since (a) it may reduce the problem of 'free riders'[44] and (b) it strengthens the mechanism by attracting the support of the industry.

(5) Integration into the existing regulatory framework: It is vital that the development and implementation of self-regulatory mechanism should not be done in isolation. It is necessary for the mechanism to complement the existing framework and to work harmoniously and in tandem with the regulator's objectives.

(6) Accountability, compliance and enforcement: We have seen (in Section 9.4) that three of the significant concerns associated with self regulation are: inadequate compliance, monitoring, and enforcement. Thus, to ensure there is sufficient accountability, it is necessary that effective compliance, monitoring and enforcement mechanisms of rules, standards and policies are in place. These mechanisms must be supported by clear, user friendly and efficient dispute-resolution processes and education of industry members of their obligations.

9.6.1 Self regulation as an alternative regulatory mechanism in Hong Kong

While we regard self regulation as a good alternative to state regulation, so far we have failed to elicit sufficient evidence to indicate that the alternative approach can be effectively implemented in Hong Kong. Our brief study of Australia and the UK in Chapter 7 has provided us with valuable insights into and a good representation of insights in to a viable self-regulatory strategy for regulating mobile content services in the light of child protection concerns. Indeed from our study, we surmise that conditions articulated in Section 9.6 above fail to exist in a manner that the conditions can support the successful implementation of a self-regulatory mechanism in Hong Kong in so far as the protection of children and young people from the hazards of mobile content

44 Free riding occurs if all industry players do not coordinate on voluntarily restraining their conduct. The free rider gains a cost advantage relative to his business rivals because it does not undertake the costly voluntary action or adhere to the regulations. Thus, members that do comply may be economically disadvantaged. This could result as a 'dis-incentive' to members that comply.

are concerned. For the failure observed here are three main reasons (1) lack of strong industry representation, (2) stakeholders' nonchalant attitude, and (3) weak government initiatives. We discuss the three reasons below.

(1) Lack of strong industry representation

It is apparent that self regulation requires significant industry level involvement in the development and implementation of the regulation. This is not possible if major industry players lack 'common interest, sincere commitment, and clear objective' to protect the youngsters from the hazards of mobile content. Unlike Australia (see Chapter 7), where an organised industry representative body in the form of the Internet Industry Association (IIA) exists, such an association does not exist in Hong Kong. Indeed we see in Hong Kong, six mobile network operators (MNOs). They have been previously described in Chapter 2 and are (1) Hong Kong CSL Limited,[45] (2) Hutchinson Telephone Company Limited, (3) SmarTone Mobile Communications Limited, (4) PCCW Mobile HK Limited, (5) New World PCS Limited, and (6) China Mobile Peoples Telephone Company Limited. Perhaps, it is due to the lack of strong industry representation that our investigations failed to reveal any proposal by the MNOs to develop an appropriate self-regulatory mechanism that can be seen as a positive and proactive measure towards addressing child protection concerns and inappropriate mobile content. We can also compare Hong Kong's position with that of the UK, where we had observed a strong commitment by the six mobile operators (namely, Orange, O2, T-Mobile, Virgin Mobile, Vodafone, and Hutchinson 3) in developing a code of practice for mobile content services. At this place, I hesitate to state that Hong Kong's position is evidenced by the author's failed attempts to arrange an interview with three of the MNOs with a view of evaluating the MNOs position with respect to the concerns posed. The reason the author was provided with was "it is a commercial secret". Thus, if the 'economic immaturity' continues to persist with each industry player viewing the other industry player as nothing more than "a market competitor and a rival for a larger slice of the mobile content services pie", rather than "market partners with common interest, commitment and shared responsibility towards a clear social objective of protecting youngsters", it would be difficult to see the implementation of industry self regulation as a viable alternative mechanism in Hong Kong.

(2) Stakeholders' nonchalant attitude

Since the development of any form of self-regulation mechanism would require the representation, participation, and input of other interested stakeholders (namely the community, NGOs, government agencies, Internet service providers, educational institutions, and the legal fraternity), the nonchalant attitude of

45 CSL New World Mobility Ltd was created to own two mobile telephone operators, New World PC Ltd and HK CSL Ltd.

these stakeholders will not assist in providing the necessary driving force required. We have stated previously in Chapter 7 that, to a large extent, the MNOs and the other stakeholders' attitude can be attributed to the origins of the Hong Kong's Chinese community and their socio-cultural and socio-economic point of view. For example, S.K Lau (1984) opines that the normative orientation of the Chinese community was (1) short term, (2) materialistic, (3) valuing social stability above political participation, and (4) securing their families longer term futures.[46] Thus, the attitude which we regard as 'narrow' does not lend itself towards working for the betterment of the community as a whole.

(3) Weak government initiatives

Despite the lack of industry representation, we opine that it is possible to 'jump-start' the development of a self-regulatory mechanism amongst industry players when there are fears of government regulation. Thus, if the Hong Kong government expresses the intention to interfere by means of legislation, this might provide the impetus for the MNOs to self regulate. However, the likelihood of this occurring is small since the Hong Kong economy is dominated by oligopolies and business tycoons who support the government. The result is that these elite business interest groups have considerable political influence and clout to ensure that their interests are protected and the government policies are not detrimental.[47] Thus, unless the government adopts a different style of governance, self regulation as a cost effective, less cumbersome regulatory alternative will fail.

Profit as incentive

MNOs can be encouraged to self regulate if there are incentives to do so. In this regard, we remark that a strong incentive for industry players is profit. We thus believe the adoption and strict adherence of industry-led regulations by MNOs will instill greater consumer confidence and trust in the industry; this can lead to an increase in profit margins. Conversely, if the compliance costs does not harm industry members' profits nor imposes a financial burden, there may be a greater incentive towards self regulation. The government can play a significant role in encouraging MNOs to self regulate by using a 'carrot and stick approach' such as providing incentives (tax benefits or government backed business loans with easier credit terms) or by imposing stringent conditions upon the renewal of an MNO's licences. It is important for the state

46 Lau, S.K., Society and *Politics in Hong Kong*, (1984), Chinese University of Hong Kong Press, Hong Kong, p. 67-71.

47 We note this observation by He and Zhu in our discussion in Chapter 7. See also He, Z., and Zhu, J.H. Jonathan, Regulating the New Media in China and Hong Kong: Manipulation and Transaction, Available at www.newmedia.cityu.edu.hk/cyberlaw/gp1/intro.html.

regulator to convince the industry that effective implementation of self-regulatory measures is beneficial in enhancing the credibility of the industry amongst consumers and in reducing the threat of costly government intervention.

Thus, we may tentatively conclude that the three main conditions, i.e., (1) a mature, well organised industry, (2) a 'community focused' stakeholder community, and (3) a strong state regulator does not currently exist in Hong Kong. Since the development, adoption, and effective implementation of a self-regulatory strategy necessitates the strong commitment of the industry and the support of the government to be successful, unless there is a change in the mind-set and attitude of the industry players and the culture of governance in Hong Kong, there is a high possibility that self regulation as a viable alternative regulatory mechanism for the protection of children and young people from the hazards of mobile technology may remain on the books.

9.7 A COMBINATION OF APPROACHES

Having (1) considered the pros and cons of self regulation and (2) defined the conditions necessary for its effective implementation, we are faced with an interesting question. Does this way of looking at benefits and criticisms of the self-regulatory approach by pitching the command control approach against the self-regulatory approach implies a mutually exclusive regulatory option? As pointed out by Iles (1996) "regulation is portrayed as top down, cumbersome and resource intensive, and voluntary standards as bottom up, relatively flexible and particularistic".[48] So we may answer the above question by stating that this is far from true. Instead, we state that the choices available to regulators are merely two extreme forms of the regulatory approaches; the command control approach at one end and pure self-regulatory approach at the opposing end (see Figure 9.3).

We know it has been stated that regulatory styles that are cooperative on the one hand and punitive on the other hand "may operate at cross purposes because the strategies fit uneasily with each other as a result of conflicting imperatives".[49] Notwithstanding the two extremes, it is argued that both approaches are neither independent and separate from the other nor are they applied solely to the exclusion of the other. It is not uncommon to see voluntarism in the command control approach and the threat of regulation being the mainstay of self regulation (see Figure 9.3).

48 Iles, A.T., (1996), Commentary, *Environment*, Vol. 38(7), p. 4-5.

49 Ayers, I., and Braithwaite, J., (1992), *Responsive Regulation: Transcending the Deregulation Debate,* Oxford University Press, Oxford, England.

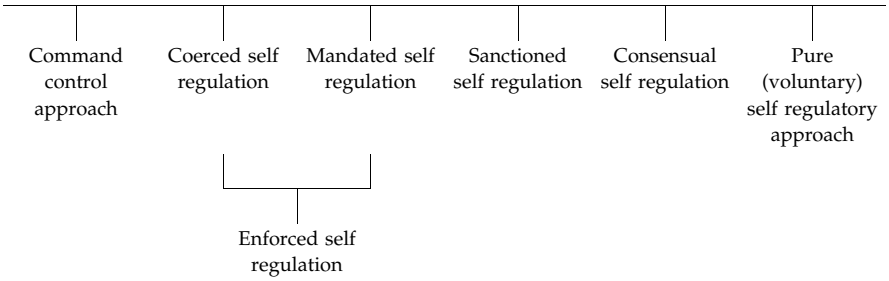

Figure 9.3: The spectrum ranging from command control to pure self regulation.

Ayers and Braithwaite (1992) refer to such a strategy as a 'tit-for-tat' strategy, where it is the mixing of punishment and persuasion that is most likely to be effective.[50] As posited by Ayers and Braithwaite, regulatory cultures can be transformed by clever signalling by regulatory agencies that every escalation of non-compliance by the industry or collective group can be matched with a corresponding escalation in the punitiveness by the state, thus resulting in a more interventionist regulatory strategy.[51] This is best illustrated in the Figures 9.4 and 9.5.

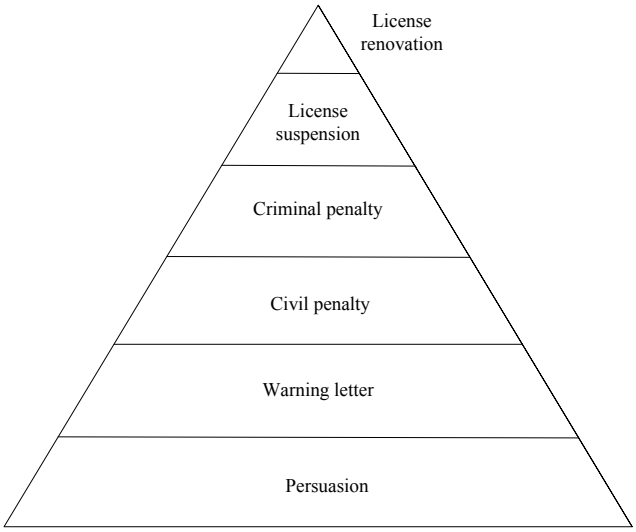

Figure 9.4: Example of enforcement pyramid.[52]

50 Supra Ayers and Braithwaite n. 49.

51 Supra n. 49.

52 Ayers and Braithwaite supra n. 49; Ayers and Braithwaite have suggested that the examples of the pyramids above particularly Figure 9.4 might be more appropriate and applicable to occupational health and safety, environmental and nursing home regulation rather than situations which would require affirmative action regulation.

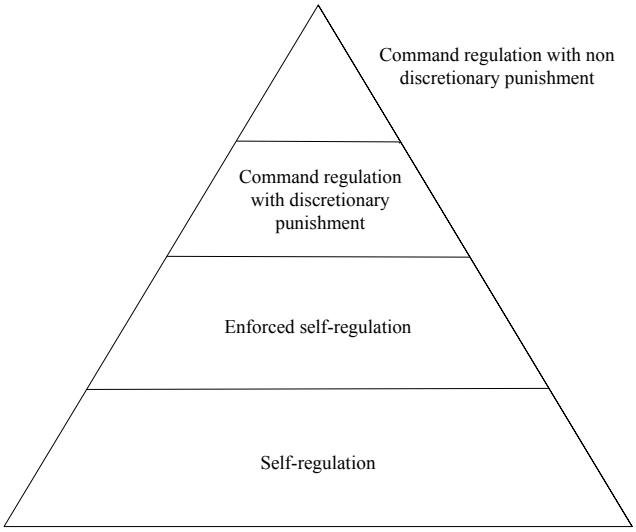

Figure 9.5: Example of a pyramid of regulatory strategies.[53]

According to Ayers and Braithwaite (1992), most regulatory action occurs at the base of the pyramid where attempts are initially made to coax compliance by persuasion.[54] Therefore, compliance is more likely if the least interventionary form of regulation is applied first with a threat of more severe sanctions if the least interventionary form fails to produce the desired result. Thus, their proposed pyramid of regulatory strategies suggests that in the first instance, regulators should seek and offer, self-regulatory solutions to industries but that, if the appropriate goals are not met, the state should escalate its approach and proceed through enforced self regulation to command regulation with discretionary punishment and finally to command regulation with non-discretionary punishment.[55] Ayers and Braithwaite's responsive regulation theory has three elements to its implementation: (1) a systematic, fairly directed and fully explained disapproval, combined with (2) a respect for the regulatees, and (3) an escalation of intensity of regulatory response in the absence of a genuine effort by the regulatee to meet the required standards.[56]

53 Supra Ayers and Braithwaite n. 49.

54 Supra.

55 Baldwin, R., and Black, J., (2007), Really Responsive Regulation, *LSE Law, Society, Economy Working Papers*, 15/2007;available at http://www.lse.ac.uk/collections/law/wps/wps1.htm #15

56 Braithwaite, J., (2002), *Responsive Regulation and Restorative Justice*, Oxford University Press, Oxford, England., Braithwaite, V., (2007) (eds.) Special Issue on Responsive Regulation and Taxation, *Law and Policy, 29 (1).*

9.8 CRITICISMS OF RESPONSIVE REGULATION THEORY

While both Ayers and Braithwaite's pyramids of regulatory strategies and enforcement mechanism proved to be logical, their theory has met with criticisms.[57] Since their theory envisages a step by step progression on the pyramids, the strategy may not be appropriate in situations where a more severe form of enforcement is required immediately. A convincing instance is a suspension of license for selling and offering for sale poultry affected by the H5N1 virus. Baldwin (2007) suggests it is more efficient to tailor and target the types of regulatory responses according to the regulatee's attitudes to regulation.[58] If, for example, a problem is caused predominantly by regulatees who are ill-disposed to respond to advice, education, and persuasion, then the regulatory response will not start at the base of the enforcement pyramid. Rather, an early intervention at a higher level will be demanded.[59] Similarly, Baldwin argues that an analysis of the risk levels may militate in favour of an early resort to higher levels of intervention.[60] Yeung (2004) provides a further criticism of responsive regulation strategy in which he states:

> "Infractions causing widespread harm will not be treated severely so long as the regulate cooperates with the regulator, whereas minor infractions will be treated severely if the regulate does not cooperate".[61]

Yeung opines that since regulatory responses are dictated by co-operation or non co-operation of the regulatee, consistency of treatment between regulates will arise since the enforcement response is not to the harm caused but rather to the degree of cooperation.[62]

In Subsection 9.8.1, we consider Gunningham and Grabosky's (1998) smart regulation theory. In Subsection 9.8.2, we contrast the opinions from where we derive the conclusions.

9.8.1 Smart regulation theory

In addition to the criticisms by Baldwin and Black (2007) and Yeung (2004) we should remain mindful of Gunningham and Grabosky's (1998) smart regulation theory and Baggott's (1989) three dimensional conception of self regulation. Gunningham and Grabosky (1998) in their combined or mixture of controls method, while accepting Ayers and Braithwaite's pyramids for

57 See Baldwin and Black, supra n. 55 for some criticisms of Ayers and Braithwaite's responsive regulation theory.
58 Supra n. 55.
59 Supra n. 55.
60 Supra n. 55.
61 Yeung, K., (2004), *Securing compliance: A Principled Approach*, Hart Publishing, p. 168-170.
62 Supra.

responsive regulation and enforcement strategies, argued that a similar three-sided pyramid but one that is not restricted to escalating punitive responses should be adopted.[63] Gunningham and Grabosky (1998) proposed a 'smart regulation' pyramid; a pyramid that focusses on the combined use of institutions and techniques as deemed appropriate in the circumstances and one that is based on different instruments of controls exercised by different parties.[64] They suggest that the three sides of the pyramid reflect (1) state control, (2) commercial and non-commercial quasi-regulators, and (3) corporations.[65] Baldwin (2005) stated that Gunningham and Grasbosky's smart regulatory pyramid does have the advantage of not being restricted to just moving up one side of pyramid, for example, state control but rather has the benefit of utilising (where necessary) the other instruments of control. Baldwin continued by stating "This provides the flexibility of response and allows sanctioning gaps to be filled; so that if escalation up to the state system is not possible (for example because a legal penalty is not provided or is inadequate), resort can be made to another form of influence".[66] Our investigation thus indicates that the availability and the use of a mixture of controls may be more suitable and appropriate in the light of changing more fluid circumstances. It might also be viewed as being more efficient in terms of (1) ease of use, and (2) compatibility of control methods which translates to (3) greater cost benefit.

Based on our studies we may conclude that the Murray and Scott (2002) control system approach as discussed in Chapter 7 is not dissimilar to Gunningham and Grabosky's (1998) smart regulatory pyramid theory. The apparent difference between the two approaches is that Murray and Scott's approach does not envisage the use of a pyramid representing the possible escalating degrees of coercion through the interaction of different but complementary instruments and parties (or stakeholders).[67] However, we believe that both approaches are similar in that they recognise the importance of other stakeholders in the formulation and implementation of a regulatory design. As we know, Murray and Scott's (2002) theory encompasses a wider range of regulatory strategies which can include (1) hierarchical control (based on the state), (2) community-based control (based on community), (3) competition-based control (based on market), and (4) design-based control (based on the architecture design). These control systems as enunciated by Murray and Scott (2002) are not restricted to being applied independently. If necessary, the

63 Gunningham, N., and Grabosky, P., (1998) *Smart Regulation,* Clarendon Press, Oxford, England. See also Baldwin, R., (2005) Is Better Regulation Smarter Regulation?, Autumn 2005, *Public Law*, p. 485-511.

64 Supra Gunningham and Grabosky.

65 Supra Gunningham, N., and Grabosky, P., n. 63; see also Baldwin, R., and Black, J., (2007), Really Responsive Regulation, Law Society Economy Working Paper 15/2007; available at http://www.lse.ac.uk/collections/law/wps/wps1.htm#15

66 Supra Baldwin n. 63.

67 Supra Baldwin n. 63.

control systems can be applied in combination with each other. This reasoning thus is in tandem with that by Gunningham and Grabosky (1998) since their theory envisages controls that can be imposed by (1) the state, (2) quasi-regulators, such as trade association, pressure groups, and non-governmental organisations, and (3) corporations. As with Murray and Scott (2002), there is no absolute requirement for the controls to be applied on its own. Instead Gunningham and Grabosky (1998) have stated earlier that there should be an empowerment of participants that are in the best position to act as surrogate regulators.[68]

9.8.2 Contrasting opinions leads to conclusions

In contrast, Baggott suggests that we consider self regulation in the following ways: (1) the level of formality – essentially, this looks at the variance between achieving consensus between interested parties to a more institutionalised arrangement, (2) the degree of legalisation – this merely follows on from (a) reflecting either a voluntary arrangement or one that is more legalised, and (b) the extent of outsider participation – this dimension can be expressed in terms of whether participation is limited to a selected group of representation or one that envisages a wider participation of industry players, stakeholders, and interested groups.[69]

We may thus conclude that although the theories propounded by legal theorists technically differ, we do observe a common thread stemming from these theories: there is consensus that self regulation as an alternative form of state regulation does not do away with the need of government intervention. On the contrary, we see government intervention as a question of degree, that is to say, (1) whether a 'light' handed approach is adopted and (2) whether there is an escalation of punitive measures in the event of non-compliance. Perhaps it is worthwhile to note Sinclair's (1997) suggestion that there are a number of policy variables which transcend a fundamentally dichotomous approach to regulatory design.[70] Sinclair continued by proposing that states should tailor regulatory responses according to the circumstances by first identifying regulatory variables. Regulatory variables include (a) the nature and extent of regulatory compulsion, (b) the extent to which regulatory flexibility allow firms to accommodate their individual circumstances, (c) the opportunity for industry design input into the negotiation and development of

68 See Gunningham and Grabosky's smart regulatory strategies five core principles summarized by Baldwin in supra n. 63.

69 Baggott, R., (1989), Regulatory Reform in Britain, The Changing Face of Self Regulation, *Public Administration*, Vol. 67, Issue 4, p. 435-454

70 Sinclair, D., (1997), Self Regulation versus Command and Control? Beyond False Dichotomies, *Law & Policy*, Vol. 19, Number 4, p. 529.

regulations, and (d) the extent to which win-win outcomes are the focus of regulation.[71]

Our investigation also revealed the increasing importance of non-state involvement.[72] Accordingly, we surmise that self regulation is based on three key elements:

1 the involvement of all interested parties in the formulation and design; this element represents participation and confirms the regulatory theories previously expounded by Baldwin (2005), and Gunningham and Grabosky (1998); it is also a regulatory variable as suggested by Sinclair (1997);
2 implementation of the self regulation by the industry; this element being a follow-up element of (1), i.e., the involvement of all parties in the formulation and design, encourages a better compliance resulting in a greater effectiveness; and
3 an evaluation of the measures undertaken.

Key element (3) is especially noteworthy since it is crucial that regulations be reviewed from time to time to consider its effectiveness or continuing necessity. This is particularly so for regulations in the information communication technology sector which is innovative and rapidly changing. The three key elements are in line with the six key conditions articulated in Section 9.6.

9.9 CODES OF PRACTICE

In this section, a brief overview is provided on codes of conduct as one of the more viable forms of co-regulation. The section also describes the variables that might impact the evolution of codes.

Although there are many forms of self regulation, we view codes of practice as the most common form of self regulation.[73] Other forms of self regulation include voluntary accreditation schemes and standards adopted by the industry.[74] Standards are used to define the acceptable characteristics of a product, process, or service. They are voluntary and are generally intended for adoption by businesses. A good example of a standard is the British Standard, developed through the British Standard Institution (BSI). The BSI works in consensus with the British government, business, and other stake-

71 Supra Sinclair.
72 See, for example, Better Regulation Task Force, Alternatives to State Regulation, (Cabinet Office, London 2000); available at http://archive.cabinetoffice.gov.uk/brc/upload/assets/wwwbrc.gov.uk/stateregulation.pdf and Imaginative Thinking for Better Regulation, (Cabinet Office, London 2003); available at http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/imaginativeregulation.pdf
73 Supra Bartle and Vass, n. 4.
74 Supra.

holders (consumers) to develop standards that suit their mutual needs.[75] In comparison to voluntary accreditation schemes and standards, codes of practice refer to fairly explicit rules wherein a violation of the codes is likely to attract some form of sanction. Other less restrictive forms of self regulation can be seen in the form of guidelines and recommendations.

Although in general codes of practice can exist for a variety of reasons, we observe that their formulation and adoption is commonplace within the business circles. In addition to the codes being seen as a means to avoid government intervention, we observe that the codes use a proactive measure in (a) building consumer's trust, and in (b) instilling greater confidence in the products or services. The adoption of codes is evidenced in wide ranging sectors from property construction and management industries to professional sectors. Yet, we argue that the underlying incentive to the adoption of the codes is based on commercial reasons in that (1) it is to avoid government regulation (wherein too much regulation is not good for business), and (2) it is to improve business by raising the public image of their industry. One example of an effective and well known code of conduct is the code of conduct by the Association of British Travel Agents (ABTA). The ABTA code aims to ensure that customers receive the best possible service from their ABTA member travel agent and tour operator before they book. This may happen through the whole booking process, after sales service, and the way they handle complaints.[76] A second example of codes regulating professionals is the code of practice for solicitors or general medical practitioners. These codes address amongst other matters, issues concerning the professionalism of the individual members[77] and can include matters such as confidentiality of clients and patients, advertisements and publicity, and conflict of interests.

Our investigations reveal that codes of practice are one of the better forms of co-regulation in that the codes are seen as possessing the ability to provide greater freedom and flexibility in deciding how best to meet social demands and objectives. This ability avoids (1) the need for state regulators' involvement in the prescribing operational arrangements, and (2) allows for a more focussed approach in dealing with non-compliance thus resulting in a degree of certainty that is normally a characteristic of state regulations. The code's flexibility and adaptability to changing circumstances, and to social and cultural norms are important elements that cannot be ignored especially with regards to the evolving nature of new communication technology. We thus see the code's flexibility and adaptability as an emerging, yet undeniable characteristic of self-regulatory codes which will no doubt assist, and further enhance its

75 www.bsi-global.com/index.xalter

76 See www.abta.com/benefits.html#code for more information.

77 The U.K.'s solicitor's code of conduct 2007; available at http://www.sra.org.uk/solicitors/code-of-conduct.page, see also the revised code of conduct for medical practitioners in Hong Kong at www.gld.gov.hk/egazette/pdf/20050903329.pdf

applicability and usefulness. However, we accept that there are variables which might impact the evolution of the codes. Five variables suggested by Price and Verhulst (2005) are (1) the convergence of national, regulatory, and corporate cultures; (2) the changing nature of the relationship between the government and industry; (3) the evolving technological architecture that underwrites self regulation; (4) the further development of standards, codes, and rules; and (5) the growth and change of cultural norms and of public understanding surrounding self regulation.[78] In identifying the variables, Price and Verhulst (2005) views codes as one of the most appropriate forms of self-regulatory mechanisms in that (a) codes make a suitable testing ground for innovative measures adopted by regulators when faced with uncertainty, (b) codes draw greater expertise and experience from stakeholders and users alike, (c) codes "(…) represent a temporarily agreed upon set of standards which serves as a (…) modus vivendi as new modes of information are distributed", and (d) codes are not independent of the state but rather are complementary to state regulations.[79]We support the views posited by Price and Verhulst. Their arguments in (a) and (b), for example, are what we have described as some of the benefits to self regulation. In so far as (c) and (d) are concerned, as codes "represent a temporarily agreed upon set of standards", these codes as we have earlier argued, do have the flexibility to change and adapt in tandem with changes in society's values, norm, culture, and circumstances. Further, we have at length discussed the degree and the necessity of state intervention based on various theories and can allude to Price and Verhulst's position that codes of practice as self regulatory mechanism is a product of interaction with the state.

Having examined the codes of practice as an appropriate form of self-regulatory mechanism, Subsection 9.9.1 considers the variables which constitute a code's framework.

9.9.1 The code's framework

In this section we aim to lay down the ingredients that constitute a code's framework. We do this by adopting the following four broad variables suggested by Price and Verhulst (2005) in the form of (A) coverage, (B) content, (C) communication, and (D) compliance.

A: Coverage

By coverage, Price and Verhulst refer to the scope of application of the code. We agree with this and state that since we are dealing with mobile communications, the code should be aimed at mobile network providers and mobile

78 Price, M.E., and Verhulst, S.G., (2005), *Self Regulation and the Internet*, Kluwer Law International, The Netherlands.

79 Supra.

content providers. Currently a code of practice does not exist for mobile network providers and mobile content providers in Hong Kong. In so far as the ISPs in Hong Kong are concerned, a voluntary code of practice does exist.[80] As such, the code can indirectly apply to mobile network providers who are (1) members of the Hong Kong Internet Service Providers Association (HKISPA), and (2) who offer and provide Internet access service to their subscribers using Internet-enabled mobile devices.

Essentially, the HKISPA code of practice stipulates that members will take 'reasonable steps' to prevent users of their services from placing and/or distributing material on the Internet likely to be classifiable as Class III (obscene) under the *Control of Obscene and Indecent Articles Ordinance*. In contrast, category II (indecent) material must be preceded by warning notices similar to those on printed material.[81] Internet users who repeatedly break the rules of the code can have their access to the Internet disconnected. Members are encouraged to promote technologies which provide a content rating classification or block sites which are regarded as inappropriate for access and viewing. In addition, the code enables members of the public to complain formally to a web site's host Internet company of inappropriate sites or materials. In the event of complaints, the member company must 'act promptly and conscientiously on the complaint'. Any unresolved complaints may be referred to Television, Entertainment, and Licensing Authority (TELA) who may conduct their own investigations.[82] However, there are limitations to the application of the codes in that (1) the codes are not mandatory being only applicable to members of the HKISPA, and (2) the codes only apply to the posting or publication of obscene and indecent materials on the Internet. Members of HKISPA are also subjected to anti-spam codes of practice. As its name suggests, the code is to regulate the sending of unsolicited mass, bulk, junk electronic mail, message, and postings.[83] The code also encourages members to adopt spam filtering mechanisms although if the filtering mechanisms are so provided, the subscriber must have explicitly requested for it. Further in the event members perform SPAM filtering by default, they must (a) explicitly inform their subscribers of the service feature, and (b) provide a convenient method for subscribers who wish to disable the filtering feature.[84]

B: Content

With regards to content, we find it imperative to determine firstly the types of content which the codes are intending to cover. In this respect, we can refer

80 See www.hkispa.org.hk

81 Code of Practice: Practice Statement on Regulation of Obscene and Indecent Materials .

82 www.tela.gov.hk

83 Hong Kong's Anti-Spam Code of Practice, June 2005, available at http://www.hkispa.org.hk/antispam/cop.html

84 Supra.

to (1) the potential harms that emanate from the use of Internet-enabled mobile phones, and (2) the hazards that can arise as a result from the use of such modern communication devices. The hazards have been fully examined and discussed in the earlier chapters. For the present purposes, the codes will need to address broadly (1) the access, posting, transmission, and distribution of illegal and/or prohibited content, (2) the access, posting, transmission, and distribution of harmful content, and (3) conduct and activities which are deemed inappropriate and/or unlawful. Content should be defined to include any material including user-generated material and material whether or not reproduced from another source for the purposes of sharing and distribution. Thus the code will cover (a) inappropriate materials of extreme sexual and violent nature such as pornography, (b) mobile games depicting violent and sexually explicit themes, (c) mobile spamming, (d) mobile marketing tactics aimed at children and young persons, (e) prohibited activities such as sourcing and grooming children and young persons, and (f) cyber-bullying. It is useful in this respect perhaps not to restrict the definition of activities to, for example, meeting on-line via electronic communications but to include subsequent activities or conduct followed through in real space. This thus covers subsequent meetings arranged via the mobile by child sexual abusers or additional and/or continued intimidation and taunting by bullies in the real world.

C: Communication

The third variable requires measures undertaken to enhance the relationship between the code subscribers (mobile network providers, mobile service providers, and mobile content providers) and mobile users. This can include (1) providing information (a) to effective filtering mechanisms for filtering communication, (b) materials and activities that are considered inappropriate or harmful, (c) on the possible sanctions that will be imposed for breach of the rules, and (2) providing an easily accessible help-line for users. The information provided must be clear and couched in simple terms so as to leave little room for mis-interpretation.

D: Compliance

It is also necessary that the codes should have clear, accessible, well-publicised detailed procedures to deal with breaches of code. Codes that promote effective compliance can include a simple and easy to use phone number, like dialing '111', which allows mobile users to initiate complaints. It is crucially important that further and in addition to complaints being dealt with swiftly and fairly, to show that the decision-making process is fair and transparent.

9.10 CHAPTER CONCLUSION

As argued earlier, self regulation does not mean the absence of state intervention at all. Instead, it means less direct state intervention. From a public policy perspective, self regulation cannot completely replace traditional state intervention. There is an inter-dependence between self regulation and official state regulation, and we see this most appropriately in enforced self regulation and co-regulation. Consequently, we surmise that self regulation in the form of co-regulation is an effective way to complement state regulation. In this regard we agree with Bartle and Vass's (2005) position that the effectiveness and efficiency of regulation depends to a large extent on the interplay between the mixture of controls on the continuum between the state of the one part and the industry or stakeholders of the other.[85] In fact, this can be seen in the examples provided by Ayers and Braithwaite (1992). In summary, it can be said that the degree of intervention and the type of intervention is dependent not only on the industry or the sector to be regulated, but also on what is to be regulated.

In fact, we can see how the ingredients for our proposed code of practice framework consisting of coverage, content, communication, and compliance sit well with the four guiding principles for regulating content. The four guiding principles are advocated in greater detail in Chapter 10 and we briefly mention them here as (a) community standards, (b) protection from harm, (c) informed choices and decision making, and (d) complaints procedure. We may thus conclude that co-regulation in the form of code of practice underpinned by state regulation for the mobile communication industry may prove to be a viable regulatory mechanism for regulating mobile content.

In the next chapter we set ourselves the task of establishing the elements that we view as necessary when formulating a regulatory framework for the protection of children and young people in the mobile communication age.

85 Supra Bartle and Vass, n. 4.

10 Government intervention – the need for regulatory alternatives?

As with Chapters 6, 7, 8, and 9, this chapter deals with the second part of the thesis, the legal perspective. The purpose of the chapter is to establish elements we regard as important and necessary in the protection of children and young people from the hazards raised and discussed in Chapter 4.

This chapter deals with RQ4: *"what are the important elements that should be included in the new regulatory framework?"* The chapter begins with a discussion on the justification for regulation (Section 10.1), wherein we consider whether there is actually a need for government intervention. By government intervention, we refer to direct government intervention. In Section 10.2, it is described what might be the objectives for content regulation before proceeding to articulate guiding principles for regulating content. In Section 10.3, we advocate the principles of good regulation. The importance of community participation is discussed in Section 10.4. From these discussions, we arrive at an alternative to state regulation (Section 10.5) and a mixture of controls (Section 10.6). We answer RQ4 in Section 10.7. In Section 10.8 we pay attention to a possible implementation of the combined regime in Hong Kong. We conclude the chapter in Section 10.9.

10.1 Justification for regulation

This section is intended to provide a straightforward reasoning as to whether government intervention (and in this respect we mean, direct government intervention in the form of hard law) is actually necessary to achieve its policy objectives (see Subsections 10.1.1 and 10.1.2). In Subsection 10.1.3 a checklist in the form of questions is provided. The checklist is meant to serve as a guide to regulators when designing and implementing regulations.

10.1.1 A straightforward reasoning

One way of looking at regulation is to consider what the regulation intends to achieve. Using this approach, we may say that regulation is a process by which regulators seek to influence the markets (or the environment) in order to achieve social and economic objectives. Thus taken at its most general level, law-making is driven by a number of objectives. In Section 3.3 and Figure 3.1, we have described various government objectives. We list them briefly here

as economic, social, and cultural objectives. Thus, in the form of "the social objective of consumer protection and privacy", we posit that regulation can exist either as an imposition of a constraint, or it can act as an incentive to encourage good behaviour. In Chapter 8, we have also observed how constraints can operate and be used together with incentives to reflect and implement a policy decision.

Nevertheless, regulation is usually justified on the basis that market forces alone are unable to deliver required public policy objectives.

Despite the argument that direct government intervention is necessary to address a 'failing market', one must accept that a perfect market simply does not exist.[1] Consequently, we argue that any impulsive government intervention intended to improve matters might instead worsen the situation. The United Kingdom Better Regulation Task Force (BRTF) (2005) had in their report provided five reasons why government intervention can make matters worse. We repeat them below.

1 Regulatory bodies who pass their costs to those they regulate may have little incentives to minimise these costs.
2 Some may want to impose high standards in order to avoid blame if things go wrong. (3) There may be little pressure to withdraw from regulatory areas, unlike in a competitive market where rivals will constrain growth. Instead there may be a tendency to expand.
3 There is also the possibility of 'regulatory capture' where a regulator becomes sympathetic to the interests of those they regulate and acts to protect their interests.
4 It is easy to underestimate the cost of regulation; this includes the cost of the regulatory body and the compliance cost of those being regulated.[2]

Consequently, we opine that it is more prudent for regulators to strive to seek an alternative, more viable, and cost-effective form of regulation in an attempt to reduce the prevailing concerns.

Further, in justifying regulation we are guided by a test proposed by Bishop (1998) where he said the following.

> "The real question the regulator must ask is not whether in theory the market can be improved but whether the defects found are sufficiently serious to outweigh the costs of intervention (…). This is not to argue that regulatory intervention is never warranted. What it does mean, however, is that intervention should not be

1 Ch. 5, No Intervention, in Imaginative Thinking for Better Regulation, a 2005 report by U.K. Better Regulation Task Force; available at www.brtf.gov.uk
2 Supra.

> undertaken on the whim or hunch of the regulator. A series of systematic rules should be followed to gauge whether regulation is likely to improve matters".[3]

What all this indicates is that direct government intervention is not an 'end all, be all' solution. There is no guarantee that government intervention via regulations will achieve its desired outcome.

10.1.2 A further discourse on content regulation

Apart from legislative and judicial pronouncements, rules guiding conduct can and do arise from individuals themselves. These can be seen in parties reaching informal contractual arrangements in the form of rules and by-laws with respect to, for example, conduct towards each other. Thus a newsgroup participant may be 'flamed' by posting inappropriate material or comments in a newsgroup. Another second form of self-help is that suggested by Trotter (1994) – unilateral self-help which is best amplified by stating "if you don't like it, don't do it". Thus, if the discussion in a particular discussion group does not interest the participant, the best solution would be for the participant to withdraw from that discussion group and move on to a discussion group which best reflects his interest. This is also an aspect of regulatory arbitrage reflecting the fluidity of the Internet previously discussed. Trotter opined that unilateral activity avoidance by individuals is an appropriate response when the activity has no significant effects.[4] The lack of external effects means that others will not be harmed or benefited so that the interest of others need not be taken into account.[5]

In so far as the discourse on content regulation is concerned, we surmise that the heart of the matter is the degree of control that the relevant stakeholders have over the content that is being offered, made accessible, and disseminated. We have discussed this in Chapter 6 with regards to Wong and Hiew's (2005) segmentation of mobile entertainment.[6] Thus, in Wong and Hiew's segment 1 (content offered within the mobile network provider's portal or 'walled garden') control is relatively easy and well defined. However, in comparison with unilateral self-help, bilateral self-help[7] (contracts) is a more

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3 Bishop, B., (1998), Antitrust Enforcement and the rule of law, Editorial, *ECLR* 1 in Ch.5, Cyber Regulation: Access – The European Example, p. 133 in Grewlich. K.W., (1999), *Governance in Cyberspace: Access and Public Interest in Global Communications*, Kluwer Law International, The Netherlands.

4 Trotter, H., (1994), The Proper Legal Regime for Cyberspace, 55 *University of Pittsburg. L. Rev*. 993.

5 Supra.

6 Wong, C.C., and Hiew, P.L, (2005), Mobile Entertainment: Review and Redefine, Proceedings of the International Conference on Mobile Business (ICMB '05), IEEE Computer Society; available at http://csdl.computer.org/dl/proceedings/icmb/2005/2367/00/23670187.pdf, see also Subsection 6.1.1, Ch. 6.

7 Supra Trotter, n.4.

viable option to regulating behaviour. This is because contracts can be tailored to an enormous variety of circumstances and can specify complex relationship and duties. For instance, in so far as the development of mobile content is concerned. We see that as parties to the agreement are fully appraised of the prohibition or restriction (as the case may be) as to the type of content that is considered suitable and appropriate for societal's access and consumption. The reasoning is even more relevant where the creation and development of content is outsourced to content providers (segment 2 content); in this situation, content is normally the subject of formal contractual agreement reached between parties. Further contract-based solutions are seen as more feasible in transactions that have a high value to the parties, relative to the costs of the transaction.[8] In such circumstances, the Coase theorem suggests that parties will reach an economically efficient result.[9]

In so far as the open mobile Internet is concerned, contract-based solutions are (although limited in its usefulness, see the discussion in Subsection 6.1.2) seen as a common form of control mechanism. An example of this form of control mechanism is a subscriber's agreement with a network provider.[10] All subscribers must register with their chosen provider whether it is done electronically or by paper mode. In the registration process, subscribers in addition to providing particulars of themselves and paying the prescribed fee, must agree to abide by the rules and regulations of the provider. In so doing, subscribers will most commonly agree to matters such as *inter-alia*, (1) not to infringe a third party's copyright without written approval of the owner of the copyright, (2) not to post racist and derogatory remarks, and (3) not to post and/or distribute illegal, harmful, obscene, or inappropriate materials.

10.1.3 A checklist of eight questions

We are not positing that regulations for all intent and purposes play a less significant role in modern age. Instead our investigations indicate that regulations are just as important, if not more important in the new age; but just as technology evolves and society advances in tandem with the adoption of the new technology, the law should progress and adapt to new environments and new circumstances. In such circumstances, we opine that greater guidance should be sought from, and better emphasis should be placed on the Organisation for Economic Development and Cooperation's (OECD) principles

8 Supra Trotter, n.4.

9 Coase, R., (1960), The Problem of Social Cost, 3 *J.L & Econ*. 1.

10 As examples, see Blue Zone Internet Access Service Agreement, available at http://www.thebluezone.com/ISPAgreement.htm and AOL Broadband Access Agreement, available at http://bbterms.aol.co.uk/memserv/tc_access_agreement.htm

for improving the quality of government regulation first enunciated in 1995.[11] We believe that the following checklist in the form of questions can positively guide and assist regulators in the development and implementation of regulations:[12]

a) is the problem defined?
b) is government action justified?
c) is regulation then the best form of regulation?
d) is there a legal basis for regulation?
e) do the benefits or regulation justify the costs?
f) is the regulation clear, consistent, comprehensible, and accessible to those regulated?
g) have all interested parties had the opportunity to present their views? and
h) how will compliance be achieved?

Indeed, these eight questions have to be considered when addressing regulation of content that is accessible via Internet-enabled mobile phones. For now, we contend that content regulation is a social objective in that it is a social responsibility of the state (regulator) to maintain an acceptable community standard which reflects the cultural and moral tone of society. We argue that the maintenance of an/any acceptable community standard is achieved by protecting the more vulnerable sections of the community from physical, economic, and psychological risks. As policy objectives can change according to the circumstances and needs of the society, social objectives such as content regulation can also change and vary in line with the requirements and expectations of the modern society.

10.2 Guiding principles for regulating content

We advocate that in the design of a viable content regulatory framework (for the protection of children and young people), it is important for regulators to take cognisance of what we view as underlying elements in the formulation of regulations. These underlying elements are principles for content regulation, principles of good regulation, and community participation. In this section, we (1) articulate and discuss the principles for content regulation, and (2) argue the applicability (in our view) of the principles of good regulation and com-

11 Recommendation of the Council of the OECD on Improving the Quality of Government Regulation, OECD Working papers (No. 74), Paris, 1995, OCDE/GD(95)/95, ; available at http://www.olis.oecd.org/olis/1995doc.nsf/LinkTo/OCDE-GD(95)95

12 Supra; see also Ch. 5, Cyber Regulation: Access – The European Example, p. 133 in Grewlich, K.W., (1999), *Governance in Cyberspace: Access and Public Interest in Global Communications*, Kluwer Law International, The Netherlands.

munity participation in framing and formulating regulations with a view of meeting the social objective of content regulation.

From our studies, we are reminded that in suggesting principles as guidelines for regulating content in relation to new media, one underlying and fundamental factor we should be remain mindful of, is the 'universal adaptability' of the principles. This means that the principles should be universally adaptable to a rapidly changing environment. With that fundamental factor in mind, we articulate the four guiding principles for content regulation as (1) acceptable community standards (Subsection 10.2.1), (2) protection from harm (Subsection 10.2.2), (3) informed choices and decision-making (Subsection 10.2.3), and (4) complaints procedure (Subsection 10.2.4).

10.2.1 Community standards[13]

We remark that the regulation of communication industries is culturally embedded and is generally reflective of the domestic environment. For example, most jurisdictions in the promotion and support of local talent stipulate the requirement of local content in the development of television programs. Since this is especially true in the context of content regulation, we view respect for community standards as our first guiding principle for regulating content. It is thus essential for the state (regulator) to ascertain the prevailing community's attitude towards obscenity or in other words, the community's definition on matters such as (a) "obscenity", (b) matters considered "indecent but not obscene", (c) "grossly indecent but not illegal", and (d) "harmful". It is not sufficient for the state to refer to the dictionary for the literal meaning of these words. Instead attention to the meaning should be directed to, from within the community to which the standard may be applied, since the standards and the terms adopted and used as a result of those standards are meant to reflect "the community's moral fiber". In other words, we need (1) to enquire and (2) to ascertain the moral strand of the community. It is possible to obtain a fair and reasonable assessment of that by asking (a) what the community is willing to accept in terms of the different levels of obscenity, indecency, potentially dangerous, and harmful materials, (b) what they (the community) would tolerate, (c) what they would regard as repulsive, and (d) what they would regard as seriously impairing the physical, psychological, and moral development of children and young people.

As a tentative conclusion, we may state that the standards or moral strand of the community are country and culture specific and can vary within regions

13 Standards are normally used to define the acceptable characteristics of a product, process, or service. Most standards are voluntary and are developed by consensus among the government, and various stakeholders. For example, the British standards for business are developed by the businesses in collaboration with the government. See www.bsi-global.com/index.xalter

or localities within each state. Furthermore, the standards are not constant in that they change according to the generations and the period of time in which the material is perceived.[14] In fact, Devlin (1965) remarked that "*Changing morality may* more accurately *be compared* not *with* the 'violent overthrow of government but *to a peaceful constitutional change in its form, consistent not only with the preservation of a society but with its advance"* (author's emphasis).[15]

As an aside, we also remark that as community standards are country and culture specific, it is difficult to reconcile such country and culture specific standards with the standards of the global community of the Internet. This is so since it is difficult, if not impossible to formulate or ascertain a community standard which accurately reflects the sum of the global community's moral fabric. In such circumstances, we opine that it is necessary for each country, region, locale, regulator, parent and child carer to establish boundaries as to what is, or is not acceptable and/or appropriate materials for children and young people to be exposed, and to have access to. We expect that this might be done via wide public consultation.

10.2.2 Protection from harm

In so far as the regulation of content is concerned, it is clear that a prime objective of content regulation is the avoidance of harm. We argue that the objective is based on communications technologies' ability to influence, harm and offend individuals. Thus, our second guiding principle is seen in terms of protection of consumers from financial (economic), physical, and psychological harm. Indeed, since the advent of the Internet and the development of new communication technologies, we observe that the discourse on content regulation has shifted mostly towards the protection of children from illegal and harmful content made easily accessible over the Internet via mobile handheld devices. So, we remark that a measure worth pursuing is the establishment of an independent organisation (similar to Australia's ACMA) to monitor and regulate content delivered using new technologies including content delivered via mobile phones.

10.2.3 Informed choices and decision-making

It is clear that a good decision-making process involves the provision and easy accessibility of information. This is our third guiding principle. It is truism that every community and every individual within a community requires

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14 See Rettig, S.,and Pasamanick, B., (1959), Changes in Moral Values over Three Decades: 1929-1958, *Social Problems*, Vol. 6, No. 4, Spring 1959. Although this paper reports on a study conducted decades ago, we view it as providing some support that moral standards do change over time.

15 Devlin, P., (1965), *The Enforcement of Morals*, Oxford University Press, London, New York.

timely and up-to-date information to be able to make informed decisions and good choices. In fact, an important element of consumer protection law requires consumers to be provided with sufficient information. Situations can arise whereby individuals would prefer to be informed of the risks, and be left to decide the next best step rather than be subjected to regulations imposed by the state. For example, some societies prefer to be provided with information as to the risks and dangers of smoking and to be left with the decision as to whether to inculcate or continue the habit of smoking or to kick the habit. In a liberal and open society, the choice is left to the individual. In comparison, societies do exist where state regulators continue to regulate firmly menial social conduct and activity. Singapore provides an example. Since 1992, the Singapore government had banned the import, manufacture, and sale of chewing gum in order to reduce littering. The penalty for smuggling chewing gum into Singapore was a year's imprisonment and a fine of SGD10,000 (approximately 5,300 euros).[16] Below we emphasise the notion of accurate information in relation to consumer empowerment.

Accurate information

Since we are of the view that informed choices and decision-making is an aspect of consumer empowerment, we posit that consumers are neither empowered nor can they be held responsible for the decisions they make if they are not provided with the benefit of accurate information. Thus, accurate information about the nature and type of content is important since it facilitates decision-making and furthers the availability of informed choices. For instance, parents as responsible individuals providing a safe environment for children and young persons, for example, should be assisted in deciding what materials are regarded as suitable and appropriate for a child to be exposed to, to access, to view, and to share.[17] This is in spite of Art. 12 of the CRC which stipulates that when adults are making decisions that affect children, children have the right to say what they think should happen and have their opinions taken into account, since the Article does not interfere with the parents' right and responsibility to decide and express their views on matters affecting their children.[18]

Thus, there is an urgent need for greater emphasis in educating parents with respect to the materials and activities that are appropriate for children

16 The gum ban is now partially lifted in view of Singapore Free Trade Agreement with the U.S. See Singapore to partly lift gum ban, March 15 2004 BBC News available at http://news.bbc.co.uk/2/hi/uk_news/3512498.stm

17 In this regard, we are using and viewing the parent as having the sole responsibility of caring for the child's welfare and acting in his best interest. We are neither disputing nor are we disregarding the roles played by 'de facto parents' such as care givers or children placed in the care of the local authorities.

18 Supra, see also Convention on the Rights of the Child at http://www.crin.org/resources/treaties/CRC.asp?legal&ID=6

and young people. While contents such as those which contain adult elements are clearly inappropriate for youngsters and require no education,[19] there is immense benefit (1) for educating parents and child carers into enhancing greater awareness of the potential hazards lurking around the use of new technologies and (2) for providing information of proactive measures that can be adopted to assist in the reduction of potential hazards. These hazards were raised and discussed in Chapter 4 as the three Cs (content, contact, and commercialism). We briefly repeat them[20] in this section: (1) Pornographic and violent materials may be viewed and shared amongst children and young people via peer-to-peer sharing and via on-line chatrooms (inappropriate adult material). This is content. (2) There is a real danger that children may be accosted and solicited by on-line predators via on-line chatrooms and social networking sites (grooming activities). Children may also be bullied via their mobile phones (cyber-bullying). These concerns relate to contact. (3) Children and young people may also be drawn to spending large amounts of money consuming mobile content as a result of aggressive marketing tactics. This is commercialism. We state that it is vital for parents to be acutely aware of the three Cs and the appropriate measures that can minimise the hazards. Thus, measures such as education, media literacy and awareness programs can greatly assist in increasing the resilience of children and young people to potential hazards.

Parents should be educated to improve their understanding as to (a) filtering technologies, their availability, and effectiveness and (b) the restrictions (technological or otherwise) that can be adopted to reduce the potential hazards. Indeed, we have observed in our study of approaches adopted in comparative jurisdictions (in Chapter 7) that media literacy programs and self-help mechanisms are important factors in consumer empowerment. We believe well informed parents who are sufficiently aware of the risks and hazards play a correspondingly important role in managing the risks faced by youngsters. While we agree that the measures are not new to creating awareness of the hazards of the Internet, we remark that it is vital that the community and the government are not complacent in addressing the concerns and in implementing the measures. This is especially important taking into account the characteristics and functionalities of the mobile phone discussed in Chapter 4. In this regard, we re-iterate our answer to RQ1: what (sociological, cognitive, mental and psychological) impact does the rise in the use of mobile technology have on children and young people?; we reiterate that mobile telephony and its applications does indeed (as we have examined in Chapter 4) have a

19 Adult content is not restricted to sexually explicit themes and undertones, but also, explosively violent images in video and online gaming and gambling.

20 We have not provided the list of hazards as this has already been fully discussed in Chapter 4.

significant transforming (sociological, cognitive, mental, and psychological) impact on children and young people.

10.2.4 Complaints procedure

As the fourth guiding principle for content regulation, i.e., the complaints procedure, we posit that an accessible, transparent, and independent complaints procedure will significantly enhance vigilance against (1) the availability of inappropriate materials, and (2) the reporting of inappropriate conduct within the community. As with media literacy and self-help mechanisms (discussed in greater detail in Chapter 7), we regard the establishment of a user friendly complaints mechanism as one of the essentials spokes in the wheel of an efficient regulatory framework. With a complaints mechanism established, it is necessary for the complaints body to act promptly in their handling of complaints and investigations to instill community confidence. This proactive measure promotes 'shared responsibility' amongst members of the community and stakeholders, making them interested participants in the protection of younger and more vulnerable strata of society. We may conclude that the establishment of an effective, user friendly complaints mechanism is a significant contributory component to regulating content.

10.3 GOOD REGULATION

In addition to the four guiding principles for content regulation, we advocate that regulators should work by the principles for good regulation in framing a new regulation. Consequently, reference is made to the United Kingdom's Better Regulation Task Force (BRTF) on Principles of Good Regulation.[21] The five principles of good regulation are (1) Proportionality, (2) Accountability, (3) Consistency, (4) Transparency, and (5) Targeting.[22] Although the Principles of Good Regulation are normally referred to and/or are adopted in relation to promulgation of hard laws, we opine that these Principles prove to be equally beneficial when considering alternative forms of regulations.

In proportionality, regulators should ensure that solutions advocated should be in tandem with the perceived risk in that a prudent regulator would evaluate the problem at hand to ensure that a heavy handed approach is not

21 The Five Principles of Good Regulation has been revised and updated as at 2007. See Better Regulation Commission available at http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/principles.pdf

22 Principles of Good Regulation, Better Regulation Task Force, December 1997; available at www.brtf.gov.uk . See also supra 'Five Principles of Good Regulation', as revised in 2007 at Better Regulation Commission available at http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/principles.pdf

utilised to resolve a minor inconvenience.[23] An example of this is seen in IMCB's implementation of content controls as envisaged in the code wherein an initial breach of the code would attract the issuance of a yellow card, a red card for a subsequent breaches, and a termination of business for repeated breaches (see Subsection 7.3.5 B). We remark that IMCB's implementation of the code with the issuance of coloured cards, the colour of the cards issued reflecting the severity of the breach of IMCB's code is a good example of Ayers and Braithwaite's (1992) responsive regulation theory. Ayers and Braithwaite's (1992) suggests that " (…) regulatory cultures can be transformed by clever signalling by regulatory agencies that every escalation of non-compliance by the industry or collective group can be matched with a corresponding escalation in the punitiveness by the state, thus resulting in a more interventionist strategy".[24] Ayers and Braithwaite's (1992) theory has been discussed in greater detail in Section 9.7.

When making rules, regulators must be able to justify, and more importantly be held responsible for the decision-making process and the decisions made (accountability principle).[25] In doing so, in addition to ensuring that policy, decision making and standard implementation are consistent and fair, regulators must ensure that the policy objectives, the decision-making process, and the implementation of standards is open, accessible and communicated (consistency and transparency principle). Finally, it is necessary to ensure that focus is maintained by regulators to avoid duplication and unintended consequences upon implementation (targeting principle).[26]

10.4 COMMUNITY PARTICIPATION

We strongly advocate and support community participation. We regard this as an integral and essential ingredient to rule-making. We believe that consultation and participation leads to a good regulation. Furthermore, it improves the chances of successful compliance especially important for self regulation. As we have discussed in Chapter 8, "it is only through the allegiance and consent of an individual living within the demarcated space that the laws within this space achieve legitimacy". Our investigations reveal two significant roles played by the user or community participation. First, it facilitates legitimisation of authority, and second, it reduces the likelihood of regulatory capture. By allowing community members to partake in policy and decision-making, an avenue is provided for them to be stakeholders thus enabling them

23 Supra.
24 Ayers, I., and Braithwaite, J., (1992) *Responsive Regulation: Transcending the Deregulation Debate*, Oxford University Press, Oxford, England.
25 Supra.
26 Supra.

to have a voice, provide input (be it positive or negative), and to exercise choice. Indeed by inviting participation, the state is entering into a relationship with the community in which the state can outline their expectations and the participants can know what to expect. This opens the regulatory design process to 'outside' scrutiny; thus making the design process open and transparent (thereby adhering to the transparency principle advocated by BRTF). The challenge for regulators, however, is to find ways to assist the community to make informed decisions about how they will contribute, so that they "own" their participation and trust the process.A number of obstacles exist in relation to community participation. We name one obstacle and that is, the likelihood of such participation by the community. It is apparent that insufficient participation merely weakens the rule-making process. The question that must be answered then is, what is the likelihood of the community, participating in consultations, and reviews?

Generally we find a community's willingness to participate to be positive, particularly in matters which concern them separately as individuals or collectively as a community. We find support in our view by research conducted by the National Consumer Council (NCC) which indicated that consumers are most likely keen to participate directly in issues that have an immediate and local impact on their lives. Further, the research indicated that tension exists between the consumers and the regulators in that it was discovered that (1) consumers are poorly informed about the role of regulators and (2) the regulators are poorly informed about the concerns of the consumers.[27] Thus consultation and participation encourages regulators to operate in a more open and transparent way, resulting in them becoming more answerable to their stakeholders thereby earning their respect.[28]

Our analysis further reveals that (i) community participation in the design and (ii) the implementation of regulation does add value to the information gathered by regulators and help inform the process. In fact, participation reflects and re-inforces Hood, Rothstein, and Baldwin's (2001) second element of a viable control system within the control theory, which is information gathering.[29] This is further supported by Murray and Scott's (2002) hybrid control theory.[30] According to Murray and Scott, under a community-based

27 Putting up with second best: Summary of research into consumer attitudes towards involvement and representation. National Consumer Council (2002) in Bridging the Gap – Participation in Social Care Regulation, September 2004 (last updated 15/3/2007), Better Regulation Commission, available at http://archive.cabinetoffice.gov.uk/brc/publications/bridgegap.html

28 Supra Bridging the Gap – Participation in Social Care Regulation.

29 See discussion in chapter 8 and Hood, C., Rothstein, H and Baldwin, R., (2001), The Government of *Risk: Understanding Risk Regulation Regimes*, Oxford University Press, Oxford, England., p. 21-27

30 Murray, A and Scott, C., (2002), Controlling the New Media: Hybrid Responses to New Forms of Power, Vol. 65, 4 *MLR*, p. 491-516

control system, information can be gathered regarding the effectiveness and the viability of the system by interacting with members of the community.[31] The importance of community participation is best illustrated in Figure 10.1.

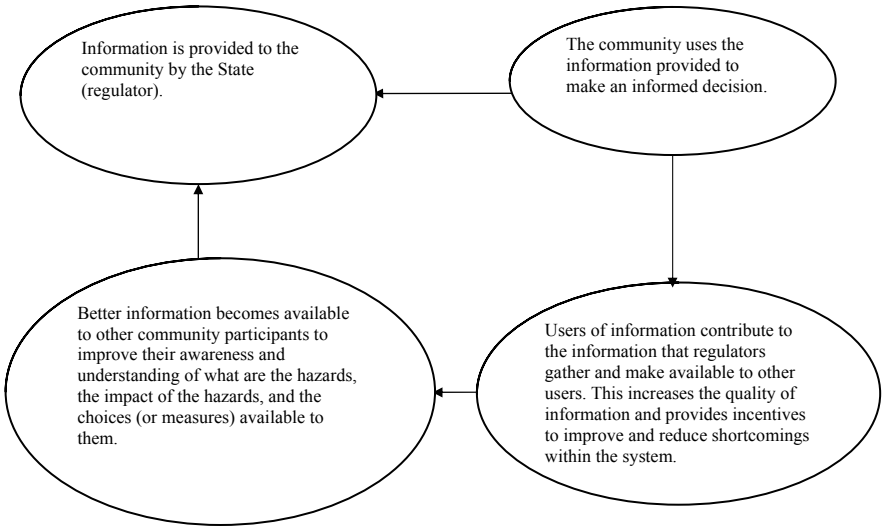

Figure 10.1: The importance of community participation (Murray and Scott, 2002).

Without input from those on whose behalf regulation is carried out, regulation lacks the legitimacy it requires. Then a gap opens up between the regulator and the regulated, endangering the process of vital information and the feedback on which good regulatory decisions depend.[32] Participation thus reduces dissention and encourages better compliance of regulations. Additionally, we argue that community participation can better reflect Teubner's law as an autopoietic system. This is especially so if the law's role is to ensure that each system is responsive to its environment by considering and taking into account that the operations of other subsystems with a view to inducing integration between various systems and subsystems, are performed adequately.

10.5 AN ALTERNATIVE TO STATE REGULATION

Our analyses of the challenges faced by regulators in the design and implementation of hard laws did not result in a proper way to be followed. How-

31 Supra. See also discussion in Chapter 8.
32 Supra.

ever, the deficiencies of state-imposed law have provided us with fertile ground to propose in this section, the application of alternatives to state regulation. In addition to the proposal, the next section articulates how the use of 'a mixture of controls' might serve as a better means to achieving the desired policy objective.

Below we start proposing a more astute approach to achieving policy objectives. For regulators it means to seriously consider alternative ways to state regulation. In this proposal, we find support from the OECD Report of 2002. Although we accept and agree that the OECD report is dated, we opine that the views posited in the 2002 report on the consideration, and adoption of a combination of regulatory and non-regulatory instruments can be usefully applied in a modern setting. We thus note OECD's argument and suggestions of various policy instruments. In its report, the OECD (2002) had argued that

> " (…) a crucial challenge for regulatory policy is to encourage cultural changes within regulatory bodies so that regulatory and non-regulatory policy instruments are systematically considered when objectives are pursued".[33]

The OECD report continued by suggesting a number of policy instruments that might be used to encourage changes within the regulatory bodies. These policy instruments include (1) information campaigns, (2) performance-based regulation, (3) process regulation, (4) voluntary commitments, (5) deregulation, (6) contractual arrangements, (7) co-regulation, (8) taxes and subsidies, (9) self regulation, (10) insurance schemes, and tradable permits.[34]

Indeed, we have observed a shift in the regulatory responses/strategies adopted from a pure hard law stance to a 'softer' approach; an approach that is more open to adopting 'a mixture of controls'. This was already referred to in, for example, the UK's Better Regulation Task Force (BRTF) 2000 report.[35]

The BRTF 2000 report recognised that state regulation (which is the conventional command control hard law approach) was not necessary and even not the best way to achieve policy objectives. Although we understand that the BRTF was established, not for the purposes of the evaluating the deficiencies and the inefficiencies of regulatory responses in the online world but rather was established to reduce real world's (a) bureaucracy and regulatory inertia and (b) was particularly aimed at 'considering the needs of "small business

33 OECD, Regulating Policies in OECD Countries, (OECD, Paris, 2002); available at http://rru.worldbank.org/Documents/PapersLinks/Regulatory_Policies_in_OECD_Countries_ch5.pdf

34 Supra. See also Baldwin, R., (2005), Is Better Regulation Smarter Regulation?, Autumn 2005, Public Law, p. 485-511.

35 In fact the European Commission's gave a commitment to giving greater consideration of alternatives as a way of delivering policy and as an important tool for regulatory improvements. See European Commission, Action Plan for Better Regulation, 2002 at http://europe.eu.int/eur-lex/en/com/cnc/2002/com20020278en01.pdf

and ordinary people",[36] we argue that the essence of the BRTF's objective is not restricted to the deficiencies, inefficiencies, and bureaucracy of government departments and local authorities alone. Conversely, we believe that the objectives and principles enunciated by BRTF should be a reference point to be taken into account (1) when considering improvements to a regulatory system and (2) when formulating and implementing a regulatory design. For example, an issue we have previously highlighted is the issue of compliance *vis a vis* enforcement. We posit that the quality of regulation depends not merely on its design (whether based on the command control approach, architectural or system design-based approach, market-based approach or social-norms-based approach), but on how the controls/constraints are applied and effected. In other words, we submit that the rules are only as good as its enforcement. Thus, we may tentatively conclude that in designing and formulating alternatives to state regulation, regulators must remain open to the fact that direct state regulation is not necessarily the best regulatory approach. Instead what might be required is the consideration of a combination of regulatory and non-regulatory instruments.

10.6 A MIXTURE OF CONTROLS

Our shift in regulatory strategies to one which involves a mixture of controls is continued below. We may consider this shift to be acknowledged by BRTF when they recognised the restrictions in adopting and implementing a purely conventional strategy. Consequently, BRTF proposed the use of 'imaginative thinking' in the form of alternative methods of regulations (BRTF 2003).[37] The 2003 report divided regulatory strategies into five types, namely (1) classic regulation, (2) no intervention, (3) an incentive-based scheme, (4) information and education, and (5) self regulation and co-regulation. The report went on further to hold that

> "(…) changes need to be made so that businesses and others are not necessarily burdened by prescriptive regulation where it is not necessary. Regulatory intervention can be necessary, but generally should be used as a last resort".[38]

Our study also reveals strong support for the proponents of 'smart regulation' with respect to alternative methods of the regulation. In the proponent's view,

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36 Supra.

37 BRTF, Alternatives to State Regulation, (Cabinet Office, London 2000); available at http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/stateregulation.pdf;see also Imaginative Thinking for Better Regulation', (Cabinet Office, London, 2003) ; available at http://archive.cabinetoffice.gov.uk/brc/upload/assets/www.brc.gov.uk/imaginativeregulation.pdf

38 Supra BRTF, Imaginative Thinking for Better Regulation.

it would be rash for the state (regulators) to exclude a "combined" regulatory regime as a means of achieving social policy and regulatory objectives. Gunningham and Grabosky (1998), for example, argued that "(…) designing good regulatory systems requires a central focus on how best to combine different institutions and techniques".[39] According to them, a smart regulatory design involves five principles. These five principles have been summarised by Baldwin (2005) as

1 prefer policy mixes incorporating a broader range of instruments and institutions,
2 prefer less interventionist measures,
3 ascend a dynamic instrument pyramid to the extent necessary to achieve policy goals, (4) empower participants that are in the best positions to act as surrogate regulators, and (5) maximise opportunities for win-win outcomes.[40]

Thus, Gunningham and Grabosky suggested adopting a combined method or a mixture of control methods. They opined that

> "(T)he challenge is to envisage what combination of instruments will be the most appropriate in a given setting and to design strategies that mix instruments and institutional actors to optimal effect".[41]

In fact, this was also recognised by Jessop (1998) when he identified governance as "the mode of conduct of specific institutions or organisations with multiple stakeholders, the role of public-private partnerships, and other kinds of strategic alliances amongst the autonomous but interdependent organisation".[42] Jessop believed that the concept of governance does not draw a line between the public and private sectors or between the market and the state (…),[43] rather it enables a clearer understanding of the role played by non-governmental and non-corporate institutions and organisations of the civil society and social movements, alongside the state/public and corporate interests as well as the ways in which such processes increasingly cross territorial jurisdictions.[44]

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39 See Gunninghan, .N., and Grabosky, P., (1998), Smart Regulation, Clarendon Press, Oxford, England.,; see also Baldwin, R., (2005) Is Better Regulation Smarter Regulation?, Autumn 2005, Public Law, p. 485-511.
40 Supra Baldwin, n. 39.
41 Supra Gunningham, N., and Grabosky, P., n. 39.
42 Jessop, B., (1998), The Rise of Governance and the Risk of Failure: The Case of Economic Development, *International Social Science Journal,* 50 (1) p.29- 45.
43 Supra.
44 Murphy, B.M., (2002), A Critical History of the Internet, in G. Elmer (eds.) *Critical Perspectives on the Internet*, Rowman & Littlefield, Lanham, Md., p.27- 45.

Looking around, we observed the adoption of a combined approach in Australia. As we have seen in Chapter 7 Australia's regulatory approach is a co-regulatory approach that encompasses (what we regard as) three core elements (see Subsection 7.1). We repeat the elements here as (1) industry codes of practice and a complaints mechanism, (2) a comprehensive scheme of prescriptive laws which underpins the codes of practice, and (3) self-help measures (which can include technological self-help measures).

Closely similar to the Australian co-regulatory approach, we recall the UK's approach which focuses on self regulation (see Subsection 7.3.5). We have seen that the self-regulatory approach worked well in the UK, and that it forms the basis in the formulation of the EU Framework (see Subsection 7.3.1)

Both jurisdictions have adopted different regulatory approaches which are relevant and perhaps specific to their domestic requirements and circumstances (this being in line with Ayers and Braithwaite's (1992) responsive regulation, that different regulatory approaches are identified and applied depending on the legal, constitutional, social, and historical context). Yet, we do see a common denominator in the strategies adopted. The common denominator is accepted by the respective states in agreement with a wider community. It includes (1) industry participation and collaboration and (2) a combined approach of various measures. This is precisely what is required if the states are serious in meeting the challenges of modern communication technology and its hazards.

10.7 An answer to RQ4

In pursuing and achieving social objectives, it is vital for the state to remain vigilant and mindful of the needs and demands of society for which the regulations are intended. It is apparent that the requirements of society are quite dependent on social, cultural, and environmental tendencies of the community. In order to achieve the objectives of content regulation, we analysed the influence of the state. Based on the analysis, we take as a point of departure that there is little room for the state; admittedly, we even believe that it would be unwise for the state

1. not to take cognisance of the principles of good regulation,
2. not to consider, adopt, and implement proactively the four guiding principles for regulating content in the new environment, and
3. not to acknowledge the importance of the participation of numerous stakeholders in the formulation and implementation of regulatory framework.

Returning to RQ4: *"what are the important elements in the new legal framework?"*, we develop a diagram (see Figure 10.2). The diagram provides the three main elements of the legal framework: (A) regulatory purpose, (B) regulatory means,

and (C) regulatory framework. We discuss the three elements below. We start remarking that the three elements encompass and reflect Hood, Rothstein, and Baldwin's (2001) suggestion of elements that represent (i) standard setting, (ii) information gathering, and (iii) behaviour modification. We claim that these elements must exist in a viable control system.[45] In addition, we remark that the eight lessons learnt and the three additional elements laid down in Section 7.7 greatly influenced the formulation of elements in (B) regulatory means and in (C) regulatory framework.

A: Regulatory purpose

The first element deals with the objective and purpose of the enacting regulations – are we regulating for political, economic, social or cultural purposes? In so far as our study is concerned, we lay down as our regulatory purpose – to implement the social objective of content regulation with the aim of protecting children and young people in a mobile environment. In line with the purpose, we need to evaluate the state's regulatory capacity to act. The capacity to act is generally dependent on the degree of risk involved. In our discussions, we have appraised (1) the potential hazards that are accessible via the use of mobile phones, and (2) the significant impact that the hazards might have on children and young people. We have concluded in Chapter 5, that the risk of harm is high.

B: Regulatory means

Under regulatory means we deal with regulatory options. Essentially, it requires a consideration of no regulation, self regulation, co-regulation, and statutory regulation, and adopting the best approach to promote the regulatory purpose and objectives set out. When considering the best approach to adopt, it is necessary to take into account the appropriateness of alternative forms of regulations as opposed to conventional approaches. In this regard, we list five factors which might prove useful:

(a) the risk of regulatory failure in terms of law enforcement results;
(b) ineffective cost of enforcement;
(c) the rapidly evolving environment of new technologies;
(d) the degree of responsibility that should be attached to various stakeholders; and
(e) the importance of stakeholders' consultation and participation.

C: Regulatory framework

Below, we consider the regulatory framework and in particular the appropriate mechanisms with a view to optimising the desired outcomes. The regulatory

45 Hood, C., Rothstein, H., and Baldwin, R.,(2001), *The Government of Risk: Understanding Risk Regulation Regimes*, Oxford University Press, Oxford, England., p. 21-27; see also discussion in Chapter 8.

framework describes the central mechanism aimed at optimising the desired regulatory outcomes. In terms of legal controls, we advocate the adoption of a combined regime, i.e., a mixture of controls designed to reflect (a) the participation of stakeholders as surrogate regulators and (b) the flexibility and effectiveness of other instruments of control. We thus articulate the following as necessary ingredients:

1 co-regulation underpinned by clear statutory regulation;
2 a separation of roles and responsibilities in that there should be independent bodies for the design, monitoring, and enforcement of regulation;
3 a user friendly and accessible complaints mechanism;
4 a transparent and effective sanctioning system; and
5 a body to review regulations to ensure that the regulations are meaningful and up-dated.

10.8 Implementing the combined regime in Hong Kong

In Chapter 7, we listed three broad criteria for measuring regulatory efficacy. For ease of reference, we repeat them here as (1) the appropriateness of the regulatory approach, (2) the clarity of the regulatory approach, and (3) the review of the regulatory approach. In Section 7.5, we have provided further details of the three criteria by illustrating and presenting in the form of a table (Figure 7.4) the approaches adopted in Australia, the UK, and Hong Kong. Also in Subsection 7.6.1 we have provided a summary of the Territory's regulatory weaknesses. Thus, if we accept that the combined (i.e., a mixture of controls) regulatory regime is a viable regulatory strategy for Hong Kong, we must then consider who should partake in its implementation in the Territory. How do we adequately address the regulatory weakness in meeting the challenges of child protection concerns *vis-à-vis* inappropriate materials and activities brought about by mobile communication technology?

10.8.1 The Territory's weaknesses

In this section, we repeat our observation in identifying the weakness in the Territory's existing regulatory framework. We continue by identifying the stakeholders that might be better placed to improve matters.

Our study has revealed that there is a distinct lack of a comprehensive protective regulatory framework which should have as its core focus, the protection of youngsters from the hazards accessible via the use of mobile phones. We specifically observed five shortcomings.

There is *little or no consultation* and/or collaboration between and amongst industry players on the development of a relevant and proactive code of practice. The shortcoming can be appropriately addressed by the Territory's mobile operators, mobile virtual network providers, third party content pro-

viders, NGOs, child protection agencies, educational institutions, and other organisations. In this respect, it is important to encourage as far as possible a wider community for consultation and participation. The code of practice, for instance, is intended to cover the activities involving the 3Cs. The Territory *does not have an independent regulator(s),* they should (2a) regulate the provision and the delivery of mobile content services and (2b) oversee, monitor, supervise and enforce the strict compliance of the code of practice. While we have noted in our investigations, a 2006 proposal for establishing a Communications Authority (CA) (see Subsection 3.9.2 and Section 7.6), we remark that there was no indication in the proposal that the CA would be an independent regulator strictly for mobile content services. The proposal to establish the CA has been delayed pending further public consultations and review. We had expected the government to act for example, by addressing the regulatory inadequacies of the mobile communications industry. The government should recommend the establishment of independent bodies to monitor the development, the compliance, and the enforcement of regulations. However, we remark that as at the date of writing, there were no further developments on the proposal. There is *the lack of consumer awareness campaign* to educate and keep the community and mobile phones user informed of risk-management issues in relation to mobile phones. Risk-management issues can include the proper use of mobile phones, its applications and functionalities, and the potential hazards that can arise from the use or abuse of mobile phones. In our view, this shortcoming can be dealt with by mobile manufacturers, mobile operators and providers, educational institutions, and the government sharing the responsibility for educating the community and end users, and empowering them.We observe that *none of the four possible protection mechanisms are offered* by the industry players. Four important protection mechanisms for mobile users are (i) empowering the users to make informed choices as to the suitability of mobile content, (ii) the provision of self-help mechanisms such as filtering technologies, (iii) a hotline mechanism for reporting inappropriate content or activity, and (iv) a transparent complaints mechanism for addressing the concerns of users. In our view, (i), (ii), and (iii) should be within the purview of mobile operators. Below, we provide brief reasons for our view.

As for (i), it is appropriate for mobile operators and content providers to collaborate, perhaps in conjunction with the regulator, in the development of a standard classification scheme for identifying mobile content. Additionally for (ii), we regard mobile network operators and service providers as being better placed to monitor and filter mobile content. However, while as previously mentioned, the monitoring and filtering should be the responsibility of industry players, such measures are restricted to mobile content and services provided by them via their portals.[46] As far as the author is aware, there is

46 Mobile content provided by third party content providers are regulated via commercial agreements with mobile operators.

no efficient mobile filtering mechanism that can be utilised as a standard blocking measure for mobile phones.

The author believes that should such a mechanism be developed, its application will be encouraged and it is likely that the mechanism will face similar shortcomings as faced by fixed Internet filtering. As for (iii), it is only appropriate for mobile operators and providers to establish hotlines since they would be the 'front-liners' for complaints of inappropriate content and activities accessed. It is essential that in the event mobile operators and providers fail to address adequately the complaints of mobile users, that users can resort to an independent body to handle the matter. We view (iv) the responsibility of the regulator. Thus, a user friendly and easily accessible complaints mechanisms should be in place. However, together with a transparent and effective sanctioning system the establishing of a complaint mechanism can go a long way in enhancing user's confidence in the regulatory mechanism.

As prescriptive law under-pins co-regulation, we opine that it is *high time* for the Territory's main regulatory arrangements to be reviewed in relation to content regulation and privacy. The Control of Obscene and Indecent Articles Ordinance (COIAO), the Prevention of Child Pornography Ordinance (PCPO), the Basic Law, the Bill of Rights Ordinance (BORO), the Personal Data (Privacy) Ordinance (PDPO), and to a smaller extent, the Unsolicited Electronic Messages Ordinance (UEMO) were not enacted to deal specifically with the new environment and so fail to provide adequate means for addressing the hazards raised in Chapter 4 (see discussion in Chapter 6). Without comprehensive legislative arrangements to underscore and support the workings of self regulation, we believe it would be difficult to implement successfully the combined strategy and address the Territory's regulatory weakness adequately. This shortcoming falls within the jurisdiction of the regulator.

Thus, we have established a mixture of controls theory that (1) recognises the important role played by other stakeholders, i.e., the state, quasi-regulators, and corporations, and (2) envisages control by the stakeholders in the formulation and implementation of a regulatory design. Moreover, we observed that while the theory is workable, the question whether it can be effectively applied in Hong Kong is to be answered by the Territory's shared commitment and responsibility towards the problem of children and mobile telephony.

10.9 CONCLUSION

We may conclude that a new regulatory framework is required. The framework should address the social objective of content protection and should have as its desired outcome, the protection of children and young people. This entails a review and consideration of the existing framework in the light of the elements we have proposed. We posit that it is meaningless if in the state's review and design of a new regulatory framework, the state fails (1) to under-

stand the rapidly evolving nature and tangibility (or intangibility) of the technological and regulatory environment, (2) to appreciate the potential hazards of new communication technologies *vis a vis* children and young people, (3) to appreciate the significant impact that the hazards can have on youngsters, and (4) to accept the restrictive nature of conventional regulatory approaches. We remark that although the state's position as the 'sole regulator' no longer holds true in the new age of digital modern communication, we firmly believe that the state does still play an important role in encouraging, facilitating, and supporting the adoption of a combined method of control. The approach should encompass both regulatory and non-regulatory instruments. Moreover, we believe the approach is viable and efficient in addressing the societal concerns of protecting children and young people from the hazards of new communication technologies.

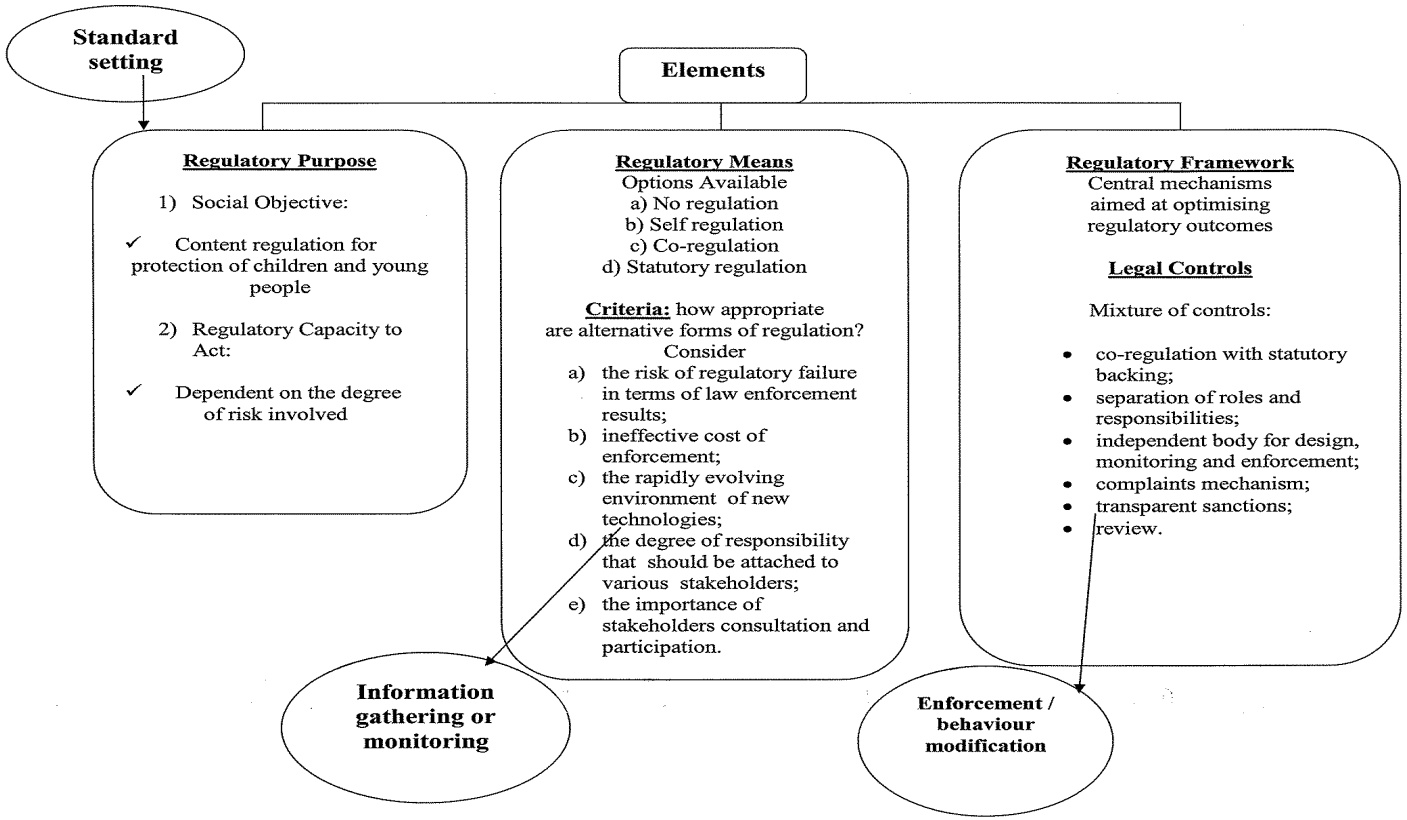

Figure 10.2: The Three Main Elements of the Legal Framework

11 Conclusion

The central objective of this thesis is (a) to explore, (b) evaluate, and (c) compare regulatory measures adopted in Hong Kong on the one hand, with practices and regulatory arrangements of other jurisdictions on the other hand, with a view to develop a viable regulatory strategy in mobile content regulation for the protection of children and young people. The protection of children and young people in a convergent environment is based on two themes: (1) the emergence of new communication technology as an instrument of abuse and (2) media convergence and mobile content delivery. Throughout the thesis, we have tried to consider the implications of new communication technology and media from the prism of sociology and law. In this final chapter we will answer the two-fold problem statement (PS).

PS1: *"Why is mobile communication technology via the use of new generation mobile phones a threat to children and young people?"*

PS2: *"How might we seek to address the inadequacies in the existing regulatory framework with regards to the protection of this vulnerable group?"*

We do so in relation to the four research questions (RQs) posed.
In Section 11.1, we will evaluate the rapid diffusion of mobile phones and consider the impact of mobile communication technology on children and young people in answer to RQ1. In Section 11.2, we examine the existing regulatory framework and answer RQ2. Section 11.3 considers the implications of convergence upon Hong Kong's regulatory framework. In support of our position that self regulation in the form of co-regulation is the better regulatory strategy, we answer RQ3 by laying down the lessons learnt from a comparative analysis made of other jurisdictions. The latter is done in Section 11.4. In Section 11.5, we evaluate theories propounded by legal and regulatory theorists and consider self regulation as an alternative form of regulation. We identify the essential elements that should be included in the design of a new regulatory framework in Section 11.6. This answers RQ4. We draw our final conclusions to PS1 and PS2 in Section 11.7. Directions for future research are given in Section 11.8.

11.1 Impact of mobile communication technology on children and young people

For a proper understanding, we repeat RQ1. It reads *"What (sociological, cognitive, mental and psychological) impact does the rise in the use of mobile communication technology have on children and young people?"*

In Chapter 4, we have seen evidence of the rapid diffusion of mobile phones. It is due to two broad underlying factors which are different yet related to each other. The first factor is seen in terms of why mobile phones are playing an important role for the average adult user. The answer is apparent in that the technology enables users to be (1) in perpetual contact and (2) in continuous communication with their families and work place.
The second factor leading to the rapid growth and diffusion of mobile communication technology is the younger generation's adeptness in understanding and applying, the rapidly developing mobile communication's technological functionalities and applications.
However, despite the many virtues of mobile communication technology rendered through its devices, the technology does facilitate and cause sociological, cognitive, mental, and psychological harm to children and young people. In some cases, physical harm is also evidenced. We surmise that the harm cause is considerably more significant, since the harm caused (1) is not yet quantifiable, (2) may be permanent, and can result in irreversible damage. In some cases, the harm has led tragically to death.
We may thus conclude that the rise in the use of mobile communication technology does have a significant impact on the social, cognitive, mental, and psychological attitude of children and young people.

11.2 The adequacy of the existing regulatory framework

Based on the conclusion in Section 11.1, we will answer RQ2, *"To what extent can the regulatory framework protect children and young people from harm and abuse? Or otherwise stated, how adequate is that protection?"*

Our investigations in Chapter 6 have shown that mobile content is currently regulated by (1) control exercised in the form of commercial agreements entered into between the network/content providers and the mobile virtual network providers (MVNOs), and (2) by legislative arrangements. In so far as content regulation is concerned, legislative arrangements take the form of two main Ordinances, i.e., the Control of Obscene and Indecent Articles Ordinance (COIAO) (Cap. 390) and the Prevention of Child Pornography Ordinance (PCPO) (Cap. 579).

We have established that the legislative arrangements are neither satisfactory nor adequate to protect children and young people from harm and abuse for the following reasons.

1 Both the Ordinances were neither enacted with the primary objective of regulating electronic content nor were the Ordinances intended to deal with the delivery of content in a mobile environment. The provisions of the Ordinances (where relevant) were merely extended to cover inappropriate content available online.
2 The inadequacy of the COIAO was acknowledged and it was the subject of a review in 2000 with proposed recommendations. The recommendations were not adopted and the Ordinance is currently undergoing a fresh review. Despite the first failed amendment of the COIAO, we expect that the recommendations proposed in the current review will be seriously considered and proactive measures be adopted to ensure the recommendations are implemented.
3 Further, as we have seen in Section 6.11, in our evaluation of the effectiveness of the COIAO by analysing the judicial decisions made under the Ordinance, we opine
   a) that there is a serious lack of consistency in the courts' imposition of penalties under the Ordinance, and
   b) the penalties imposed were below the statutory maximum allowed.

While (3b) may not seem as a pre-requisite to deterrence, in our view this neither sends the right message to the community nor reflects the regulator's commitment in addressing the concerns that are upon the community. If the regulator is serious about protecting individuals from harm and abuse, in my opinion, it must review its stance and ensure rigorous measures are undertaken and consistently applied.

1 As with the COIAO, the PCPO was seen to be deficient and less than inadequate in protecting children and young people for the following reasons.
   a) Any activity that facilitates and encourages child pornography should be criminalised. We hold the view that an individual who engages in any child pornographic activity including creating, reproducing, publishing, distributing, and possessing should be punished severely for the involvement. We remark that this is necessary since as we have seen in Chapter 4, the making of these images does constitute, and cause immeasurable harm to children and young people. This is the more so if the images and the child victims are real images and victims as opposed to computer generated ones.
   b) The type of sentencing (whether custodial or non-custodial), and the severity of the sentence imposed varies considerably between the courts.

However, among others, based on our research we may expect that a change will take place upon a Court of Appeal review in 2008 (see Figure 6.7 in Section 6.8.3).

1 In Chapter 6, we also briefly discussed the inadequacy of the existing privacy regime to address the new technological applications which are becoming commonplace for mobile phones and that is, location-based-services (LBS). Although the right to privacy is generally protected under the Basic Law (the Territory's mini constitution) and two other Ordinances (BORO and PDPO), we argue that the regime does not cover the invasion of privacy encountered via LBS for two reasons.
   a) The Basic Law and BORO only provides for a general right to privacy and while it is possible to raise an argument under these instruments, this has not been done. Raising an argument under these instruments will require an amendment to the instruments. Because of the complexity of the procedure involved, considerable time will be spent. For example, since the Basic Law was enacted by the National People's Congress of the People's Republic of China (the NPC), the power to amend the Basic Law vests with them. So, although Article 159 of the Basic Law provides for an amendment bill to be submitted as an initiative step towards amendment, the Article requires that the Territory submit the amendment bill to the NPC after obtaining the consent of two-thirds of the deputies of the region to the NPC and two-thirds of all members of the Territory's legislative council and the Chief Executive.
   b) While communications privacy and information privacy may not necessarily be fundamentally different, we state that the PDPO was not designed to protect communications privacy. Rather it is clear that the enactment of the PDPO was to protect the privacy interests of individuals in relation to personal data (information privacy).

We may thus conclude that although content regulatory arrangements are in place, we are of the view that these arrangements are far from adequate to protect children and young people from the hazards of mobile communication technology.

11.3 Convergence of technologies

Our aim at introducing convergence as a discussion point in our thesis is (1) to consider whether, and (2) to what extent, the converging environment increases the existing risks.

We have described in Chapter 3, the immense benefits that converging technologies bring to global society on the one hand, and on the other hand, we noted its concerns. There is no doubt that innovative applications can arise as a result of the convergence between mobile technology and the Internet. We provide as an example, LBS, an application which does significantly increase the possibility of risk of harm to children and young people. Nonetheless, we

fail to see any evidence of protective measures and/or legislative effort undertaken by the regulator to meet their social objective of consumer protection and privacy. In the present context, we speak of consumer protection and privacy in terms of protecting children and young people from social, cognitive, mental, and psychological harm brought upon by converging applications and services.

What we do see from our investigations and study of the fertile converging environment in the Territory is the regulator's aggressive pursuance of economic objectives. We see this evidenced in the Telecommunication Authority (TA)'s primary role in promoting de-regularisation and establishing effective market competition within the telecommunications sector with a view to (a) creating a conducive environment for investment in new technologies, and (b) preparing the industry, and the consuming market towards the eventual migration to a new generation network (NGN) environment. While this may be seen as beneficial to society in the long run, we opine that much more can be done for the social, cognitive, mental, and psychological health and the well-being of the younger generation. The economic and financial benefits stemming from the measures adopted might be enjoyed by only a few large and well connected conglomerates. Moreover, we argue that being financially strong but culturally and morally poor does not bode well for the well-being of the society as a whole. Thus, although the convergence of technologies provided an opportune time for the regulator to review comprehensively the existing regulatory framework, specifically with regards to the protection of children and young people, the opportunity was not taken.

However, we note that the proposed establishment of a Communications Authority has been delayed pending further consultations. We remain positive that the regulator will in addition to a thorough and comprehensive review of the converging environment,

1 accept and acknowledge that the significant impact converging applications and services can have on youngsters, and
2 implement adequate measures to meet its social objective of protecting children and young people. We mention three measures that we regard as important (a) the formulation of clear objectives to reduce the availability, restrict the access, and the increase of resilience of children and young people to potential hazards, (b) the establishment of an independent organisation to deal with content regulation, and (c) the development of media literacy awareness programs and campaigns. The measures have been described in Section 7.7.

11.4 THE LESSONS LEARNT

In Chapter 7, we evaluated the regulatory strategies adopted in Australia and the UK, with a view to answer RQ3, which reads, *"What lessons can we derive from other jurisdictions in the formulation of a viable regulatory strategy?"*

Having concluded on the inadequacy of the regulatory framework in Chapter 6, we look towards answering RQ3, by examining on the one hand, (1) two different content regulatory models, i.e., the broadcasting centric regulatory model (model A) reflected and adopted in the UK, and the converged content regulatory model (model B) reflected in the content regulatory strategy adopted in Australia, and on the other hand, (2) the strengths and weaknesses of the two models.

Our examination of Australia's content regulatory framework revealed that its regulatory strategy reflects the strengths of a convergent-content regulatory model in that the model better understands, and recognises (1) that inappropriate and harmful on-line audio-video services and applications can be accessed via multiple platforms, and (2) the impact that the hazards can have on the vulnerable sector of society. We observed that the Australian's content regulation is co-regulatory and is based on the following three elements:

1 the regulation of mobile carriage service providers and mobile content providers via (1a) self-regulatory codes of practice, and (1b) a complaints mechanism;
2 the under-pining of the codes of practice by comprehensive prescriptive laws; and
3 the facilitation of other self-help measures, such as media literacy and awareness programs.

In addition to the three elements, we observe the use of classification schemes as an integral element of any content regulatory schema (see Subsection 7.1.5). A classification scheme assists the community in making informed choices as to what might be considered harmful and/or inappropriate for children and young people. Without such a scheme, regulators will find it impossible to provide for and adopt access restriction measures including issuing take-down orders.

An examination of the UK's regulatory strategy revealed that the strategy reflected a broadcasting-centric model. We mentioned in Subsection 7.3.5, that the UK is used as an illustrative example since the self-regulatory approach formed the basis of the European Framework for Safer Mobile Use. We see this evidenced in the statement made in the EU Framework, "[…] that it (the Framework) is a EU wide common framework for national self regulation". The strategy thus provides a lighter form of content regulation by way of self regulation. We have seen examples of successful implementation of this strategy by the UK's IMCB and IWF. However, what is more important from

our investigation of the EU Framework are the responses received to the EU's survey on Child Safety and Mobile Phone Services where in no uncertain terms, it was acknowledged that the responsibility of ensuring safe mobile use amongst children and young people rests not solely on the shoulders of one stakeholder but on numerous stakeholders.

This acknowledgement we view, is best furthered by the public authorities and the industry providing and supporting user-awareness campaigns and education programmes aimed at parents, child carers, and youngsters alike to create awareness and to educate them as to the potential hazards and safety measures available.

Thus, while we

(a) recognise and accept the strengths and weaknesses of regulatory models and strategies that have been adopted,
(b) note that there is no one perfect regulatory strategy that can address all societal concerns, and
(c) understand Hong Kong's lack of regulatory focus and general regulatory inertia, we are able to draw the experiences from other jurisdictions in our answer to RQ4 by articulating eight lessons learnt. The eights lessons are as follows.
    1 The formulation of clear attainable objectives.
    2 The establishment of an independent organisation to deal with content regulation.
    3 The design of a content regulatory framework to be supported by strong regulations.
    4 The re-formulation of a classification mechanism.
    5 The establishment of clear and consistent access control mechanisms.
    6 The development of an industry code of practice.
    7 The development and promotion of media literacy programmes/campaigns.
    8 The provision of self-help mechanisms.

We further remark that in addition to the eight lessons learnt, a viable regulatory strategy should have three additional elements, i.e., the regulatory strategy should

(a) incorporate the views and suggestions of those it aims to protect, i.e., children and young people,
(b) establish a content advisory committee to advice, and provide guidance to the regulator on changes occurring within technologies, applications, and consumer usage, and
(c) provide incentives for stakeholders' participation.

We strongly believe that the eight lessons supplemented with (a), (b), and (c) will provide the right measure for the state's regulator to respond appropriately to the concerns at hand. Furthermore, the strategy will introduce and in-

culcate a culture of shared responsibility amongst the stakeholders of the community resulting in a win-win environment for all.

11.5 Regulatory paradigms and self regulation

In Chapter 8, with the primary objective of investigating the most appropriate regulatory strategy, our attention is centred upon the various regulatory theories propounded by legal and regulatory theorists.

Our evaluation of the regulatory theories revealed that the traditional approach of command control regulation cannot be accepted as an appropriate nor an adequate metaphor when it comes to regulating a complex and more importantly, non physical rapidly changing environment. We introduced and adopted Fuller's (1964) definition of regulation as "the enterprise subjecting human conduct to the governance of external controls whether state or non-state, intended or unintended". The adoption of this definition provides us with a firm basis upon which we argue that

1 the state (regulator) does not possess the absolute monopoly of regulating the community and their activities; and
2 the community is not a passive collective body of individuals to be patronised, controlled, and regulated.

The arguments raised are even more prevalent, and relevant in the regulation of a new communication technology and its resultant environment. We have seen that in comparison to law which is tied to a geographical border, technology is global and has far reaching effects. Attempts to regulate an environment that is based on bits and bytes is fraught with two main obstacles: (1) the actors (regulatees) engineering around it (regulatory arbitrage), and (2) the weak enforcement of strict rules. We have seen the obstacles substantiated in Chapter 6 by the inadequacy of the existing regulatory framework with regards to content regulation and the protection of children and young people. There we proposed that a review be made of the PDPO, the PCPO, and Criminal Ordinance to ensure (1) that there is greater certainty and effectiveness in addressing the potential hazards, and (2) that the provisions reflect more accurately the rapidly evolving environment and its activities.

In recognising the obstacles, and upon evaluating the theories and modalities expounded by various legal theorists we are able to hold the view that the existing regulatory is not fit for the purpose of addressing the challenges and vicissitudes of modern communication technology. Instead, there is sufficient support for the adoption of a self-regulatory approach. In this regard, we advocate co-regulation as the regulatory alternative (Chapter 9), by suggesting the adoption of codes of practice as a viable instrument. We take this position having noted in Section 9.9, the advantage of the code's flexibility to change, and adapt in tandem with changes in society's values,

norm, culture, and circumstances. In line with our suggestion, we have adopted Price and Verhulst's (2005) four variables (1) coverage, (2) content, (3) communication, and (4) compliance as important ingredients for establishing a proposed framework for a code of conduct.

11.6 A VIABLE REGULATORY FRAMEWORK

The foregoing answers to RQs 1, 2, and 3 provide us with a sufficient basis to formulate three clear and distinct elements which we believe must be adhered to for a new and efficient legal framework. This answers RQ4, *"What are the important elements that should be included in the new legal framework?"*

The three main elements proposed are (1) regulatory purpose, (2) regulatory means, and (3) regulatory framework. We surmise that the underlying basis upon which these elements rests are (a) the guiding principles for regulating content, and (b) the importance of community participation which we have articulated in Section 10.2, and Section 10.4, respectively.

In so far as our thesis is concerned, we state that the focus of a regulatory purpose is to achieve the social objective of protecting children and young people from inappropriate and harmful content accessible via new communication technological appliances.

A number of regulatory options are available to the state in seeking to achieve the social objective. We are of the view that to achieve its desired outcome, the state must keep an open mind to other forms of regulatory alternatives, and not to be confined to conventional methods of regulating. Moreover, we suggest that positive encouragement of open, transparent consultation and sincere consideration of community interest, community participation, and community input will introduce, inculcate, and further enhance a culture of shared community responsibility. In our opinion, this will go a long way in the promoting of the stakeholders' understanding. The simultaneous co-operation in achieving the desired outcome is advised with respect to reducing, for example, (1) problems of implementation and legitimisation associated with direct state intervention and (2) the compliance and enforcement costs. We further surmise that this reflects Teubner's theory of law as an autopoietic system – where law is to ensure that each system is responsive to its environment in that each system considers and takes into account in its operations, the operations of other subsystems with a view to inducing integration between the various systems and subsystems.

Thus, as a regulatory framework, we strongly advocate a combined regime of regulatory controls, i.e., a mixture of controls designed to reflect (1) the participation of stakeholders as surrogate regulators, and (2) the flexibility and effectiveness of other instruments of control. With that in mind, we propose the adoption and implementation of a self-regulatory mechanism in the form of co-regulation as being an appropriate regulatory measure. As co-

regulation is under-pinned by statutory regulation, the effectiveness of co-regulation as a regulatory regime will be undermined if a comprehensive review is not made of the existing legislative provisions.

So, we believe that an efficient regulatory framework can broadly encompass (1) a degree of state intervention (by prescriptive laws), (2) industry input and consultation (community participation), and (3) self-help measures (including self-regulation).

11.7 THE PROBLEM STATEMENT ANSWERED

The primary focus of this thesis was founded on three main issues:

1 to investigate the reasons for the rapid growth and diffusion of mobile communication technology,
2 to consider the potential hazards that exist with the use of mobile phones and the impact the hazards have on children and young people, and
3 to evaluate the adequacy or inadequacy of the regulatory framework in protecting children and young people from the hazards.

The three issues led us to the formulation of our two-folded PS expressed at the beginning of this Chapter, and which for the purposes of convenience we mention here as PS1:*"Why is mobile communication technology via the use of new generation mobile phones a threat to children and young people?"* And PS2: "*How might we seek to address the inadequacies in the existing regulatory framework with regards to the protection of this vulnerable group?"*. This section attempts to answer the PS.

As to PS1, we have been able to highlight some of the reasons for the exponential growth and rapid diffusion of mobile phones. Aside from the unique features of portability and mobility of mobile phones, we found that particularly amongst children and young people, mobile technology provides the independence, individuality, identity, and self expression craved by the youngsters. This represents a shift from parent identification as a young child to peer identification as tweens and teens, where a central part of this behaviour is due to the youngster's drive for social interaction as they attempt to find in their own sense, who they are in relation to others.

However, despite the extolling features of mobile technology, rapid evolution of the once bulky and cumbersome device has led to a multitude of applications and functionalities which has facilitated the migration and thereby increased the potential hazards of the real world onto the mobile platform. The hazards are seen in terms of not only increased exposure (whether solicited or unsolicited) and access to inappropriate and harmful content, but also in terms of increased vulnerability with respect to contact by exploitative adults and aggressive marketers.

The resultant impact of the hazards on the social, cognitive, mental, and psychological development of children and young people have been nothing less than significant. We surmise that this is due to two separate, yet related factors: (1) the difficulty in the youngsters' ability to evaluate properly the purpose, and reliability of the mobile applications used, and the content accessed, and (2) the curiosity and risk-seeking nature of a healthy youngster. We summarise the impact in the following two ways.

1 On a social, cognitive, and psychological level, evidence has revealed that the on-line experiences may create a sense of emotional detachment and insensitivity to circumstances arising in the real world. On-line experiences may also contribute to
(a) the development or validation of negative beliefs, ideas, and attitudes, and
(b) promote negative learning behaviour through imitation as a result of regular exposure to sexually explicit, abusive, and violent images. Negative experiences can have a less than a positive impact on the sexual development of the affected child and/or young individual.
Further we may add that the on-line environment has the effect of creating a different personality for the user in that we have observed that individuals behave and express themselves differently when using communication technologies as compared to direct face-to-face interaction. We do not believe this is a favourable or positive developmental factor for children and young people.
2 On a mental and physical level, we have noted children and young people's responses to inappropriate material and harmful content. Depending on the gravity, explicitness and/or violent nature of the material, regular exposure of such material have resulted in the youngsters becoming fearful, depressed, withdrawn, and losing their self esteem. Moreover, we note that emotional harm may be caused when children and young people develop trust and friendship based on an on-line relationship that may not be appropriate or lack permanence. There is also the increasing concern that such on-line friendship may lead to physical exploitation and harm.

Our observation of the impact that the hazards can have on youngsters leads us to PS2. Having recognised the significant harm that can be caused to youngsters, what measures have been adopted to protect them? In other words, what preventive and protective measures have the regulators undertaken to (adopting researcher Livingstone's (2005) phrase),"reduce availability, restrict access and increase resilience" to inappropriate material and content?

We are aware that achieving the 'perfect' regulatory strategy is difficult and complex, if not impossible. This is more apparent in the new media and communications technology environment. In a rapidly evolving environment, there is no 'one size fits all' regulatory solution which can address the increasing concerns brought about by new technology and new environment. Instead

what we have is a steep learning curve where each jurisdiction aims to learn from the other jurisdiction's experiences and perhaps, mistakes. Nevertheless, we believe what is required is a combination of regulatory measures tailored to suit and reflect the environment and the changing circumstances. This combination of regulatory measures together with a culture of shared responsibility amongst the various stakeholders might prove to be a viable solution to the challenges and hazards of new communication technology.

11.8 Suggestions for future research

In this thesis, we have laid down the essential elements of what, we advocate, should be included in a viable legal framework. Together with the lessons learnt from comparative jurisdictions of Australia and the UK, and the three proposed elements, we believe it will provide a clear, proactive, and viable strategy in meeting the state's social objective of protecting children and young people, and in achieving its desired outcome. Notwithstanding, our study has exposed three areas that require further research.

First, quantitative and qualitative research must be carried out on the incidences of psychological and physical abuse of children and young people and the actual harm caused as a result of access via the use of mobile phones. Much of the evidence gathered so far was derived from hazards accessed via the fixed Internet.

Second, we have noted that potential hazards are not restricted to the exposure of content accessible via Internet-enabled mobile phones. Rather new communication technology and its resultant devices and applications can facilitate, and lead to the abuse of children. We have provided as an example the use of the mobile phone as an initial point of contact by exploitative adults. Together with LBS, a youngster can be easily and more expediently located in the commission of contact crimes. An area that should be further explored thus is the diversification of activities of exploitative adults (and indeed) other youngsters based on evolving technologies and applications which can be used as instruments of abuse. So, further research should be conducted in relation to the extent to which the youngsters themselves are active participators and contributors to sexual abuse and harassment.

In our study, we have seen the impact of bullying. We believe there is a need further to explore the incidences of bullying and harassment, for example, happy slapping – where an individual is filmed whilst being physically assaulted. Qualitative and quantitative research should be conducted from the perspective of the youngster with a view to investigating the extent to which, and the reasons why youngsters are using the new technology to commit crimes and indulge in unfavourable activities. With regards to this, it will be beneficial if insight can be gathered into the ways youngsters circumvent the default mechanisms and access restrictive measures that may be in

place. The results of the study will provide greater guidance as to the measures required to reduce the incidences of such abuses.

Third, from the legal perspective, more research must be conducted in relation to the youngsters' right of privacy and consumer interest. Privacy laws are generally focussed on the adult individual. While this may be right, children and young people are, we believe, a separate category which requires separate attention and consideration. This same also holds true for establishing separate guidelines and regulations for protecting children and young people as consumers.

Summary

This thesis is concerned with the (sociological, cognitive, mental, and psychological) impact the rise in the use of mobile communication technology have on children and young people. The primary objective is to examine the inadequacies of the existing regulatory framework with regards to protection of this vulnerable group.

The advent of communication technologies dating from the invention of the telegraph to the present day Internet has facilitated communication across great distances from different locales around the world. The communication technologies have allowed communities all over to share viewpoints, experiences, and culture wherever the linkages exist. Thus even though physical territorial borders still exist, these borders are established and are maintained purely for political reasons. From our investigations, we observe two significant changes in view of the advances in technology: (1) an increase in choice and affordability of portable devices and content, and (2) an increase in user's empowerment in terms of control in consumers deciding (a) how, (b) when, and (c) content is delivered, accessed, and consumed. Consumers and therefore, young mobile consumers are burdened with increased responsibility as to how best to navigate, and negotiate the content available. The convenience, efficiency and benefits of new communication technologies do not come without challenges. A main challenge is the protection of children from inappropriate content (accessible online or via mobile network operators' and content providers' portal) and abusive activities.

The concerns of the harm and abuse that new technology including the mobile phones can have on children and young people has been recognised by international organisations (Chapter 1) and is the impetus behind a number of initiatives (1) to raise the awareness of these potential hazards, and (2) to urge global communities to strengthen the protection of youngsters in the light of the hazards (Chapter 1). It is with this in mind, we formulate the first part of our two-folded problem statement (PS). PS1 "*Why is mobile communication technology via the use of new generation mobile phones a threat in terms of content, contact and commercialism to children and young people?*" and PS2, "*How might we seek to address the inadequacies in the existing regulatory framework with regards to the protection of this vulnerable group (children and young people)?*"

As this thesis focuses on the use of mobile phones amongst children and young people and the corresponding impact it has on them, we have in Chapter 2, provided a brief description of the development of mobile tech-

nology, the telecommunication infrastructure in Hong Kong, the providers of mobile phone services in Hong Kong (the Territory). Chapter 2 also introduces the role of the mobile phone as a new platform for delivery of mobile content. This is discussed further under the three forms a business model can take. However, the discussion on the use of new communication technologies and in our study, mobile phones, cannot be undertaken without a consideration of converging technologies such as the converging technologies of the Internet and mobile telephony (Chapter 3). In addition to considering the general benefits and concerns of converging technologies, we examine and evaluate in Chapter 3, the Territory's response to convergence specifically in relation to (1) the government's social objective of consumer protection and (2) the implications of convergence on the government's policies with respect to content regulation. Our examination revealed while the Territory's Telecommunication Authority's (TA) had adopted proactive measures to address the challenges posed by convergence and converging services, on the whole the measures adopted are towards pursuing the economic objectives rather than the social objective of consumer protection. However, despite the Territory's recent regulatory review on the implications of convergence, no regulatory review was made in relation to (1) the type of content distributed or capable of being distributed via the use of converging devices (including mobile phones) and the actual distribution of content. We believe that the regulator's role as 'society's moral watchdog' is of increasing importance in the current converging era. This is not so in Hong Kong. Consequently, we remark that the Territory has failed to introduce and implement measures to protect children and young people in line with the efforts undertaken by other major economies. We believe there is a significant imbalance of economic objectives (or pursuits) as against the social objectives of consumer protection in terms of content regulation. This we see is reflective in the Territory's aggressive commitment towards economic and commercials objectives at the expense of the society's moral and social health, and overall well-being.

The rationale behind content regulation is based on its ability to influence. We see this played out in a regulator's (be it state, industry or parent) role as a 'protector' of the more vulnerable sectors of society – children and young persons. With rapidly evolving convergent communication devices, society is facing moral panic in terms of potential hazards brought about by new and emerging audio-video services and applications. We have observed that most of these hazards are not new in that they were not created by the new age of modern convergent communication devices. Instead, the hazards were hazards of the real world migrating over to the more fluid and intangible online world as a result of rapid advances in technology. What is more disconcerting and is raising considerable alarm globally is that the hazards are becoming mobile via the exponential diffusion and use of mobile communication devices such as the mobile phones (see Chapter 4). This brings us to the first of our four research questions (RQ), RQ1 which reads, "*What (sociological,*

cognitive, and psychological) impact does the rise in the use of mobile communication technology have on children and young people"?

RQ1 is answered in Chapter 5 wherein we state that the children and young people's exposure to potential hazards is evident in the (social, cognitive, mental, and psychological) impact the hazards have the vulnerable group. The hazards can be broadly divided into three Cs: (1) *content* – i.e., existing inappropriate materials, (2) *contact* – by abusing the use of (mobile) communication technology, and (3) *commercialism*. With respect to content, inappropriate materials include both illegal content and harmful materials. The social, cognitive, mental, and psychological development of children and young people greatly depend on the experiences that the children and young people encounter in their developing years. Evidence has shown that children and young people are distressed and traumatised by, for example, unwanted and accidental exposure to sexually explicit materials and violent content. Thus regular exposure of such content may de-sensitise children and young people and may be a contributing factor to them developing a sense of 'emotional detachment'. Further, the de-grading treatment exercised by one individual upon another may also contribute to the child developing a sense of dis-respect for fellow human beings, animals, and a dis-regard for property.

In addition to the mental and psychological trauma, physical harm can also be caused to youngsters. This is *contact*. In contact crimes, new communication technology, (specifically the Internet either via a fixed location or via an Internet-enabled mobile phone) is used as an instrument to facilitate and cause harm to children and young people. Examples of contact crimes include the sexual abuse and molestation of children. The activities leading on to contact crimes are generally preceded by mobile and/or online contact by exploitative adults. Further, the abuse of new communication technology has also led to youngsters committing suicide as a result of continuous harassment and mobile bullying.

In so far as commercialism is concerned, youngsters are attracted by the interactive mobile content and services offered. Thus youngsters are often the target of aggressive marketing tactics. We find that there are inadequate guidelines to ensure that children and young people are sufficiently protected as young consumers. For example, how do we ensure that children and young people are not deceived in receiving the right mobile content and service? How do we ensure that children and young people are not excessively charged for the content and service? We remark that while youngsters are tech-savvy, they are not astute consumers. Moreover, there are concerns of the increasing use of location-based-services (LBS) for which there is little, if any, comprehensive guideline to protect the privacy, and consequently, the safety and well-being of children and young people. Our conclusion thus that the hazards are real and the impact on children and young people, damaging leads us to RQ2, "*To what extent does the current regulatory framework protect children and young people from harm and abuse? Or otherwise stated, how adequate is that protection*"?

In answering RQ2, we reviewed the existing content regulatory framework (Chapter 6) and remarked that the framework is neither adequate nor efficient in protecting children and young people from the hazards of new communication technology. We state this for the following two main reasons. (1) the main legislative arrangements, i.e., the Control of Obscene and Indecent Articles Ordinance (COIAO) (Cap. 390) and the Prevention of Child Pornography Ordinance (PCPO) (Cap. 579) (a) are not specific ordinances enacted to address with the vicissitudes of new communications technology and hazards arising from the delivery of electronic content in a mobile environment. (2) the enforcement of the Ordinances by the courts in terms of imposition of penalties provided for under the relevant Ordinances have been inconsistent. Additionally, we observe that current privacy regulatory regime comprising of the Basic Law, the Bill of Rights Ordinance (BORO) (Cap. 383) and the Personal Data (Privacy) Ordinance (PDPO) (Cap. 486) does not protect against the invasion of privacy via the use or abuse of location-based- services (LBS). This is so as BORO provides for a general right of privacy while PDPO deals with information privacy.

We have in our attempt to design a regulatory framework learnt eight lessons from our analysis of the mobile content regulatory frameworks in Australia and the UK. In our view the eight lessons learnt does accurately reflect (1) the combination of regulatory controls and (2) the three main elements proposed. Moreover, we believe that the adoption and implementation of the eight lessons together with the three additional elements of (1) children and young people's input, (2) the establishment of content advisory committees and (3) the use of incentives (see Chapter 8), will be a positive step toward the design of a viable regulatory framework.

In our attempt to propose building blocks for a content regulatory framework, we comparatively analyse in Chapter 7, the regulatory strategies adopted in Australia and the UK with a view of learning from their experiences. The analysis leads us to our answer of RQ3. RQ3 reads as follows, "*What lessons can we derive from other jurisdictions in the formulation of a viable regulatory strategy*"?

We remark that eight lessons and three additional elements were drawn from our analysis of the mobile content regulatory frameworks in Australia and the UK (Chapter 7). We believe that the adoption and implementation of the eight lessons together with the three additional elements of (1) children and young people's input, (2) the establishment of content advisory committees and (3) the use of incentives (see Chapter7), will be a positive step toward the design of a viable regulatory framework. In Chapter 7, we also listed three broad criteria we view as essential for measuring regulatory efficacy and provided a table to measure the regulatory efficacy of the regulatory approaches adopted in Australia, the UK and Hong Kong. For ease of reference, we repeat them here as (1) the appropriateness of the regulatory approach,

(2) the clarity of the regulatory approach, and (3) the review of the regulatory approach.

Within the discussion of regulatory frameworks and the design of such frameworks, we provide the legal perspective to our thesis (Chapters 6 to 10). We remark that the legal perspective is underscored by RQ4, *"what are the important elements that should be included in the new legal framework"*? In our opinion, this question cannot be answered adequately without (1) exploring the regulatory theories propounded (Chapter 8) and considering the regulatory alternatives such as self regulation (Chapter 9). Thus we provide a discussion of the theories propounded by *inter-alia,* Austin (1832), Teubner (1983), Ayers and Braithwaite (1992), Gunningham and Grabosky (1998), Lessig (1999), Baldwin and Cave (1999), Hood, Rothstein and Baldwin (2001) and Murray and Scott (2002). The relevance of the discussion is seen as a pre-cursor to our provision of the three main elements which we view as important building blocks in the design of a legal framework (Chapter 10). The three main elements are (1) regulatory purpose, (2) regulatory means, and (3) regulatory framework. In addition to the three main elements, we must remain mindful of the significance of (a) the guiding principles for regulating content and (b) community participation. We strongly believe the guiding principles and community participation bear a strong influential role in the design of a viable and efficient framework. Thus, we believe a co-regulatory approach in the form of a comprehensive industry code of practice with strong prescriptive laws is what may be required.

However as we propose the building blocks for a new legal framework in Chapter 10, we acknowledge the shortcoming in the Territory's existing regulatory framework and that is a distinct lack of a comprehensive protective regulatory framework which should have as its core focus, the protection of youngsters from the hazards accessible via the use of mobile phones. In so acknowledging the shortcoming, we identify the stakeholders that might be in the best position to improve matters.

Notwithstanding the above, we do have a caveat to our discourse and that is, while a particular regulatory regime may be effective in one circumstance, there is no guarantee that the regime will work just as effectively and well in another. In such circumstances, it is incumbent on the regulators to understand the unique circumstances at hand and to tailor a regulatory regime to suit the circumstance best. We posit that in a rapidly converging world where new media and converging technologies are re-shaping our communication patterns, a flexible regulatory structure that understands the environment and is quick to respond to the challenges presented in what is needed.

We further state that even after a regulatory regime is in place, it is incumbent on the regulators to regularly review the strategy adopted to ensure that the strategy is in tandem with the rapid changes in communication and media technology. More importantly, it is vital that the review takes into account the changing values and mindset of the society it intends to regulate.

In the majority of circumstances, neither a pure self-regulation nor a strict command control approach is the preferred solution. Rather as discussed in the Chapters 8, 9, and 10, we may conclude that a combination of regulatory approaches will be necessary to deliver and achieve the desired outcome.

Samenvatting

MOBIELE COMMUNICATIE EN BESCHERMING VAN KINDEREN

Het proefschrift gaat over diverse effecten (positief en negatief) op kinderen en adolescenten tengevolge van het toenemend gebruik van de mobiele communicatietechnologie. De primaire doelstelling van het onderzoek is te kijken naar het tekortschieten van de bestaande regelgeving, vooral waar het gaat om de bescherming van een kwetsbare groep, zoals kinderen en adolescenten.

De huidige communicatietechnologie maakt directe communicatie mogelijk tussen (groepen van) mensen op verschillende plaatsen waar ook ter wereld. Zo kunnen gemeenschappen hun standpunten, ervaringen en cultuur met elkaar delen. De bestaande fysieke territoriale grenzen zijn alleen nog maar politiek van belang. We nemen in ons onderzoek twee significante grote veranderingen waar met betrekking tot de technologische vooruitgang: (1) een technologische groei in variëteit van apparatuur, met als gevolg een toename in keuze en betaalbaarheid van draagbare apparaten en van *content*, en (2) een toenemende mondigheid van de consumenten inzake drie beslissingen, nl. over (a) hoe, (b) wanneer, en (c) waar *content* wordt geleverd, ter beschikking gesteld en genoten. Aan de consumenten, dus ook aan jonge mobiele consumenten, wordt een grote verantwoordelijkheid toegekend als het erom gaat hoe het best te laveren en te onderhandelen over de mogelijk beschikbare *content* (vanaf nu niet meer cursief). Er is geen *free lunch,* dat wil zeggen er is geen gemak, efficiëntie en profijt van de nieuwe communicatietechnologieën zonder uitdagingen. Een heel grote uitdaging is de bescherming van kinderen tegen ongeschikte content (die online toegankelijk is, of via portals van het mobiele netwerk van operators en content providers toegankelijk is) en tegen "verkeerde" activiteiten.

De zorgen over de nadelen en het verkeerde gebruik van nieuwe technologieën, waaronder mobiele telefoons, in relatie tot kinderen en adolescenten zijn erkend door diverse internationale organisaties (Hoofdstuk 1) en vormen de drijfveer achter een aantal initiatieven betreffende (1) de bewustwording van de potentiële risico's en (2) het wereldwijd benadrukken dat de gemeenschappen, gezien de risico's, de bescherming van jongeren moeten vergroten (Hoofdstuk 1). Tegen het licht hiervan formuleren we onze tweeledige probleemstelling (PS).

PS1: "Op welke wijze vormt de mobiele communicatietechnologie via het gebruik van de nieuwe generatie mobiele telefoons wat betreft content, contact en commercialisering een bedreiging voor kinderen en adolescenten?"

PS2: "Hoe zouden we te werk moeten gaan om het tekortschieten in de bestaande regelgeving betreffende de bescherming van deze kwetsbare groep (kinderen en adolescenten) in kaart te brengen?"

Omdat dit proefschrift zich richt op het gebruik van mobiele telefoons door kinderen en adolescenten en op de effecten die dit op hen heeft, geven we in Hoofdstuk 2 een korte beschrijving van de ontwikkeling van de mobiele technologie. Daarbij valt de nadruk op twee zaken, te weten (1) de telecommunicatie-infrastructuur in Hong Kong Territory (voortaan aangeduid met Hong Kong) en (2) de providers van mobiele telefoondiensten in Hong Kong. Hoofdstuk 2 beschrijft de rol van mobiele telefoons als een nieuw platform voor het verschaffen van mobiele content. Er worden drie vormen van een mogelijk *business model* besproken. Het gebruik van nieuwe communicatietechnologie, *in casu* mobiele telefoons, kan echter niet worden onderzocht zonder convergerende technologieën in de beschouwing te betrekken, zoals convergentie van Internet en mobiele telefoons (Hoofdstuk 3). Behalve een beschouwing over de voordelen van en zorgen over convergerende technologieën in het algemeen, onderzoeken en evalueren we in Hoofdstuk 3 het antwoord van de beleidsmakers in Hong Kong op de convergentie, en wel specifiek met betrekking tot (1) het sociale oogmerk van de regering wat de consumentenbescherming betreft, en (2) de implicaties van de convergentie op het beleid voor de regeling van de content. Ons onderzoek brengt twee zaken aan het licht, te weten: (1) de Hong Kong Territory Telecommunicatie Autoriteit (TA) heeft proactieve maatregelen vastgesteld om de uitdagingen tengevolge van de convergentie en convergerende diensten zo goed mogelijk op te vangen, en (2) alles bij elkaar genomen dienen de maatregelen eerder economische doelen dan de sociale doelstelling van de consumentenbescherming. Ondanks de recente wijziging van de regelgeving betreffende de implicaties van de convergentie volgde er echter geen wijziging aangaande (1) het type content dat wordt verspreid of geschikt is geacht om verspreid te worden door middel van het gebruik van convergerende apparaten, waaronder mobiele telefoons, en (2) de feitelijke verspreiding van content. Wij, als onderzoekers, denken dat de rol van de regelgevende macht als morele waakhond van de samenleving van toenemend belang is in het huidige tijdperk van convergentie. Zo gaat het echter niet in de praktijk in Hong Kong. Derhalve merken wij op dat Hong Kong tekort is geschoten in het initiëren en implementeren van beschermende maatregelen die tegenwicht bieden aan de inspanningen op dat vlak door economische grootmachten. Wij menen dat er een significante onevenwichtigheid bestaat tussen economische doelen (of bezigheden) aan de ene kant en sociale doelstellingen van de consumentenbescherming, zoals de regulering van content, aan de andere kant. Wij zien dit vooral tot uiting

komen in de aandacht van Hong Kong voor economische en commerciële doelen ten koste van het morele en sociale welzijn van de samenleving.

Het idee achter de regulering van content is om daarmee invloed uit te oefenen op genoemde onevenwichtigheid. We denken dat regulering nodig is voor de bescherming (door de staat, industrie of ouders) van de meer kwetsbare sectoren van de samenleving – kinderen en adolescenten. Door de snelle opkomst van convergente communicatiemiddelen wordt de samenleving geconfronteerd met potentiële risico's tengevolge van de nieuwe en opkomende audio-/videodiensten en toepassingen. Wij hebben geconstateerd dat het merendeel van deze risico's niet nieuw is in die zin dat ze zouden zijn ontstaan vanwege de nieuwe moderne convergente communicatiemiddelen, maar dat het risio's zijn die in de fysieke wereld al langer bestaan. In de onbepaalde en ontastbare online-wereld doemen ze nu op als resultaat van de snelle technologische vooruitgang. Wat verontrustend is en wereldwijd de alarmbellen doet rinkelen is dat de risico's zelf ook mobiel worden. Dit betekent dat er een exponentiële explosie plaatsvindt in de vorm van verspreiding en gebruik van mobiele communicatiemiddelen (Hoofdstuk 4). Dat brengt ons tot de eerste onderzoeksvraag (RQ, *Research Question*), RQ1: *"Welke (sociologische, cognitieve, en psychologische) invloed heeft de groei van de mobiele communicatietechnologie op kinderen en adolescenten?"*

RQ1 wordt beantwoord in Hoofdstuk 5. Daarin zetten we uiteen wat de invloed (sociaal, cognitief, mentaal en psychologisch) is. Oftewel dat kinderen en adolescenten evidente risico's lopen wanneer ze worden blootgesteld aan de invloed van communicatietechnologie. De risico's kunnen grofweg worden verdeeld in drie C's: (1) *Content* – d.w.z. bestaand onbehoorlijk materiaal, (2) *Contact* – door misbruik van (mobiele) communicatietechnologie, en (3) *Commercialisering.*

Wat *content* betreft, bevatten onbehoorlijke materialen zowel illegale content als schadelijk materiaal. De sociale, cognitieve, mentale en psychologischs ontwikkeling van kinderen en jongeren hangt voor een groot deel af van hun ervaringen gedurende de jaren van ontwikkeling. Er is bewijs geleverd dat kinderen en adolescenten door bepaalde ervaringen getraumatiseerd raken, bijvoorbeeld door ongewenste en ongelukkige blootstelling aan expliciet seksueel materiaal en gewelddadige content. Een voortdurende blootstelling aan zulke content kan kinderen en adolescenten ongevoelig maken en een bijdrage leveren aan een gevoel van emotionele isolering. Verder kan de vernederende behandeling door het ene individu van het andere bij het kind eveneens bijdragen aan een ontwikkeling van een gevoel van disrespect voor medemensen en dieren, en van minachting voor andermans eigendom.

Behalve dat ze een mentaal en psychisch trauma kunnen oplopen, kunnen de jeugdigen ook fysieke schade ondervinden. Dat gebeurt door *contact.* In geval van contactvergrijpen wordt de nieuwe communicatietechnologie gebruikt als een instrument om schade aan kinderen en adolescenten te faciliteren en veroorzaken. Verdere voorbeelden van contactvergrijpen zijn

het seksueel misbruiken en molesteren van kinderen. De activiteiten die leiden naar contactvergrijpen worden in het algemeen voorafgegaan door mobiel en/of online contact door de uitbuitende volwassenen. Daarnaast heeft misbruik van de nieuwe communicatietechnologie ook geleid tot zelfmoord onder jongeren tengevolge van onafgebroken pesterijen en mobiele psychische terreur.

Wat de *commercialisering* betreft worden de jongeren aangetrokken door de interactieve mobiele content en dienstverlening. Zij zijn vaak het doelwit van een agressieve marketing aanpak. Wij constateerden dat de richtlijnen om kinderen en adolescenten te beschermen inadequaat zijn. Wij merken verder op dat jongeren weliswaar technisch slim zijn, maar daarmee zijn ze niet ook slimme consumenten. Bovendien bestaan er zorgen over het groeiende gebruik van LBS (*Location Based Services*). Daarvoor bestaan tot nu toe weinig tot geen degelijke richtlijnen die de privacy beschermen. Als gevolg daarvan is de veiligheid en het welzijn van kinderen en adolescenten in gevaar. Onze conclusie, dat de risico's reëel zijn en schade veroorzaken bij kinderen en adolescenten, leidt ons tot RQ2: *"In hoeverre beschermt het huidige regelgevend kader kinderen en adolescenten tegen beschadiging en misbruik?"*

Voor de beantwoording van RQ2 bezien we de bestaande regels betreffende content (Hoofdstuk 6) en zetten we uiteen dat kinderen en adolescenten noch adequaat noch efficiënt beschermd worden tegen de risico's van de nieuwe communicatietechnologie. Wij voeren daarvoor de volgende twee redenen aan.

De belangrijkste wettelijke regelingen, te weten de *Control of Obscene and Indecent Articles Ordinance* (COLAO) (Cap. 390) en de *Prevention of Child Pornography Ordinance* (PCPO) (Cap. 579) (a), zijn voorschriften die niet specifiek zijn gemaakt voor de bestaande nieuwe communicatietechnologieën. De handhaving via strafoplegging door rechtbanken bij het toepassen van de strafbepalingen uit beide regelingen gebeurt inconsistent. Daar komt nog bij dat we zien dat het huidige privacyregiem, bestaande uit de *Basic Law*, de *Bill of Rights Ordinance* (BORO) (Cap. 383) en de *Personal Data (Privacy) Ordinance* (PDPO) (Cap. 486), niet beschermt tegen schending van de privacy door middel van gebruik of misbruik van LSB. BORO voorziet immers in een algemeen privacyrecht terwijl PDPO de informationele privacy regelt.

We hebben bij ons streven om een regulerend kader te ontwikkelen acht lessen geleerd uit onze analyse van de regelgeving betreffende de mobiele content in Australië en in het Verenigd Koninkrijk. We denken dat het overnemen en de implementatie van de acht lessen tezamen met de volgende elementen (1) inbreng van kinderen en adolescenten, (2) de instelling van content-adviescommissies en (3) het gebruik van prikkels (zie Hoofdstuk 8) een positieve stap voorwaarts zal zijn in de richting van het ontwerpen van een levensvatbaar regelgevend kader.

RQ3 luidt als volgt: *"Wat kunnen we van andere jurisdicties leren over de formulering van een levensvatbare reguleringsstrategie?"*

In onze poging om bouwstenen voor te stellen voor content-regelgeving, analyseren we vergelijkenderwijs de regelgevende strategieën zoals deze zijn aangenomen in Australië en het Verenigd Koninkrijk. De analyse leidt ons naar het antwoord op RQ3.

In ons proefschrift bespreken we regelgevende kaders en het ontwerpen daarvan ook vanuit juridisch perspectief (Hoofdstukken 6 – 10). Dit komt tot uitdrukking in RQ4: *"Welke belangrijke elementen behoren te worden opgenomen in het nieuwe juridische kader?"* Naar onze mening kan deze vraag niet adequaat worden beantwoord zonder (1) onderzoek van de voorgestelde regelgevende theorieën (Hoofdstuk 8), en een beschouwing van regelgevende alternatieven zoals zelfregulering (Hoofdstuk 9). Daarom geven we een bespreking van de theorieën zoals deze zijn voorgesteld door o.a. Austin (1832), Lessig (1999), Baldwin en Cave (1999), Hood, Rothstein en Baldwin (2001), Murray en Scott (2002), Teubner (1983), Ayers en Braithwaite (1992) en Gunningham en Grabosky (1998). De relevantie van deze bespreking vormt een voorbode voor de drie hoofdelementen die wij zullen aanreiken en die wij beschouwen als belangrijke bouwstenen voor het ontwerp van een juridisch kader. Deze hoofdelementen zijn (1) het doel, (2) de middelen en (3) het kader van de regelgeving. Behalve met de drie hoofdelementen moeten wij rekening houden met het belang van (a) de leidende beginselen voor het reguleren van content en (b) de eigen inbreng van de samenleving. Wij zijn ervan overtuigd dat deze beginselen en de bedoelde inbreng van bepalende betekenis zijn voor het ontwerpen van een levensvatbaar en efficiënt kader. Wij menen daarom dat moet worden voldaan aan de vereisten van een coregulering-benadering in de zin van een uitputtende praktijkcode van de zijde van de industrie plus dwingend voorgeschreven wetten.

Bij het bespreken van een nieuw juridisch kader in Hoofdstuk 10 erkennen wij de tekortkoming van het bestaande regelgevende kader van Hong Kong, namelijk een onmiskenbaar gebrek aan een uitputtend beschermend regelgevend kader dat als kerntaak heeft om de jongeren te beschermen tegen de risico's die zij lopen bij het gebruik van mobiele telefoons. Met de erkenning van deze tekortkoming, identificeren we tevens degenen die zich in de meest geëigende positie bevinden om de tekortkoming te verbeteren.

Op grond van onze analyse komen we tot de volgende waarschuwing: waar een bepaald regelgevend regiem effectief kan zijn in de ene situatie, garandeert dat niet dat het regiem in een andere situatie net zo effectief is. Het is aan de regelgevers om het unieke van het geval te begrijpen en een regelgevend regiem te ontwikkelen dat het best past bij de omstandigheden. Wij stellen dat in een snel convergerende wereld waar nieuwe media en convergerende technologieën onze communicatiepatronen veranderen, een flexibele regulerende structuur nodig is, met begrip voor zo een omgeving en met de kwaliteit om snel te voldoen aan de daaraan inherente uitdagingen.

Wij zetten daarom uiteen dat zelfs als er een regelgevend regiem is, het de taak van de regelgevers is om de gekozen strategie voortdurend te

heroverwegen om ervoor te zorgen dat de strategie aansluiting blijft behouden bij de snelle veranderingen in de communicatie- en mediatechnologie. Het is van vitaal belang dat bij de heroverweging rekening wordt gehouden met de veranderende waarden en opvattingen in de samenleving, waarvoor die regulering is bedoeld. In de meeste gevallen is een keuze voor een van de extremen, louter zelfregulering of een strikte *control and order* benadering, niet te prefereren. Zoals besproken in de Hoofdstukken 8, 9 en 10 komen wij tot de conclusie dat een combinatie van benaderingen noodzakelijk is om het gewenste resultaat te bereiken.

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Appendices

A

Mobile network operators in Hong Kong

There were six licensed personal-communication-service-licensed operators. The personal-communications-service operators are also licensed operators of mobile networks. Thus, the Territory's MNOs are (1) Hong Kong CSL Limited, (2) Hutchinson Telephone Company Limited, (3) SmarTone Mobile Communications Limited, (4) PCCW Mobile HK Limited, (5) New World PCS Limited, and (6) China Mobile Peoples Telephone Company Limited.[1] Henceforth, we indicate them by

1 CSL
2 Hutchinson
3 SmarTone
4 PCCW
5 New World
6 Peoples

The figures below illustrates the market share of the respective MNOs in Hong Kong as at early 2005 (Figure A1) and the mobile market in Hong Kong as at early 2006 (Figure A2). In Figure A1, ARPU stands for Average Rate Per User.

Operator	*CSL*	*Hutchinson*	*SmarTone*	*PCCW*	*New World*	*Peoples*
Number of subscribers	1,300,000	2,195,000	1,033,000	684,000	1,300,000	1,130,000
ARPU	309	156	196	180	171	156
Market share	17.01%	28.72%	13.52%	8.95%	17.01%	14.79%
Technology adopted	GSM DAMP PCS WCDMA	GSM CDMA PCS WCDMA	GSM PCS WCDMA	PCS WCDMA	PCS	PCS

Figure A1: Market Share of Mobile Network Operators in Hong Kong (Early 2005).[2]

Recently, the number of MNOs was reduced to five by CSL merging with New World.[3]

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1 See operator declared compliance status athttp://www.ofta.gov.hk/en/b_m_issues/compliance_status_voluntary.pdf

2 Annual Reports of Operators, OFTA referred to in The Regulatory Environment For Future Mobile Multimedia Services, Hong Kong and China 2006, available at www.itu.int/osg/spu/ni/multimobile/papers/ChinaHKmobilemulti.pdf

3 CSL New World Mobility Ltd was created to own two mobile telephone operators, New World PCS Ltd and HK CSL Ltd.

In addition to the five operators, seven MVNO licenses have been issued. The seven MVNOs are (1) Trident Telecom Ventures Ltd., (2) China Motion Telecom, (HK) Ltd., (3) China-Hongkong Telecom Limited, (4) China Unicom International Limited, (5) CITIC Telecom 1616 Limited, (6) IMC Networks Ltd., and (7) Telecom Digital Mobile Limited.[4]

	CSL	*Hutchinson*	*SmarTone*	*PCCW*	*Peoples*
Networks	2G, 3G	2G, 3G	2G, 3G	2G, 3G	2G
No. of 2G users	2,080,000	1,674,000	1,054,000	738,000	1,287,000
No. of 3G users	60,000	521,000	100,000	100,000	N/A
Total No. of users	2,680,000	2,195,000	1,154,000	838,000	1,287,000
Market share	31%	25.4%	13.4%	9.7%	14.9%

Figure A2: Mobile Market in Hong Kong (Early 2006).

4 See mobile virtual network licensees at http://www.ofta.gov.hk/en/tele-lic/operator-licensees/mvno-lic.html

B

A case sample

Case sample – CSL New World Mobility Ltd

To provide some more insights into the world of telecommunication in Hong Kong, we propose at this stage to view the content provided by the MNOs in Hong Kong. For this purpose, we will look at the web pages of CSL New World Mobility Ltd (CSL). CSL is selected as the MNO has the largest number of subscribers (31%) registered in Hong Kong.[5]

CSL New World Mobility Limited[6] (CSL) has an impressive history. The company launched the first commercial General Packet Radio Service (GPRS) in Hong Kong in November 2000, introduced Asia's first MMS in March 2002, and was also the first in Asia to deploy Enhanced Data Rates for GSM Evolution (EDGE) in September 2003.[7] In December 2004, the Company launched its 3G and Wi-Fi services.[8] Its High Speed Downlink Packet Access (HSPDA) service was launched in September 2006.[9] The company was also reported to have launched Asia's first Video Sharing service in November 2005 and Hong Kong's first 3GMobile TV in February 2006.[10] CSL markets its services through its mobile brands, 1010, One2Free, and New World Mobility. For the present purposes, we shall be considering the contents offered by One2Free (see 2.4.1). We will also mention the contents offered by Hutchinson[11] and PCCW.

One2Free

From the home page of One2Free, amongst other matters, information is provided on (1) 3G and infotainment, (2) downloads, and (3) mobile electronic mail and messaging. Under the icon 3G, subscribers are provided with various channels to watch over their mobile phone. Some channels available are BBC world, fashion TV, Bloomberg television, latest local TV drama, and soundtrack channel.[12] The infotainment channel

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5 As at early 2006, see supra Figure A2.

6 CSL New Mobility is 76.4% beneficially owned by Telstra Corporation Limited and 23.6% beneficially owned by New World Mobile Holdings Limited.

7 http://www.hkcsl.com/en/about_us/corporate_profile.jsp

8 Supra.

9 Supra.

10 Supra.

11 Hutchinson, provides similar contents and services. Their services include entertainment, fortune, games, comedy, music, live TV, cartoon and playboy. Betting services for horse racing, Mark Six lottery and football are available on their website with instructions and charging details.

12 The website states there are over 30 news and entertainment channels providing 24 hours on-air viewing.

provides a music channel, an entertainment channel, a news channel, a finance channel, a football channel, Disney mobile, Discovery Channel, and an adult channel. The entertainment channel for example, provides Variety – dining and travel guide, latest local drama, i-cable entertainment, funny videos, and cartoons. Brief descriptions of the various programmes, 'how to' instructions together with charges and subscriptions are provided. For instance, the Racing channel provides all the information you need to place a bet and to follow the races. Other examples are: the date, start time, and course information are provided together with the horse's name, jockey's name, and their numbers. Moreover, information is provided on the odds by the Hong Kong Jockey Club to enable punters to make an informed betting decision. Finally, a mobile online betting service is provided with instructions.

Subscribers of One2Free can download, (1) full songs, MP3 ring-tones, polyphonic ring-tones, and monophonic ring-tones under 'Music', (2) various wallpapers such as theme wallpapers, under 'wallpapers', and (3) java games under 'games'. There is also a Chinese mobile bookstore for subscribers keen on reading.

For comparison, we mention that Hutchinson, provides similar content and services. Their services include entertainment, fortune, games, comedy, music, live TV, cartoon, and playboy. Betting services for horse racing, Mark Six lottery, and football are available on their website with instructions and charging details.[13]

So, we may observe that the mobile sector is a vibrant sector. Evidence indicates that MNOs continuously offer new products and applications to lure subscribers.[14]

13 See content services and applications available on Three Hutchinson available at http://www.three.com.hk/website/appmanager/three/home?_nfpb=true&pageid=000001&_pageLabel=P20017039121956737654 7&lang=eng

14 For instance, PCCW has launched "Moov on Mobile" making 60,000 song library available to its PCCW mobile subscribers via streaming technology. The service allows their subscribers to use a computer to compile their personalised playlists online at http://MOOV.now.com.hk/mobile and enjoy the same playlist on a mobile phonehttp://www.cahk.hk/Publication/12/Bulletin_Spring%202007.pdf

C

Convergence at three levels and convergence of sectors

In this section, we briefly examine the technological and market convergence that is taking place. In this respect, we will consider technological convergence in the form of (1) network convergence in (a), and (2) service convergence in (b). Market convergence is separately considered in part (c). We remark that all three levels are distinct from each other, yet they are interconnected with each other. In (d), we show the convergence of sectors.

(a) Network convergence

Network convergence has been described as the ability of different network platforms to carry essentially similar kinds of services. The convergence is possible because distinct industries such as telecommunications, computing, media, and broadcasting, can share and utilise the same infrastructure or communication resources. As digitisation does not discriminate between types of information or data, the same infrastructure has facilitated the integration of the once-upon-a-time distinct networks into one 'all encompassing network'. The best example of convergence at the network level is the Internet. The Internet carries voice signals via voice over Internet Protocol (VoIP), video images via video streaming and video conferencing, and radio via Internet radio.[15] It is all made possible because the TCP/IP (transmission control protocol/Internet protocol) is the common protocol underlying the Internet's infrastructure.[16]

(b) Service convergence

Convergence at the services level (also known as functional convergence[17]) can be understood to encompass situations where the current technology is offering functions and services that go beyond what they were originally designed to do. Prime examples of this are the television, computer, and the mobile phone. With the coming together of broadcasting, computing, and telecommunication on a single communication plat-

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15 Seng, D., (2000), Regulatory Frameworks for Convergence? Issues Arising from New Regulatory Frameworks in view of the Increasing Convergence of Conventional Telecommunications Models & Cybercommunications, in The Singapore Conference: Leading the Law and Lawyers into the New Millennium @2020, edited by Singapore Academy of Law, p. 201-240. Singapore: Butterworths Asia.

16 The transmission of data (text, voice, still or moving images) is more expedient with packet switching technology as opposed to the conventional circuit switching technology. It is this packet switching technology together with digitisation that stimulates convergence.

17 Convergence in Macro Environment and Telecommunications, available at http://cbdd.wsu.edu/kewlcontent/cdoutput/tr501/page29.htm

form, the consumer is able to receive via a single screen, be it a television screen, computer or mobile screen, a wide range of services and applications. We remark that the convergence is possible as a result of the non-exclusive use of microprocessors. Where microprocessor chips were once developed for use in computers, its use has been extended and expanded to all manner and form of modern age equipment (devices). As a result, these devices by reason of the commonality of microprocessor chips, are capable of being connected with other forms of 'intelligent devices', and in being so connected, they acquire, share, and disseminate the content and intelligence with other devices. Under such conditions, we have the mobile phone as a device capable of receiving, providing, and exchanging interactive data ranging from television and broadcasts, via information on traffic and weather conditions, to shopping locations and discount vouchers.

(c) Market convergence

In comparison to technological convergence (a) and service convergence (b), market convergence is the result of financial and strategic considerations. We see convergence at the market level establishing itself when traditional players of telecommunication, media, computing, and broadcasting seek to find new synergies between themselves in the types of services or content they offer. In other words, upon strategic alliance, an industry player can independently provide a 'whole value chain of content to communications to consumption' to its consumers.[18] An example of this is the well known merger of America OnLine (AOL) and Time Warner.[19] The merger resulted in a unique platform in which the value chain from the production of content, computing, and packaging and delivery to consumer are fully covered.[20]

(d) Convergence of sectors

In Figure C1, we see an illustration of market convergence occurring between the four main market sectors, that is, information technology, telecommunication, broadcasting, and other media. We relate them to services, software, and hardware.

18 Supra Seng, n. 15.

19 AOL Inc., was the largest internet service provider in the United States and Time Warner was the largest media and cable conglomerate. See http://en.wikipedia.org/wiki/Time_Warner. The AOL-Time Warner merger is listed as the top merger-acquisition deal since 2000. Its transacted value was U.S. $165,747,000 million.

20 At the time of the merger, it was envisaged that AOL-Time Warner would offer a full spectrum of media and content from Internet to broadcast, and from cable television to film, to music, to magazines, and to books.

	I.T.	*Telecom*	*Broadcasting*	*Other media*
Content/ services	Software- based content	Telecom-based services and content	Broadcast programs	Film, music, newspapers, etc.
Network/ software	Generic software	Network services	Transmission	Cinemas, video rentals, etc.
Equipment/ hardware	Hardware	Telecom equipment	Broadcast equipment	Reproduction of films, printing, etc.

Figure C1: Convergence of sectors.[21]

Figure C1 illustrates (1) the sectors involved, and the levels of activities from equipment/hardware (at the bottom) and network /software (in the middle) to content/service provision (at the top), and (2) the many possibilities for convergence at (2a) a horizontal level between different sectors as well as (2b) the vertical integration between different levels.

In Figure C2, we provide a table which illustrates the convergence process occurring at four different levels. The levels are (1) Service providers, (2) Terminal equipment, (3) Modes of delivery, and (4) Service offerings. Within each level we show the development by listing the elements from a – d. In (d), we find the current state of affairs.

(1) Service providers		*(2) Terminal equipment*	
Power/utility service	a	Television	a
Broadcasting service	b	Computer	b
Cable service	c	Fixed handset	c
Telecommunication service	d	Mobile handset	d
(3) Modes of delivery		*(4) Service offerings*	
Copper wires	a	One stop service	a
Fiber/coaxial cables	b	Integrated company operations	b
Radio frequencies	c	Flat rate price services	c
Satellite	d	Bundling of packages such as triple play and quadruple play	d

Figure C2: Convergence at different levels[22]

21 Henten, A., Falch, M., and Tadayoni, R., (2002) Some Implications for regulation of ICT and Media Convergence, *World Dialogue on Regulation for Networked Economies*, Discussion Paper, Center for Tele-Information, Technical University of Denmark; available at http://www.regulateonline.org/2003/2002/dp/dp0202.htm

22 Matilla, O., (2006) Overview of Convergence, NGN, VoIP and related regulatory challenges, availableathttp://www.itu.int/ITU-D/afr/events/Dakar-2006_Regulatory_Challenges_of_VoIP_Africa/Presentations/Day1/Dakar_1__Overview_of_convergence__NGN_and_VoIP_plus_related~.pdf

We re-iterate that Figure C2 illustrates convergence occurring at four different levels. For example, the provision of services is no longer restricted to a fixed equipment, or the size of the equipment i.e., via the television or the computer. Instead, services are accessible via the smaller, portable, and mobile handset. Services offered to users are also innovatively attractive, and increasingly more user-price sensitive. This is evidently seen in the bundling of packages and flat rate price services such as triple and quadruple play offered by service providers.

D

Hong Kong's way forward: Towards a converging environment

Typically, regulation in the communications sector takes the form of licensing. However due to convergence, we have established that necessary changes in the framework are required. The change should be one that appropriately reflects the rapidly converging communication media environment. A change in traditional licensing regimes should be a way forward. This can be reflected in one of various ways, that is, (1) from a technology or service specific structure, to one that is technology neutral, or (2) designing and complementing a simplified set of licensing categories, or (3) implementing a unified (single) license or market entry procedure for all technologies and services.[23]

Under three subheadings we will discuss: a unified licensing scheme for fixed mobile convergence in (a), a broadband wireless application (b), and other initiatives (c). Specifically, we will investigate what are the changes made to the existing regulatory framework?

(a) Unified licensing scheme for fixed mobile convergence

In so far as Hong Kong is concerned, OFTA is interested in (1) acknowledging the ongoing and continuously converging environment, and (2) the aims of removing barriers to such an environment. Therefore, OFTA has recently invited public views on a new licensing scheme for fixed mobile convergence in the telecommunication sector. This augurs well for a vibrant sector where the distinction between fixed and mobile network and the provision of services are becoming blurred.[24] At present, there are two major types of carrier licenses, namely, (a) a fixed carrier license, and (b) a mobile carrier license. The existing separate licensing frameworks for fixed and mobile services may not be sustainable in the fixed mobile converging environment since in an increasingly converging environment, it is difficult to classify a service as being solely fixed or mobile as the service may be used by consumers at fixed locations on some occasions

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23 Torre, M. D.L., and Rush, C., (2006), Key Regulatory issues in an Era of Convergence, available at http://www.tmgtelecom.com/_PDFS/Key_Regulatory_Issues_in_an_Era_of_Convergence.pdf.

24 Two rounds of regulatory review for fixed mobile convergence framework were carried out in 2005 and 2006. Essentially, the review was centered upon a) the existing one-way fixed/mobile interconnection charge structure, b) the feasibility and the cost-benefits of implementing fixed/mobile number portability and c) the possibility of a new carrier licence which will allow a licensee to offer flexibly various mobile, fixed or nomadic network services. See www.ofta.gov.hk/en/speech/presentation/dg_20050125.pdf. In addition to this, OFTA has also commenced a comprehensive review of spectrum management policies to ensure efficient use of this scarce resource. In accordance with the Government's new spectrum policy, OFTA will make available spectrum to the market, including the spectrum which enables the provision of mobile services based on the CDMA 2000 standard and the spectrum for broadband wireless access (BWA).

and in motion on other occasions.[25] Accordingly, a new licensing scheme, i.e., a single Unified Carrier License (UCL) is proposed for the licensing of all kinds of fixed, mobile, and converged telecommunication services.[26] It is intended that the UCL will replace services currently provided under four existing carrier licenses, i.e., (a) fixed carrier license, (b) fixed carrier (restricted) license, (c) mobile carrier license, and (d) mobile carrier (restricted) license.[27]

The new UCL will be issued to all new applicants. Existing operators may voluntarily apply to have their licenses converted to UCL before the expiry of their respective licenses.[28] The period of validity for the UCL is 15 years, the same period as the existing carrier licenses. UCL will adopt the same set of General Conditions imposed by the Secretary of Commerce and Economic Development in the existing carrier licenses. The conditions are imposed to ensure that all carriers licensed to provide public telecommunication services will have the same basic obligations.[29] It is also proposed that the license fee for UCL will be align (1) to cover the cost of the Telecommunication Authority (TA) for administering the licenses, and (2) to encourage the efficient use of telephone numbers by the operators.[30]

In addition, a set of Special Conditions will also be imposed on all UCLs. These Special Conditions will align some current obligations under fixed and mobile services

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25 Two rounds of regulatory review for fixed mobile convergence framework were carried out in 2005 and 2006. Essentially, the review was centered upon a) the existing one-way fixed/mobile interconnection charge structure, b) the feasibility and the cost-benefits of implementing fixed/mobile number portability and c) the possibility of a new carrier licence which will allow a licensee to offer flexibly various mobile, fixed or nomadic network services. See www.ofta.gov.hk/en/speech/presentation/dg_20050125.pdf. In addition to this, OFTA has also commenced a comprehensive review of spectrum management policies to ensure efficient use of this scarce resource. In accordance with the Government's new spectrum policy, OFTA will make available spectrum to the market, including the spectrum which enables the provision of mobile services based on the CDMA 2000 standard and the spectrum for broadband wireless access (BWA).

26 Legislative Council Panel on Information Technology and Broadcasting papers; see www.legco.gov.hk/yr07-08/english/panels/itb/papers/itb0114cbi-601-1-e.pdf

27 These licences are prescribed under the Telecommunication (Carrier Licence) Regulation (Cap. 106V)

28 Supra OFTA press release, n. 25.

29 Malaysia adopted a new licensing framework which simplified the existing 31 service-based licenses into four broad technology-neutral licensing categories: Network Facilities Provider (NFP); Network Services Provider (NSP); Application Services Provider (ASP);and Content Application Service Provider (CSP; a special subset of application services that includes television and radio broadcast services and Internet content services. See Malaysia's Communication and Multimedia Act 1998 available at www.mcmc.gov.my/mcmc/thelaw/ViewAct.asp?cc=4446055&lg=earid=900722

By contrast, Singapore licensing scheme provides for two categories of licenses for the provision of telecommunications services: (1) Facilities-Based Operator (FBO) licenses and (2) Services-Based Operator (SBO) permits. The FBO license is always an individual license, whereas the SBO may be an individual license or, for some services, a class license. See Information Development Authority of Singapore (IDA), available at www.ida.gov.sg/idaweb/pnr/infopage.jsp?inforpagecategory=licensing:pnr&versionid=14&infopageid=I3616

30 The new number fee provides an incentive for operators to ensure efficient use of telephone numbers as a scarce public resource. In this respect, license fees may be reduced by returning unused telephone numbers to the TA.

such as (a) interconnection,[31] (b) tariff publication, (c) ex-post tariff regulation, and (d) number portability.[32] Special Conditions are also imposed for consumer protection requiring the licensee to comply strictly with any code of practice or guideline issued by the TA for the purpose of providing practical guidance in respect to (1) provision of satisfactory service, (2) protection of customer information, and (3) protection and promotion of consumers' interest.[33] The Special Conditions imposed by the TA to protect consumers include (a) the provision of a minimum set of information to customers such as tariff charges and name of licensee, and (b) to comply with the codes of practice in respect to requirements on telecommunications service contracts. We have observed that the Special Conditions imposed by the TA does not provide for the protection of children and young people.

In relation to (b) our investigations reveal that there have been an increasing number of complaints against telecommunication operators in respect of service contracts. Consumer complaints are generally outside the purview of the TA.[34] Nevertheless, a new Special Condition on service contracts and a dispute resolution will be imposed by the TA. The new condition requires a licensee to comply with any code of practice which the TA might issue in respect of the requirements to apply in contracting of telecommunication services to consumers.[35] This may include (a) contract documentation, (b) manner of entering into and terminating service contracts, (c) submission of disputes to an independent dispute resolution, and (d) providing a formal framework for handling contractual disputes.[36]

(b) Broadband wireless access

Apart from fixed mobile convergence, a second key enabler of convergence is broadband wireless access (BWA).[37] The role of BWA cannot be neglected since it contributes significantly to the overall structure of convergence by serving both fixed and mobile customers. Thus, this technology must be taken into account when considering the need for a unified license. Currently, all local fixed network operators are allowed under their licenses to provide broadband services. After three rounds of consultation, the TA has proposed to make available 2.3 to 2.4 GHz band for the provision of BWA

31 With respect of interconnection arrangements, the TA has recommended that the current practice of 'mobile party network pays' for interconnection charges be phased out within two years. Thereafter, the network operators will freely negotiate terms and conditions for mutually agreeable interconnection settlement arrangement. However, under section 36A, the TA will retain his power to make a determination in the event an agreement cannot be reached between the operators. See Legislative Council Panel on Information Technology and Broadcasting, Conclusion on Consultation on De-Regulation of Fixed Mobile Convergence, LC Paper No. CB(1)1831/06-07(14), 11 June 2007, available at http://www.legco.gov.hk/yr06-07/english/panels/itb/papers/itb0611cb1-1831-14-e.pdf

32 Fixed mobile number portability relates to a single user number which can be used (ported) for access of both fixed and mobile services.

33 Supra OFTA press release, n. 25.

34 These complaints are generally dealt with by the Consumer Council.

35 Supra OFTA press release, n. 25.

36 Supra n. 3. In relation to this, the TA is currently discussing with major telecommunication operators on establishing a 'Consumer Dispute Adjudication Scheme'.

37 BWA is a wireless technology for connecting end-users to telecommunications networks for voice, data and multimedia communications.

services. The proposal was to assign the BWA spectrum using a market-driven approach. With such an approach, the BWA spectrum will be assigned by auction.[38] It is expected that six BWA licenses, each with a maximum of 30 MHz of spectrum will be issued and a lump sum payment method (as opposed to a royalty payment method) for the Spectrum Utilisation Fee will be employed.[39]

In addition to network operators, Internet service providers (ISPs) are also allowed to provide broadband services. Thus, as at October 2008, there were 168 ISPs licensed to provide broadband services. Together with ISPs, more than 1.793 million registered customers representing 77.4% of households in the residential market, have access to broadband services with speeds up to 1,000 Mbps (Megabits per second).[40]

(c) Other initiatives

Rapid advances in the broadband technologies and the increasing convergence between telecommunications and broadcasting have created opportunities for telecommunications operators to offer new services, such as IP Television (IPTV) services. In fact, "triple-play" services, that is telephony, broadband access, and TV, and "quadruple-play" services: telephony, broadband access, TV, and mobile are becoming increasingly common services offered by operators. This is reflected in the over 1,000,000 IPTV subscribers in Hong Kong (as at February 2008). Though the number does not seem high, it remains a significant number when compared to Hong Kong population of 7 million. The number thus represents a household penetration of 48% (as of May 2008), making Hong Kong the most advanced IPTV market in the world.[41]

Further and in addition to IPTV service, we note that OFTA has, introduced as part of their regulatory review in response to an increased interest and utilisation of Internet Protocol telephony or VoIP, a two class regulatory framework for Internet Protocol telephony or VoIP.[42] The new framework allows network providers and service-based providers to provide integrated multimedia services and voice telephony over Internet Protocol with a new license known as Service Based Operator Licence.[43]

38 This is expected to take place in the last quarter of 2008.

39 The same lump sum payment approach as opposed to a royalty based approach was adopted in the spectrum auction of CDMA2000 services.

40 OFTA Trading fund Report 2006-07; available at http://www.ofta.gov.hk/en/trade-fund-report/0607/pdf.

41 OFTA Trading Report 2007-08; available at http://www.ofta.gov.ak/en/trade-fund-report/0708/pdf/full.pdf.

42 Class 1 service license will have all the attributes of a conventional telephone service. Carriers are required to therefore fulfill the licensing conditions of FTNS or fixed carrier licenses relevant to the provision of local voice telephony services. Class 2 licenses will be issued to services which do not possess the conventional telephone services. As such, the issuance of such licenses will have minimal licensing conditions.

43 Supra OFTA Trading fund Report 2006-07, n. 40.

Curriculum Vitae

Rebecca Ong was born in Malaysia on 26 October 1961. She completed her degree in law at the University of London, her first LLM at King's College, London and her second LLM (in Information Technology Law) at the University of Strathclyde in Glasgow. Rebecca has been admitted as a Barrister at Law (Lincoln's Inn) in England and had practised as an Advocate and Solicitor in Malaysia before moving into the academia. She has since taught in various educational institutions and is currently attached to the School of Law at City University of Hong Kong.

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MI-157 G.J.M. Verburg, *Vaststelling van smartengeld,* (diss. Leiden) Deventer: Kluwer 2009

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MI-174 L. Mommers, H. Franken, J. van den Herik, F. van der Klaauw, G.-J. Zwenne (red.) *Het binnenste buiten,* Liber amicorum A.H.J. Schmidt, Leiden: eLaw@leiden 2010, ISBN 978 90 815196 1 8

MI-175 R. Ong, *Mobile Communication and the Protection of Children*, (diss. Leiden), Leiden: Leiden University Press 2010, ISBN 978 90 8728 080 2

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Promotores: Prof.dr. H.J. van den Herik (UvT/UL), Prof.mr. A.H.J. Schmidt (UL)
Promotie: 20 April 2010

2010-09
Hugo Kielman (UL)
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Copromotor: Mr. dr. L. Mommers (UL)
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Copromotor: Prof.dr. A.P. de Vries (TUD)
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Fernando Koch (UU)
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Copromotor: Dr. F. Dignum (UU)
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Sensor Data Management with Probabilistic Models
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Copromotor: Prof.dr. L. Feng, Tsinghua University (China).
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Assistent promotor: Dr.ir.m. W. A. Steen (Novay) Promotie: 22 Oktober 2009

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Copromotor: Dr. P.A. Boncz (CWI)
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Sofiya Katrenko (UVA)
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Promotor: Prof.dr. P.W. Adriaans (UVA)
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2009-32
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Architectural Knowledge Management: Supporting Architects and Auditors
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2009-33
Khiet Truong (UT)
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Promotor: Prof.dr. F.M.G. de Jong (UT), Prof.dr.ir. D.A. van Leeuwen (RU)
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Wouter Koelewijn (UL)
Privacy en Politiegegevens; Over geautomatiseerde normatieve informatie-uitwisseling
Promotores: Prof.dr. H.J. van den Herik (UvT/UL), Prof.mr. A.H.J. Schmidt (UL)
Co-promotor: dr. L. Mommers (UL)
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2009-36
Marco Kalz (OU)
Placement Support for Learners in Learning Networks
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Copromotor: Dr. J.M. van Bruggen (OU)
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2009-37
Hendrik Drachsler (OU)
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Promotores: Prof.dr. E.J.R. Koper (OU)
Co-promotor: Dr. H.G.K. Hummel (OU)
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2009-38
Riina Vuorikari (OU)
Tags and self-organisation: a metadata ecology for learning resources in a multilingual context
Promotor: Prof.dr. E.J.R. Koper (OU)
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2009-39
Christian Stahl (TUE, Humboldt-Universitaet zu Berlin)
Service Substitution -- A Behavioral Approach Based on Petri Nets
Promotores: Prof.dr. K. van Hee (TUE), Prof.dr. W. Reisig (Humboldt-Universitaet zu Berlin)
Co-promotor: Prof.dr. Karsten Wolf (Universitaet Rostock)
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2009-40
Stephan Raaijmakers (UvT)
Multinomial Language Learning: Investigations into the Geometry of Language
Promotores: Prof.dr. W. Daelemans (UvT), Prof.dr. A.P.J. van den Bosch (UvT)
Promotie: 1 December 2009

2009-41
Igor Berezhnyy (UvT)
Digital Analysis of Paintings
Promotores: Prof.dr. E.O. Postma (UvT), Prof.dr. H.J. van den Herik (UvT)
Promotie: 7 December 2009

2009-42
Toine Bogers (UvT)
Recommender Systems for Social Bookmarking
Promotor: Prof.dr. A.P.J. van den Bosch (UvT)
Promotie: 8 December 2009

2009-43
Virginia Nunes Leal Franqueira (UT)
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Co-promotor: Dr. P. van Eck (UT)
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2009-44
Roberto Santana Tapia (UT)
Assessing Business-IT Alignment in Networked Organizations
Promotor: Prof.dr. R.J. Wieringa (UT)
Promotie: 4 December 2009

2009-45
Jilles Vreeken (UU)
Making Pattern Mining Useful
Promotor: Prof.dr.A.P.J.M. Siebes (UU)
Promotie: 15 December 2009

2009-46
Loredana Afanasiev (UvA)
Querying XML: Benchmarks and Recursion
Promotor: Prof.dr. M. de Rijke (UvA)
Co-promotor: Dr. M.J. Marx (UvA)
Promotie: 18 December 2009

2008

2008-01
Katalin Boer-Sorbán (EUR)
Agent-Based Simulation of Financial Markets: A modular, continuous-time approach
Promotor: Prof.dr. A. de Bruin (EUR)
Copromotor: Dr.ir. U. Kaymak (EUR)
Promotie: 25 January 2008
2008-02

Alexei Sharpanskykh (VU)
On Computer-Aided Methods for Modeling and Analysis of Organizations
Promotor: Prof.dr. J. Treur (VU)
Promotie: 10 January 2008

2008-03
Vera Hollink (UVA)
Optimizing hierarchical menus: a usage-based approach
Promotor: Prof.dr. B.J. Wielinga (UvA)
Copromotor: Dr. M.W. van Someren (UvA)
Promotie: 31 January 2008

2008-04
Ander de Keijzer (UT)
Management of Uncertain Data - towards unattended integration
Promotor: Prof.dr. P.M.G. Apers (UT)
Copromotor: Dr.ir.m. van Keulen (UT)
Promotie: 01 februari 2008

2008-05
Bela Mutschler (UT)
Modeling and simulating causal dependencies on process-aware information systems from a cost perspective
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Copromotor: Dr. M. U. Reichert (UT)
Promotie: 17 January 2008

2008-06
Arjen Hommersom (RUN)
On the Application of Formal Methods to Clinical Guidelines, an Artificial Intelligence Perspective
Promotor: Prof.dr.ir. Th.P. van der Weide (RUN)
Co-promotor: dr. P.J.F. Lucas (RUN)
Promotie: 18 April 2008

2008-07
Peter van Rosmalen (OU)
Supporting the tutor in the design and support of adaptive e-learning
Promotor: Prof.dr. E.J.R. Koper (OU)
Co-promotor: Prof.dr. P.B. Sloep (OU)
Promotie: 18 April 2008

2008-08
Janneke Bolt (UU)
Bayesian Networks: Aspects of Approximate Inference
Promotor: Prof.dr.ir L.C. van der Gaag (UU)
Promotie: 21 April 2008

2008-09
Christof van Nimwegen (UU)
The paradox of the guided user: assistance can be counter-effective
Promotor: Prof.dr. L. van den Berg (UU)
Co-promotor: Dr. H. van Oostendorp (UU)
Promotie: 31 March 2008

2008-10
Wouter Bosma (UT)
Discourse oriented summarization
Promotor: Prof.dr.ir. A. Nijholt (UT)
Co-promotor: Dr. M. Theune (UT)
Promotie: 27 March 2008

2008-11
Vera Kartseva (VU)
Designing Controls for Network Organizations: A Value-Based Approach
P Promotores: Prof.dr. Y.H. Tan (VU), Prof.dr.ir R. Paans (VU)
Co-promotor: Dr. J. Gordijn (VU)
Promotie: 28 May 2008

2008-12
Jozsef Farkas (RUN)
A Semiotically Oriented Cognitive Model of Knowledge Representation
Promotor: Prof.dr.ir. T.P. van der Weide (RUN)
Co-promotor: Dr. J.J. Sarbo (RUN)
Promotie: 23 April 2008

2008-13
Caterina Carraciolo (UVA)
Topic Driven Access to Scientific Handbooks
Promotor: Prof.dr. M. de Rijke (UVA)
Co-promotor: Dr. J. Kircz (HvA)
Promotie: 25 April 2008

2008-14
Arthur van Bunningen (UT)
Context-Aware Querying; Better Answers with Less Effort
Promotores: Prof.dr.P.M.G. Apers (UT), Prof.dr. L. Feng (Tsinghua University, China)
Co-promotor: Dr. M. Fokkinga (UT)
Promotie: 13 June 2008

2008-15
Martijn van Otterlo (UT)
The Logic of Adaptive Behavior: Knowledge Representation and Algorithms for the Markov Decision Process Framework in First-Order Domains.
Promotores: Prof.dr.ir A. Nijholt (UT), Prof.dr. J.-J.Ch. Meyer (UU)
Co-promotor: Dr. M. Poel (UT)
Referent: Dr. M. Wiering (RUG)
Promotie: 30 May 2008

2008-16
Henriette van Vugt (VU)
Embodied agents from a user's perspective
Promotores: Prof.dr. J. Kleinnijenhuis (VU) Prof.dr. G.C. van der Veer (VU)
Co-promotores: Dr. J. Hoorn (VU), Dr. E.A. Konijn (VU)
Promotie: 25 June 2008

2008-17
Martin Op 't Land (TUD)
Applying Architecture and Ontology to the Splitting and Allying of Enterprises
Promotor: Prof.dr.ir. J.L.G. Dietz (TUD)
Promotie: 13 June 2008

2008-18
Guido de Croon (UM)
Adaptive Active Vision
Promotores: Prof.dr. E.O. Postma (UM), Prof.dr. H.J. van den Herik (UM)
Promotie: 26 June 2008

2008-19
Henning Rode (UT)
From Document to Entity Retrieval: Improving Precision and Performance of Focused Text Search
Promotor: Prof.dr. P.M.G. Apers (UT)
Co-promotor: Dr. D. Hiemstra (UT)
Promotie: 27 June 2008

2008-20
Rex Arendsen (UVA)
Geen bericht, goed bericht. Een onderzoek naar de effecten van de introductie van elektronisch berichtenverkeer met de overheid op de administratieve lasten van bedrijven.
Promotor: prof.dr. T.M. van Engers (UvA)
Promotie: 07 October 2008

2008-21
Krisztian Balog (UVA)
People Search in the Enterprise
Promotor: Prof.dr. M. de Rijke (UVA)
Promotie: 30 September 2008

2008-22
Henk Koning (UU)
Communication of IT-Architecture
Promotores: Prof.dr. S. Brinkkemper (UU), Prof.dr. J.C. van Vliet (VU),
Co-promotor: Dr. R. Bos (UU)
Promotie: 24 September 2008

2008-23
Stefan Visscher (UU)
Bayesian network models for the management of ventilator-associated pneumonia
Promotor: Prof.dr. M.J.M Bonten (UU/ UMCU)
Co-promotores: Dr. P. Lucas (RUN), Dr. C.A.M. Schurink (EUR)
Promotie: 30 September 2008

2008-24
Zharko Aleksovski (VU)
Using background knowledge in ontology matching
Promotor: Prof.dr. F. van Harmelen (VU)
Co-promotor: Dr. W. ten Kate (VU)
Promotie: 05 September 2008

2008-25
Geert Jonker (UU)
Efficient and Equitable Exchange in Air Traffic Management Plan Repair using Spender-signed Currency
Promotor: Prof.dr. J.- J. Ch. Meyer (UU)
Co-promotor: Dr. F. Dignum (UU)
Promotie: 06 October 2008

2008-26
Marijn Huijbregts (UT)
Segmentation, Diarization and Speech Transcription: Surprise Data Unraveled
Promotor: Prof.dr. F.M.G. de Jong (UT)
Co-promotor: dr. R.J.F. Ordelman (UT)
Promotie: 21 November 2008

2008-27
Hubert Vogten (OU)
Design and Implementation Strategies for IMS Learning Design
Promotor: Prof.dr. E.J.R. Koper (OU)
Co-promotor: Dr. J.M. van Bruggen (OU)
Promotie: 07 November 2008

2008-28
Ildiko Flesch (RUN)
On the Use of Independence Relations in Bayesian Networks
Promotor: Prof.dr.ir. Th.P. van der Weide (RUN)
Co-promotor: Dr. P.J.F. Lucas (RUN))
Promotie: 27 November 2008

2008-29
Dennis Reidsma (UT)
Annotations and Subjective Machines - Of Annotators, Embodied Agents, Users, and Other Humans
Promotor: Prof.dr.ir. A. Nijholt (UT)
Co-promotor: Dr.ir. H. J. A. op den Akker (UT)
Promotie: 09 October 2008

2008-30
Wouter van Atteveldt (VU)
Semantic Network Analysis: Techniques for Extracting, Representing and Querying Media Content
Promotor: Prof.dr. F. van Harmelen (VU), Prof.dr. J. Kleinnijenhuis (VU)
Co-promotor: Dr. S. Schlobach (VU)
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2008-31
Loes Braun (UM)
Pro-Active Medical Information Retrieval
Promotor: Prof.dr. H.J. van den Herik (UM), Prof.dr.ir. A. Hasman (UvA)
Co-promotor: Dr. F. Wiesman (UVA)
Promotie: 29 October 2008

2008-32
Trung H. Bui (UT)
Toward Affective Dialogue Management using Partially Observable Markov Decision Processes
Promotor: Prof.dr.ir. A. Nijholt (UT)
Co-promotor: Dr. J. Zwiers (UT)
Promotie: 09 October 2008

2008-33
Frank Terpstra (UVA)
Scientific Workflow Design; theoretical and practical issues
Promotor: Prof.dr. P.W.Adriaans (UVA)
Co-promotor: Dr. G.R.meijer (UVA)
Promotie: 06 November 2008

2008-34
Jeroen de Knijf (UU)
Studies in Frequent Tree Mining
Promotor: Prof.dr. A.P.J.M. Siebes (UU)
Co-promotor: Dr. A.J. Feelders (UU)
Promotie: 19 November 2008

2008-35
Ben Torben Nielsen (UvT)
Dendritic morphologies: function shapes structure
Promotor: Prof. dr H.J. van den Herik (UvT), Prof.dr. E.O. Postma (UvT)
Co-promotor: Dr. K.P. Tuyls (TUE)
Promotie: 03 December 2008

2007

2007-01
Kees Leune (UvT)
Access Control and Service-Oriented Architectures
Promotor: Prof.dr.ir.m.P. Papazoglou (UvT)
Co-promotor: Dr. W-J. van den Heuvel (UvT)
Promotie: 28 February 2007

2007-02
Wouter Teepe (RUG)
Reconciling Information Exchange and Confidentiality: A Formal Approach
Promotor: Prof.dr. L.R.B. Schomaker (RUG)
Co-promotor: Dr. L.C. Verbrugge (RUG)
Promotie: 18 January 2007

2007-03
Peter Mika (VU)
Social Networks and the Semantic Web
Promotor: Prof.dr. J.M. Akkermans (VU), prof.dr. T. Elfring (VU)
Co-promotor: Dr. P. Groenewegen (VU)
Promotie: 05 February 2007

2007-04
Jurriaan van Diggelen (UU)
Achieving Semantic Interoperability in Multi-agent Systems: a dialogue-based approach
Promotor: Prof.dr. J.-J. Ch. Meyer (UU)
Co-promotores: Dr.ir. R.-J. Beun (UU), dr. F. P.M. Dignum (UU), dr. R.m. van Eijk (UU)
Promotie: 21 March 2007

2007-05
Bart Schermer (UL)
Software Agents, Surveillance, and the Right to Privacy: a Legislative Framework for Agent-enabled Surveillance
Promotor: Prof.dr. H.J. van den Herik (UM/UL)
Promotie: 09 May 2007

2007-06
Gilad Mishne (UVA)
Applied Text Analytics for Blogs
Promotor: Prof.dr. M. de Rijke (UVA)
Promotie: 27 April 2007

2007-07
Natasa Jovanovic' (UT)
To Whom It May Concern - Addressee Identification in Face-to-Face Meetings
Promotor: Prof.dr.ir. A. Nijholt (UT)
Co-promotor: Dr.ir. H.J.A. op den Akker (UT)
Promotie: 14 March 2007

2007-08
Mark Hoogendoorn (VU)
Modeling of Change in Multi-Agent Organizations
Promotores: Prof.dr. J. Treur (VU) , Prof.dr. C.M. Jonker (TUD)
Promotie: 18 June 2007

2007-09
David Mobach (VU)
Agent-Based Mediated Service Negotiation
Promotor: Prof.dr. F.M.T. Brazier (VU)
Co-promotor: Dr. B.J. Overeinder (VU)
Promotie: 21 May 2007

2007-10
Huib Aldewereld (UU)
Autonomy vs. Conformity: an Institutional Perspective on Norms and Protocols
Promotor: Prof.dr. J.-J. Ch. Meyer (UU)
Co-promotor: Dr. F.Dignum (UU)
Promotie: 04 Juni 2007

2007-11
Natalia Stash (TUE)
Incorporating Cognitive/Learning Styles in a General-Purpose Adaptive Hypermedia System
Promotores: Prof.dr. P.M.E. De Bra (TUE), Prof.dr. L. Hardman (CWI / TUE)
Co-promotor: Dr. A.I. Cristea (University of Warwick, UK)
Promotie: 02 July 2007

2007-12
Marcel van Gerven (RUN)
Bayesian Networks for Clinical Decision Support: A Rational Approach to Dynamic Decision-Making under Uncertainty
Promotor: Prof.dr.ir. Th.P. van der Weide (RUN)
Co-promotor: dr. P.J.F. Lucas (RUN)
Promotie: 05 September 2007

2007-13
Rutger Rienks (UT)
Meetings in Smart Environments; Implications of Progressing Technology
Promotor: Prof.dr.ir. A. Nijholt (UT)
Co-promotor: dr. D. Heylen (UT)
Promotie: 11 July 2007

2007-14
Niek Bergboer (UM)
Context-Based Image Analysis
Promotores: Prof.dr. H.J. van den Herik (UM), Prof.dr. E.O. Postma (UM)
Promotie: 10 Oktober 2007

2007-15
Joyca Lacroix (UM)
NIM: a Situated Computational Memory Model
Promotores: Prof.dr. J.M.J. Murre (UM/UvA), Prof.dr. E.O. Postma (UM), Prof.dr. H.J. van den Herik (UM)
Promotie: 20 September 2007

2007-16
Davide Grossi (UU)
Designing Invisible Handcuffs. Formal investigations in Institutions and Organizations for Multi-agent Systems
Promotor: Prof.dr. J.-J. Ch. Meyer (UU)
Co-promotor: Dr. F.Dignum (UU)
Promotie: 17 September 2007

2007-17
Theodore Charitos (UU)
Reasoning with Dynamic Networks in Practice
Promotor: Prof.dr.ir L.C. van der Gaag (UU)
Promotie: 17 September 2007

2007-18
Bart Orriens (UvT)
On the development an management of adaptive business collaborations
promotor: Prof.dr.ir.m.P. Papazoglou (UvT)
Co-promotor: Dr. J. Yang (UvT)
Promotie: 12 September 2007

2007-19
David Levy (UM)
Intimate relationships with artificial partners
Promotores: Prof.dr. M.J.H. Meijer (UM), Prof.dr. H.J. van den Herik (UM)
Promotie: 11 Oktober 2007

2007-20
Slinger Jansen (UU)
Customer Configuration Updating in a Software Supply Network
Promotores: Prof.dr. S. Brinkkemper (UU), Prof.dr. P. Klint (CWI)
Promotie: 08 Oktober 2007

2007-21
Karianne Vermaas (UU)
Fast diffusion and broadening use: A research on residential adoption and usage of broadband internet in the Netherlands between 2001 and 2005
Promotor: Prof.dr. S. Brinkkemper (UU)
Co-promotor: Dr. L. van de Wijngaert (UU)
Promotie: 26 November 2007

2007-22
Zlatko Zlatev (UT)
Goal-oriented design of value and process models from patterns
Promotor: Prof.dr. R.J. Wieringa (UT)
Promotie: 04 Oktober 2007

2007-23
Peter Barna (TUE)
Specification of Application Logic in Web Information Systems
Promotores: prof.dr. P. De Bra (TUE), prof.dr G.-J. Houben (VUB/TUE)
Promotie: 30 Oktober 2007

2007-24
Georgina Ramírez Camps (CWI)
Structural Features in XML Retrieval
Promotor: Prof.dr. M.L. Kersten (CWI / UVA)
Co-promotor: Dr. A.P. de Vries (CWI/ TUD)
Promotie: 02 November 2007

2007-25
Joost Schalken (VU)
Empirical Investigations in Software Process Improvement
Promotor: Prof.dr. J.C. van Vliet (VU), Prof.dr. S. Brinkkemper (UU)
Promotie: 17 December 2007

2006

2006-01
Samuil Angelov (TUE)
Foundations of B2B Electronic Contracting
Promotores: Prof.dr.ir. P. W.P.J. Grefen (TUE), Prof.dr.ir. J.A. La Poutré (TUE/CWI)
Promotie: 02 February 2006

2006-02
Cristina Chisalita (VU)
Contextual issues in the design and use of information technology in organizations
Promotores: Prof.dr.G. van der Veer (VU), prof.dr. J.C. van Vliet (VU)
Promotie: 14 March 2006

2006-03
Noor Christoph (UVA)
The role of metacognitive skills in learning to solve problems
Promotor: Prof.dr.B.J. Wielinga (UVA)
Co-promotor: Dr. J. Sandberg (UVA)
Promotie: 21 April 2006

2006-04
Marta Sabou (VU)
Building Web Service Ontologies
Promotores: prof.dr. F.A.H. van Harmelen (VU), prof.dr. H. Stuckenschmidt (University of Mannheim, Germany)
Promotie: 27 April 2006

2006-05
Cees Pierik (UU)
Validation Techniques for Object-Oriented Proof Outlines
Promotor: prof.dr. J.-J. Ch. Meyer (UU)
Co-promotor: dr. F.S. de Boer (UU/CWI)
Promotie: 03 May 2006

2006-06
Ziv Baida (VU)
Software-aided Service Bundling - Intelligent Methods & Tools for Graphical Service Modeling
Promotor: prof.dr. J.M. Akkermans (VU)
Co-promotor: dr. J. Gordijn (VU)
Promotie: 29 May 2006

2006-07
Marko Smiljanic (UT)
XML schema matching -- balancing efficiency and effectiveness by means of clustering
Promotor: Prof.dr. W. Jonker (UT and Philips Research)
Co-promotor: dr. M. van Keulen (UT)
Promotie: 21 April 2006

2006-08
Eelco Herder (UT)
Forward, Back and Home Again - Analyzing User Behavior on the Web
Promotor: Prof.dr.ir. A. Nijholt (UT)
Assistent-Promotor: Dr. E.M.A.G. van Dijk (UT)
Promotie: 13 April 2006

2006-09
Mohamed Wahdan (UM)
Automatic Formulation of the Auditor's Opinion
Promotores: Prof.dr. H.J. van den Herik (UM), Prof. E.H.J. Vaassen (UM)
Co-promotores: Prof. H.F. Ali(Rutherford University), Dr. P. Spronck (UM)
Promotie: 29 June 2006

2006-10
Ronny Siebes (VU)
Semantic Routing in Peer-to-Peer Systems
Promotor: Prof.dr. F.A.H. van Harmelen (VU)
Promotie: 09 June 2006

2006-11
Joeri van Ruth (UT)
Flattening Queries over Nested Data Types
Promotor: Prof.dr. P.M.G. Apers (UT)
Promotie: 02 June 2006

2006-12
Bert Bongers (VU)
Interactivation - Towards an e-cology of people, our technological environment, and the arts
Promotores: Prof.dr. G. C. van der Veer (VU), Prof.dr. J. C. van Vliet (VU)
Promotie: 04 July 2006

2006-13
Henk-Jan Lebbink (UU)
Dialogue and Decision Games for Information Exchanging Agents
Promotores: Prof.dr. J.-J. Ch. Meyer (UU), Prof.dr. C.L.M. Witteman (RUN)
Promotie: 18 September 2006

2006-14
Johan Hoorn (VU)
Software Requirements: Update, Upgrade, Redesign - towards a Theory of Requirements Change
Promotores: Prof.dr. G. C. van der Veer (VU), Prof.dr. J. C. van Vliet (VU)
Promotie: 09 October 2006

2006-15
Rainer Malik (UU)
CONAN: Text Mining in the Biomedical Domain
Promotor: Prof.dr. A.P.J.M. Siebes (UU)
Promotie: 11 October 2006

2006-16
Carsten Riggelsen (UU)
Approximation Methods for Efficient Learning of Bayesian Networks
Promotor: Prof.dr. A.P.J.M. Siebes (UU)
Co-promotor: dr. A.J. Feelders (UU)
Promotie: 23 October 2006

2006-17
Stacey Nagata (UU)
User Assistance for Multitasking with Interruptions on a Mobile Device
Promotor: Prof.dr. J. van den Berg (UU), Prof.dr. M. Neerincx (TUD)
Co-promotor: dr. H. van Oostendorp (UU)
Promotie: 12 October 2006

2006-18
Valentin Zhizhkun (UVA)
Graph transformation for Natural Language Processing
Promotor: Prof.dr. M. de Rijke (UVA)
Promotie: 28 November 2006

2006-19
Birna van Riemsdijk (UU)
Cognitive Agent Programming: A Semantic Approach
Promotor: Prof.dr. J.-J. Ch. Meyer (UU)
Co-promotores: dr. F.S. de Boer (CWI / LIACS / UU), dr. M. Dastani (UU)
Promotie: 25 October 2006

2006-20
Marina Velikova (UvT)
Monotone models for prediction in data mining
Promotores: Prof.dr.ir. H.A.M. Daniels (UvT / EUR), Prof.dr. J.P.C. Kleijnen (UvT)
Co-promotores: dr. A.J. Feelders (UU)
Promotie: 13 November 2006

2006-21
Bas van Gils (RUN)
Aptness on the Web
Promotores: Prof.dr. H.A. Proper (RUN), Prof.dr.ir. Th.P. van der Weide (RUN)
Promotie: 08 December 2006

2006-22
Paul de Vrieze (RUN)
Fundaments of Adaptive Personalisation
Promotor: Prof.dr.ir. Th.P. van der Weide (RUN)
Co-promotores: dr. P. van Bommel (RUN)
Promotie: 13 December 2006

2006-23
Ion Juvina (UU)
Development of Cognitive Model for Navigating on the Web
Promotor: Prof.dr. J. van den Berg (UU)
Co-promotores: dr. H. van Oostendorp (UU)
Promotie: 19 October 2006

2006-24
Laura Hollink (VU)
Semantic Annotation for Retrieval of Visual Resources
Promotores: prof dr. A.Th. Schreiber (VU), prof dr. B.J. Wielinga (UVA)
Co-promotor: dr. M. Worring (UVA)
Promotie: 16 November 2006

2006-25
Madalina Drugan (UU)
Conditional log-likelihood MDL and Evolutionary MCMC
Promotor: Prof.dr.ir. L. C. van der Gaag (UU)
Co-promotor: dr.ir. D. Thierens (UU)
Promotie: 27 November 2006

2006-26
Vojkan Mihajlovic (UT)
Score Region Algebra: A Flexible Framework for Structured Information Retrieval
Promotor: Prof.dr. P.M.G. Apers (UT)
Co-promotor: Dr. D. Hiemstra (UT)
Promotie: 07 December 2006

2006-27
Stefano Bocconi (CWI)
Vox Populi: generating video documentaries from semantically annotated media repositories
Promotor: Prof.dr. L. Hardman (CWI/TUE)
Co-promotor: dr. F. Nack (CWI)
Promotie: 30 November 2006

2006-28
Borkur Sigurbjornsson (UVA)
Focused Information Access using XML Element Retrieval
Promotor: Prof.dr. M. de Rijke (UVA)
Co-promotor: dr.ir. J. Kamps (UVA)
Promotie: 14 December 2006

2005

2005-01
Floor Verdenius (UVA)
Methodological Aspects of Designing Induction-Based Applications
Promotor: Prof.dr. B.J. Wielinga (UVA)
Copromotor: dr. M.W. van Someren (UVA)
Promotie: 28 January 2005

2005-02
Erik van der Werf (UM)
AI techniques for the game of Go
Promotor: prof.dr. H.J. van den Herik (UM)
Co-promotor: dr. J.W.H.M. Uiterwijk (UM)
Promotie: 27 January 2005

2005-03
Franc Grootjen (RUN)
A Pragmatic Approach to the Conceptualisation of Language
Promotores: prof.dr.ir. Th. P. van der Weide (RUN), prof. C.H.A. Koster (RUN)
Promotie: 26 January 2005

2005-04
>Nirvana Meratnia (UT)
Towards Database Support for Moving Object data
Promotores: prof.dr. P.M.G. Apers (UT)
Copromotor: Dr.ir. R. A. de By (ITC)
Promotie: 23 February 2005

2005-05
Gabriel Infante-Lopez (UVA)
Two-Level Probabilistic Grammars for Natural Language Parsing
Promotores: prof.dr. M. de Rijke (UVA), prof.dr. R. Scha (UVA)
Promotie: 06 April 2005

2005-06
Pieter Spronck (UM)
Adaptive Game AI
Promotores: prof.dr. H.J. van den Herik (UM), prof.dr. E.O. Postma (UM)
Promotie: 20 May 2005

2005-07
Flavius Frasincar (TUE)
Hypermedia Presentation Generation for Semantic Web Information Systems
Promotores: Prof.dr. P. De Bra (TUE)
Prof.dr.ir. G-J. Houben (VUB/TUE)
Co-promotor: Prof.dr. J. Paredaens (TUE/UA)
Promotie: 20 June 2005

2005-08
Richard Vdovjak (TUE)
A Model-driven Approach for Building Distributed Ontology-based Web Applications
Promotores: Prof.dr. P. De Bra (TUE)
Prof.dr.ir. G-J. Houben (VUB/TUE)
Co-promotor: Prof.dr. J. Paredaens (TUE/UA)
Promotie: 20 June 2005

2005-09
Jeen Broekstra (VU)
Storage, Querying and Inferencing for Semantic Web Languages
Promotor: Prof.dr. F. van Harmelen (VU)
Promotie: 04 July 2005

2005-10
Anders Bouwer (UVA)
Explaining Behaviour: Using Qualitative Simulation in Interactive Learning Environments
Promotores: Prof.dr. B. J. Wielinga (UVA), Prof.dr. J. A. P. J. Breuker (UVA)
Co-promotor: Dr. B. Bredeweg (UvA)
Promotie: 06 July 2005

2005-11
Elth Ogston (VU)
Agent Based Matchmaking and Clustering - A Decentralized Approach to Search
Promotores: prof.dr. F.M.T. Brazier (VU), prof.dr.ir.m.R. van Steen (VU)
Promotie: 05 April 2005

2005-12
Csaba Boer (EUR)
Distributed Simulation in Industry
Promotor: prof.dr. A. de Bruin (EUR)
Prof.dr.ir. A. Verbraeck (Delft University/University of Maryland)
Promotie: 21 Oktober 2005

2005-13
Fred Hamburg (UL)
Een Computermodel voor het Ondersteunen van Euthanasiebeslissingen
Promotores: prof.dr. H.J.van den Herik (UM/UL), prof.dr.H.M.Dupuis (UL), prof.Dr.E.O.Postma (UM)
Promotie: 24 November 2005

2005-14
Borys Omelayenko (VU)
Web-Service configuration on the Semantic Web; Exploring how semantics meets pragmatics
Promotores: prof dr. A.Th. Schreiber (VU), prof dr. J.M. Akkermans (VU)
Promotie: 12 October 2005

2005-15
Tibor Bosse (VU)
Analysis of the Dynamics of Cognitive Processes
Promotores: Prof.dr. J. Treur (VU) , Prof.dr. C.M. Jonker (RUN)
Promotie: 23 November 2005

2005-16
Joris Graaumans (UU)
Usability of XML Query Languages
Promotor: Prof.dr.ir. G.J. van der Steen (UU)
Co-promotor: dr. H. van Oostendorp (UU)
Promotie: 17 October 2005

2005-17
Boris Shishkov (TUD)
Software Specification Based on Re-usable Business Components
Promotor: prof.dr.ir. J.L.G. Dietz (TUD)
Promotie: 26 September 2005

2005-18
Danielle Sent (UU)
Test-selection strategies for probabilistic networks
Promotor: Prof.dr.ir L. C. van der Gaag (UU)
Promotie: 17 October 2005

2005-19
Michel van Dartel (UM)
Situated Representation
Promotores: prof.dr. E.O. Postma (UM), prof.dr. H.J. van den Herik (UM)
Promotie: 1 December 2005

2005-20
Cristina Coteanu (UL)
Cyber Consumer Law, State of the Art and Perspectives
Promotores: prof.dr. H.J. van den Herik (UM), prof.dr. G. Howells (Sheffield)
Promotie: 20 December 2005

2005-21
Wijnand Derks (UT)
Improving Concurrency and Recovery in Database Systems by Exploiting Application Semantics
Promotor: Prof.dr. W. Jonker (UT)
Promotie: 16 November 2005

2004

2004-01
Virginia Dignum (UU)
A Model for Organizational Interaction: Based on Agents, Founded in Logic
Promoteres: prof.dr. J.-J. Ch. Meyer (UU)
Co-promotor: dr. F. Dignum (UU), dr. H.Weigand (UvT)
Promotie: 12 January 2004

2004-02
Lai Xu (UvT)
Monitoring Multi-party Contracts for E-business
Promotor: Prof.dr.ir.m.P. Papazoglou (UvT)
Co-promotor: dr.rer.nat. M.A. Jeusfeld (UvT)
Promotie: 20 February 2004

2004-03
Perry Groot (VU)
A Theoretical and Empirical Analysis of Approximation in Symbolic Problem Solving
Promotor: prof.dr. F.A.H. van Harmelen (VU)
Co-promotor: dr. A.C.M. ten Teije (VU)
Promotie: 23 March 2004

2004-04
Chris van Aart (UVA)
Organizational Principles for Multi-Agent Architectures
Promotores: prof.dr. B.J. Wielinga (UvA), prof.dr.A.Th.Schreiber (VU)
Promotie: 06 April 2004

2004-05
Viara Popova (EUR)
Knowledge discovery and monotonicity
Promotor: prof.dr. A. de Bruin (EUR)
Co-promotor: dr. J.C. Bioch (EUR)
Promotie: 01 April 2004

2004-06
Bart-Jan Hommes (TUD)
The Evaluation of Business Process Modeling Techniques
Promotor: prof.dr.ir. J.L.G. Dietz (TUD)
Promotie: 26 January 2004

2004-07
Elise Boltjes (UM)
Voorbeeldig onderwijs; voorbeeldgestuurd onderwijs, een opstap naar abstract denken, vooral voor meisjes
Promotores: Prof.dr. M.J.H. Meijer (UM), Prof.dr. H.J. van den Herik (UM)
Promotie: 13 May 2004

2004-08
Joop Verbeek (UM)
Politie en de Nieuwe Internationale Informatiemarkt, Grensregionale politiële gegevensuitwisseling en digitale expertise
Promotores: Prof.dr. H.J. van den Herik (UM), Prof.mr. Th.A. de Roos (UL)
Promotie: 14 Oktober 2004

2004-09
Martin Caminada (VU)
For the Sake of the Argument; explorations into argument-based reasoning
Promotor: Prof.dr. R.P. van de Riet (VU)
Co-promotor: dr.mr. H. Prakken (UU)
Promotie: 22 June 2004

2004-10
Suzanne Kabel (UVA)
Knowledge-rich indexing of learning-objects
Promotores: Prof.dr. R. de Hoog (UVA)
Prof.dr. B.J Wielinga (UVA)
Promotie: 20 October 2004

2004-11
Michel Klein (VU)
Change Management for Distributed Ontologies
Promotores: prof dr. A.Th. Schreiber (VU), prof dr. J.M. Akkermans (VU)
Promotie: 14 September 2004

2004-12
The Duy Bui (UT)
Creating emotions and facial expressions for embodied agents
Promotor: Prof.dr.ir. A. Nijholt (UT)
Co-promotor: dr. D.K.J. Heylen (UT)
Promotie: 1 July 2004

2004-13
Wojciech Jamroga (UT)
Using Multiple Models of Reality: On Agents who Know how to Play
Promotores: Prof.dr.ir. A. Nijholt (UT), Prof.dr. W. van der Hoek (University of Liverpool)
Co-promotor: dr. J. Zwiers (UT)
Promotie: 1 July 2004

2004-14
Paul Harrenstein (UU)
Logic in Conflict. Logical Explorations in Strategic Equilibrium
Promotores: Prof.dr. J.-J. Ch. Meyer (UU), Prof.dr. W. van der Hoek (University of Liverpool)
Co-promotor: dr. C. Witteveen (TUD)
Promotie: 6 September 2004

2004-15
Arno Knobbe (UU)
Multi-Relational Data Mining
Promotor: Prof.dr. A.P.J.M. Siebes (UU)
Promotie: 22 November 2004

2004-16
Federico Divina (VU)
Hybrid Genetic Relational Search for Inductive Learning
Promotor: Prof.dr. A.E. Eiben (VU)
Co-promotor: dr. E. Marchiori (VU)
Promotie: 26 October 2004

2004-17
Mark Winands (UM)
Informed Search in Complex Games
Promotor: prof.dr. H.J. van den Herik (UM)
Co-promotor: dr. J.W.H.M. Uiterwijk (UM)
Promotie: 1 December 2004

2004-18
Vania Bessa Machado (UvA)
Supporting the Construction of Qualitative Knowledge Models
Promotor: Prof.dr. B.J. Wielinga (UvA)
Co-promotor: Dr. B. Bredeweg (UvA)
Promotie: 29 November 2004

2004-19
Thijs Westerveld (UT)
Using generative probabilistic models for multimedia retrieval
Promotor: Prof.dr. F.M.G. de Jong (UT)
Co-promotor: Dr. A.P. de Vries (CWI)
Promotie: 25 November 2004

2004-20
Madelon Evers (Nyenrode)
Learning from Design: facilitating multidisciplinary design teams
Promotores: Prof dr W. Baets (Nyenrode), Prof.dr. G. van der Veer (VU)
Co-promotor: dr. Th. Homan (Nyenrode)
Promotie: 10 December 2004

2003

2003-01
Heiner Stuckenschmidt (VU)
Ontology-Based Information Sharing in Weakly Structured Environments
Promoteres: prof.dr. F.A.H. van Harmelen (VU)
Co-Promotor: prof.dr. O. Herzog, (Universitaet Bremen)
Promotie: 23 January 2003

2003-02
Jan Broersen (VU)
Modal Action Logics for Reasoning About Reactive Systems
Promotores: prof.dr. J.-J. Ch. Meyer (UU), prof.dr. R.J. Wieringa (UT), prof.dr. R.P. van de Riet (VU)
Promotie: 25 February 2003

2003-03
Martijn Schuemie (TUD)
Human-Computer Interaction and Presence in Virtual Reality Exposure Therapy
Promotor: Prof.dr.ir.F.W.Jansen
Co-promotor: Dr.ir.C.A.P.G.van der Mast (TUD)
Promotie: 3 maart 2003

2003-04
Milan Petkovic (UT)
Content-Based Video Retrieval Supported by Database Technology
Promotor: Prof.Dr. Willem Jonker (UT)
Promotie: 28 February 2003

2003-05
Jos Lehmann (UVA)
Causation in Artificial Intelligence and Law - A modelling approach
Promotores: Prof.dr. J.A.P.G. Breuker (UvA), Prof.mr. P.W. Brouwer (UvA)
Promotie: 11 March 2003

2003-06
Boris van Schooten (UT)
Development and specification of virtual environments
Promotores: Prof.dr.ir. A. Nijholt
Co-promotor: Dr. E.M.A.G. van Dijk
Promotie: 17 April 2003

2003-07
Machiel Jansen (UvA)
Formal Explorations of Knowledge Intensive Tasks
Promotores: Prof.dr. B.J. Wielinga (UVA)
Co-promotor: Dr. A. Th. Schreiber (UvA).
Promotie: 5 June 2003

2003-08
Yongping Ran (UM)
Repair Based Scheduling
Promotores: Prof.dr. H.J. van den Herik (UM)
Co-promotor: Dr.ir. N. Roos (UM)
Promotie: 18 June 2003

2003-09
Rens Kortmann (UM)
The resolution of visually guided behaviour
Promotores: Prof.dr. H.J. van den Herik (UM), Prof.dr. E.O.Postma (UM)
Promotie: 4 July 2003

2003-10
Andreas Lincke (UvT)
Electronic Business Negotiation: Some experimental studies on the interaction between medium, innovation context and culture
Promotores: Prof.dr. P. Ribbers (UvT), Prof.dr. J. Ulijn (TUE)
Co-promotor: Dr.H.Weigand (UvT)
Promotie: 17 September 2003

2003-11
Simon Keizer (UT)
Reasoning under Uncertainty in Natural Language Dialogue using Bayesian Networks
Promotor: Prof.dr.ir A. Nijholt (UT)
Promotie: 03 September 2003

2003-12
Roeland Ordelman (UT)
Dutch speech recognition in multimedia information retrieval
Promotor: Prof.dr. F.M.G. de Jong (UT)
Promotie: 10 October 2003

2003-13
Jeroen Donkers (UM)
Nosce Hostem - Searching with Opponent Models
Promotor: prof.dr. H.J. van den Herik (UM)
Copromotor: dr. J.W.H.M. Uiterwijk (UM)
Promotie: 05 December 2003

2003-14
Stijn Hoppenbrouwers (KUN)
Freezing Language: Conceptualisation Processes across ICT-Supported Organisations
Promotores: prof.dr. H.A. Proper (KUN), prof.dr. M.P. Papazoglou (UvT)
Copromotor: dr. H. Weigand (UvT)
Promotie: 10 December 2003

2003-15
Mathijs de Weerdt (TUD)
Plan Merging in Multi-Agent Systems
Promotores: Prof.dr.ir. H.J. Sips (TUD), Prof.dr. J-J.Ch. Meyer, (UU)
Co-promotor: Dr. C. Witteveen (TUD)
Promotie: 15 December 2003

2003-16
Menzo Windhouwer (CWI)
Feature Grammar Systems - Incremental Maintenance of Indexes to Digital Media Warehouses
Promotor: Prof.dr. M.Kersten (UVA/CWI)
Promotie: 06 November 2003

2003-17
David Jansen (UT)
Extensions of Statecharts with Probability, Time, and Stochastic Timing
Promotor: Prof.dr. R.J. Wieringa (UT)
Assistent-promotor: dr. J-P Katoen (UT)
Promotie: 29 Oktober 2003

2003-18
Levente Kocsis (UM)
Learning Search Decisions
Promotor: prof.dr. H.J. van den Herik (UM)
Copromotor: dr. J.W.H.M. Uiterwijk (UM)
Promotie: 11 December 2003

2002

2002-01
Nico Lassing (VU)
Architecture-Level Modifiability Analysis
Promotores: prof.dr. J.C. van Vliet (VU)
prof.dr. D.B.B. Rijsenbrij (VU)
Promotie: 12 februari 2002

2002-02
Roelof van Zwol (UT)
Modelling and searching web-based document collections
Promotor: Prof.dr. P.M.G. Apers (UT)
Promotie: 26 april 2002

2002-03
Henk Ernst Blok (UT)
Database Optimization Aspects for Information Retrieval
promotor: Prof.dr. P.M.G. Apers (UT)
co-promotor: Dr. H.M. Blanken (UT)
Promotie: 12 april 2002

2002-04
Juan Roberto Castelo Valdueza (UU)
The Discrete Acyclic Digraph Markov Model in Data Mining
promotor: Prof.dr. A Siebes (UU)
Promotie: 3 june 2002

2002-05
Radu Serban (VU)
The Private Cyberspace Modeling Electronic Environments inhabited by Privacy-concerned Agents
promotor: Prof.dr. R.P.van de Riet
Promotie: 5 november 2002

2002-06
Laurens Mommers (UL)
Applied legal epistemology; Building a knowledge-based ontology of the legal domain
promotor: Prof.dr. H.J. van den Herik (UL / UM)
Promotie: 20 June 2002

2002-07
Peter Boncz (CWI)
Monet: A Next-Generation DBMS Kernel For Query-Intensive Applications
promotor: prof.dr. M.L. Kersten (CWI/UVA))
Promotie: 31 May 2002

2002-08
Jaap Gordijn (VU)
Value Based Requirements Engineering: Exploring Innovative E-Commerce Ideas
promotor: prof.dr. J.M.Akkermans(VU))
Promotie: 25 June 2002

2002-09
Willem-Jan van den Heuvel(KUB)
Integrating Modern Business Applications with Objectified Legacy Systems
promotores: Prof.dr.ir.m.P. Papazoglou (KUB), Prof.dr. P. Ribbers (KUB)
Promotie: 14 juni 2002

2002-10
Brian Sheppard (UM)
Towards Perfect Play of Scrabble
promotores: Prof.dr. H.J. van den Herik (UM), Prof.dr. J. Schaeffer (University of Alberta)
Promotie: 5 July 2002

2002-11
Wouter C.A. Wijngaards (VU)
Agent Based Modelling of Dynamics:
Biological and Organisational
Applications
promotor Prof.dr. J. Treur
co-promotor Dr. C.M. Jonker
Promotie: 14 oktober 2002

2002-12
Albrecht Schmidt (Uva)
Processing XML in Database Systems
promotor: prof.dr. M.L. Kersten
(Uva/CWI)
Promotie: 7 november 2002

2002-13
Hongjing Wu (TUE)
A Reference Architecture for Adaptive Hypermedia Applications
promotores: Prof.dr.ir. P. De Bra (TUE),
Prof.dr.ir. L. Hardman (CWI/TUE)
Promotie: 8 november 2002

2002-14
Wieke de Vries (UU)
Agent Interaction: Abstract Approaches to Modelling, Programming and Verifying Multi-Agent Systems
promotores: Prof.dr. J.-J. Meyer (UU),
Prof.dr. J. Treur ((VU)
co-promotores: dr.F.S. de Boer, dr. W.
van der Hoek (UU), dr. C.M. Jonker (VU)
Promotie: 11 November 2002

2002-15
Rik Eshuis (UT)
Semantics and Verification of UML Activity Diagrams for Workflow Modelling
promotor: Prof.dr. R.J. Wieringa (UT)
Promotie: 25 October 2002

2002-16
Pieter van Langen (VU)
The Anatomy of Design: Foundations, Models and Applications
promotores: prof.dr. F.M.T. Brazier,
prof.dr. J. Treur
Promotie: 22 November 2002

2002-17
Stefan Manegold (UVA)
Understanding, Modeling, and Improving Main-Memory Database Performance
promotor: prof.dr. M. Kersten
(UVA/CWI)
Promotie: 17 December 2002

2001

2001-1
Silja Renooij (UU)
Qualitative Approaches to Quantifying Probabilistic Networks
Promotores: prof.dr. J.-J.Ch. Meyer (UU)
prof.dr.ir. L.C. van der Gaag (UU)
Co-promotor: dr. C.L.M Witteman (UU)
Promotie: 12 maart 2001

2001-2
Koen Hindriks (UU)
Agent Programming Languages: Programming with Mental Models
Promotor: prof.dr. J.-J.Ch. Meyer (UU)
Co-Promotoren: dr. W. van der Hoek
(UU) dr. F.S. de Boer (UU)
Promotie: 5 februari 2001

2001-3
Maarten van Someren (UvA)
Learning as problem solving
Promotor: prof.dr. B.J. Wielinga (UvA)
Promotie: 1 maart 2001

2001-4
Evgueni Smirnov (UM)
Conjunctive and Disjunctive Version Spaces with Instance-Based Boundary Sets
Promotor: Prof.dr. H.J. van den Herik
(UM/RUL)
Promotie: 22 februari 2001

2001-5
Jacco van Ossenbruggen (VU)
Processing Structured Hypermedia: A Matter of Style
Promotor: prof.dr. J.C. van Vliet (VU)
Promotie: 10 april 2001

2001-6
Martijn van Welie (VU)
Task-based User Interface Design
Promotor: prof.dr. J.C. van Vliet (VU)
Co-promotores: dr. G.C. van der Veer (VU) dr. A. Eliens (VU)
Promotie: 17 april 2001

2001-7
Bastiaan Schonhage (VU)
Diva: Architectural Perspectives on Information Visualization
Promotor: prof.dr. J.C. van Vliet (VU)
Co-promotor: dr. A. Eliëns (VU)
Promotie: 8 mei 2001

2001-8
Pascal van Eck (VU)
A Compositional Semantic Structure for Multi-Agent Systems Dynamics.
Promotores: prof.dr. F.M.T. Brazier (VU) prof.dr. J. Treur (VU)
Promotie: 12 juni 2001

2001-9
Pieter Jan 't Hoen (RUL)
Towards Distributed Development of Large Object-Oriented Models, Views of Packages as Classes
Promoter: prof.dr. G. G. Engels
Co-promotoren: dr. L.P.J. Groenewegen dr. P.W.M. Koopman
Promotie: 25 oktober 2001

2001-10
Maarten Sierhuis (UvA)
Modeling and Simulating Work Practice BRAHMS: a multiagent modeling and simulation language for work practice analysis and design
Promotores: Prof.dr. R. de Hoog (UvA) Prof.dr. B. Wielinga (UvA)
Co-promotor: Dr. W.J. Clancey (IHMC/NASA Ames Research Center)
Promotie: 28 september 2001

2001-11
Tom M. van Engers (VUA)
Knowledge Management: The Role of Mental Models in Business Systems Design
Promotor: Prof.dr. J.M. Akkermans (VUA)
Co-promotor: Dr. G.C. van der Veer (VUA)
Promotie: 11 december 2001

2000
2000-1
Frank Niessink (VU)
Perspectives on Improving Software Maintenance
Promotor: prof.dr. J.C. van Vliet (VU)
Promotie: 28 maart 2000

2000-2
Koen Holtman (TUE)
Prototyping of CMS Storage Management
Promotores: prof.dr. P.M.E. De Bra prof.dr. R.H. McClatchey
Co-promotor: dr. P.D.V. van der Stok
Promotie: 29 mei 2000

2000-3
Carolien M.T. Metselaar (UVA)
Sociaal-organisatorische gevolgen van kennistechnologie; een procesbenadering en actorperspectief.
Promotor: Prof.dr. B.J. Wielinga
Co-promotor: Dr. P.A.A. van den Besselaar
Promotie: 20 juni 2000

2000-4
Geert de Haan (VU)
ETAG, A Formal Model of Competence Knowledge for User Interface Design
Promotor: Prof.dr. J.C. van Vliet
Co-promotores: Dr. G.C. van der Veer Dr. M.J. Tauber
Promotie: 10 oktober 2000

2000-5
Ruud van der Pol (UM)
Knowledge-based Query Formulation in Information Retrieval.
Promotores: Prof.dr. H.J. van den Herik (UM/RUL) Prof.dr.ir. J.L.G. Dietz (TUD) Prof.dr.ir. A. Hasman (UM)
Promotie: 14 september 2000

2000-6
Rogier van Eijk (UU)
Programming Languages for Agent Communication
Promotor: prof.dr. John-Jules Ch. Meyer
Co-promotoren: Dr. Frank S. de Boer Dr. Wiebe van der Hoek
Promotie: 18 oktober 2000

2000-7
Niels Peek (UU)
Decision-theoretic Planning of Clinical Patient Management
Promotor: prof.dr. J.-J. Ch. Meyer
Co-promotor: Dr.P.J.F.Lucas
Promotie: 30 oktober 2000

2000-8
Veerle Coupé (EUR)
Sensitivity Analyis of Decision-Theoretic Networks
Promotores: prof.dr.J.D.F. Habbema
prof.dr.ir.L.C van der Gaag
Promotie: 27 september 2000

2000-9
Florian Waas (CWI)
Principles of Probabilistic Query Optimization
Promotor: prof.dr. M.L. Kersten (CWI/UvA)
Promotie: 03 november 2000

2000-10
Niels Nes (CWI)
Image Database Management System Design Considerations, Algorithms and Architecture
Promotor: prof.dr. M.L. Kersten (CWI/UvA)
Promotie: 14 december 2000

2000-11
Jonas Karlsson (CWI)
Scalable Distributed Data Structures for Database Management
Promotor: prof.dr. M.L. Kersten (CWI/UvA)
Promotie: 14 december 2000

1999

99-1
Mark Sloof (VU)
Physiology of Quality Change Modelling; Automated modelling of Quality Change of Agricultural Products
Promotor: prof.dr. J. Treur
Co-promotor: Dr.ir.m. Willems
Promotie: 11 mei 1999

99-2
Rob Potharst (EUR)
Classification using decision trees and neural nets
Promotor: prof.dr. A. de Bruin
Co-promotor: Dr. J.C. Bioch
Promotie: 4 juni 1999

99-3
Don Beal (UM)
The Nature of Minimax Search
Promotor: Prof.dr. H.J.van den Herik
Promotie: 11 juni 1999

99-4
Jacques Penders (UM)
The practical Art of Moving Physical Objects
Promotor: Prof.dr. H.J. van den Herik
Co-promotor: Dr. P.J. Braspenning
Promotie: 11 juni 1999

99-5
Aldo de Moor (KUB)
Empowering Communities: A Method for the Legitimate User-Driven Specification of Network Information Systems
Promotor: Prof.Dr. R.A. Meersman
Co-promotor: Dr. H. Weigand
Promotie: 1 oktober 1999

99-6
Niek J.E. Wijngaards (VU)
Re-design of compositional systems
Promotor: prof.dr. J. Treur
Co-promotor: Dr. F.M.T. Brazier
Promotie: 30 september 1999

99-7
David Spelt (UT)
Verification support for object database design
Promotor: Prof.dr. P.M.G. Apers
Assistent promotor: Dr. H. Balsters
Promotie: 10 september 1999

99-8
Jacques H.J. Lenting (UM)
Informed Gambling: Conception and Analysis of a Multi-Agent Mechanism for Discrete Reallocation.
Promotor: Prof.dr. H.J. van den Herik
Co-promotor: Dr. P.J. Braspenning
Promotie: 3 december 1999

1998

98-1
Johan van den Akker (CWI)
DEGAS - An Active, Temporal Database of Autonomous Objects
promotor: Prof.dr. M.L. Kersten (CWI/UvA)
co-promotor: dr. A.P.J.M. Siebes (CWI)
Promotie: 30 maart 1998

98-2
Floris Wiesman (UM)
Information Retrieval by Graphically Browsing Meta-Information
promotores: Prof.dr.ir. A. Hasman (UM)
Prof.dr. H.J. van den Herik (UM/RUL)
Prof.dr.ir. J.L.G. Dietz (TUD)
Promotie: 7 mei 1998

98-3
Ans Steuten (TUD)
A Contribution to the Linguistic Analysis of Business Conversations within the Language/Action Perspective
promotores: Prof.dr.ir. J.L.G. Dietz (TUD)
prof.dr. P.C. Hengeveld (UvA)
Promotie: 22 juni 1998

98-4
Dennis Breuker (UM)
Memory versus Search in Games
promotor: Prof.dr. H.J. van den Herik (UM/RUL)
Promotie: 16 oktober 1998

98-5
E.W. Oskamp (RUL)
Computerondersteuning bij Straftoemeting
Promotores: Prof.mr. H. Franken Prof.dr. H.J. van den Herik
Promotie: 13 mei 1998