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Believable Unbelievable Internet Based Information

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Abstract

The world around us has changed over recent years with the evolution of cyberspace and the development of the internet. Information in cyberspace is like an endless repository of information of various kinds, where there are no checks on who uploads the information and who downloads the same. Cyberspace thus practices equality in its most pristine form, though at the same time it also has the potential of fomenting communal hatred, inciting violence, and affecting public opinion. The fundamental challenge here is how to establish what information in cyberspace is useful, authentic, and original and what is not. Given the growing popularity of the internet, there is a need to address the regulation of its use so that our society is not divided on social, cultural, and economic lines. This paper discusses the issues concerning openness and authenticity of information found in cyberspace, and its impact on the world around us. It illustrates the point that certain level of control is essential to minimise the detrimental social, cultural, and economic impacts from the multifaceted information available in cyberspace. This may even require re-examination and re-structuring of the traditional institutions that we have come to rely on to resolve the basic issues of society.

Keywords

Information, internet, authenticity.

INTRODUCTION

The world has seen rapid change in recent years as the emergence of technology has provided new and dynamic connections to both people and information. Much of the world has access to vast amounts of information through the virtual world of cyberspace. However, as this technology advances, it intrinsically opens the debate on the authenticity of information which can be accessed through this digital environment. The term "Cyberspace" was originally coined in 1984 by William Gibson in his novel *Neuromancer* (Boehlefeld 1996, p. 141)*,* prior to the availability of the internet to civil society. In his book, he describes a matrix which is 'a graphic representation of data abstracted from the banks of every computer in the human system' (Gibson 1984, p. 51). The term has since been used to describe the communication over computer networks. According to Benedikt (cited in Crampton 2003, p.11) cyberspace is 'globally networked, computer-sustained, computer-accessed, and computer-generated, multidimensional, *artificial* or '*virtual*' reality'. The virtual world of cyberspace is now widely accessible to the majority of the developed world through the use of the World Wide Web. Users are free to search, organise, disseminate and even distort information found via the internet. This freedom has created arguments as to the authenticity of the information we find. Huizer (1996) claims that in the information society, 'we enter an "electronic frontier", where rules of social behaviour are not firmly established and there are no law-making authorities' (Klein 2005, p. 4).

A distinguishing feature of information society is the abundance of information that is changing human activities and human relations. As a global and easily accessible library, internet provides information on almost every aspect of life, for example, news, entertainment, medicine, merchandising, religion, etc. However, abundance of information does not necessarily mean that people become informed. It is important to ascertain right information quickly and easily, in order to distinguish between what information a user needs and what information appears nice to the user, so that the user doesn't sink in electronic junk information. The phenomenon of information in cyberspace can be likened to an almost limitless library where anyone can upload any information for the public to read. To live up to our belief in freedom of expression such openness should be defended as long as the material is not aimed at fomenting communal hatred, inciting violence and affecting public opinion. Lack of control and ease of publication signifies that a fair proportion of the cyber information is unauthentic. Internet is a self-regulated system and inhibits semantic, pragmatic and social barriers, which have the ability to create swings in cognitive styles and beliefs of its users. Utopians argue that the internet offers novel and enhanced modes of information dissemination; while dystopians contend that the information potential of internet can take people away from their communities. Authenticity, reliability and validity of internet based information is therefore, more important than just being able to access information. Internet's self

regulating and open structure makes it an easy platform to publish, access, retrieve, manipulate, and distribute information, and hence not just raises the problem of authenticity of information but also that of the potential beneficial or harmful effects of cyber information on society at large. These problems have increased with the increasing flow of information resources being distributed in the cyberspace without editors and fact checkers (traditional gatekeepers for print publications) monitoring them. By creating a new global space that disregards national borders and that cannot readily be controlled by any existing sovereign, the internet weakens many of the institutions that we have come to rely on to resolve the basic problems of collective action - the selection of means by which individuals coordinate and order their interactions so as to achieve what they believe is a greater good.

This paper discusses the issue of authenticity in cyberspace. It argues that internet is an open medium and in absence of traditional editorial checks the information contained therein has the potential of dividing the society (among others) along economic, cultural, racial, ethnic, religious, and social line. Particularly, this paper suggests that the internet is a different form of media than, for example, the printing press, therefore certain measures need to be taken at the societal and global level to ensure authenticity of information in cyber world. This paper starts with highlighting the role that internet based information plays in shaping and reshaping our social, cultural, economic, and political view of the world. This is followed up by a broader discussion on the evolution of information society and the role of information authenticity in enabling and engaging information society. The paper then discusses the openness of the internet and establishes the case of authenticity of information in cyberspace, and concludes with potential solutions to the regulation of the internet.

CYBERSPACE: THE SOCIAL, ECONOMIC AND POLITICAL IMPACT

It is important to consider the impact that cyberspace, and today's information society, has had on our world. For globalisation and technology has created as many opportunities as it has induced perils (Castells 2005, p.9).

On both a national and global scales, cyberspace has compounded the extremes between our societies. The disparity in information distribution via cyberspace accentuates the existing divides which occur throughout these worlds and creates additional barriers for developing countries to prosper. Whereas, in developed countries, access to information has 'empowered humankind with the ability, incessantly, to feed knowledge back into knowledge, experience into experience' and has enabled 'unprecedented productivity potential' (Castells 1999, p.11). The divide could be so great that 'since both Europe and North America, as technological leaders, established their control over information systems early on, the system first serves their needs and may or may not be useful to those in the Third World (Rodriguez 1994, p. 30). However, it could be argued that the information divide between worlds occurred long before access to the internet. Rodriguez (1994, p. 31) claims that between 1970 and 1989, both the amount of book titles published and percentage of book production was considerably imbalanced between many countries. In 1970, developing countries had only 16% of the world's book titles published and, at the same time, Africa saw a mere 1.5% of worldwide book production. This demonstrates that prior to the internet 'a weak publishing industry, poor bibliographic control and a lack of economic resources lead to the problem of imbalance of information flow between the developed and developing countries' (Rodriquez 1994, p. 30). Another argument by Zinnbauer (2001, p. 50) is that 'the absence of sophisticated internet based technologies does not seem to stand much in the way of maintaining information flows between the community. A digital divide might exist, but this is not automatically a broken link in communication and information flows'.

Yet, it is undeniable that the availability of information and the advancement of technology have, in turn, created thriving economies and increasingly strong competitive markets in the developed world. Globalisation and technology have changed the nature of business where many countries have seen a shift from an industrial economy (product focused) to a knowledge economy (service and expertise focus) (Debowski 2007, p. 3). Globalisation has opened an international market with larger commercial opportunities and greater access to consumers. As a result, organisations have wreaked the benefits of increased pressure to be more creative and innovative through technology (Debowski 2007, p. 4). It has been necessary for organisations to increase their effectiveness and efficiencies by focusing on technology advancement in order to meet the challenges of these growing competitive markets. Additionally, contributing to the developed world's thriving economies are not only large enterprises such as Google, Amazon and eBay, whom have emerged from the advent of the internet, but it has also been 'possible for small businesses to reach national, and even global, markets that were previously inaccessible' (Varian, 2005).

In contrast, the developing world hasn't experienced the same economic impact of advanced technology. Many countries are still labour intensive and lack the internal competition to expand. Lamberton (cited in Rodriguez 1994, p. 29) states that 'most of the nations of Latin America and the Caribbean realise information is 'an asset, a resource and a commodity with social, economic and political value. Yet governments have been slow to realise the importance of establishing an information policy for each nation'. Furthermore, Makau (cited in Rodriguez 1994, p. 29) concluded the introduction of technology should be delayed because 'developing

countries have less resource to sustain the necessary continued growth of technology'. As a result, developing countries have not experienced the economic strengthening of today's knowledge economy.

This raises the question of political impact and political power over today's information society. The advent of cyberspace has created information and communication technologies (ICTs) which has needed political stability to ensure successful and timely implementation. Geldof (2005, p. 3) notes 'ICTs need to be centrally incorporated in the development plans of a country' to enable a constructive technology infrastructure. As with many political agendas, the deployment of communication and technology remain disparate between countries, and certainly between the developed and developing worlds. For much of the developing world, unstable governments who change priorities frequently inhibit the development of a successful information infrastructure (Rodriguez 1994, p. 31). Countries at the forefront of technological advancements, such as the US, therefore have more scope to foresee and obtain the favourable social and economic outcomes of technology advancement. That said, even where ICTs are now embedded in society, there are still government concerned over the lack of control of information access via the internet. In Singapore, for example, the government seeks 'strict broadcasting censorship on the medium' to retain empowerment (Rodan 1998, p. 65). However, it should be evident that 'the internet can enhance the flow and distribution of alternative information, provided the state does not follow a heavy-handed regulatory approach' (Zinnbauer 2001, p. 53). Certainly, in the recent US Demographic Party elections, the internet has been a powerful ally to the Obama presidential campaign. The use of which has allowed him to generate both monetary and voter support by tapping into new technologies that reach wider audiences (Cohen, 2008).

EVOLUTION OF THE INFORMATION SOCIETY

A more advanced information society has emerged from the availability of cyberspace which, in addition to the technology, users have helped to mould. For cyberspace was never intended to reach such wide audiences and allow the freedom we experience today (Davis, 1998; Abbate, 2000; Lessig, 2006). Advances in technology have made information more accessible today than ever before, and has helped to shape our society. Kellerman (2000, p. 539) describes the evolution of this "information society" firstly, as an "information-rich society" in the 1960s-1970s when a 'growing emphasis on information production and use through the development of IT' began. It was during this time that employment in "information-related occupations" grew and started the consumption of information through the introduction of personal computing, producing ever-increasing numbers of academic books and journals. Later, Kellerman (2000, p. 540) describes that an "information-based society" emerged during the 1980s – 1990s seeing growth in both information technology and employment. Three major trends emerged: worldwide access to information (globalisation), adoption of information devices such as personal computers and cellular telephones (specialisation), and the recording and transmission of information (connectivity). These developments have cultivated the "information-dominated society" seen today where information production, transmission and use leads economic and social activity.

One of the vital issues in the information society is that postmodern institutions are being controlled by those laws, regulations, and norms that came into existence as a by product of industrial revolution. With the wide presence of misinformation or spurious information the beliefs in the accepted wisdom of knowledge society, and common economic and cultural spaces, cannot be realized. Instead we face predicaments of ideology, identity, and social integration. Castells (2000, p. 3) argues that 'our societies are increasingly structured around a bipolar opposition between the net and the self'. Turkle (1995) points out that internet works as a postmodern object to think with, which deeply changes the users' belief systems. She argues that although postmodern ideas have been around for a considerable period of time, yet they did not receive enough attention from general public; nevertheless, it is due to the experiences on the internet that these ideas are growing to be realized and becoming pertinent to everyday life.

Literacy in the form of printed word encouraged the development of abstract thinking, concern with literal meanings, and search of universal truths (Olson 1994). This helped shaping up the foundations of a single rational and logical worldview that is modernism. The basic idea of modernism implies that there is always a truth to be revealed. It is concerned with the search of universal principles through linear, hierarchical and logical means. Postmodernism as opposed to modernism advocates the bias inherent in truth due to the context in which meaning is fashioned, and the plurality of perspectives that emerge as a result (Gergen 1991). The postmodern ideas of perspectivism and multiplicity on the internet are not only relevant to the illustration of information or knowledge, but also to the self. All the way through the period of growth in literacy in human civilization, the written word symbolized a trustworthy voice for both literate and illiterate alike. Interpretation as it is understood now, as a subjective course of action, was not what was derived out of text. A manuscript was expected to be having unique connotations as that of the intent of the author (Olson 1994). This uniqueness of understanding was a prerequisite for endowing the text with ultimate authority. It can be argued that just as these ideologies are rooted in the technology of print on paper, new thought patterns are being fashioned in the electronic paradigm in response to a new set of forces acting on it, such as the interactivity of internet. "Life in

cyberspace seems to be shaping up exactly like Thomas Jefferson would have wanted, founded on the primacy of individual liberty and a commitment to pluralism, diversity, and community" (Kapor 1993, p. 53).

AUTHENTICITY OF INFORMATION

With such vast amounts of information flowing within this digital world, the critical question of authenticity is raised. Fundamentally because 'anyone with access to the internet… can have a voice in cyberspace' (Mitra, 2002 p. 27) but also because 'given both the volume of information stored and accessed daily on the internet, under the current structure, it is possible for different, contradictory versions of information to be simultaneously available' (Mathieu & Woodward 1996, p. 94).

According to Webster's dictionary, '*authentic* means "worthy of acceptance or belief as conforming to or based on fact…; conforming to an original so as to reproduce essential features…; made or done the same way as an original"' (MacNiel 2002, p. 52). In the virtual world, Akester (2004, p. 436) believes 'words such as trust, reliability, and truthfulness, which are fundamentally social, apply to documents as much as to people'. Therefore, users of cyberspace should be able to feel confident that the information available to them is authentic as this documentation contributes to the maintaining of our social order. However, it is the distrust of this intangible and ubiquitous world that we need to consider the 'potential for technology to address concerns of authenticity' (Akester 2004, p. 436). However, it is also argued that the advent of cyberspace and the freedom of our information society have not necessarily created *new* concerns over the authenticity of information. According to Akester (2004, p. 436) the authenticity of information works 'has long been a concern, but has not been a major issue in the past, because of the technical barriers to altering works'. Although Dryson (cited in Davis 1998, p. 13) claims that, because the internet allows users to copy content, it 'dramatically changes the economics of content'.

Davis (1998, p. 23) suggests that copyright owners would disagree given technological innovations such as photocopy machines and VCR have been developed in the past and raised similar concerns. Davis notes that when this new technology emerged copyright owners 'feared that their intellectual property would be in jeopardy' as their copyrighted work could be reproduced and sold for profit by others. In a similar technological advancement, it was feared that the video recorder would 'deprive the entertainment industry of revenue'. Although, it was found that 'concerns were allayed by new solutions: either by new technology or by changes in the way business was done'. Yet there remains a belief that the digital environment does further complicate authenticity of information. Akester (2004, p. 436) believes that 'from an intellectual property viewpoint, the discussion on authenticity focuses on the accuracy of reproduction of the presented material as compared with the initial source'. Additionally, that the internet allows for 'works in digital form to be reproduced instantaneously… and increases in the capacity of the internet have made it easier to distribute and retrieve existing works' suggesting that authenticity is more problematic through this medium. Not only does the digital world raise intellectual property concerns but also the issue of inaccuracy of information. MacNeil (2000, p. 53) states that 'an authentic record is one that can be proven to be (i) what it claims to be and (ii) free of falsification or inappropriate modification. Akester (2004, p. 437) agrees that 'inaccuracy may take the shape of false claim of authorship, attribution of structurally altered work, or even distortion of work' and in relation to public interest, it is important that accurate information is recorded by any information medium.

Therefore, due to this concern for authenticity, it is important to note as Ketelaar (1997, p. 337) suggests, just as with news we read or hear, it is with instinct or experience that we decide whether to trust a source of information. It makes quite a difference as to whether we believe the information presented to us; from the news, a journalist or by an official spokesperson and in what context. It is important that users apply this same experience to the information located via cyberspace.

THE OPEN WORLD OF CYBERSPACE

Freedom of Information (FOI) has existed for over 200 years and in essence ensures that society has effective access to information (Banisar 2006, p. 6). Various FOI acts have evolved around the world over this time with most countries acknowledging the right to information access. However, in some instances these rights have been violated through the medium of cyberspace. Banisar (2006, p. 14) notes that article 13 of the American Convention on Human Rights states, 'e*veryone has the right to freedom of thought and expression. This right includes freedom to seek, receive, and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing, in print, in the form of art, or through any other medium of one's choice'.*

This right has been fully adopted across the internet after modifications were implemented since its original creation and intended use in academia. Certainly, as Mitra (2002, p. 29) suggests 'technological savvy and the slick presentation of the "facts" can make any representation appear to be the truth'. Lessig (2006) notes that the original infrastructure didn't allow for the scope of accessibility and freedom we have using the internet today. Everyone can now access the internet and publish anything they like. A phrase coined from a *New Yorker*

cartoon which shows two dogs surfing the internet has one saying to the other 'On the internet, no one knows you're a dog' (Lessig, 2006 p. 35). This illustrates the fact that anonymity can be preserved, and any type of information published because internet protocol doesn't require a user's credentials (Lessig, 2006).

Additionally, given that anyone can now publish information 'we cannot assume that the information available is reliable' Chowdhury (1999, p. 213) and the 'fact that a resource is available on the internet does not provide any guarantee of importance, accuracy, utility or value' (Berghel 1997 p. 20). Chowdhury (1999, p. 213) believes that this is because the information posted on the internet doesn't pass through the traditional editorial checks of printed material. This not only raises the concern of authenticity but also a concern that the internet can be used by groups for the purpose of competition and malicious intent. Schwartau (cited in Sturges 2004, p. 429) suggests that the new 'Information warfare is an electronic conflict in which information is a strategic asset worthy of conquest or destruction'.

In today's information warfare, adversaries are known to 'exploit the tools and techniques of the information revolution' (Crilley 2001, p. 251) which extends the warfare through the internet. This tool has allowed for new and inexpensive mechanisms to be used via the internet such as; electronic mail, which is used to communicate ideologies using fictional usernames; websites, which can be created with little technical knowledge, not only allow extremist groups to propagate their messages but also raise funds for their organisation. These websites link like-minded groups allowing them to congregate and, ultimately, reach larger audiences. This all taking place in a virtual world which is ungoverned, and hard to police given that national laws differ and ownership is often unknown (Crilley 2006, p. 252).

It is unfortunate that, given Freedom of Information acts are implemented as a measure to 'guard against abuses, mis-management and corruption' (Banisar 2006, p. 6), the laws are yet to be converted to protect the virtual world of cyberspace and combat the increasing "information warfare". It is interesting, however, that many nations have begun including information warfare into their military strategies for the purpose of information attacks (Crilley 2006, p. 259). In a more positive light, the internet opens communication on a social level where legitimate individuals can be free to extend their knowledge and experiences. For many, it is a world where they can fully express themselves. Erickson (1996, p. 16) states that 'the World-Wide Web is one of the first venues where individuals can construct portrayals of themselves using information rather than consumer goods as their palette'. Additionally, as Mitra (2002, p. 29) very simply claims an 'optimistic perspective might suggest that voices can be trusted in cyberspace' and if users acknowledge voices with confidence they will get 'the power they seek and the attention that they deserve'.

TODAY'S CYBERSPACE

In recent years, the World-Wide-Web has evolved to include what is now known as Web 2.0. 'Web 2.0 refers generally to web tools that, rather than serve as a forum for authorities to impart information to a passive, receptive audience, actually invite site visitors to comment, collaborate, and edit information' (Oberhelman 2007, p. 5). It 'is more dynamic and interactive than its predecessor, Web 1.0, letting users both access content from a Web site and contribute to it' (Murugesan 2007, p. 34). These evolving applications come in many forms, including:

- *Blogs*: an application where people can create a personal website and publish comments, suggestions, thoughts, and ideas. They are easy to locate on the internet, anyone can post messages, and information published is instantly available (Dell 2008; Murugesan 2007, p. 35).
- *Really Simple Syndication (RSS):* a tool used for 'syndicating content from blogs or other Web pages. RSS…informs users of updates to sites they're interested in' (Murugesan 2007, p. 35).
- *Wikis*: a powerful Web collaborative-authoring system for creating and editing content. It lets anyone add a new article on a subject of interest or revise an existing articles posted by others (Boue 2008, p. 16; Murugesan 2007, p. 35).
- *Social networking*: systems that allow members of a website to learn about other members. Users build personal profiles, enabling others to find them (Dell 2008; Boue 2008, p.16).

This interactive and collaborative evolution of the internet has been very popular. It has allowed "Communities of Practice" to form where 'groups of people with a common interest meet to share their insights and learn from each other' (Debowski 2007, p. 45). There are many different types of "online communities" that exist via the internet which convey different types of 'social organisation, expected benefit, and social norms' (Backstrom et al. 2008, p. 117). In their study, Backstrom et al. found that the online community product, Yahoo! Groups, contained upwards of 100 million distinct users and six million groups. This is indicative of the popularity of social interaction via the internet.

Web 2.0 has also proving to be successful in both the corporate and political world. 'In a recent McKinsey global survey, more than three-fourths of senior executives participating in the study said that Web 2.0 technologies are strategic and that they plan to increase their investments in Web 2.0 applications' (Murugesan

2007, p. 34). In addition, the US elections have seen the Obama presidential campaign strategy utilise both the internet and Web 2.0 with successful results. Cohen (2008) notes that in one month Obama raised $55 million, and $45 million of which was raised over the internet. Cohen also suggests that 'more than any other factor, it is Obama's grasp of the central place of internet-driven social networking that has propelled his campaign for the Democratic nomination'.

However, the nature of Web 2.0 invites a further argument about the authenticity of information published on these tools. Oberhelman (2007, p. 5) argues that 'ten years ago we could easily explain notions of authority and objectivity in evaluating web resources by comparing them to their print counterparts', however, today there is 'a brave new world environment in which anyone can be an authority for 15 minutes simply by hitting the "Edit" or the "Comment" button'.

CAN CYBERSPACE BE REGULATED?

The popularity of the internet appeared to rise from the freedom that the new virtual world proclaimed. Lessig (2006, p. 2-3) notes that the 'claim for cyberspace was not just that government would not regulate cyberspace – it was that government *could not* regulate cyberspace' and that in its infancy people believed cyberspace 'seemed to promise a kind of society that real space would never allow – freedom without anarchy, control without government, consensus without power'. However, this freedom has allowed for both the publication of inaccurate information found throughout the internet and for the onslaught of today's information warfare. Lessig (2006, p. 4) believes that 'we have every reason to believe that cyberspace, left to itself, will not fulfil the promise of freedom'. It seems sensible that global regulation, using the most appropriate body, would be beneficial to the continuation of accurate information flow. Davis (1998, p. 14) acknowledges that 'most countries recognize that their best interests lie in being a part of the global market embodied in the digital information network, but they see that for this network to function smoothly, some global rules must be followed'.

In its current state, the method implemented for regulating information in terms of copyright and intellectual property is based upon the encryption of data. Whereby, two different keys are used by; a source (a private key) and its users (a public key). The source will encrypt a message which can then only be decrypted by the recipient (Akester 2004, p. 437). This method isn't without its flaws, however, and has been deployed with mixed results as decryption software has found its way to the internet for people to download and bypass the use of public keys. For example, Allen (2008) reports that many online music websites are moving away from using digital rights management systems (DRM), which were originally introduced by big record labels to 'stop buyers moving tracks between devices, and making multiple copies', yet provided the highest quality digital recordings. However, user demand for music in different digital formats is reported to be the reason that online music stores now offer DRM-free recording in an attempt to fight against their illegal competitors (Allen, 2008).

Lessig (2006) argues that cyberspace can indeed be regulated, and predicts that the *infrastructure* of cyberspace is where the future of global internet regulation will be defined. Code 'can be understood as programs, devices, and protocols – i.e. the sum total of the software and hardware – that constitutes cyberspace. This code, like physical architecture in real space, sets the terms on which one can enter or exit cyberspace' (Tavani 2006, p. 41). Cyberspace code will allow for 'some behaviour to be impossible and others unavoidable, just as laws may make some behaviour legal and others illegal'. Hence, the future of public policies will be realised in technology design rather than by governmental decisions (Klein 2005, p. 4).

However, currently, the issue of authenticity remains. To potentially mitigate the issue, the introduction of an international regulatory body could address the area of authenticity governance. Given 'libraries and information centres have been engaged in organising information… tracing back to 1875' (Chowdhury 1999, p. 215) it seems sensible to establish a body stemming from this field. The principles and practices of indexing, cataloguing, and bibliographic organisation and control as we know them today are attributed to the extensive research carried out in this industry by information professionals over the years (Chowdhury 1999, p. 215). Applying global information principles to published content on the internet will help to combat the issue of authenticity of information in the virtual world. Supporting this notion is a report by the Public Libraries and Information Society (PLIS) in 1997, looking at the role of the public library in European society in the mid-1990s. It was found that a key role for libraries was to 'give access to public information, offer lifelong learning opportunities, safeguard cultural identity in a changing world and ensuring citizens can cope with information technology' (Hamilton & Ole Pors 2003, p. 408). These roles are key in supporting the sustainable ideal of cyberspace, therefore, a body regulated by the information industry could be a sound solution in its global governance.

ROLE OF INSTITUTIONS

Establishing authenticity of the cyberspace based information is a phenomenon that is too broad to be addressed by any legislation or standard. Cyberspace presents a diverse community, which consists of libertarians, communitarians, communists, socialists, rich, poor, nerds and literati. It is very unlikely that they will reach consensus on any subject. Berman (2000) argues that the power of the actors in the cyberspace to make their own rules, which can be enforced by any Internet user, poses a problem because these entities do not have to enforce any constitutional reforms or legislations, or ethical principles that would allow for all the legitimate interests of stakeholders.

Some scholars have proposed international law, with particular emphasis on political and social aspects, as the appropriate way of governing the Internet (see for example Cochrane (1998)). While, others suggest norms as a substitute to legal legislation, especially considering the fact that the Internet population is not homogenous and many countries lack an established legal system (see for example Lessig 1997)). Johnson and Post (1997) suggest that existing legal frameworks are insufficient to control Internet; therefore, national governments are ill-equipped to handle the issue. They argue that the solution to this problem is creating virtual courts and virtual governments within cyberspace.

Reality as claimed in the cyberspace depends very much on the real physical world for it to be taken seriously and to function properly. The Internet and its apparatus function as a global unit and any national government embarking to control the information on the internet cannot succeed. The solution to the issue of authenticity of information in cyberspace lies in cooperation between communities, nations, commercial and non commercial organization and supranational organizations. This has significant implications for the roles of the state, well established business and non-business organizations as well as socially committed individuals who have a track record of professional achievements.

This paper proposes a solution to this issue as a virtual organization operating on the principles of self organization by means of institutional and temporal cooperation. By endorsing and authenticating information originating out of their national boundaries, governments can offer a stable platform for information exchange to their citizens and economy, and for the development of varied commercial and non commercial contents. However, the state cannot achieve its objective alone; it needs to be supported by society and supranational organizations. A three step approach is proposed. At the first step, all commercial and non-commercial web sites should go through a process of authentication and approval by endorsers, such as, non-governmental organizations, professional bodies, professionals, opinion leaders, and community watchdogs. These organizations and individuals may have their own criteria for endorsement, but the guiding principles should be completeness, accuracy, validity, integrity, originality, meaningfulness, balance, and permissiveness of information. Once authenticated, these websites would become the voice or representative of their respective communities or organizations, thereby ensuring the freedom of speech and equality. At the second stage, the state is in a position to authenticate that the origin of the information on the website is within its geographic boundaries, and represents the opinion of a particular group. When each state does the same, the third step will arrive in the shape of collective organization at a global level that will be based on self-regulation and temporal cooperation. However, this does not mean that once having obtained the authentication these web sites are the free to publish any harmful content. The players at the first two stages also have added responsibility as they have to react to any infringements identified and deal with these according to the laws of the state.

However, this is not the ultimate solution, as there will always be countries, communities and cultures that would be sanctuaries of propaganda, misinformation and bogus information, to serve their vested interests. It is therefore, the recipient of the information who has to make a decision about the authenticity and acceptability of the information. The real role of the state lies in making the public digitally literate and promoting awareness of the possible hazards of misleading information by promoting consciousness about certain issues, for the reason that intellectual contributions do not come from education alone, it requires enlightenment.

CONCLUSION

In many ways, cyberspace has opened a virtual world of opportunity for its users. It is evident that, in today's digital age, we have access to more people and information than ever before. However, as the internet continues to grow, so to does the concern for information authenticity. Some control for legitimate authors is important for our information society as their works are important to our world on a social, economic and political level. Additionally, as Akester (2004, p. 441) describes, this control will consequently provide authors with the incentive to create. In contrast, although the openness of the internet generates such concerns, it is important to realise, as Mitra (2002, p. 29) states, 'we know cyberspace allows us to stay in touch globally while understanding that not all we encounter can be trust; it is also understood that without cyberspace many alternative and marginal voices would remain unheard'. Controlling the flow of information on the internet is extremely difficult if not impossible. Due to the subjective nature of authenticity and the characteristics of

openness and self regulation of the internet, the problems associated with information in information society are enormous. Internet is not only becoming a part of our lives but is also fostering new behaviors. Perhaps the most important construct that derives information dissemination from the internet is the perceived attributes of the internet, i.e., the user's attitudes, beliefs, and information received by the user from his/her social environment about the internet. There is much information available in electronic form that we rely upon and believe it to be what it appears to be, for example, internet based news sources, business and academic documents, and images, most of which has its own intention and purpose. Internet on one hand fosters critical thinking, and on the other could also prove to be tool for cultural and cognitive invasion. Pluralism of information is leading us to suspect that what we see is not what actually is. Authenticity of information on the internet is not an easy issue to handle. We, the creators and users of information, have to become digitally literate. Specific communities, such as, government, NGOs, scholars, publishers, and the community at large have to decide what information they need to place high trust in and to develop protocols for ensuring the integrity of that information, so that its authenticity could be maintained. National governments can draw upon the base thus provided to act as a gatekeeper, while ensuring the freedom of expression and speech. Once each government has a mechanism in place that endorses information originating from within its boundaries, the issue authenticity of information at global level may become addressable. However, truth value of most information will always be subjective to user's judgment. These judgments have never been guaranteed in the off line world and that will certainly not change in the electronic environment.

REFERENCES

Abbate, J 2000, 'Inventing the internet', *getAbstract compressed knowledge*, 2002, pp. 1-5.

Akester, P 2004, 'Authorship and authenticity in cyberspace', *Computer Law & Security Report*, vol. 20, no. 6, pp. 436-444.

Allen, K 2008, *Napster joins move away from copy protection*, The Guardian, viewed 16th June 2008, <http://www.guardian.co.uk/media/2008/jan/08/digitalmedia.news>.

Backstrom, L, Kumar, R, Marlow, C, Novak, J, Tomkins, A 2008, 'Preferential Behavior in Online Groups', *Web Search and Web Data Mining*, pp. 117-128.

Banisar, D 2006, 'Freedom of Information Around the World', *in A Global Survey of Access to Government Information Laws*, Privacy International.

Berghel, H 1997, 'Cyberspace 2000: Dealing with Information Overload', *Communications of the ACM*, vol. 40, no. 2, pp. 19-24.

Berman, PS 2000, 'Cyberspace and the State Action Debate: The Cultural Value of Applying Constitutional Norms to Private Regulation', *University of Colorado Law Review*, Volume 7, Issue 4, pp. 1263-1310.

Boehlefeld, SP 1996, 'Doing the Right Thing: Ethical Cyberspace Research', *The Information Society*, vol. 12, no. 2, pp. 141-152.

Boue, G 2008, 'Don't say Web 2.0, say Intranet 2.0', *KM Review*, vol.11, no. 1, pp. 14-17.

Castells, M 1999, 'Information Technology, Globalization and Social Development', *United Nations Research Institute for Social Development*, discussion paper, no. 114.

Castells M, 2000, *"The Rise of the Network Society"*, Cambridge, MA: Blackwell Publishers.

Castells, M 2005, 'Global Governance and Global Politics', Ithiel de Sola Pool Lecture, *American Political Science Association*, vol. 38, no. 1, pp. 9-16.

Chowdhury, GG 1999, 'The internet and Information Retrieval Research: A Brief Review', *Journal of Documentation*, vol. 55, no. 2, pp. 209-225.

Cochrane, T 1998, 'The Law of Nations in Cyberspace: Fashioning a Cause of Action for the Suppression of Human Rights Reports on the Internet', *Michigan Telecommunications and Technology Law Review*, Volume 4, pp. 158-193

Cohen, R 2008, *The Obama Connection*, The New York Times, viewed 7th June 2008, <http://www.nytimes.com/2008/05/26/opinion/26cohen.html?_r=1&oref=slogin>.

Crampton, JW 2003, *The Political Mapping of Cyberspace*, The University of Chicago Press, Chicago.

Crilley, K 2001, 'Information warfare: new battlefields, Terrorists, propaganda and the internet', *Aslib Proceedings*, vo. 53, no. 7, pp. 250-264.

Daly, JA 2000, 'Studying the impacts of the internet without assuming technological

Determinism', *Aslib Proceedings,* vol. 52, no. 8, pp. 285-300.

Davis, JC 1998, 'Protecting Intellectual Property in Cyberspace', *IEEE Technology and Society Magazine*, vol. 17, no. 2, pp. 12-25.

Debowski, S 2006, *Knowledge Management*, Wiley, Milton, Qld.

Dell, C 2008, 'Web 2.0 and Knowledge Management – Themes from an APQC Consortium Benchmarking Study', APQC.

Erickson, T 1996, 'The World-Wide Web as Social Hypertext', *Communications of the ACM*, vol. 99, no.1, pp. 15-17.

Geldof, M 2005, 'Becoming an information society: The role of new information technologies in development', *in Wilton Park Conference 798*, Wilton Park Paper, pp. 1-9.

Gibson, W 1984, *Neuromancer*, Ace Books, New York, NY.

Gergen, K J, 1991, *"The Saturated Self: Dilemmas of Identity in Contemporary Life"*, New York: Basic Books.

Hamilton, S & Ole Pors N 2003, 'Freedom of access to information and freedom of expression: the internet as a tool for global social inclusion', *Library Management*, vol. 24, no. 8/9, pp. 407-416.

Johnson, DR, and Post, D 1997, 'And How Shall the Net Be Governed? A Meditation on the Relative Virtues of Decentralized, Emergent Law', in *Coordinating the Internet*, edited by Kahin B., and Keller J. H., (eds.), Cambridge Massachusetts: MIT Press, pp. 62

Kapor M, 1993, "Where is the Digital Highway Really Heading?", *Wired*, July/August, p. 53-59.

Kellerman, A 2000, 'phases in the rise of the information society', *The journal of policy, regulation and strategy for telecommunications information and media*, vol. 2, no. 6, pp. 537-541.

Ketelaar, E 1997, 'Can We Trust Information', *International Information & Library Review*, vol. 29, no. 3-4, pp. 333-338.

Klein, H 2005, 'The Right to Political Participation and the Information Society', *in Global Democracy Conference*, Georgia Institute of Technology, Montreal, pp. 1-7.

Lessig, L 2006, *Code 2.0*, Basic Books, New York, NY.

Lessig, L 1997, 'The Constitution of Code: Limitations on Choice-Based Critiques of Cyberspace Regulation', *Journal of Communications Law and Policy*, Summer, Volume 5, pp. 181-191.

MacNeil, H 2000, 'Providing Grounds for Trust: Developing Conceptual Requirements for the Long-Term Preservation of Authentic Electronic Records', *Archivaria*, vol. 50, p. 52-78.

Mathieu, RG & Woodward, RL 1996, 'Data integrity and the internet: implications for management', *internet Research: Electronic Networking Applications and Policy*, vol. 6, no. 1, pp. 92-96.

Mitra, A 2002, 'Trust, Authenticity, and Discursive Power in Cyberspace', *Communications of the ACM*, vol. 45, no. 3, pp. 27-29.

Murugesan, S 2007, 'Understanding Web 2.0', *IT Pro*, vol. 9, no. 4 pp. 34-41.

Oberhelman, DD 2007, 'Coming to terms with Web 2.0', *Reference Reviews*, vol. 21, no.7, pp. 5-6.

Olson, D R, 1994, *"The World on Paper: The Conceptual and Cognitive Implications of Writing and Reading"*, New York: Cambridge University Press.

Rodan, G 1998, 'The internet and Political Control in Singapore', *Political Science Quarterly*, vol. 113, no. 1, pp. 63-89.

Rodriguez, K 1994, 'Barriers to information technology in Latin America and the Caribbean: some options', *The Electronic Library*, vol.12, no. 1, pp. 29-35.

Sturges, P 2004, 'Information in the national liberation struggle: developing a model', *Journal of Documentation*, vol. 60, no. 4, pp. 428-448.

Tavani, HT 2006, 'Regulating cyberspace: concepts and controversies', *Library Hi Tech*, vol. 25, no. 1, pp. 37-46.

Varian, HR 2005, *Economic Scene: Closing the gap via technology*, International Herald Tribune, viewed 31st June 2008, <http://www.iht.com/articles/2005/08/25/business/scene.php>.

Zakon, RH 2006, *Hobbes' internet Timeline v8.2*, viewed 31st June 2008, <http://www.zakon.org/robert/internet/timeline/>.

Zinnbauer, D 2001, 'internet, civil society and global governance: the neglected political dimension of the digital divide', *Information & Security*, vol. 7, pp. 45-64.

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