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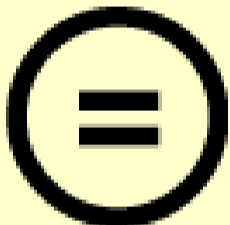
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# **Globalisation, ICTs and National Identity: The Case of Malaysia**

by

**Abd Rasid Abd Rahman**

A Doctoral Thesis  
submitted in partial fulfilment of the requirements  
for the award of  
Doctor of Philosophy of Loughborough University

June, 2005

Supervisor: Dr John Downey  
Department of Social Sciences

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# **Keywords**

By

**Abd Rasid Abd Rahman  
Department of Social Sciences**

- 1. Democracy**
- 2. Digital Divide**
- 3. Globalisation**
- 4. ICTs (Information Communication Technologies)**
- 5. Inequality**
- 6. Malaysia**
- 7. National Identity**
- 8. Neo-colonialism**

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## Acknowledgements

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In the completion of this study, I am grateful to my supervisor, Dr. John Downey, first of all for allowing me to embark on this task and who have been a teacher and guide. I have gained much intellectual insight above and beyond the scope of this study.

I also wish to record my sincere thanks to the staff of the Social Sciences Department, Loughborough University – Deirdre Lombard, Ann Smith, Pete Beaumont for the support and various assistance they had provided me with.

At the same time, a small group of friends and collaborators have directly or indirectly given important support toward the completion of this study, especially in the form, of ongoing speculative interactions. To this I am grateful to Mohd Yusof Saib, Ahmad Murad Merican, Ahmad Majdi Abdul Rani, Adnan Hashim, Ismail Nasiruddin Ahmad, Noor Azizi Ismail, Siti Hawa Mahadi and Mohamad Zainudi Mat Taib.

I would like to thank University Technology MARA particularly the Vice-Chancellor and the Faculty of Communication and Media Studies for giving me the opportunity to further my studies and the financial support during this project.

I also want to thank my family, the main source of my strength. To my three children, Afiq Danial, Akmal Danial and Puteri Irdina Safiah for their unconditional precious love, warm encouragement and tremendous support. They have grown up together with the process of completing this study and along the way, have acquired a small vocabulary of understanding the enterprise. I am also indebted and would like to express my gratitude to my parents, Haji Abd Rahman and Hajjah Rokiah, my parent in-law and all my three sisters for their emotional support. And finally, to my wife, Zuriana, for her support, love, intelligence and patience, who together live with this thesis in often not so easy circumstances, my heartfelt thanks.

**Globalisation, ICTs and National Identity:  
*The Case of Malaysia***

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For the past thirty years the Malaysian economy has been said to contribute well to the progress of the nations. However, the intensification of global economic activity and the extensive use of ICTs in recent years are challenging government's effort to further develop Malaysian society. The competition posed by the low wage economies such as China and Vietnam have made the government realise the importance of engaging in high-skill and high technology industries. It is hoped this will be the basis of attracting more FDI (foreign direct investment) in order to help the country to compete in a globalised world. Using Vision 2020 as its targeted vision, the government has decided to engage in the use of ICTs and introduce many policies pertaining to it. This thesis is mainly concerned with the study of ICT policy in Malaysia and its consequences for both the economy and society.

The investigation focuses on the three dimensions: 'ICTs and economic growth', 'ICTs and inequality' and 'the element of neo-colonialism'. Two approaches are used to achieve the objectives of the study. They are secondary analysis and semi-structured interviews. This thesis is largely dependent on library research and secondary sources such as government official policies and data. Semi-structured interviews are used as a means to support or test some of the arguments and evidence collected throughout the analysis and discussion. For the interviews, three groups of people were identified: policy developers, implementers and evaluators. These people are those involved directly and indirectly with ICT policy establishment and implementation.

The findings show that policy pertaining to ICTs in Malaysia contributes to economic growth, but the consequences of this have resulted in greater division within society. Although some of the divisions such as gender and ethnicity are narrowing down, the gap in important areas such as regions and class differences, is becoming wider. The widespread use of ICTs might contribute to the further establishment of democracy in Malaysia, but the increasing number of foreign entities such as FDI and foreign workers, cultural hybridisation and to some extent cultural domination are contributing to neo-colonialism in Malaysia. This has obvious consequences for the government's effort to create a Malaysian national identity. An important finding of this work is that there are contradictions within ICT policy between the effort to develop the economy and society.

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## *List of Abbreviations*

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APEC	Asia Pacific Economy Conference
ASEAN	Association of Southeast Asian Nations
ASP	Access Service Provider
BCIC	Bumiputera Commercial and Industrial Community
CMD	Communication and Multimedia Division
DAGS	Demonstrator Application Grant Scheme
DAP	Democratic Action Party
DBP	Dewan Bahasa dan Pustaka
DII	Domestic Investment Initiatives
ELX	Electronic Labour Exchange
EPF	Employee Provident Fund
EPU	Economic Planning Unit
EU	European Union
FDI	Foreign Direct Investment
FMS	Federated Malay States
FOMCA	Federation of Malaysian Consumer Association
GCI	Growth Competitiveness Index
GDP	Gross Domestic Product
GERAKAN	'People's Movement Party'
GEO	Generic Office Environment
GNP	Gross National Product
GSP	Generalised System of Preferences
HRDF	Human Resource Development Fund
HRMIS	Human Resource Management Information System
ICTs	Information Communication Technologies
ISP	Internet Service Provider
IT	Information Technology
ITA	Investment Tax Allowance
JETRO	Japan External Trade Organisation
KLIA	Kuala Lumpur International Airport
KWX	Knowledge Workers Exchange
MAVCAP	Malaysian Venture Capital Management
MCA	Malaysian Chinese Association
MDC	Multimedia Development Corporation
MEASAT	Malaysian East Asia Satellite System
MECM	Ministry of Energy, Communication and Multimedia
MESDAQ	Malaysian Exchange of Securities Dealing and Automated Quotations
MGS	MSC Grant Scheme
MIC	Malaysian Indian Congress
MIDA	Malaysian Industrial Development Authority
MIDF	Malaysian Industrial Development Finance
MIMOS	Malaysian Institute of Microelectronic System
MIU	Mobile Internet Unit



MSC	Multimedia Super Corridor
NDP	National Development Policy
NEP	New Economic Policy
NGOs	Non-Governmental Organisations
NICs	Newly Industrialised Countries
NITA	National Information Technology Agenda
NITC	National Information Technology Council
NTIA	National Telecommunication & Information Administration
NTP	New Telecommunication Policy
NVP	New Vision Policy
OECD	Organisation for Economic Corporation and Development
OPP	Outline Perspective Plan
PAS	Pan-Islamic Party
PIKOM	Persatuan Industri Komputer Malaysia (Malaysia Computer Industry Association)
PMS	Procurement and Project Monitoring System
R&D	Research and Development
ROC	Registrar Of Companies
SARS	Severe Acute Respiratory Syndrome
SMEs	Small and Medium Enterprises
SPR	Suruhanjaya Pilihanraya (Election Commission)
S&T	Science and Technology
STIC	Strategic Thrusts Implementations Committee
STMB	Syarikat Telekom Malaysia Berhad
TNB	Tenaga Nasional Berhad
TNCs	Transnational Corporations
UMNO	United Malays National Organisation
UNDP	United Nation Development Programmes
USO	Universal Service Obligations
UMS	Unfederated Malay States
VC	Venture Capital
WAP	Wireless Application Protocol
WEF	World Economic Forum
WWW	World Wide Web

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## *Malaysian Glossary*

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- Bangsa Malaysia** - Malaysian Nation
- Bumiputera** - A term to describe the indigenous people such as Malay, Iban, Dayak, Kadazan etc.
- Bahasa Malaysia** - Malaysian National language
- Barisan Nasional (BN)** - National Front – the ruling party in Malaysia. An alliance of UMNO, MCA and MIC. BN was Established in 1976 and has been a ruling party Today.
- Rukun Negera** - Currently known as Malaysian Ideology and was Introduced after the ethnic unrest of May 13, 1969. The adoption of these five principles as pillars of the national philosophy and outlook represents an attempt to base national unity on certain concepts, which are universal and acceptable to all citizens, regardless of ethnic origin or religious affiliation. The declaration of the five Principles is formulated as follows:  
OUR NATION, MALAYSIA is dedicated; TO ACHIEVING a greater unity for all her peoples; TO MAINTAINING a democratic way of life; TO CREATING a just society in which the wealth of the nation shall be equitably distributed; TO ENSURE a traditions; and TO BUILDING a progressive society which shall be oriented to modern science and technology. The five principles are; 1) Belief in God 2)Loyalty to King and Country 3) The Supremacy of the Constitution 4) The Rule of Law 5) Mutual Respect and Good Social Behaviour
- Reformasi** - Comes from English word ‘Reformation’. A Term coined for ‘resurgence’ used by Anwar Ibrahim, a former Deputy Prime Minister
- Silat** - A traditional Malay martial art

# Chapter One

## Introduction

The notion of Malaysia becoming a developed country by the year 2020 is very much related to recent changes in policies pertaining to information and communication technologies (ICTs). It is hoped that by taking ICTs as its new engine of growth, both the economy and society will continue to prosper in the 21st century and beyond. As Malaysia's economy progresses, the impact of these policies with regard to issues relating to inequality within the society has aggressively challenged the country's efforts to harmonise its economy and social relationships. In order to investigate how successful the policy would be, it is pertinent to discover the relationship between the development of ICT policy and its consequences for Malaysia. Other key issues are whether policy concerning ICTs can contribute further to Malaysian economic growth and if so, what the implications and consequences of this policy are for both the economy and the social structure in Malaysia. For Malaysia, the failure on addressing the issues would not only impact on the creation of its own national identity but would also call into question the role of its ICT policy in satisfying the needs of both the economy and the country's social cohesion.

It is believed that the increasing liberalisation, deregulation and privatisation, the recasting of labour and capital and the changes to the occupational structure are due to the intensification of the global economy and capitalism. The ability of large transnational corporations to transcend national boundaries whilst demanding more profit is an important reason for such competition. Many believe that this is being pushed by the development and improvement in most types of technology especially in communication technology (Harvey, 1989; Giddens, 1991; Castells, 2000a).

Commonly known as ICTs, the advancement of this new technology tends to break down traditional boundaries that create global competition between markets and other locations, including those for production and distributive activities. As such, today's economy has been generally characterized as being more informative, more competitive, more dynamic, more integrated and more global. Consequently, it is believed that this 'new economy' postulates 'new rules' and challenges for all economies, including Malaysia (Yu, 2001:79).

In order to be in the forefront in this global marketplace, the people and the nation need to adjust accordingly to survive in the global competitive economy. This is because the focus on creativity, generation of ideas and knowledge are the avenues for wealth-creation in today's environment (Castells, 2000b:376). Businesses need appropriate strategies in order to maintain an advantage over their competitors. To the nation state and the people, the borderless nature of the present economy is presented as both a threat and an opportunity even though ICTs in many cases introduce new currency to venture into and compete within new industries in the globalised world.

However, the advent of ICTs and the current phase of the global economy present both problems and challenges. The challenges include those of maintaining knowledge workers and distributing knowledge products as well as policies and regulatory issues. Most importantly, the question of growing inequality suggests that a "digital divide" based on regional, ethnic and class divisions is becoming wider and more prominent in many countries around the globe challenging the notions on which the present social relationships are based. For a developing country like Malaysia, the government must consider whether its decision to embark on increasing role of ICTs in the economy will also create even greater divisions in society.

For Malaysia, much has happened in its economy since its independence in 1957. As Malaysia enters the 21st century, the economy once again makes another shift. While maintaining the importance of manufacturing industry, there will also be a great shift towards developing the high levels of manufacturing technology and the highly skilled workforce, which the new industries will need. It is anticipated that the focus

will be on the employment sector through the creation of information workers and skilled manpower to gain higher productivity and output for the overall economy.

For Malaysia, its increasing integration into the world economy has made the government realise the importance of more liberal policies in trade and foreign investment in order to encourage higher productivity and greater returns. According to the World Bank, Malaysia was one of the top five recipients of Foreign Direct Investment (FDI) in the developing world especially in the middle 1990s. However, the action of opening the economy to inter-country trade and commerce results in other consequences. It is likely that the government has less control of the domestic economy, especially over price levels, due to the fluctuations in the international market and higher competition from low wage countries such as China and Vietnam.

Realising the possibilities and potentials of a remarkable growth in high technology and high skill industries that ICTs brought along with them, Malaysia can no longer enjoy its comparative advantage based on its supply of cheap labour. Thus, Malaysia has taken the necessary measures to transform its economy to the fullest extent to maintain its competitiveness in a global market as a result of the innovations in ICTs. It is anticipated that the opportunities in ICTs will be the backbone for Malaysia's next engine of growth (Mahathir, 1998). Armed with a prime directive to transform the economy successfully by the year 2020, officially known as Vision 2020, the Multimedia Super Corridor (MSC) that was introduced in the mid 1990s has been used as a test-bed to reinvent important sectors of the economy. It is hoped that the seven MSC flagships namely electronic government, smart schools, telemedicine, Research and Development (R&D) clusters, the national multi-purpose card, the borderless marketing centre and the worldwide manufacturing hub will enable the country to reap great benefits to help its economy and stay abreast of the developments in the global economy. It is also hoped that the recent changes in the economy will perpetuate the flow of FDI into the country, hence contributing further to the progress of the nation. But still the question is, could it be that the continuous dependence on international private investors along with their capitalist nature further strengthens Malaysia's neo-colonialist elements?

In many instances, the involvement in ICT itself is a complicated task. Not only total transformation is needed in terms of finance and infrastructure but also the change in mind and attitude within society is also another important prerequisite in order to achieve the objectives. Moreover, barriers of language and culture, the realignment of the workforce and education system as well as the gulf between information-haves and information-have-nots will be another set of obstacles. Thus, the successful introduction of ICTs depends very much on the ability of the nation to draw up a proper set of policies in order to adjust and adapt to the changes required.

Malaysian society is considered to be a multi-ethnic, multi-lingual, multi-religious and multi-cultural entity. The three main ethnic groups; Malay, Chinese and Indian, will put Malaysia to be in a disadvantageous position. This is due to the fact that, among many major obstacles that the country is facing, the most important effort is to unite its people to make up one *Bangsa Malaysia* (Malaysian society). The issues such as economic imbalances among the major ethnic groupings or even the differences in language and culture that spurred the bloody racial riots in 1969 have been long standing and widely debated. Eventually the situation became calmer, especially after the introduction of five principles as pillars of the national philosophy known as the *Rukun Negara* (a Malaysian ideology that represents an attempt to base national unity which are universal and acceptable to all citizens, regardless of ethnic origin or religious belief). As the country places greater emphasis on ICTs, the issues of satisfying both the economy and social solidarity are once again becoming central concerns.

As mentioned above, because of the multi-ethnic groupings in the Malaysian society, the country is facing many major obstacles. On one hand, the government wants to be in the forefront of its economic development and on the other it wants prosperity and unity among the people in terms of language and culture. This is raising many questions. It is becoming more important that the efforts to move towards developed country status spelled out in Vision 2020 should be accompanied by its own sense of modernity and the establishment of a national identity. It was under this related policy that the government stressed that the means of becoming a developed country should also be accompanied by the establishment of a moral and ethical society, supporting strong cultural and religious beliefs and based on a strong and resilient

family system (Malaysia, 1991:2-4). Modernisation for Malaysia is not Westernisation or Japanisation or Easternisation or Asianisation. 'The land that must be fully developed by 2020 must be uniquely modern, i.e. in keeping with the progress that the world has made in every field by then and yet remain uniquely Malaysia' (Mahathir, 2000:158). In an effort to meet the challenges, the government has drawn up and implemented many related policies to support both economic and social solidarity. But the ways in which one can satisfy or contradict the other are central to the issues, especially when ICTs are playing a major role in achieving the goals.

The consequences that Malaysia will be facing in satisfying its aims for both the economy and the unity of her people created by ICTs and related policies appear to be elusive. Recent changes in the attitude and policies toward ICTs and globalisation have created many contradictions and costs. The short-term consequences are mixed. The long-term consequences, however, are unclear. Thorough research is urgently needed in order to clarify what advantages and disadvantages Malaysia will experience. With the ICT industry growing at an unprecedented rate, it is likely that the interconnected world shaped by ICTs will appear to be less predictable than was previously thought.

### **1.1 Aims and Objectives**

There are a variety of different aspects and approaches in studying the development of ICTs and its consequences for society. One very topical issue, which is important to developing countries such as Malaysia, has informed this research: "Globalisation, ICTs and National Identity: The Case of Malaysia". This issue is the intensification of global economy, which is believed to be pushed by the development in ICTs. It has consistently dominated recent seminars, both business and academic. In Malaysia, for instance, the policies aimed at complementing both social and economic progress with regard to ICTs are becoming more critical than ever, especially when it comes to understanding their fullest effects. Without proper understanding of their consequences, the goal for Malaysia to achieve its developed status country by 2020 will be called into question. The fact is, to improve the leverage of ICTs is not a

straightforward task, especially when it comes to an issue concerning the division in society caused by digital technology. The outcome noted in many developed countries has been one of growing division based on class, ethnicity and region (see for example Castells, 2001; Norris, 2001). It is obvious that Malaysia also is in danger of undergoing the same set of experiences.

In order to examine whether the policy is being successful or not, this thesis focuses particularly on the ICT policy. For this, the purpose of this research is to study the consequences of the policy and the possible policy contradictions with regard to the implementation of ICTs in Malaysia. This thesis aims to investigate three dimensions of the relationship between ICTs and their consequences in Malaysia namely: 1. ICTs and Economic Growth, 2. ICTs and Inequality. 3. The elements of neo-colonialism (for the discussion on neo-colonialism, it will be set within the broader context of this thesis).

In order to achieve this, a comprehensive investigation of the policy development concerning ICTs in Malaysia from the introduction of the New Economic Policy (NEP) to Vision 2020 will be made. In addition, the insight from three groups of people involved directly and indirectly in the ICT development in the country, namely the policy developers, implementers and evaluators will also be examined. The purpose of including this is to identify the relationship between the existing policy decisions and policies aimed at achieving the goals. With the aim of researching the implications of ICT policy for both the economy and society, the objectives of this research are as follows:

1. To examine the establishment of ICT policy in Malaysia, its contributions and implications towards economic and social progress in the country.
2. To investigate the consequences of this ICT policy for the notion of inequality in terms of infrastructure, gender, class, ethnicity and the development of democracy in Malaysia as a result of progressive growth in ICTs.
3. To examine the neo-colonialist relationship between Malaysia and other countries that may be a consequence of ICT policy.



## 1.2 Methodological Approach

This study concerned with the development and implementation of ICT policy by taking Malaysia as a specific case study. Rist (1982) argued that case studies allow for identification of behaviours and other variables that were not expected to be related to the social problem. Moreover they provide for a more in-depth analysis of superficial statistical portrayals of populations. Especially when the study is related to research into policy matters, the nature of the case study itself will help to 'promote examination of the process by which an intervention or policy action has been implemented'... and be ... 'particularly useful for developing recommendations concerning the future implementation of policy options' (Majchrzak, 1984:63).

This study will be very much dependent on library research, analysing government official policy (which is also known as secondary analysis) and semi-structured interviews; activities that have been identified as being best able to fulfil the defined objectives. Both secondary analysis and interviews offer a unique element in analysing the topic being investigated. Secondary analysis can provide room to further understand the explanatory elements through existing databases. Meanwhile, to investigate the implementation and consequences of policy and the ICT industry, a semi-structured interview with those who are involved directly and indirectly in ICT development in the country was conducted.

### 1.2.1 Secondary Analysis

The secondary analysis method refers to the analysis and reanalysis of existing databases that have already been gathered or compiled in some way. Hakim (1982:1) defines secondary analysis as 'any further analysis of an existing dataset which presents interpretations, conclusions or knowledge additional to, or different from those presented in the first report on the inquiry as a whole and its main results'.

The term for secondary analysis is often used in connection with survey data. It ranges from a set of data produced by the population census, through microdata represented by sample surveys, to datasets derived from administrative and public records. Relating to Hakim and the set of data that will be used in the secondary

analysis, the term itself implies a re-working of data that has already been analysed. Under such circumstances, some may argue that a contribution towards the originality of the work and new findings will be less likely. This is because the survey sets itself out to be descriptive rather than explanatory. However, Angela Dale et.al (1988:88) claimed that the 'social researchers who obtain the survey data tape and carry out further analyses themselves are, in a sense, extending the original analyses'. For example Colin Rallings and Michael Thrasher (1994) in their studies of the local election turnout in England found out that by obtaining and analysing local election statistics, they were able to determine the actual factors underlying the voting pattern and the reasons for not turning out to vote, thus giving an indication that the contribution of secondary analysis can be significant and cannot be ignored.

Although secondary analysis builds upon the work of others, apparently it is the most cost-efficient and timesaving method, especially when proper databases are available. Even in a case where databases are difficult to obtain or for a problem that is intricate and complex, the possibility of using secondary analysis is still high. As Ann Majchrzak (1984:61) explained 'in such situations, it may still be possible to do secondary analysis by building a new database of selected items taken from a combination of different databases'.

Looking at the nature of this study, secondary analysis is the best all-round method of fulfilling the objectives. This is due to the fact that the study discusses a wide range of issues, ranging from social and demographic patterns to the country's economic performance. The study has a huge scope, examining events that took place from independence to the present day; in such circumstances relying on other's empirical works is more appropriate. For that reason, sources that have been created by others such as the country's economic growth for the last forty years translated through government policy and official data such as New Economic Policy (NEP), National Development Policy (NDP), Vision 2020, and the other government short, middle and long term plans will be very important to the study.

## **1.2.2 Interviews**

The interview is one of the most fundamental research techniques and has been very widely used by many researchers. It allows the researcher to gain information that cannot easily be obtained by observation. Perhaps the simplest definition is by Arthur Asa Berger (2000:111) who described an interview as ‘a conversation between a researcher (someone who wishes to gain information about the subject) and an informant (someone who presumably has information of interest on the subject)’. According to Fontana and Frey (1994:36) ‘interviewing is a paramount part of sociology, because interviewing is interaction and sociology is the study of interaction’. In other words, interviews can be used to establish audience opinions and have been identified as the most common and powerful way of understanding human beings. There are three types of interviews; structured, semi-structured and unstructured.

In the structured interview, the interviewer has little freedom and tends to use standard questions in a predetermined order. Within the continuum of interviewing techniques, this structured interview is the most formal in its approach. The unstructured interview represents the most informal technique, which adopts the opposite approach to that taken in structured interviewing. As for semi-structured interviews, they are a combination of both the structured and unstructured types.

It is essential to say that in this study, the semi-structured interview proved to be the most suitable tool to use in order to achieve the objectives. Both the interviewer and interviewee had more freedom but in an environment which was very controllable.

### **1.2.2.1 Semi-structured Interview**

Among all interviewing techniques, the semi-structured interview occupies the middle ground that lies between the structured and unstructured models. It allows the researcher to use the broad topic area of interest to construct questions, which are asked during the interviewing stage of the project. Both elements of structured and unstructured approaches are used within this context. In this stage when developing an interview schedule, demographic questions such as age, sex and position in the

organization can be designed. Meanwhile, to probe beyond the standardised responses, open-ended questions, which are not uniformly worded, can also be included. Also within the framework of topics selected by the researcher, the respondents are permitted to express their own views on the issue. The reason is to gain as much information from the interviewee as possible so as to be able to address the overall research question. Within this context, the researcher must be able to pose further follow-up questions at an appropriate time to gain more insights from the respondent. The ability of the researcher to move the interview topic from one to the next enables the discussion to flow fluently and is said to be another important criterion.

The central attraction of the semi-structured interview is that the information gathered from the method will provide not just answers, but reasons for the answers. Using a combination of both structured and unstructured questions can uncover a rich fund of data.

#### **1.2.2.2 Primary Interview Data**

The reason for conducting the interviews using the semi-structured method is to strengthen as well as to challenge the policy implementations that are already in existence such as Vision 2020. This will help to crosscheck with the existing data to identify precisely the direction the policy is moving towards to achieve the goals. For such a reason, three groups of people, namely the policy developers, implementers and evaluators have been chosen to participate in the interviews conducted for this study. They are chosen based on their direct and indirect involvement in ICT development in Malaysia. The policy developers and implementers are categorized under 'direct involvement' while the evaluators fall under the 'indirect' category.

For example, the groups of policy makers comprise those in high-ranking designations in the government from various ICT sectors directly involved in policy implementations in Malaysia, such as the National Information Council of Malaysia (NITC); the Multimedia Development Corporation (MDC); the Ministry of Energy, Communication and Multimedia and the Ministry of Human Resource (the

importance of these sectors in the ICT development and implementation in Malaysia is further discussed in Chapter Four).

For the group of implementers, ICT-related companies with MSC-status in and around the Multimedia Super Corridor (MSC) area such as international, local and Internet Service Providers (ISP) are chosen due to their direct participation as catalysts for ICT development in the country. Meanwhile those classified as evaluators were people with diverse range of background but who are indirectly involved in ICT development. Among them are scholars and academicians from local higher institutions in the area of Science and Technology Studies, Communication and Media Studies and Information Studies. These people have been randomly picked based on their active scholarly involvement in the area pertinent to ICTs in the country. In addition to this, Federation of Malaysia Consumer Association, also known, as FOMCA are included as they represent the voice of consumers and active participants of ICTs. Lastly, the two major political opposition groups in Malaysia such as the Pan-Islamic Party (PAS) and the Democratic Action Party (DAP) are also be included. This is to establish a balanced and comprehensive group of interviewees made up of these who represent the voice of the government, such as policy developers on one hand, and the detractors on the other hand. In the middle are the implementers. For the full list of interviewees, please refer to Appendix 1.

As far as the study is concerned, there are clear differences among these groups of interviewees in their perceptions of Malaysia's ICT policy. The primary interview data collected throughout this study has clearly shown that the policy developers are supportive of the policies. As government officials, they are not allowed to discuss openly and are very defensive over issues related to ethnicity, class and religious differences in Malaysia. What can be perceived, most of the primary data provided by these government officials are only a repetition of an existing policy documentation that has already been mentioned in most of the governments short and long-term economic plans from the period of the NEP right up to Vision 2020 in the study. Unlike the government officials, both the implementers and evaluators are more critical of most of the issues that "help" to formulate our understanding of the ICT policy in Malaysia.

### 1.3 Outline of the Thesis

The thesis comprises seven chapters, which are divided into three parts:

1. Part 1 (Chapter 2-4) - Theoretical Framework and Contextual Background
2. Part 2 (Chapter 5-7) - Empirical Work
3. Part 3 (Chapter 8) - Conclusion

#### **Part One : Chapter Two to Four**

Chapter One serves as an 'Introduction' to the thesis. The 'Introduction' includes 'Aims and Objectives', 'Methodological Approach' and 'Outline of the thesis'. Part One is divided into three chapters and serves as a theoretical and contextual background. Chapter Two serves as the theoretical framework of the thesis. Known as Theories of Information Society, it is divided into five sections; 'Technological Determinism and Social Shaping', 'Information Revolution', 'Economic Consequences', 'Globalisation and Development' and 'Democracy, Surveillance and Public Sphere'. This chapter attempts to explore the notion of an information society and to conceptualise its relationship with social, economic and political factors.

Chapter Three, covering 'Economy, Politics and Inequality in Malaysia', provides a brief background on Malaysian socio-economic progress. The objective of this chapter is to understand the government effort to bridge the socio-economic gap within the society, which has existed since the colonial period. This is important, as it will help to formulate an understanding of the later consequences that ICTs might bring to the establishment of equality in Malaysia. Chapter Four, entitled 'Policy Development: The Case of Malaysia', outlines the framework of policy pertaining to ICTs in Malaysia. With the aim of this study being to understand the consequences of the policy, this chapter is very relevant to the understanding of the evolution of policy from the New Economic Policy (NEP) to Vision 2020. It is important, as it enables the connection between the previous policies pertaining to the socio-economic gaps in the present policy establishment, such as those related to the digital divide to be charted. This chapter is largely descriptive in nature.

## **Part Two : Chapter Five to Seven**

Part Two, which includes Chapter Five, Chapter Six and Chapter Seven, specifically covers all the empirical work that was largely conducted using the method of secondary analysis and some of the interview results with groups of policy developers, implementers and evaluators. Using policy pertaining to ICTs, such as Vision 2020, as its framework, both of these chapters are aimed at examining the possible policy contradictions in the search for both modernity and national identity. Chapter Five is about 'Globalisation, Development and National Identity'. This chapter provides an in-depth analysis on Malaysia's integration into the global economy and the means to further develop the economy through greater engagement with ICTs. This chapter aims to explore the notion of economic growth and its consequences. Three sections are included in this chapter, namely 'Globalisation, Privatisation and Economic Liberalisation', 'ICT Investment, MSC and Private Participation' and 'Education and Training: Creating a Knowledgeable Workforce'.

Chapter Six, detailing 'Democracy, Inequality and National Identity' provides an in-depth analysis on the relationship between the democratisation process through ICTs and equality such as in ICT infrastructure, gender, ethnicity and class. This chapter is divided into four sections: 'ICT Infrastructure and Regional Implications', 'Gender and ICT Development', 'ICTs and Ethnic Composition' and 'ICTs and Growing Class Division'. Chapter Seven is about 'Democracy and Public Sphere', which specifically covers a discussion on a relationship between democracy and the establishment of public sphere in Malaysia. This chapter is also divided into four sections namely the 'Cultural Citizenship and Digital Divide', 'E-Democracy and Electronic Government', 'Global Media and Malaysia' and 'Virtual Public Sphere'. The aim of both Chapters Six and Seven is to investigate the policy consequences pertaining to ICT development in Malaysia.

## **Part Three : Chapter Eight**

Part Three, which is Chapter Eight, constitutes the final part of the thesis. This chapter includes a full review of general arguments and introduces an overall perspective of consequences of ICT policy for economic and social relationships in

Malaysia. The aim is to map out the possible contradictions of this policy for the establishment of a national identity. This final section, also offers some reflections on policy and suggestions for future research in ICTs, especially those that might affect other aspects of policy.



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*Part 1*

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# Chapter Two

## Theories of Information Society

### 2.1. Introduction

The main objective of this chapter is to provide a theoretical framework to underpin the study of the consequences of Malaysian ICT policy for the economic, social and cultural attainment in the country. The concern is to explain the incorporation of Malaysia into the so-called information society. The purpose is to examine the implications of the state's policy to the creation of its own vision of modernity with relation to Malaysian inclusion in the global information society. The areas to be examined are: 'Technology and Society', 'Economy', 'Globalisation' and 'Democracy'. The chapter has been divided into five sections – 'Technological Determinism and Social Shaping', 'Information Revolution', 'Economic Consequences', 'Globalisation and Development' and 'Democracy, Surveillance and the Public Sphere'.

David Lyon (1988:2) stressed that the roots of the idea of an information society are intertwined in a complex manner and are subjected to extensive interrogations. These ideas started to appear in accounts of contemporary society in the early 1960s, the current widespread use of ICT and the speculation about its expansion and social impact, has prompted a major extension of interest in, as well as criticism of, the information society (May, 2002:4). In the course of this it is hoped that, by comparing the different assessments of the information society by thinkers coupled

with strong and persuasive empirical evidence, our understanding of the implication of ICT will improve (Webster, 2002:267).

In order to fully understand the consequences of Malaysian ICT policy for the creation of its own concept of modernity through the meaning of an information society, the concept of an information society must be examined. In the first section, the arguments by both the so-called technological determinists and social shapers will be made. The main objective of placing both arguments is to chart the right point of departure for ICT policy in Malaysia. In the second section, I will examine the various arguments by scholars concerning the notion of information and its place in the global information society. The concern of this is to understand its consequences and its relevancy to the extensive deployment of ICTs in Malaysia. In section three, the focus will be on the economic consequences and their possible negative effects such as inequalities and social disruption. Section four examines the links between ICTs and globalisation and their relationship with developing societies such as Malaysia. Finally, in section five, the examination will focus on the attempts to understand the relationship between ICTs and democracy. This includes a discussion of the role of the public sphere in maintaining the democratisation process as a result of ICT development.

## **2.2 Technological Determinism and Social Shaping**

The notion that technology is an independent causal factor and a virtually autonomous agent of change is hardly new. Taking for example the classic study by Longdon Winner (1978) in his book *'Autonomous Technology: Technics-Out-of-Control as a Theme in Political Thought'*, in which he voiced his concern about the development of autonomous technology, and sees as being difficult to control within the political debate. He argues that when humankind needs to accommodate a change in response to changes in technology, it will create a 'technological dynamism, a forceful movement in history which continues largely without human guidance' (Winner, 1978:105). When combining both the changes in technology and the human reaction towards them the role of technology in history becomes expanded into technological determinism (May, 2002:24).

It is a common understanding of the concept of technological determinism that technology is an independent factor that shapes society whilst somehow being outside society, and that technical change causes and is responsible for social change. It is as though technology has a life of its own, the impact which society needs to accommodate (MacKenzie and Wajcman, 1999:3). By taking these changes as the most important single factor, it gives the interpretation that the technological determinists are ignoring the social embeddedness of technology in such things as the role of social and political choice. Webster (2002) argue:

‘So much commentary on the ‘information age’ starts from a naïve and taken-for-granted position: ‘there has been an “information revolution”, this will have and is having profound social consequences, here are the sorts of *impacts* one may anticipate and which may already have been evidenced’. This sets out with such a self-evidently firm sense of direction, and it follows such a neat linear logic – technological innovation results in social change – that it is almost a pity to announce that it is simply the wrong point of departure for those embarking on a journey to see where informational trends, technological and other, are leading. At least, recognition of the contribution of social theory moves away from the technological determinism which tends to dominate a great deal of consideration of the issues...

(Webster, 2002:264)

There have been many commentaries and criticisms about the nature of technological determinism. Smith and Marx (1994:2) for example have divided technological determinism into two sets of categories namely the ‘hard view’ and ‘soft view’. In its ‘harder’ forms, technological determinism seems to argue that the given technology will lead to particular outcomes by asserting that the technology is the main determinant of social change and a prime mover in history, while the ‘softer view’ asserts that technology is an enabling factor but only one of many that shapes history. Although in many ways the ‘softer view’ is trying to move away from being part of the optimists’ position, both views agree on the notion that ‘technological development represents the unfolding of the scientific laws of nature which drive social progress’ (Mackay, Maples and Reynolds, 2001:29). As Lynn White put it, ‘a new device merely opens a door; it does not compel one to enter’ (White, 1978:28).

In another view, Bruce Bimber (1994) has provided us with another set of approaches to explaining the nature of technological determinism. Unlike the argument made by

both Smith and Marx, he does not see the relevance of a distinction such as 'hard' and 'soft' determinism. Looking at broad characterizations of technological determinism what he insists is that it is difficult to distinguish who is 'hard' and who is 'soft'. The notion is based on the understanding that, the concept of 'hard and soft' is itself disputed since the two viewpoints are closely tied to one another. Instead, what he stresses is that there are three possible strands of technological determinism, namely the 'normative', the 'nomological' and the 'unintended consequences'.

According to Bimber, out of the three approaches only the 'nomological' one can be regarded as 'truly technologically deterministic' while the other two can be 'stripped away' as forms of determinism (Bimber, 1994:79&99). This is based on the arguments that the 'nomological approach' tends to treat technology as part of a development of the natural laws and that society has to adapt to such changes. Crude notions of technological determinism such as those of Alvin Toffler (1980), John Naisbett (1982), and Nicholas Negroponte (1995) were among those highly associated with such a notion. What they saw was that the advent of new technology has prompted us into new life situations that are totally separated from our previous history. In all this technology is a prime mover in social change and humankind had to find ways and means to adapt to such changes. Their preference for the primacy of change whilst at the same time ignoring the premise of the continuity of past imagination fails to accept that technology has its social origin within the role of human action (Mumford, 1967, Lyon 1988, Winston, 1998). Obviously those who regard technological advances as things, which happen automatically and assert that we are witnessing the emergence of an information society, have technological determinism high on their list of shared principles (Webster, 2002:272).

But the most interesting arguments made by Bimber were the approaches between the 'normative' and 'unintended consequences'. In the 'normative' approach, Bimber argues that, in any particular technology there is always an embodiment of specific norms such as democracy and efficiency. The norms have been said to prompt particular technology to deploy with the interaction of non-technological norms, which are socially determined. A fine example of this in recent technology is the Internet, which is often, regarded as the embodiment the norms of 'freedom of speech' that have promoted the development of global democracy. As such it is

difficult to regard it as fully deterministic in its approach since the norms in their original sense find their roots in society not in technology (Bimber, 1994: 88).

In the unintended consequences approach, Bimber further argues that, while accepting some form of technological drive, the element of unintended consequences cannot be avoided. Obviously for such unpredictable outcomes to be qualified there is a need to have a blend of some other factors, one of which is certainly a society. As he mentioned, 'unintended consequences are basic facets of social action, rather than the special products of technology' as 'these accounts are neither technological nor deterministic' (ibid:89). For him the deterministic approach cannot be included in this approach since being determined may cause the outcomes to be foreseeable. A fine example of this is the use of predicting tools by "Moore's Law" in the doubling of computer chip every eighteen months. May (2002) for instance has made a clear distinction on this account, as he mentioned;

'Currently, few positive accounts of the information age stress its unintended consequences, not least of all because so much effort is spent predicting the 'new age' in all its variants. Most consequences are regarded as intentional, following from the widespread deployment of ICTs by companies and other groups expecting to benefit from such consequences. Critics of the information age on the other hand have been more inclined to identify seemingly unexpected outcomes ranging from issues broadly collected under the rubric of the 'digital divide' ... to the enhanced possibility of theft/piracy of intellectual assets by digitalisation, or through the erosion of privacy by new modes of surveillance.'

(May, 2002:26)

Critics of the information age, such as Manuel Castells, also share the same view. While admitting that ICTs have produced a new sort of society, namely the networked society, the enhancement in communication has also increased social fragmentation and dislocation (Castells, 2000a:3). This indicates that the consequence of technological developments is something that is unavoidable as the technology itself is a social and political phenomenon. There is nothing fixed or certain about the effects technology may have on society. For those technological determinists who presume that technology is the only single factor that drives society, this would be a major problem for their identification and promotion of the information society. Particularly in discussing the development of state policy in driving its society

towards the so-called new economy, consideration of technology and society has to be taken into account (Castells, 2000a:5). This consideration is what many technological determinists fail to identify in their literature.

In opposition to this approach are the groups of thinkers known as 'social shapers'. The social shaping approach tends to focus heavily on the sociology of science. They believe that all science, including all technology, is constructed and driven by social dimensions either in political, economic or cultural organisations (Williams and Edge, 1996:53). A common approach taken by social shaping involves the consensus about the variations of technical description. They later defined this under the framework of 'historical context'. One example of this phenomenon is the involvement of human characteristics in shaping their participation in political and economic decision-making for the implementation and adoption of ICTs.

The extreme end of this group is in a position to oppose and critique the prevailing technological determinism tradition. The elements, such as the technology, were separate entities, prime movers in history, developing independently of society and then having effects on society such common viewpoints of technological determinism are rejected by many of the followers of social shaping.

Both social shapers and technological determinists have been highly criticized for their belief. For some critics, the embeddedness of social conception is problematic, as it would 'flip from technological determinism to social determinism' (Garnham, 2000:86). Like technological determinism, the social shaping approach has also been criticized, particularly of its perception of technology. For them, technology was viewed as if it was a single or a linear process. What they perceived was that the elements of continuity of the previous historical context are all intimately tied together along the direction of technology development, and do not impact upon its nature (Williams and Edge, 1996:61).

Some critics, like Garnham, see that the failure of social shaping to integrate the implication of nature on human action was due to their bias towards culture and arts rooted in the Post-Enlightenment Period. As a result, they tend to ignore the values of science. As mentioned by Steve Woolgar, 'this involvement is generally regarded as

having no bearing upon the hardware and software which make up the core of the technology' (Woolgar, 1996:88). In another view, Winston (1998) for instance, has made a clear distinction between the actual meaning of science and its potentiality for social deployment from prototypes through a process, which he called 'inventions' (Winston (1998:9-10). Based on such judgments, the importance of both technological development and its social embeddedness has been highly recognised. What he suggests is that to be able to construct the real meaning of technology, one should also incorporate some engineering and scientific characteristics<sup>1</sup>, as they too are being constrained by economic and political configuration. An example is the diffusion of both technological devices and technological systems such as mobile telephony and broadcasting. For mobile telephony, its diffusion is easily predicted as it depends very much on market prediction and social needs, while, on the other hand, technological systems, such as broadcasting, are directly linked to high technological decisions long before any consumer comes into consideration, leaving little space for social shaping to have an effect. The failure of high-definition television to replace the current analogue system is the best example of this. As such, some critics might suggest that 'a failure to take technological constraints seriously leads to a form of idealist thinking' (Garnham, 2000:70-71).

Underlying this argument, Winston certainly has provided a clear explanation by taking both the important elements of technological change, such as the prototypes and inventions, whilst at the same time not to undermine the potential effect of 'soft' elements such as the social push. Known as 'the law of suppression of radical potential', what he suggests is that, despite a strong social push for any invention to diffuse, we also have to accept the fact that not all technology can easily transform. The change in plan due to its incompatibility with the needs of society or the need further refinement, sometimes holds it back from further transformation (Winston, 1998:12-13). What we see here is actually the reality that governs the transformation of any particular technology with a strong bias towards social needs.

Obviously, the argument in dealing with the issues pertaining to both technology and society has to be forgone. To accept the extreme end of the social shaping approach

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<sup>1</sup> See for example work by Bruno Latour (1987) *Science in Action: How to Follow Scientists and Engineers to Society*. Cambridge : Harvard University Press.



is not the intention here, neither is an acceptance of crude technological determinism. Another approach known as 'Path Dependency' (Garnham, 2000:75) needs examination. Under this notion one can find ways and means to synthesise both the arguments of the technological system and those of social shaping. The approach is most important when dealing with the dominant view of technology and the policy implications within economics, such as the one with which this study is carried out. What Garnham suggests, under such notions as the 'lock-in' process, is that the technological monopoly by a dominant supplier (such as the government) will further reinforce their efficiency, particularly against competitive rivals. This is based on the arguments that, not only will the profits gained from the economic returns strengthen their present position but the reinvestment into future developments will further benefit both the economy and its society<sup>2</sup> (Garnham, 2000:77). A fine example of this can be seen in the case of Malaysia and the establishment of the Multi Media Super-Corridor (MSC). What the government hoped was that the MSC would not only act as the platform for attracting more Foreign Direct Investment (FDI) and greater economic returns but also for reinvesting them back into the infrastructure for the benefit of society. How far this will continue to be the case in Malaysia is the subject of further discussion.

Returning to the remark made by Webster about our failure to chart the right movements of informational trends, he raises the need to identify what the right point of departure is. Certainly this question is crucial towards our understanding of the consequences of technological development for the creation of an information society like Malaysia. If we are to resist both ways of thinking, we have to admit that there is nothing fixed or certain about what consequences technologies may have for society. But to accept totally the view that technology is a prime mover in history and that we live in a totally new environment is certainly a mistake. Rejecting this view does not mean that nothing has changed. Webster (1998), for instance in his concluding remarks on the critics of the information society, clearly stated that it is the pressure of the newest forms of capitalism that has changed the course of many informational

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<sup>2</sup> Taking for instance the investment of ICT network and telecommunication infrastructure by the Malaysian government. It is hoped through the monopoly entity, the government will have the ability to monitor its progress through its regulatory body for the prosperity of the nation.

trends today. Situating it in the context of the historical framework, he mentioned that;

‘... one is not suggesting that that capitalism is the same today as it ever was. The informational capitalism we have today is significantly different from the corporate capitalism that was established in the opening decades of the twentieth century, just as that was distinguishable from the period of laissez-faire of the mid – to late nineteenth century...prominent among which are the presence of unprecedentedly large transnational corporations, an intensification of competition on a global scale...the relative decline of national sovereignty and, above all, globalisation’

(Webster, 2002:267-268)

What he is suggesting is that this sort of trend makes us better understand the current phenomenon of information society, the consequences of which touch many aspects of our daily lives, including the political, economic and cultural, in both local and global settings.

Castells provides us with a better understanding of the issues. What he has proposed is that the development of technology such as ICTs has produced a new sort of society, which he calls the network society (Castells, 2000a). Castells’ arguments suggest that this shift results from a reliance on the increased use of physical resources in knowledge and information. He also suggests that this has led to the restructuring of capitalism as a result of the information revolution, which has taken place since the 1970s. Not only has this given a new meaning to ‘information capitalism’ but it has also made a significant impact on the state and other social movements. Alongside this is the emergence of the global information economy that demands the transformation of work such as more flexibility and less standardisation of labour. Although, as a consequences this has produced some changes in societies, we are witnessing growing disparities in wealth and social fragmentation such as class division and polarisation (Castells, 2000b:375).

Although in many cases the study carried out by Castells focused more on developed countries, this study needs developing in order to relate it more closely to a developing country like Malaysia. These views and frameworks form the point of departure for this study. It is hoped that, by revealing these views we will understand where the trends are taking us. As Raymond William (1974) mentioned any ‘... new

technology is itself a product of a particular social system, and will be developed as an apparently autonomous process of innovation only to the extent we fail to identify and challenge its real agencies' (William, 1974:135).

### 2.3 Information Revolution

Among many claims about the emergence of an information society is the notion that the present society is being ushered out by new information technologies. By starting to take into account the accelerated growth in technological development since the 1970s, such as satellite television, personal computers and, prominently, the ICTs, the changes that these technologies bring to the society suggest that we are in the midst of an information revolution. The above notion has supported the claim that the character of the information society, which is undergoing a revolutionary process, will usher us into the new information age.

In many instances, those claims were popularised by some futurists and "techno boosters". The world's leading futurists such as Alvin Toffler (1980) have concluded that our society has been divided by three categories of technological change. The first Agricultural Revolution was followed by the Industrial Revolution and now society is witnessing the Information Revolution. Other futurists, like Tom Stonier, take another view and argue that the 'modern productive system no longer depends on land, labour and capital as their primary input; rather, they require information' (Stonier, 1983:306). The so-called impact of this information revolution further popularised the concept of an Information Society. John Naisbett (1982) claims that the major role played by the computer made the United States move towards the transition from an industrial-based society to an information society as early as the 1960s. Meanwhile, others identify the 'microelectronic revolution' (Forester, 1980) which created a new 'mode of information' (Poster, 1990), that not only managed to wire the society (Martin, James, 1978), but was able to 'digitize' it (Negroponte, 1995).

Such analysis is not, however, confined to futurists, as it is prominent also among many governments who see that the information society, driven by the new ICTs, can

represent a profound social revolution. A classic example of this lies at the centre of the French Report on *The Computerisation of Society* by Simon Nora and Alain Minc (1980). Based on their 1978 report to the President of France, on the centrality of information in the transformation of society, Nora and Minc mentioned that 'the computer is not only technological innovation of recent years, but it does constitute the common factor that speeds the development of all others' (Nora and Minc, 1980:3). Meanwhile Martin Bangemann, European Commissioner and Head of the European Council Directorate General XIII in his report on his analysis of the information revolution to the European Council in 1994, mentioned in his opening chapter that:

'Throughout the world, information and communications technologies are generating a new industrial revolution already as significant and far-reaching as those in the past.

It is a revolution based on information ....

This revolution adds huge new capacities to human intelligence and constitutes a resource which changes the way we work together and live together. ...

All revolutions generate uncertainty, discontinuity – and opportunity. Today's is no exception. How we respond, how we turn current opportunities into real benefits, will depend on how quickly we can enter the European information society.'

(Bangemann, 1994: ch1)

As many would argue, central to this is obviously the relationship between scientific advances and technological change. If we were to look at the notion of technological development, what is suggested is that much of it was focusing on the 'product' base in determining the forces of technological change; such as the invention of the transistor and the integrated circuit. Evan Christopher (1979) and Tom Forester (1987) for instance, see the development of the scientific advances of early computing as a technological paradigm and regard it as a revolution in information. The notion was very much related to the discoveries of microelectronics such as the transistor, first discovered in Bell's laboratory in 1947, followed by the integrated circuit in 1957, the planar process in 1959 and the microprocessor in 1971. These discoveries boosted the development of the computer extensively by increasing its power and reducing its prices. As Braun and Macdonald (1978) explain, the ability to miniaturize the components in computer technology was a major contribution to the

whole process. They argued that these astonishing achievements have made their impact by transforming whole organizations, industries, production systems and professions into new sorts of enterprise (Braun and Macdonald, 1978:1-3).

The introduction of the microprocessor in 1971 led to the introduction of personal computers four years later. The move from a computer that was affordable only to large organisations back in the 1960s, and departments in the 1970s to personal computers that can be owned and operated by individuals in the early 1980s has been driven by the ability to double processor power and speed every 18 months. Despite microchip<sup>3</sup> capacity doubling, their price has remained relatively stable. In reality, this has turned a relatively small industry into a multi-million dollar one and the fastest-growing industry ever (Forester, 1987:133).

The rapid advancement in microelectronics, telecommunications industries and ongoing falls in prices, has caused the costs to bring about the convergence of the computer and telecommunications into what is being called the 'information-processing' industry. Dramatic industrial restructuring began to emerge with computer companies moving into telecommunications, and telecommunications moving into computers. What we are facing now is not only people talking to other people but increasingly, computers talking to other computers (Burton, 1992:11). The Internet for example, from its early days as a military brainchild for military networking purposes, has made its transformation into the modern Internet of today providing a different mode of networking and connecting. It is believed that the ability to connect across borders with relatively high speed; to compress time and space and an unprecedented growth in information sharing and exchange, has altered the way people think, play and socialised.

Obviously there are a number of problems with these overarching claims of revolution. The central objection to this is that technology is being perceived as the most important single factor, which explains any particular change in society. However, the most problematic of these claims is that 'it relegates into an entirely

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<sup>3</sup> For example the in 1972 there were only 3,500 transistor in Intel's latest computer chip, and by 1997 the amount of transistor was 7,500,000.00. Source from Consumer Electronic Manufacturers Association in Ray Kurzweil (1999). *The Age of Spiritual Machines, How We Will Live, Work, and Think in the New Age of Intelligent Machines*. London : Orion

separate division social, economic and political dimensions of technological innovation' (Webster, 2002:11). Since, 'technical developments and innovations are not self-explanatory', they have to be put in a social and cultural context properly (Lyon, 1998:26).

For such instances, Winston, for example, has provided us with clear explanations. What he argues is that the realisation of any scientific advances from the process he called 'prototypes' to the 'invention stages' were very much determined by the previous social arrangements and the acceptance of the advances in the social sphere (Winston, 1998:4-6). What he mentions that the processes from ideation to its constraints (Law Suppression of Radical Potential), spinning-off or even redundancy stages contributed heavily to this understanding. From these processes we will be able to view technological development through scientific advances as a process of continuation rather than revolutionary change. This is due to the fact that there is always a notion that the development of technology incorporates strongly within itself the embodiment of the economic, political and cultural constraints that have made the advances in technology subject to alteration (ibid:13). From this view, what Winston clearly foresees is the importance of both scientific truth and its social context.

As such, it is hard to agree that we are in the midst of technological revolution. What we are witnessing is actually the process of 'informationalism' that is changing the way the information is being perceived today. Both Webster and Castells agreed that the changing nature of capitalism with regards to information and its capitalist mode is actually central to our understanding of today's information situation (Webster, 2002:267-268; Castells, 2000:14). The prominent role and growth of transnational corporations and the decisive effort by governments to deregulate and privatise many of its economic sectors as a result of the intensification of competition in the global economy contribute to the centrality of the issues under consideration here. Under such pressure, many governments, including those in the developing countries, have to undergo a series of reforms. Even in the case of Malaysia, the reform of many of its economic policies such as privatisation, deregulation and greater support for international private capital such as Foreign Direct Investment (FDI), was indeed a reflection of this pressure. But as far as the information is concerned this will lead

into the commodification elements rather than regulations protecting social and public interest.

What can be argued, when it comes to the technological development, there are no clear boundaries between profit and government role. The ongoing processes of this factor have resulted in two main contradictory issues relating to the activities of many governments at the local and global level. One is the question of the continuing domination of capitalism as a process of profit and market sharing; and the other is the active government intervention in promoting policies for deregulation and their involvement in stimulating competition for the development and marketing of information technology. The drawback of these questions can be clearly extended 'into several other areas of economic and social life' and 'inevitably spills over into educational policy and industrial relations' (Lyon, 1988:37). Children need to be well exposed to computers, the whole bulk of society has to become IT literate and workers have to adapt to new working conditions. The penetration of transnational corporations (TNC) into the realm of information technology in almost all government activities will indeed be disruptive and the loss of sovereignty will be a major question. The commodification of information by many corporate powers not only results in the reduction of individual free expression but also widens and makes more obvious the gap between the society of information 'haves' and 'have-nots'. As Herbert I. Schiller (1986) argues, 'when the ability-to-pay criterion becomes the standard for information access – which is precisely what occurs when information provision and dissemination are turned over to the market enterprise – the divisions in society deepen' (Schiller, 1986:38). With all this in mind, public institutions will find themselves in a very vulnerable situation.

The extensive use of advertising and promotional activities, ranging from conventional to newer media will be successful in changing the consumer's attitude towards IT. Personal computers are no longer seen as an item of luxury in the home or even in the office but as a tool to be able to 'keep-up' with the latest information and to increase productivity (Toong and Gupta, 1985:169). The extensive use of ICTs, such as the Internet is being perceived as the ability to be able to connect to the outside world while at the same not lagging behind with information. The pervasiveness of profit-oriented advertising within capitalist enterprise was seen, not

only as changing the pattern of the way information is being consumed, but also as calling into question the quality of information itself (Roszak, 1994:5).

At the very core of these possibilities lies the active role played by the marketing and strategy of capitalist organisations, which can be developed into a so called 'Social Taylorism' (Webster and Robins,1986). The battle in the IT field is very obvious in its competitiveness and market control through the medium of advertising via television and other, newer media. As Manuel Castells (1989) further argues, 'the diffusion of new technologies under the new mode of development...into...the very processes and organizational forms...were at the basis of the demand of information technologies' (Castells, 1989:20).

What had been noted is that the above arguments are directed at the complex interplay between technology and society. No doubt social impact is profound but social origins are also highly significant (Webster, 1986, Winston, 1998:2). To deny the evolution process or the revolution paradigm in the context of information technology is to abandon inevitability. What is needed is the promotion and consideration of alternative trails for IT development. As Kranzberg suggested in his formulation of the 'First Law', 'technology is neither good nor bad, nor is it neutral' (Kranzberg, 1989:247). He implied that technology has effects, which go beyond the original plans and cited the car as an example. He argues that the car was initially seen, as societal transportation to increase mobility but the initiator did not foresee the effects that the car would bring with it, such as noise and air pollution or even changing social lifestyles. The very notion seems to be well connected in the age of information technology. He foresees that it will have similar unintended consequences; that IT will go beyond its expectations. But as further suggested by Kranzberg, only after we understand the interactions between technology and society in a different sociocultural setting, will the whole notion be well understood. As he mention;



'All of this can be done only by seeing how technology interacts in different ways with different values and institutions, indeed, with the entire sociocultural milieu' ... since ... 'the same technology can have quite different results when introduced into different contexts or under different circumstances'

(Kranzberg, 1989:247&249)

Under such conditions it will be interesting to examine the potential consequences of technology such as ICTs within different sociocultural context like Malaysia. An example might be the consequences of Vision 2020 for the economic, social, cultural and even political situations. It is hoped through this investigation that a better understanding of where the information trends are taking Malaysia will be achieved.

## 2.4 Economic Consequences

It is often assumed that the analyses of the information society always linger around the notion that the present economy is undergoing profound changes. What we should believe is that the restructuring of both the economy and society or the relationship between capital and labour has been affected considerably by the emergence of the information sector through the advancement of information technology (Castells, 2000a:77-78). At least two elements can be derived from this. One is the increasing demand made on the way information is being handled, and the other is the transformation of the information itself. From this view, not only are the demands for information workers increasingly important compared to the previous productive workers, but also the way the information is being handled and managed is radically being transformed (Burton, 1992:3). The view is based on the assumption that the dominant role in the economy is highly significant with the changing structure of the way the information is being handled and processed. This is often related to the advances in ICTs.

Leading to this is the understanding that the continuation of automation will lead to manual jobs being phased out, while the information-based tasks will increase in importance. By looking at the broad categories of information work, the transformation of workers into information workers makes them the fastest growing

group in any occupational structure and a sign of the arrival of the information society.

The notion can be clearly traced back to the pioneering studies by Fitz Machlup (1962) and Marc Porat (1977). By taking the changes through statistical elements, Marc Porat's influential study claims that the United States has made a great shift from being an industrial, manufacturing economy into new information one. Information workers made up 50% of the workforce in 1980 in comparison to only 30% in the service sector. His attempt to measure information activities in America built on and extended the earlier work by Fritz Machlup done in 1962. What Porat did was to define the knowledge and information industries by measuring the level of employment, categorisation and the contribution to Gross National Product (GNP). While another study carried out by Herbert Dordick and Georgette Wang claimed that more than half, or to be exact 56 of the US workforce in 1989 were in information occupations, compared to only 53 per cent in 1980, which showed an increase of 3 per cent (Dordick and Wang, 1993:143). Through this analysis what is often presumed is that the information society is emerging (Bell, 1974; Masuda, 1980).

But behind all the assumptions, there are a number of failures that should be recognised. Dordick and Wang, for example in the same study, concluded that, although there was a great jump in the information occupation within America, the same methodological approach failed when applied to the some middle income states in Latin America in the 1980s and elsewhere. The approach also failed to find the same level of informationalisation even when compared with those found in the 1960s by Muchlup (Dordick and Wang, 1993:45-57). This indicates that it is difficult to accept that the information society is arriving everywhere, as the implications might be different for other societies. As Duff (2000) mentioned:

'the general point is that it is very difficult to prove...that modern societies are more information-based than other societies. There is something *prima facie* suspect, perhaps even arrogant, about the assertion that we are now, while they were not then, living in information societies'

(Duff, 2000:171-172)

Webster had also noted that there are problems in developing quantitative measurements of the information sector such as those attempted by both Machlup and Porat. Their ignorance in some qualitative approaches will worsen the basic understanding on the emergence of the information society as a whole (Webster, 2002: 13).

The efficacy of these methods is crucially important in assessing the complex interplay between capital, labour and technological innovation in order to answer the question of whether indeed an 'information society' is emerging. What is often thought is that the 'white-collar' workers are steadily replacing and outnumbering the 'blue-collar' workers. On the other hand, the inventiveness in technology itself, such as word processors and electronic mail, has made the traditional industries more complex; with information handling being the central function in managing and coordinating the multifarious individual tasks.

However, the critical question that need to be considered here is whether the innovations in information technology, such as the convergence between information and communication technologies (ICTs), leads to the growth of labour productivity and developments. As Castells strongly claims, the new economy that is increasingly organised around the network is contributing to high productivity growth that will further enhance the economy and 'fully transform itself into this new mode of development' (Castells, 2000a:161). But the most important questions are, what will be the consequences of this being for a different socio-economic background like Malaysia and how will it affect the social class system and integration within society? Also, under what conditions will this lead to further development and growth in society, particularly in the case of developing economies like Malaysia?

In discussing the relevance of the relationship between technological development and productivity as a basis for economic growth, the discussion of whether to deskill or reskill always lies at the centre of the issue. Even though skill is a concept that is very difficult to define precisely, the driving force behind automation is whether to enhance human skill or to entirely eliminate it. Both sides of this argument can be

attributed to the transition from Fordism<sup>4</sup> to post-Fordism. Sceptics will find that the transition towards post-Fordism will worsen the labour participation within the organization, as the technology is likely to become more sophisticated, such as ICTs, and so will often undertake the skilled functions resulting in the deskilling of workers (Noble,1984:339). On the other hand, others see the advancement of information technology as a means of strengthening labour productivity both in factories and offices (Castells, 2000a:257).

As far as computerisation and information technology is concerned, Shaiken (1986) in his arguments on deskilling, argued that the decision made by most managements when it comes to the introduction of new technology is to eliminate human skill as a means of doubling up productivity. Since technology has the capacity to outnumber the output achievable by a human it may lead to disemployment and unemployment. Even though it is true that in many contexts computerisation requires high levels of skill, what Shaiken argues is that, it is not a matter of more skills or fewer skills but that ‘in the market economy, the selection and assemblage of these electronic building blocks into a production system is largely the prerogative of management’ (Shaiken, 1986:4). As for the management, in the capitalist mode of production their function is to increase profits for the organization (Braverman, 1974). Drawing on the case of Henry Ford and his introduction of the automobile assembly line, Braverman mentions that,

‘As Ford, by the competitive advantage gained, forced the assembly line upon the rest of automobile industry, in the same degree workers were forced to submit to it by the disappearance of other forms of work in that industry’

(Braverman, 1974:149)

Even in the case of new technology such as ICTs, further deskilling of workers will take place through the introduction of machines that are fully automated and self-correcting to compensate for all variations and changing conditions. It is a hope that,

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<sup>4</sup> Fordism is concept that based on the development of automobile assembly line first introduced by Henry Ford in early twentieth century. Under this principle, the manufacturing process through the assembly line was divided into two sets. One is the simple operations that will be performed by labour that will paced by the speed of the line, while the more complicated jobs will be performed by machinery skills. The objective of this is basically to mass produce the product, speed up the production and relatively to cut down cost followed by selling the product at the very lowest price.

by relying on the machine rather than workers, the productivity level will be upgraded while the organisation will further benefit from the processes (Noble, 1984:346).

To accept totally the fact that technological advancement in automation and computerisation that eliminates many functions of human capability and productivity is something which needs to be questioned here. Particularly in the case of ICTs, there will be some cases where skill will be increased as a result of adapting to the new ways of learning and operating (Webster and Robin, 1986:154). As mentioned by Zuboff (1988), when ‘“works” becomes the manipulation of symbols, and when this occurs, the nature of skill is redefined’ (Zuboff, 1988:23). What this means is that changes caused by ICTs will act as a means of reskilling the workforce so that the process of technological change can act as the basis for increasing productivity and competitiveness (Castells, 2000a:165-166). Not only has the process of technological change prompted the transformation of work and the emergence of global information economy but the working class has been ‘de-massified’ while labour is becoming more flexible and less standardised.

By giving the process of technological change and innovation a central role in understanding productivity growth, what Castells describes is that, under the new system of production, labour is divided into two categories: ‘generic labour’ and ‘self-programmable labour.’ The allocation of workers to the appropriate category is determined by their level of education as Castells argues that ‘whoever is educated, in the proper organizational environment, can reprogram him/herself towards the endlessly changing task of the production process’ (Castells, 2000b:372). As a result labour will constantly be redefined whenever the necessary skills are required. What he sees is that as the informational economy becomes more mature, ‘human labour will produce more and better with considerably less effort. Mental work will replace physical effort in the most productive sectors of the economy’ (ibid:385).

This is where many organisations are coming to depend on ‘generic labour’ rather than ‘specific labour’. Moreover, through the annihilation of time and space, capital and labour can now increasingly tend to exist in different places and times but still contribute under the same mode of production, for example, a computer programmer in India, designing a product for a company in Silicon Valley. Under such conditions,

not only is labour becoming more flexible, but also it demands increased liberalisation by deregulation and privatisation according to the notions of Schumpeterian 'gales of creative destruction'<sup>5</sup>. Thus education and even many aspects of the economic system need to be restructured in order to fit with such conditions.

But still whenever the discussion on the labour and employment takes place, the mode of capitalism cannot be avoided. Historically, the acceleration of social change, has been strongly connected with the early development of capitalism and the interaction between different social structures and cultures which resulted from the voyages of exploration and the development of early colonialism (Garnham, 1990: 3). In the early industrial revolution, Karl Marx (1974) asserted that this process has created a capitalist society, which resulted in the division of labour and classification of workers. He claimed that 'when manufacture is the dominant form of the capitalist method of production...which...leads to hierarchical classification of the workers...between skills and non-skill' (Marx, 1974:389) this will widen the gap between employed and unemployed.

Indeed Herbert I. Schiller (1986) argues that emergence of new information technology in the market economy is due to the world at large responding to a 'systematic crisis in the world business system' (Schiller, 1986:2). The emergence of transnational corporations and their ability to control and orientate information flows for profit and commercialisation has deepened the crisis of disemployment in the digital age. He goes further, claiming that 'the new information technologies that provide the transnational corporations with greatly enhanced operational flexibility, locally and globally, have recast as well the historic balance between capital and labour' (ibid:103) with the advantage to the former. What this means is that, when profit and commercialisation are the main outcomes, the means to increase productivity by cutting the cost will certainly have implications for labour. What can be observed is that while capital is increasingly going global, labour remains local, which is becoming blurred into a 'production of variable geometry' (Castells, 2000a:506). Most importantly this will make more labour increasingly individualised

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<sup>5</sup> Look for instance at work by Freeman, Chris and Soete, Luc (1997) *The Economic of Industrial Innovation* (3<sup>rd</sup> ed.). London : Printer

in its capacities, characterized by the 'tele-working' or 'network cottage'. This will obviously result in what Castells terms 'a loss of collective identity' (ibid).

Alongside these economic shifts are changes in the character of societies. The growing disparities in wealth, social fragmentation and dislocation that have been part of these developments are increasingly in evidence (Castells, 2000b:385). The emergence of transnational corporations in manipulating information for profit-oriented ends, as Schiller mentioned earlier, has caused unevenness in access and inequality (Golding, 1998:75). It can also widen the gap between the information rich and the information poor within the society locally, regionally and globally. Particularly in the case of ICTs, the polarisation between haves and have-nots can be clearly seen between countries around the globe. A clear example can be seen in the Internet hosts. There are more Internet hosts in New York than in the whole of Africa. More hosts in Finland than in Latin America and the Caribbean, and despite the rapid progress of ICTs in India, many villages still do not have a working telephone (Singhal and Rogers, 2001:85). What is worrying is the inability to construct the entire system economically and socially in a network of capital, labour and information this will result into what Castells's identifies as a deprivation into 'the Fourth World'<sup>6</sup> (Castells, 2000b:368). This means that the economic polarisation within social sphere will be much wider than before.

The consequences of these developments are likely to be a tendency towards increasing social inequality and polarisation within income groups and social status. As strongly claimed by Castells (2000b), the avenue for this social inequality is characterized by the different levels of labour created within the globalised economy and the individualisation of labour. Obviously, those who do not fit into these categories will be further marginalized, whilst the social divisions will be further increased (ibid:375).

The most obvious manifestation of this process is probably the growing disparities between different income groups and geographic areas with IT being seen as the

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<sup>6</sup> What Castells means with 'the Fourth World' is that, the means to switch away from the global network will worsen the situation which the Third World Countries are facing. For further understanding of these notions, see Castells, 2000b – *End Of Millennium*.

central cause (Castells, 1995). As mentioned by Castells, in many instances the extensive use of IT in many organisations and institutions today is altering many bureaucratic processes through the complex technological integration that is changing the mode of production between cities and regions (Castells, 1995:17). The aim to rejuvenate geographic locales through the development of ICTs to encourage the growth of electronic spaces, particularly in the poor areas, has prompted increased urban regeneration. As a result we are witnessing the emergence of what Castells describes it as the 'dual city', which houses both the rich and poor living in different areas of the same city. Although divisions in wealth have long been prominent in cities, the situation described by Castells is one of growing disparities between different geographic locations and incomes, which have been accelerated by the developments in the information economy. It seems clear that the variation of income and differences in their daily experience have resulted in a widening cultural and economic gap. For example, those IT workers who are more 'cosmopolitan' in outlook and are living in the "information city" through the means of ICTs, manage to interact both locally and globally and have the financial ability to travel anywhere in the world. On the other hand, the urban poor continue to remain and act locally due to their economic constraints and often lack of motivation (Castells, 1995:21).

Another empirical study conducted by Pippa Norris (2001) has found out that, besides the extensive use of ICTs, the inequalities in access in terms of income, education, occupational status and age, even in the case of developed countries such as those in Europe, is significantly becoming stronger. Only those related to gender are showing the gap closing over time (Norris, 2001:86). Such increasing inequality and polarisation in this context cannot be taken lightly.

Although the issues of inequality can be well addressed within policy implementations measures, the dynamism of informational capitalism and the race for competitive advantage can lead to the issues of social division and polarisation sometimes being overshadowed (Castells, 2000b:375). If this continues to happen, there will be a contradiction between the notion of sustaining economic growth on one hand and maintaining social relationships on the other. The issue is very critical for Malaysia. The need to maintain its economic growth and compete in the global economy through its extensive deployment of ICTs has always been the priority.



However, as far as the information economy is concerned, the ways in which it will further contribute to those contradictions such as by reducing inequalities whilst maintaining its own identity needs further investigation.

## **2.5 Globalisation**

Diverse claims have been made concerning the meaning and the definition of globalisation. In many instances it can be referred to as an increasing interconnectedness of human activity on a global scale. This includes the unprecedented flows of capital, labour, technology, skills, ideas and values across national boundaries. These free flows are challenging the present notion of nation state and its distinct national economy (Giddens, 1990; Hirst and Thompson, 1999).

Some critics of globalisation claim that the emerging trend of interconnectedness of individuals and societies is a recent phenomenon. As Malcolm Waters mentioned, the term globalisation 'referring to the idea that the world is becoming one place as opposed to a myriad of relatively independent, different, and faraway places-came into popular use only 40 years ago' (Waters, 1995:7), while others view it as a process that has been going on for a very long time, even before the rise of modernity and capitalism (Robertson, 1992:58-60). In Robertson's terms, the acceleration in globalisation only came into regular usage in the 1980s after it had been moved into the general consciousness through the 'compression of the world' by mass media and international discussion on such topics as peace keeping and world recession.

### **2.5.1 Cultural Dimensions of Globalisation**

As technology sets the stage for globalisation, taking the spotlight in the debate over its effects is the question of culture. As strongly mentioned by Tomlinson (1999:1) that 'Globalization lies at the heart of modern culture; cultural practices lie at the heart of globalization'. Even though it sounds seemingly basic, the question of what is culture? The answer may not be as simple as it appears. Even the Oxford Dictionary of Sociology offers many choices. At the very heart of its definition of culture most

likely lies a combination of each of these possibilities: a mixture of mental, physical, intellectual and creative aspects of a society.

Even media theorists themselves have raised this very question. Smith (1990:171) for example asks, 'Can we speak of culture in the singular?' For him, culture is 'a collective mode of life' which necessitates 'different modes and repertoires in a universe of mode and repertoires.' Fiske (1989, McQuail, 1994:94) defines culture as 'the constant process of producing meanings of and from our social experience'. Both Carey (1988) and McQuail (1994:95) also define culture as a process, which refers to a 'shared attribute of a human group such as physical environment, tools, religions, customs and practices or way of life'. But to describe it simply as a 'total way of life' will be a mistake as Greetz (1973) once describes it as '*pot-au-feu*' or 'the throwing of anything and everything into conceptual stew that is the 'complex whole' of human existence' (quoted in Tomlinson, 1999:17). Hence, the dimensions of culture in its very essence are very complex and indefinable (Thompson, 1990; Tomlinson, 1991; McGuigan, 1992).

But why culture matters for globalisation? Considering that globalisation is widely regarded as 'multidimensional' phenomenon, it 'cannot be properly understood until it is grasped through the conceptual vocabulary of culture' (Tomlinson, 1999:1). Therefore, a better way of understanding the world that is contained in an economic, political or a cultural discourse is by trying to draw out our understanding of globalisation in these contexts and 'pursuing one dimension in self-conscious recognition of multidimensionality' (ibid:17).

Robertson (1990) and Featherstone (1990:6) mention that the process of globalisation may lead to the extension of global cultural interrelatedness that can also be understood as global ecumene – region of persistent culture interaction and exchange. It is a process in which a series of cultural flows produce both: 'firstly, cultural homogeneity and cultural disorder, in linking together previously isolated pockets of relatively homogeneous culture which in turn produces more complex images of the other as well as generating identity-reinforcing reactions'.

However, Appadurai (1990:296-299) further addresses this as a new 'non-isomorphic' path of global cultural flow through his conceptualisation of interacting 'disjunctures'. What he perceives as the global culture flowing in five dimensions: ethnoscaples, finanscapes, technoscapes, mediascapes and ideoscapes. Ethnoscaples refers to the flow of people (immigrants, refugees and tourists) throughout the globe, as we become increasingly mobile. Technoscapes includes the flow of hardware, machinery (through the production process of TNCs), governments and national corporations. Finanscapes depicts the flow of money through stock exchange and currency markets. Mediascapes incorporates those involved with the flow of images and information from various forms of media with regards to growing interactive technologies. Lastly, Ideoscapes refers to a dimension which often political in nature and deas with the flow of ideology throughout the globe.

What can be understood from the above conceptual explanation of the Appadurai model is that, this change in flow may lead to not only massive interlinking information and technological system, but also to 'déterritorialisation'. The idea is that we are no longer able to live our lives entirely 'locally', as our cultural experiences are influenced by distant globalising forces through music, food, images and events from television and communications (Tomlinson, 1997:118). Giddens (1990:140) further states that globalisation means 'the very tissue of spatial experience alters conjoining proximity and distance in ways which have few parallels in prior ages'. In other words, changing of experience in our everyday locale as we are influenced by distant globalising forces.

This process is likely to have many consequences. Notions such as cultural homogenisation are 'likely to produce, simultaneously 'new global' and 'new local' identifications' (Hall, 1992:304) or hybridisation of culture (Garcia Cancilini, 1995). Under such instances, what kind of cultural identity is likely to be produced for developing country like Malaysia? What implications might this have for national identity? Most importantly, how will this affect the effort to balance the creation of modernity while at the same time maintaining its own identity as strongly suggested

in Vision 2020<sup>7</sup>? What kind of consequences are likely to emerge from this relationship?

The web of interconnections of globalisation could be seen as not only involving the state and economy, but also culture. Therefore, culture matters for globalisation in a sense that 'it brings the negotiation of cultural experience into the center of strategies for intervention in the other realms of connectivity: political, the environmental, the economic' (Tomlinson, 1999:31).

No doubt the cultural elements are important in relation to our understanding of globalisation, but in the context of this study, it will not form a significant component compared to economic dimensions. The reason is simply that the nature of study very much concerns the ICT policy with economic elements at its forefront, which are closely linked to consequences affecting the society. This can be the case since most of the policies that concerns ICT found in many official documentations on government policies in Malaysia, from as early as the NEP right up to Vision 2020, have been focused on economic enhancement. The most prominent example relates to the government is continuous effort at reducing economic imbalances among major ethnic groups to achieve developed status country by 2020. It is for this reason that later analysis of ethnicity, gender and those related to social class in Malaysia, will focus on economic rather than cultural dimensions.

### 2.5.2 Globalisation and Development

Indeed, as many would argue, the idea that the world is shrinking and being compressed through the annihilation of time and space is because it is being pushed by the recent development in information communication technologies and transportation network (Giddens, 1991; Harvey, 1989). This concept has led to Castells for instance proposing that the spatial construction of our world no longer relies on physical locality but is more dependent on the flows of electronic pulses (telecommunications, microelectronics, computers processing, broadcasting and so

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<sup>7</sup> Under Vision 2020, the vision to become a developed country by 2020 should be accompanied strongly with the desire to progressively develop the economy through ICTs, while at the same time hold firmly to its cultural, family and religious values with the hope that one 'Bangsa Malaysia' (Malaysian Nation) under the rubric of national identity will emerge (Malaysia, 1991:2-4).

on) that move around the network. He sees the world as a space of flows where the concept of time is changing so that it no longer has a sequential order while the space is becoming more borderless. All this leads to instantaneous communication across the globe (Castells, 2000b:374).

Such instances show that the widespread deployment of ICTs has produced a new kind of relationship between time and space. Theoreticians believe that the nature of globalisation and its interconnectedness have been supported by easier and cheaper communication and has accelerated social mobility, facilitating the dissemination of knowledge and being able to respond to common problems and needs. Furthermore, in a market economy, it is increasingly assumed that to be able to compete in the globalised world it is not only economic activity, which needs to be restructured, but also entire societies and cultures need to be changed in the name of productivity. It is also believed that this will further contribute to future progress and the development of a nation and its entire social system (World Bank Group, 2002).

As many would also argue, our understanding of globalisation is not without risk and uncertainty. Diverse claims have been made about what consequences globalisation might have for society. Issues ranging from social problems to religious fanaticism, from pornography to cultural imperialism are dominated in both policy and academic discourse. But in many instances the issue of globalisation coupled with the unprecedented growth in ICTs has had its most direct consequences on the economic sector, which will then trickle down into other consequential areas such as the crisis of identity (Harvey, 1992:294) and cultural imperialism (Herman and MacChesney, 1997).

The issue of globalisation is based on the claims made by Castells that the annihilation of time and space by electronic means has given rise to the new meaning of global financial markets and informational capitalism (Castells, 2000b:371). What he meant was that the market could now easily be twisted and manipulated, as it is no longer following sequential market logic such as cross-border capital flows that work almost perfectly in real time. When this is happening, the competition between capitalists in the economic sphere will be more intensified while at the same time the social interaction in cross-border networks will continuously change. Under such

logic the dynamism of the world economy is being dominated by uncontrollable market forces, which will continue to deepen the economic interdependence between different political and cultural regimes, including those in the developing countries. As such, it is important to state here the circumstances under which the unprecedented growth in ICTs and the increasing human interconnectedness through the process of globalisation will uplift the economic development in a developing country such as Malaysia.

The basic assumption in our understanding of the developing world and the changing face of capitalism through its historical stages in a neo-colonial period lies in the context of the 'development theories'. These have had a long legacy of pointing out the income gap between the rich and poor countries that prompted the search for "sameness" and differences within each group. What was being suggested in these theories of development is an ideology of international development that underlies two contradictory arguments, namely 'modernisation theories' and 'dependency theories'. Modernisation theories argue that, as less-developed countries lack compatibility in their means of structuring their economic, political, social and cultural institutions, these countries should model their social and political structures following the example of the West (Preston, 1982:83). The means of doing this, as Preston explained, is through technological and economic aid, where under such circumstances the people of economically underdeveloped areas need all these resources to improve their standard of living. Over time, what was perceived, as a change in their economic status should also be accompanied by a consistent change in their social, cultural and even political lives.

Meanwhile 'dependency theories' argue that the backwardness in the Third World countries is due to their lack of internal social relationships and their limitations of international division of labour. The lack of autonomous development and industrialisation has embedded these countries into the world system leading to high dependency on various institutions such as the International Monetary Fund (IMF) and the World Bank. The general argument about the world system and the notion of dependency theory illustrates that 'the core countries have been regarded as being 'strong', while those on the periphery were naturally assumed to be 'weak''(Hoogvelt, 2001:220). Under such conditions many developing countries,

including Malaysia started, to draw up a policy that emphasized a globalisation strategy by being one of the main players as an offshore centre of production for transnational corporations (TNCs). It is hoped that, by opening the door to international capital such as foreign direct investment (FDI), both the economy and society can benefit (Mahathir, 2000a:135).

It has been noted that the means of bringing more areas of the world into the world market system was a result of the Bretton Woods conference held in 1944. With the objective of making a shift towards more manageable trade, it was hoped under such monetary arrangements as the IMF, World Bank, EC, GATT, NAFTA, and APEC, that a globalised world order would be produced (Golding and Harris, 1997:3). Consequent to this, world trade experienced a very significant expansion, where many economies, including those in the developing countries, expanded aggressively. International trade has expanded more than twelve times while FDI has been expanding at two or three times more than the expansion of trade itself, from USD340 billion in 1996 to USD660 billion in 1998 (Lieten, 2001:105). From this it can be concluded that while global economic forces were penetrating the local economies, the national trade barriers were systematically being eroded and dismantled.

However this success does not mean that there are no challenges ahead. Despite its importance and opportunities, the 'small open economies' (a term that is normally associated with developing countries) are very much being influenced by the forces described above (Helleiner, 1990:3). The move towards liberalisation, privatisation and deregulation to accommodate the presence of international private capital such as TNCs in many developing economies is being thoroughly questioned despite the fact that, in many instances, the presence of TNCs as an economic agent is believed to have contributed positively to the economic growth in such areas as employment and the development of small and medium industries (SMI). However, being among the most powerful actors in the world economy, their ability to transcend national borders and bypass national policies as a result of globalisation is indeed challenging the significance of the nation-state and its capacity to govern (Hirst and Thompson, 1999:256). No doubt the means of increasing wealth and living standards by establishing a social infrastructure for the economy will primarily be the responsibility of any government (Stiglitz, 1997:13) including those of developing

nations. But the creation of a market, oriented such as to support the growth of foreign direct investment, will also create another series of challenges and other consequences.

The challenges will be those related to competitive advantage. Many TNCs has been attracted to a country not only because of its financial and economic stability but also its abundance of natural resources such as cheap but skilled labour (Lieten, 2001:110; Balasubramanyam and Balasubramanyam, 2000:355 ). For example, in the case of India, the country's ability to produce a large pool of cheap labour involving many areas of knowledge activity managed to attract many international companies such as IBM, Motorola, Texas Instruments and Hewlett Packard who started to invest in the country. China's ability to attract more than USD45 billion of FDI in 1997 alone is indeed a result of that process (UNDP, 1999:27).

As such, it is increasingly important for a country to remain competitive in the global economy (particularly those economies relying very heavily on international private capital such as Malaysia) by providing a cheap but skilled labour force to prevent the country losing out. For example, in the case of Malaysia, it has been reported recently that, although FDI in the country is contributing well to her economic growth, the competition posed by countries like China and Vietnam, have seen the FDI in the country plummeted in recent years (NEAC, 1999). This may be due to the movement towards engaging services sector while maintaining the importance of its manufacturing industry, which is increasingly evident in the context of the Malaysian economy. Under such circumstances not only does much of its economic system need to be restructured, but more importantly is its ability to reconstruct its education system in accordance with the changing task is becoming more apparent for the purpose of remaining competitive in the global market.

If we were to take Giddens' interpretation of globalisation, the move towards a globalisation strategy that has been adopted by many developing nations, including Malaysia, would have the basis of modernity (Giddens, 1990). What can be perceived here, with the drive to speed up technological advance and organisational change through ICT, is that the 'complex relations between local involvements and interaction across distance' or as Giddens terms it 'disembedding', might happen



(Giddens, 1990:64). What this means is that, as the global communication network becomes more complicated along with the growth of global production and exchange, the possibility of a decrease in the local autonomy over social lives from the very 'distanced relations' might take place. This does not mean that local happenings are no longer considered important, but 'the truth of experience no longer coincides with the place in which it takes place' (Harvey, 1989:261). The argument above sees modernity as being 'inherently globalizing' (Giddens, 1990:63).

But as far as the issue of globalisation and development is concerned, many leaders are aware of the impact of this phenomenon. For example, during the APEC conference in 1998, the Malaysian ex-Prime Minister Dr. Mahathir Mohammed welcomed globalisation but was still concerned not to rush too rapidly towards it. As he mentioned, 'We should not reject globalisation. It has to come to this shrinking world. But the big and powerful can be magnanimous and accord the small and the weak time and latitude to prepare and make adjustment' (NST, 1998). This is particularly important for a country, which is continuously searching for national progress through economic liberalisation whilst at the same time trying to maintain its cultural and national identity. The major role for the developing nations is not only to strike a balance between market competition and major social interests, but also to comprehend both forces by creating its own pace in moving towards modernity.

Issues such as capitalism and cultural imperialism are not single and linear processes. Obviously, by liberalising its economy in order to be able to compete in the global market coupled with the advancement in ICTs such as the Internet, Malaysia will also invite the presence of transnational media. Being thoroughly integrated into the capitalist world system and with their power and global reach, the possibilities of commodification of cultural experience in modern societies, including those in the developing countries, induced by the transnational media corporations is becoming more apparent (Tomlinson, 1999:83; Schiller, 1979:31).

## **2.6 Democracy, Surveillance and Public Sphere**

Philosophically, the notions of democratic processes in respect of political freedom and citizenship are rooted in the idea of the public sphere. Craig Calhoun (1992)

suggests that 'a public sphere adequate to democratic polity depends upon both quality of discourse and quantity of participation' (Calhoun, 1992:2). Underpinning on the idea of the communication media lies the belief that the non-democratic invisibility and top-down approach of the traditional media has prompted the emergence of ICTs which are perceived as being less hierarchical in nature and seek for more democratic participation. This is based on the assumption that a varied cultural representation and citizen participation can be well organized under such media (O'Sullivan et.al., 1994).

Centring on the notion of public participation in democratic process, many have expressed hopes that electronic democracy could be the basis of promoting deliberative democracy and surveillance processes. It is believed that the unprecedented growth in ICTs, such as the Internet, is providing opportunities for political mobilisation, while the vast amount of public policy information will be the basis for the people to be well informed whilst expressing their opinions and making voting decisions (Dutton, 1999:178). With official documentation increasingly available electronically, such as in websites and multimedia kiosks, not only has this contributed to the notion of 'open government' but also has opened up more 'possibilities for people and companies to bypass government control' (Lawson, 1998:7). As such, it would allow for full participation in direct democracy and public deliberation, where the government is seen to be less hierarchical and bureaucratic (Frissen, 1997:114-115).

Meanwhile in the context of surveillance, the continuous use of ICTs by many governments for the means of promoting greater electronic democracy was seen as a tool for such a government to monitor people's private lives. The concerns of the state over crime, security and economic gain have made the issues of surveillance, such as control and privacy, more important than before (Lyon, 1994:85). The concern is based on the understanding that the augmentation of surveillance within society under such processes will be the basis for the 'reinvention of politics' in a society that is becoming more risky (Lyon, 2001:135). This may mean that the rise of a 'surveillance society' in modern nation-states can be seen from two perspectives; one as an effort to control situations to avoid breakdown and chaos, by imposing a

new form of order. The other is as a means to encourage democratic participation and search of full citizenship through the advent of ICTs.

The idea of promoting electronic democracy has prompted many governments to rush into making more information widely available to general public via the electronic media involving ICTs. Online political discussion, tele-voting, deliberative polling and the storing, processing, retrieving and even marketing of personal data for the purpose of managing or influencing, are all increasingly made available online. It is hoped that the political freedom and citizenship participation in the electronic democracy as part of the democratisation process will be further enhanced.

But, as argued by many, the above conceptions of ICTs are recasting the balance between the government and the public. Indeed, this great transition from liberal to organized capitalism, which has shifted much of the relationship between government and the public, can be clearly seen in the work translated by Jurgen Habermas on the *Structural Transformation of the Public Sphere* in 1989 (Habermas, 1989). In his influential work he sees that, besides the possibilities of emancipatory intervention, there lie also the reasons for the deterioration of the increasing capitalist democracies (see Calhoun, 1992).

In his critique of the eighteenth-century European bourgeoisie, he describes the way in which early elites, who constituted themselves as 'the public' and discussed the political issues in the space set apart from the state and civil society, can be regarded as an 'ideal' form of the 'public sphere'. He sees this as the real formation of 'public opinion', which is set apart from the conception of the social and the economic entity, a situation, which he regards as a balance between 'lifeworld' and 'system organisation'. But by the mid twentieth century, the changes in the social system as a result of industrialisation and development have shaken both conceptions. The increasingly interventionist, bureaucratic state and the capitalist media, such as public relations and advertising, have encourage the notion of the public sphere to gradually fall into decline. As pointed out by Malina, 'Differences between public and private in the political and economic domains were blurred, shifting the focus from rational discussion of politics and culture to mass consumerism (Malina, 1999:25-26).

This is a clear indication that the communicative media in the context of the public sphere seem vulnerable at the moment. The ability of modern propaganda to gain profit and consumerism has both diminished the importance of public communication. What is obvious nowadays is that information is being regarded as a product that is 'privately produced as a commodity for sale' (Schiller, 1996:35). Those with the ability to pay most will probably be in an advantageous position. Although universal access to ICTs is well established, the capitalist mode of production by private institutions and companies taps a lucrative market, which prevents those with the inability to pay from accessing better information. Conversely, this further difference between haves and have-nots will tend to encourage social division to occur. In this, the context of organising open democratic expression in the public sphere, such as those promoted in electronic democracy, can be regarded as problematic.

In another view, Held (1987) strongly argued that the emancipatory potential in this sense can be questioned, particularly in the liberal protective democratic states. What he meant is that there is a clear separation between state politics and civil society when the general focus of the state is continuously supporting private capital for the development of the competitive market (Held, 1987:99). The process of liberalisation, deregulation and the extensive use of ICTs is the best example of this, and it is in such process that many countries, including Malaysia, are engaging as a means of staying competitive in the global economy. The outcome of this would probably be the issue of promoting private entities rather than the public sphere itself.

Currently, there is a widespread belief that the hype surrounding the ICTs is promoting a kind of 'strong democracy' for more of the public to engage in public debate (Becker, 1998:343). A good example is the increasing numbers of government's political websites and chat rooms that are becoming dominant in cyberspace. It is that the advancement in ICTs such as the Internet that will become the basis for more engagement in political discussion. The growing number of government agencies using ICTs to change the way services are delivered is enormous. Norris (2001) in her empirical study to chart the number of government websites around the globe, reported about 14,000 government agencies as being online in mid 2000 (Norris, 2001:116). There is a similar situation with the increasing number of political websites, including radical groups from both Left and Right.

Even in the case of Malaysia, there is growing evidence of how the Internet has been used by both the government and opposition groups to mobilise the democratisation process (see for instance Baharuddin, A. et.al., 2001). There is a hope that through the means of 'open government', the democratisation process will be further enhanced while the relationship between the government and its citizens will be further strengthened.

Despite its new possibilities in offering the elements of decentralised participation, citizenship and democracy, there also lies the question of how ICTs in capitalist democracies can be the basis for revitalising the public sphere's emancipatory potential. Anna Malina (1999) has forwarded her concerns on the issue, mentioning that 'ensuing struggles for technological advantageous can produce a range of advantage outcomes, bringing huge benefits to some and profound advantage to others' (Malina, 1999:24). What can be noted is that the promotion of electronic democracy in the increasing 'surveillance societies' is actually promoting the growth of an 'information aristocracy' (Carter, 1997:137). This is due to the fact that the increasing economic value of communication networks and information services provided by many national and local governments, are targeted at maximizing freedom for market forces rather than maximizing public intervention, which will undermine the regenerating new form of the public sphere (Habermas, 1989). Further to this, ICTs are seen as moving towards providing commercial services rather than a political forum for exchange and interaction. What is worrying is that the continuous support of private capital will lead to greater divisions in society. The 'ability-to-pay' criterion for accessing the information domain will allow those with very restricted budgets to be marginalized since the importance of the public sphere very much depends on the level of the accessibility of the information and communication domain for participation in democracy (Golding, 1990).

It is beyond doubt that the number of people accessing the Internet is increasing over the years while government/political information is doubling, but still there are growing doubts as to how the Internet can be the basis for reviving the democratic process at the click of the button. It has been widely suggested that in comparison with the traditional media, the limitations imposed by the net are extremely significant. Downey (2001), for instance, has suggested that, because the Internet is a

‘pull technology rather than a push technology like radio and television; this means that people have to decide to visit a website and this results in the wrong audience from the perspective of political parties’ (Downey, 2001:606).

Although in many instances digital technologies, such as e-mail, are becoming important elements in the dissemination of information to policy and decision makers, it is still the traditional methods such as informal meetings and newsletters which continue to be prominent (OECD, 1999), while others even question the way that information is being gathered and disseminated through the net. The use of elements with a more ‘top-down’ approach to gathering information rather than a ‘bottom-up’ methods along with the lack of interactivity do not suggest that we are in the midst of engaging in electronic democracy (see for instance Nixon and Johansson, 1999; and Norris, 2001). But, most interestingly, although political information is increasingly available on the net, it is still the case that ‘the people to benefit from this development are already relatively well catered for’. Downey claims that, in many instances the voters have already made their own decision as to whom they should vote for (Downey, 2001:609).

Meanwhile, besides the deterministic views of ICTs, role in the power relationship between government and ‘the people’, there is also a notion of how the present government should be viewed differently. There are many debates concerning the notion that the emergence of new electronic media, such as the Internet, worsens the meaning of democracy. Many would conclude that the means of censoring many forms of representation such as free speech and pornography as well as government secrecy and official documentation through the process of surveillance in both liberal and authoritarian regimes, do not improve the level of national public debate. This might be true in the case of traditional media where the means of control and censorship are highly regarded as in such authoritarian regimes such as Burma, Libya and Cuba. Even in the case of Malaysia, it is evident that the traditional media are part of the state propaganda system to strengthen the government grip by imposing certain laws and regulations such as the Official Secrets Act (OSA) and the Printing Presses and Publications Act.

In many instances, the development of the Internet is seen as being completely free from censorship and state control. However because Internet access is directly connected to a particular person who then falls under national jurisdiction, many policy makers around the globe have taken some highly restrictive measures against both users and providers through the regulation of Internet traffic. The introduction of laws such as self-censorship by ISPs (Internet Service Providers) introduced in Australia in 1996, the law pertaining to Cyber pornography and racism in Germany in 1997, censorship measures introduced in the Philippines and the Republic of Korea in 1996 or even in the case of Malaysia, on the monitoring of Internet content introduced in 1996 were among the regulatory measures taken by many national lawmakers to further control the indecent content of the Internet (see for example Hamelink, 2000).

But the ability of the material to cross borders through different networks and channels was among the reasons why it easily slips through state censorship<sup>8</sup>. This can be evident as the Internet has begun to mobilise dissident global movements for political freedom, such those in Indonesia, Mexico, Sri Lanka and Tibet or even to strengthen global terrorist networks (Castells, 2004:72). This gives an indication that it is becoming more difficult to silence the critical voices by using the new media compared with the ability to regulate and control the television airwaves. A study by Hill and Hughes (1998) had found that the increasing use of Usenet groups is providing more public space for political discussion, which is becoming more critical for antigovernment voices and those of authoritarian regimes (Hill and Hughes, 1998:17). Some might argue that the importance of such methods is that they might promote 'the growth of virtual counter-public spheres' (Downey and Fenton, 2003:199).

In the case of Malaysia, despite of the heavy promotion of ICTs and liberalisation, the importance of this growth for its political and cultural establishment is still unclear. Whether this will further enhance the democratisation process and public sphere in the country is also unknown. The effort to reinvent the government along liberal democratic lines as heavily promoted by Malaysia will most likely have its

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<sup>8</sup> For example in the case of China, through strict regulation and censorship being imposed by the government through the obligations for the Internet users and ISPs to register with the authorities in addition to the need to sign a declaration that forbidden sites will not be visited. But the use of electronic mail for such purposes is what escapes their censorship.

consequences for deliberative democracy and the search for greater pluralism. As mentioned by Downey and Fenton, 'shared networks may offer a *sense* of solidarity at the click of a mouse but actual critical solidarity is by-passed' (ibid). Although it might be the case that greater pluralism will emerge as a result of continuous network exchanges, Habermas cautions that this may lead to greater fragmentation of the civil society that will then spill into other areas such as the political and cultural divide.

## 2.7 Concluding Remarks

The notion of the information society is intertwined in a very complex manner. It poses the aspects of both ideological and utopian elements, which cannot be disregarded. To rely upon the deterministic view of technological development as providing a predictable outcome is something that should be resisted. As with social shaping, the involvement of human agents, includes those in economic, deliberative politics and even cultural choices. But still to only take into account the linear logic of social determinism as the main social push towards our understanding of technological change is equally questionable. It is likely that the answer may take many other forms in order to understand the problems ICTs presented for the structure of society.

Winston (1998) has clearly argued that our understanding of technological development should be accompanied by both direct and indirect consequences. The need to balance scientific advances and 'social push' can provide unpredictable outcomes such as those relating to political decisions and its acceptance in the social sphere, which lies at the core of our understanding of such developments. This is important, particularly since the relationship between the development of ICTs and its consequences might impact on economic, social and cultural attainment.

Arguably, the technological development such as the ICTs can be well understood through the increasing informatisation process under the newest mode of capitalism that has changed the course of many of today's informational trends. What is suggested is that it will obviously have direct and indirect consequences such as those in social, economic, political and cultural choices. As suggested by Castells in his trilogy, the *Network Society*, the process under the new mode of production brought



in by ICTs has indeed impacted upon societal transformation including the economy and self, locally and globally (Castells, 2001a 2000b, 2004). As a result, we are witnessing a restructuring in occupational structures and the educational system through the process of deregulation and privatisation, which is very much in line with the Schumpeterian's notion 'gales of creative destruction'.

However, what Castells also suggest is that the changes had their own consequences. Divisions in society are becoming wider than before. The demarcation between haves and have-nots, such as those resulting from class division and the digital divide, is clearly foreseeable, which will further fragment and marginalize society within state and the social systems. In many instances this is perpetuated through the process of globalisation and the need to remain competitive in the global economy. Clearly, the powerful international agencies (TNCs and the transnational global media) through their capitalist mode of production are contributing significantly to the factors. As such, not only is the role of the nation-state and its governance declining, even the effort to accommodate the forces through the means of ICTs is opening up other possibilities such as the commodification of culture, cultural imperialism and cultural homogenisation or even hybridisation. The role of the nation will then have its impact upon the democratic process and the destabilisation of the public sphere. The issue of access to the ICTs continues to be a major threat, which might degenerate into new forms of fragmentation and solidarity as a result of increasing social inequality and polarisation between both the top and bottom of social scale.

What is obvious is that the effort to balance economic prosperity in one hand and maintaining political and cultural identity on the other hand through the development of ICTs is contributing to many destabilization processes rather than stabilizing them. The advantage might be that the economic liberalisation would contribute to the prosperity of the nation, but on the other hand it may invite many outcomes that will jeopardise the effort to maintain its social relationships such as the one posed by the increasing social division resulting from the digital divide. This study sets out on the quest to understand what consequences a developing country like Malaysia through its Vision 2020 strategy might experience in its search for its own sort of modernity in the realm of an information society.

## Chapter Three

# Economy, Politics and Inequality In Malaysia

### 3.1 Introduction

Since independence in 1957, Malaysia has been profoundly transformed economically, socially and politically. Essentially premised on its various development strategies and programmes, the successful story of the Malaysian economy can be attributed to its market-oriented policies with regard to private sector investment and activities, both domestic and foreign. With the emphasis targeted at achieving long-term sustainable growth in equity, the basic philosophy of growth since 1970s, should be accompanied by improvements in the distribution of income and social stratification. Goals are not only set in economic terms but also in the form of social targets such as those envisaged in the New Economic Policy (NEP), New Development Policy (NDP) and initially in the current Vision 2020. But with the increasing engagement in the liberalisation process and ICTs, as in its recent economic policy for instance, the question of how well this can be the basis of its future attainment is something that is interesting to investigate. This question is based on the argument made by many that the continuous engagement in such developments will further divide the society (Castells, 2000a, 2000b, 2004; Norris, 2001).

As such, this chapter will serve as a contextual background to the thesis. The discussion will be centered on the Malaysian historical, economic and political context with the inequality issues as its main backdrop. Using the issues of inequality

as the basis for analysing the role of history, the economy and politics, is essential for our understanding of the implications that the recent economic development and ICTs might have on the future attainment of a Malaysian society.

The first part of this chapter examines the historical context during the colonialist period, particularly British colonialism. The main objective of this section is to chart the influence of colonialism in the formation of a multi-ethnic society in Malaysia and its later implications for the economy and politics. In the second section the discussion will be focusing on the various development and policy strategies engaged by the government to further develop the economy and society. This section will serve as an indicator of the government's aim to be a developed country by 2020 through its extensive use of ICTs. Finally a discussion on politics will be included as they play an important role as far as policymaking is concerned.

### **3.2 Brief background of Malaysia**

Malaysia is regarded as being of the successful economies in the developing world. Being one of the fastest growing regions in the world, Malaysia's aims are to reach developed status within the next two decades through the extensive use of ICTs. Strategically situated in the heart of Southeast Asia, her neighbours comprise Singapore in the south, Thailand in the north, Indonesia in the west and the Philippines in the Far East. Malaysia comprises Peninsular Malaysia and the two states of Sabah and Sarawak, which are located on the island of Borneo where Brunei and some parts of Indonesia are also situated (Diagram 3.1).

Twenty years ago, with its economy based on the export of agriculture and mineral products, Malaysia was merely known as an "Agrarian State". Today, manufacturing and service industries dominate the Malaysian economy. This structural change in many of its economic sectors has helped the country to grow tremendously. Historically Malaysian society has been based upon unequal economic and political segregation. However, the recent growth led to further social division based on disparities in income distribution, work composition (particularly between genders), the increasing gap between urban and rural dwellers and even political division.

Diagram 3.1

## Map Of Malaysia



With a total population of 23.27 million, according to the 2000 census, Malaysian society is considered to be multi-ethnic, multi-lingual, multi-religious and multi-cultural. The population comprises three major ethnic groups namely the Malay, Chinese and Indian. Of the total Malaysian citizens, Malays make up 65.1 per cent, while 26 per cent are Chinese and 7.7 per cent Indians. Not only does each community strongly guard its cultural identity and ethnic dimensions, even most political parties are ethnically based.

Malaysia is made up of fourteen states: Johor, Melaka, Negeri Sembilan, Perak, Pulau Pinang, Selangor, and the Federal Territory of Kuala Lumpur, make up the more developed states whilst Kedah, Kelantan, Pahang, Perlis, Terengganu, Sabah and Sarawak from a group of less developed states ones. As for Kuala Lumpur, as well as being the capital city of Malaysia and the centre of economic and cultural activity, it is also the most urbanized state with 100 per cent urbanisation followed by Selangor with 87.6 per cent and Pulau Pinang with 80.1 per cent. On the other hand states with low urbanisation levels are Kelantan (33.5 per cent), Perlis (33.8 per cent) and Kedah (38.7 per cent) (Malaysia, 2001a:135 and 146).

### 3.3 Colonialist Period

The successive captures of Malacca by the Portuguese in 1511 and subsequently by the Dutch in 1641, the British in 1786, Japanese Occupation of 1941-1945 were followed by a further period of British rule up to the independence of Malaya (then Malaysia) in 1957. Independence marked an historic transition from colonial influence and intervention to the changing socio-economic background of modern Malaysian society. The historical context of the formation of ethnic pluralism in Malaysia can be traced back to the early contacts between Dutch and Portuguese colonialists and Chinese and Indians traders. However, it was British colonial rule that most influenced the present economic and social structure (Snodgrass, 1980:22-42; Anand, 1983:1-4; Faaland et.al, 1990:2-4)

For the British, their attempt to secure the trade route between India and China through the Straits of Malacca, the settlement of Penang in 1786 and Malacca in 1795 followed by Singapore in 1824<sup>9</sup>, was primarily aimed at the expansion of trade. But the disputes among the local rulers following the discovery of rich tin deposits in Perak and other mining activities in about 1850 signalled further British intervention, which slowly drew the Straits Settlements into closer political and economic ties despite the transformation of economic activity and the large-scale migration of Chinese population into the Malay Peninsular.

Malays were engaged in small-scale mining activity up to the middle of the nineteenth century, but the major development of the industry was accompanied by the rapid migration of Chinese workers whose numbers grew from zero in 1850 to an estimated 80,000 in 1870 in Perak alone (Andaya & Andaya, 1982:210). As at this point in time, the Chinese were the dominant figures in Malayan tin mining. For the Chinese, their ability to quickly adopt European skills and techniques in economic management and mechanical innovation had made them more successful than the Europeans (Gullick, 1969:66). Even after the British entrance into mechanised mining using techniques such as dredging, had displaced many Chinese from the mining industry,

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<sup>9</sup> Following the establishment of a trading post in Singapore in 1824, a single administrative unit, namely the Straits Settlements, comprising Penang, Malacca and Singapore was formed by the British in 1826.

they moved into other areas of the economy such as urban commerce, estates and small-scale industry. As a result the flow of Chinese immigrants from China continued (Young, Bussink & Hassan, 1980:13). The Chinese relationship with civil power, which could be described as *imperium in imperio*, was described by Victor Purcell as follows:

‘As a race they are quite prepared that the overseas administrative power shall be vested in others, indeed they seem to prefer it so. They do not want to be bothered with the legal and administrative machinery. But they want the maximum of freedom within alien framework of government, the freedom to trade and make money and to live their lives without interference. To the really ambitious Malayan Chinese, success means to be a great merchant or a captain of industry.’

(Purcell, 1967:291)

By the late 1880s, the British agreed to intervene and established indirect rule in Selangor, Perak, Negeri Sembilan and Pahang. By 1896, these four signatory states were established as the Federated Malay States (FMS) with Kuala Lumpur as its capital. With the concept of ‘Malay rule and British advice’ the Sultan was required to accept a British Resident ‘whose advice must be asked and acted upon on all questions other than those touching Malay religion and customs’. At the same time the Sultans were allowed to keep all the privileges of the Malay ceremonial court but with the executive power remaining in the hands of the British Resident. Unsurprisingly most of the Malay rulers became ‘puppets’ under the strict control of the British (Gullick, 1981:19-33). Meanwhile the acceptance of permanent British advisers by the four northern states of Perlis, Kedah, Kelantan and Terengganu and the southern state of Johor in 1914, collectively known as the Unfederated Malay States (UMS) and excluded from the FMS, had effectively allowed the extension of British rule throughout the Malay Peninsular.

With this extension Britain’s next move was to establish its commercial interests in accord with the interests of the British colonial administration. Despite growing numbers in tin mining activities, the first rubber boom caused by the expansion of the motorcar industry occurred between 1905-1908 and made the British government introduce special land regulations to encourage rubber cultivation. By 1908 it was reported that rubber was being planted in almost every state in Malaya, occupying

some 109,000 hectares, 'an area greater than that planted with any other crop' (Andaya & Andaya, 1982:214). The rubber boom in Malaya was quickly noticeable, especially along the west coast states, which made these areas more developed and prosperous than those on the east coast of Malay Peninsular, Sabah and Sarawak (Roslan, 2002). The established infrastructure of the tin industry had also benefited the rubber industry, which not only led the spectacular entry of European investment and expertise into Malaya's economy but also made the Malay Peninsular quickly become the main supplier of rubber to the world in addition to its dominance of the tin supplies.

Obviously the new activities needed more labourers. Surprisingly, the indigenous Malay community was largely bypassed to meet this demand. Instead, during the early decades of the twentieth century, hundred of thousands of 'indentured' workers from South India<sup>10</sup> were brought in by plantation owners to work on their rubber plantations while the Chinese continued to work in the tin mines. Under such circumstances, immigration continued to increase, particularly throughout the first decade of the twentieth century. This particularly occurred before the introduction of some restrictive legislation on export and planting activities<sup>11</sup> and the great depression<sup>12</sup> that took place between the periods of 1922 to 1939. Eventually, from the 1930s onwards, the ethnic changes started to slow down and stabilise, particularly the proportion of Malays in the population levelled off at 50 per cent after the period<sup>13</sup> (Arles, 1971, cited in Anand, 1983, 2). A most striking factor was the increase in locally born Chinese and Indian communities. The proportion of Chinese born in Malaysia rose from 36 to 64 per cent, while the Indians increased from 21 to 52 per cent in the period from 1931 to 1947. By independence in 1957 more than three-quarters of the Chinese population and almost two-thirds of Indians were locally born (ibid). Obviously, the most striking implication of this was that the economic and political make-up of Malaysia was becoming more divided along ethnic line.

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<sup>10</sup> The beginning of large-scale Indian migration can be traced back as early as the 1880s (see for example Hirschman, 1972)

<sup>11</sup> Discussion on the issues related to legislation pertaining to land and planting activities can be found in Thoburn (1977, 68-70)

<sup>12</sup> World economic depression took place between 1929-1933

<sup>13</sup> For example in 1800 the Malays had made up of some 90 per cent of the total population of Malaya but by the first census in 1911 they made up only 51 per cent (Gullick, 1969:74).

As mentioned earlier, at this point in time, the Malay Peninsular was made up of three major races; the Malays as the indigenous community and the Chinese and Indian immigrants as non-indigenous groups. By contrast, the form of economic and social organisation among Chinese and later the Indians along with their distinctive work as labourers in mines and on plantations kept these communities apart from the Malays who were being re-absorbed into the countryside as agriculturalists, an occupation to which they were much accustomed. The net result was a country made up of sectoral and geographical concentrations based on race (Abdullah & Mohamed, 1982:107).

Largely inherited from the British colonial administration policy of 'divide and rule', the segregation among major ethnic groups became more prominent. The Chinese and Indians were engaged more with the modern sectors of the economics such as in tin mining, rubber production and commercial activities that mostly took place in the west coast areas such as in the states of Selangor, Negeri Sembilan, Perak and Pulau Pinang which were relatively more developed. The Malays on the other hand, continued to remain in the subsistence sector of traditional and agricultural activities such as farming, fishing and paddy (rice), largely in the East Coast and northern parts of the peninsular such as in Kelantan, Terengganu, Kedah and Perlis. These states were basically agricultural states and relatively underdeveloped.

Looking at the employment structure by ethnic group and economic sector for the late 1960s for example, it was clear that Malays continued to predominate in the rural areas compared to non-Malays who were largely in the urban sectors. In 1968 for instance, about 66 per cent of Malays were in the rural sectors with only 32 per cent of total Chinese employment in the same sector. While on the other hand, the urban sector, such as in mining, manufacturing, construction and commerce, employed about 62 per cent non-Malays with Malays making up only about 15 per cent of this sector (M.Zainuddin and Zulkifly, 1982:137). This indicates that the Chinese domination in the modern or quasi-modern sector of the economy further established their settlement in the urban areas. For example, reported by Mehden (1975), in 1957 there were only about 11.2 per cent of Malays living in the urban areas while 88.8 per cent remained in the rural areas. For the Chinese, about 44.4 per cent of this community lived in the urban areas. Obviously, 'the relative concentration of non-Malays in urban areas also gave them access to better educational facilities in the



cities – a factor which helped in perpetuating their edge over the Malays in the economy' (Anand, 1983:3-4).

But the most important implication of this was the increased income gap and the widespread of poverty, particularly among the Malays. From Table 3.1, below, it is clear that, while there was an indication of a reduction in the incidence of poverty in the period of 1957 to 1970, about 65.9 per cent of Malays were still poor, compared to only 27.5 per cent Chinese and 40.2 per cent Indians respectively. Moreover, the severe poverty problem seems to have occurred more in rural than in the urban areas. Even though there were urban poor,

**Table 3.1**  
**Incidence of Poverty in Peninsular Malaysia (%),**  
**1957/58 and 1970**

	1957/58	1970
All Households	51.2	49.3
Rural households	59.6	58.7
Urban households	29.7	21.3
Malay		
All households	70.5	65.9
Rural households	74.9	70.3
Urban households	32.7	38.8
Chinese		
All households	27.4	27.5
Rural households	25.2	24.6
Urban households	29.4	30.5
Indian		
All households	35.7	40.2
Rural households	44.8	31.8
Urban households	31.5	44.9

Source: Ikemoto (1985)

as well as Chinese and Indian poor, the majority of the rural households were Malays, and these Malays experienced higher levels of poverty and remained the largest group. This is based on the fact that most of the Malays were to be found outside the modern, urban and corporate sector. Malays tended to be poorly represented among professional, entrepreneurs or corporate managers, as 'they continued to be concentrate

peopled in low-productivity peasant agriculture and the public sector' (Gomez and Jomo, 1999a:19).

This was the case during the period between 1957 and 1970 when there was a fall in income share of about 30 per cent for the lowest 20 per cent of households. It was the predominantly Malay rural households that experienced the sharpest decline of about 40 per cent; an amount that was sharper than the Chinese urban households (15 per cent) (Pang, 1983:317). Although some measures to speed up the Malays' economic mobility and to promote *bumiputera*<sup>14</sup> capitalism through NEP was introduced (to be discussed in the next section), the ownership of share capital among the Malays in 1970, still remained low at about 2.4 per cent compared to the Chinese, 27.2 per cent, and that of foreigners, which constituted about 63.4 per cent (Gomez and Jomo, 1997).

After independence, particularly by the mid 1960s, Malay feelings of being economically deprived became more noticeable. The sentiment was felt by the new generation of Malays, especially among the upwardly ambitious Malay civil servants and the new cohort of educated and urbanized Malays, who wanted more and quicker economic advantages. Much blame was put on the government for its perceived error in not aggressively correcting the economic imbalances between the ethnic groups. Since then, the issue of the economic backwardness of the Malays has been used by the Malay political elites and intelligentsia to single out the ethnic inequality factor (Mahathir, 1970:76).

These economic imbalances, despite some efforts that had been made to eliminate the pre-independence pattern of foreign and local Chinese ownership of the corporate sector has created the ethnic disturbances on May 13, 1969. The bloody racial riots that occurred during that period, particularly between the Malays and the Chinese, had most tragic effects. The riots had proved to have a damaging effect on nation building. Many argued that, for Malaysia to enjoy progress, stability and harmony in the future, correcting and narrowing the economic imbalances between ethnic groups

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<sup>14</sup> Bumiputera literally means the "son of the soil" related strongly with the Malays to differentiate them from the other non-indigenous communities such as the Chinese and Indians. The Malays are the main Bumiputera in Peninsular Malaysia, meanwhile in Sabah, the Bumiputera are Kadazan, Bajau and Murut. In Sarawak they are Malay, Bidayuh, Iban and Melanau.

was essential. As a response, the New Economic Policy (NEP) was introduced by the government in 1970, a policy strategy that was to be implemented over the 20-year period to 1990. Under its two-pronged strategy, its primary objectives were to eradicate poverty in society, regardless of ethnicity and to increase Malay and other indigenous peoples' (bumiputera) participation in the country's economic growth and wealth. This was to be targeted at a figure of 30 per cent by 1990.

However, inequality among the ethnic groups in areas such as income level, the rural-urban dichotomy and work composition proved to be highly persistent during this period. But it was claimed that the affirmative action taken by the government through NEP was the turning point in bringing the rapid economic growth that the country is presently enjoying and eventually helping to reduce inequalities within society. How far this has been the case as a result of various policy implementations will be discussed in the next section. At this point we must turn to a discussion of Malaysian economic development to understand its contributions in further developing the economy and the implications for its future progress.

### **3.4 Malaysian Economic Development**

Some observers of Malaysia's economic development have argued that Malaysia appears to represent one of the success stories of a developing economy which challenges many conventional models of national development [see for example World Bank (1993) and Trezzini (2001)]. Being in the first generation of newly industrializing countries (NICs), Malaysia has the remarkable record of sustained economic growth with a Gross Domestic Product (GDP) growth rate of between 8.0 to 10.0 per cent during the period from 1990 to 1996, with the manufacturing sector as its major contributor. Malaysia has been portrayed as one of the 'economic miracles' of East Asia (World Bank, 1993:25) before the sudden and massive collapse of its economy due to the economic and financial turmoil in late 1997. With extensive deposits of natural gas, copper, tin, uranium, bauxite and coal, Malaysia is also known as a country that is rich in natural resources. Meanwhile in agricultural production, besides having a major producer of rubber and exporter of tropical hardwoods, Malaysia is also the leading exporter of palm oil (Alamgir, 1994:67).

The initial interest of the British Empire in the mid 19th and 20th centuries in the Malaysian agricultural economy was to cater for Britain's needs and meet the demands of the European market, as most of the products were exported to Britain. After independence in 1957, with the characteristics of a classical colonial economy, Malaysia became the world's largest producer of tin and the second largest of natural rubber. But with the uncertainties in agricultural products, such as lower commodity prices in tin and rubber and with the pricing system mostly being controlled by the West, government started to align its economic structure towards manufacturing by promoting industrialisation in selected areas, which became the basis for its continuous growth in the present decade (Brown, 1995:543). The creation of the Malaysian Industrial Development Finance (MIDF) in 1960, followed by the Malaysian Industrial Development Authority (MIDA) in 1965 has had a great impact on the pace and pattern of industrial development in the country. With the variety of incentives to attract foreign investment through the opening of free trade zones and many industrial estates, the 1970s and 1980s witnessed remarkable growth in the Malaysian economy.

### **3.4.1 Policy Change and the Growth of the Malaysian Economy**

Malaysia's success in its economic development and planning has primarily been shaped by the nature of the visions and interpretations of the respective ruling governments in promoting a national agenda for development. Jomo (1999) for example, has outlined and distinguished at least three different regimes with different prophecy and priorities in shaping the development process of Malaysian economy, which are:

- (i) 'Alliance Laissez Fairism, 1957-69 (Tunku Abdul Rahman). Generally laissez faire policies with 'mild' import-substituting industrialization, agricultural diversification, rural development and 'mild', but increasing ethnic affirmative action policies;
- (ii) Growing State Intervention (Abdul Razak, 1969-76; Hussein Onn, 1976-81; Mahathir Mohamed, 1981-85). Increasing state intervention and public sector expansion, especially for inter-ethnic redistribution; export oriented industrialisation; Looking East; public expenditure cuts from 1982, but government joint ventures with Japanese to develop heavy industries in the face of declining foreign investments;

- (iii) Economic Liberalisation (Mahathir Mohamad, 1986-present). Massive ringgit depreciation, economic liberalisation, privatisation, improved official support for the private sector; increased investment incentives; regressive 'supply side oriented', tax reforms; Vision 2020.' (Jomo, 1999:85-86)

The ruling Alliance government, a coalition of the political elite from three major ethnic groups, formed Malaysia's development philosophy after independence in 1957. It was to embark upon a programme of economic development emphasising industrialisation and economic diversification. This was effectively, a continuity of the laissez-faire economic policy of the post-colonial government. With a development strategy of minimum state intervention, the effect of such interest was to protect the ex-colonial power and encourage greater foreign investment inflows. Even though the approach of laissez-faire economic policy has resulted in rapid economic growth with a real GDP growth rate of 5.4 per cent in the period 1966-70 compared with only 4.1 per cent in 1956-1960 (BNM, 1994:4), about half of the population were still living in poverty towards the end of the 1960s as indicated in the incidence of poverty (see section 3.2). The policy was therefore considered a failure.

The introduction of the New Economic Policy (NEP) in 1971, after the bloody racial riots in 1969, marked the historical transition of socio-economic development in Malaysia. The widening gap of equity between the Malays and other ethnic groups, especially the Chinese, had forced the ruling government to divert their laissez-faire policy into greater state intervention in order to speed up the Malays' mobility in employment, education and the economy of the country to keep them abreast of the non-Malays.

With its implementation over twenty years (1970-1990) and including the Second Malaysia Plan (1971-1975), the NEP's ultimate aim was to achieve national unity and foster nation-building through massive economic redistribution programmes to achieve its twin-pronged strategy of 'poverty eradication' and 'the restructuring of society'. The targets of the NEP both in reducing the level of poverty and boosting the ownership of share capital among the ethnic groups, particularly among the *bumiputera* can be clearly seen in Table 3.2, below. Its target was that, by 1990, the

incidence of poverty among Malaysians would be reduced to 16.7 per cent, while the ownership of share capital among *bumiputera* would be increased to 30 per cent.

**Table 3.2**  
**Selected Socio-Economic Targets of the NEP**

	1970	Target (1990)
<b>Incidence of Poverty</b>		
Overall	49.3	16.7
Rural	58.7	23
Urban	21.3	9.1
<b>Corporate Equity Ownership</b>		
Bumiputera	2.4	30
Other Malaysian	34.3	40
Foreigners	63.3	30

Source: Malaysia (1991), Table 2-1, p. 34

As at 1990, most of the NEP's ambitious targets had largely been achieved. The poverty incidence had been impressively declined from 49.3 per cent in 1970 to 15 per cent in 1990, and was further reduced to 8.1 per cent in 1999, beyond its targeted figure. The identification of ethnic groups with economic function was also being reduced. The *bumiputera* share rose from 6 per cent to nearly 20 per cent in 1990 before experiencing a slight decline to 19.1 per cent in 1999. Meanwhile, shares for non-*bumiputera*, especially the Chinese, also rose from 27.2 per cent in 1970 to 45.5 per cent in 1990 and to 37.9 in 1999 (Malaysia, 1991, 2001a). In the overall observations, the *bumiputera* control of capital and ownership at the end of the NEP period was identified as representing significant progress, but it was still under-representation in terms of the actual share of corporate capital, being still below its target point of 30.0 per cent (see for instance Gomez and Jomo, 1997:166).

Malaysia experienced remarkably high economic growth during the NEP and later through the NDP period. The GDP growth rate has been increased and sustained at roughly more than 8.0 per cent annually compared to an average of only 5.4 per cent at the introduction of the First Malaysia Plan from 1966 to 1970. The government favoured the international competitiveness of export-oriented activities compared to

the earlier policy of import substitution, despite the weakening public enterprises and the heavy promotion of privatisation and its economic priorities of modernisation and industrialization which had been among the reason for Malaysia's success in achieving fast growth (Jomo et.al, 2003:109). With the heavy reliance on foreign rather than domestic-led manufacturing growth, which imitates Singapore's industrialisation strategy, the extensive transformation of the public sector by privatisation and deregulation appears to be the turning point for government policy in terms of economic liberalisation and structural change since 1986.

Modern manufacturing sectors were expanded progressively while the new wave of foreign relocation started to take shape. The passing of a Free Trade Zone Act in 1971, despite various incentives and privileges under the Generalised System of Preferences (GSP) that were withdrawn in many Asian NICs in 1998, explains the rising trend in foreign direct investment (FDI) in manufacturing industries in Malaysia. The changes in the domestic economic environment to coincide with businesses in industrialized countries, particularly the United States and Japan, enabled Malaysia to receive huge Foreign Direct Investment (FDI) from the mid-1980s to mid-1997, before the financial crisis occurred. For example, in 1993, Foreign Direct Investment contributed nearly 60 per cent of all investment in Malaysia, and Malaysia became one of the top five recipients of FDI in the developing world during 1987-93, according to the World Bank. The major bulk of FDI received was for manufacturing; with electrical and electronic products being a steady recipient since 1990, followed by petroleum and petrochemical products (EPU, 2001b). Among the major sources of FDI flowing into Malaysia are the United States and Japan. The US was the major contributor to FDI with a share accounting for 37.8 per cent followed by Japan with 14.5 per cent, Singapore 9.0 per cent, Taiwan 4.6 per cent and the United Kingdom 3.8 per cent (ibid).

Obviously, during the period from 1970 to 2000, the contribution of manufacturing to GDP increased from 13.9 per cent to 33.4 per cent as compared with the previously predominant agricultural sector, which declined from 29.0 per cent to 8.7 per cent of the total output of the economy (Table 3.3). However, the service sector, such as finance; transport and communication along with the wholesale and retail trade, continued to be dominant throughout the period. Admittedly, the Malaysian economy

has diversified considerably from the colonial economic pillars of rubber and tin. With export-oriented industrialisation increasing its momentum in the seventies and into the late eighties, manufacturing has become the largest single sectoral activity in the Malaysian economy, with services growing correspondingly.

**Table 3.3**  
**Composition of Gross Domestic Products (GDP)**  
**(% at constant prices)**

	1970	1980	1990	1995	2000
Agriculture, Forestry and Fishing	29.0	22.9	18.7	10.3	8.7
Construction	3.8	4.6	3.5	4.4	3.3
Manufacturing	13.9	19.6	27.0	27.1	33.4
Mining and Quarrying	13.7	10.1	9.7	8.2	6.6
Services	36.2	42.8	42.3	57.2	61.7

Source: (i) Malaysia (1991); (ii) Economic Report 1996/97;  
Based on data retrieved from <http://www.epu.jpm.my/eif2001/1.html>  
Malaysia (2001a)

As a result, the share of agriculture in total employment fell from 50.5 per cent in 1970 to 18.7 per cent in 1995 to 15.2 per cent in 2000, while the share of the manufacturing sector increased from 11.4 per cent in 1970 to 25.3 per cent in 1995 and 27.6 per cent in 2000. The employment rate experienced a decline from 5.1 per cent in 1970 to only 3.1 per cent in 1995 and maintained this level throughout 2000. The per capita income had also increased tremendously, from RM721 in 1960 to RM6099 in 1990 to RM13,359 in 2000 and the poverty level has impressively fallen while the gap between the ethnic groups has been reduced substantially (Malaysia, 1996, 2001a)

As can be seen, the Malaysian economy has made tremendous progress. The economic diversification towards manufacturing and its preference towards FDI have helped it perpetuate the growth in income levels and the changes in work composition. Meanwhile, the affirmative action taken by the government under the NEP has not only significantly reduced poverty amongst the Malay community, but the number of Malay capitalists and middle class has expanded aggressively (Gomez



and Jomo, 1999a:23). This can be seen, not only through the increasing size of the Malay share, but also from the increasing number of registered professional Malays that has increased from 4.9 per cent in 1970 to nearly 30 per cent in 1999 (Jomo, 1991:498; Malaysia 2001a:69). Because of the government's concentration on creating a Malay middle and business class, some re-distribution of wealth has taken place. However, there remain large numbers of Malays that have not really benefited, particularly those in the rural areas. This has been the main factor in the increasing inter-class disparity among the Malays in recent years (Zakaria, 1982:96; Roslan, 2002).

What this suggests is that, while inter-ethnic disparity is eventually closing, there is now emerging a new problem of inter-Malay inequality. This is based on the evidence that the gini coefficient amongst the Malay community has substantially increased over the years from 0.428 in 1990 to 0.4495 in 1997, compared to the Chinese community who experienced a decline from 0.423 to 0.4188 for the same period (Roslan, 2002, Table VI.2). Whether this has resulted from affirmative action taken by the government or is related to the extensive use of ICTs in recent years is something that needs further investigation.

Meanwhile, in the case of regional development, while economic prosperity is being enjoyed by the overall society there is still clear disparity between the urban and rural populations. Not only do the urbanisation rates seem to be high in the more developed states like Kuala Lumpur, Selangor, Pulau Pinang and Johor, these states also seem to enjoy high income gains and low levels of poverty, which leaves the less developed states, like Kelantan, Kedah, Perlis and Sabah, with a high level incidence of poverty. For example, in the state of Kedah the level of incidence poverty increased from 12.2 per cent to 13.5 per cent and Perlis from 11.8 to 13.3 per cent from 1995 to 1999. Conversely, more developed states, only experienced a low incidence of poverty; between 0.5 per cent and 9 per cent for the same time of period (Malaysia, 2001a:143). Moreover, the lack of infrastructure such as telecommunication and electricity coverage particularly in the rural areas such as those in Sabah and Sarawak, give an indication that the issue of inequality continues to be persistent in Malaysia (Malaysia, 2001a:322; Harris et.al, 2001).

### 3.4.2 The Present Economic Development

The introduction of the NDP (1991-2000) to replace the NEP, which ended in 1990, marked another important economic transition for the country. During this period, massive economic liberalisation, privatisation and deregulation processes took place. No doubt some liberalization, such as the privatisation and deregulation of the telecommunications and communication industries, was first adopted during the mid eighties, it was during this period that private sector was given more leeway. The call for a less regulated economy, particularly by the large Malay-controlled business class and the example of the success of other earlier East Asian economies such as Taiwan and Korea in liberalising its economy were among the important factors in the government's move towards extensive economic liberalisation (Jomo, 1999:95).

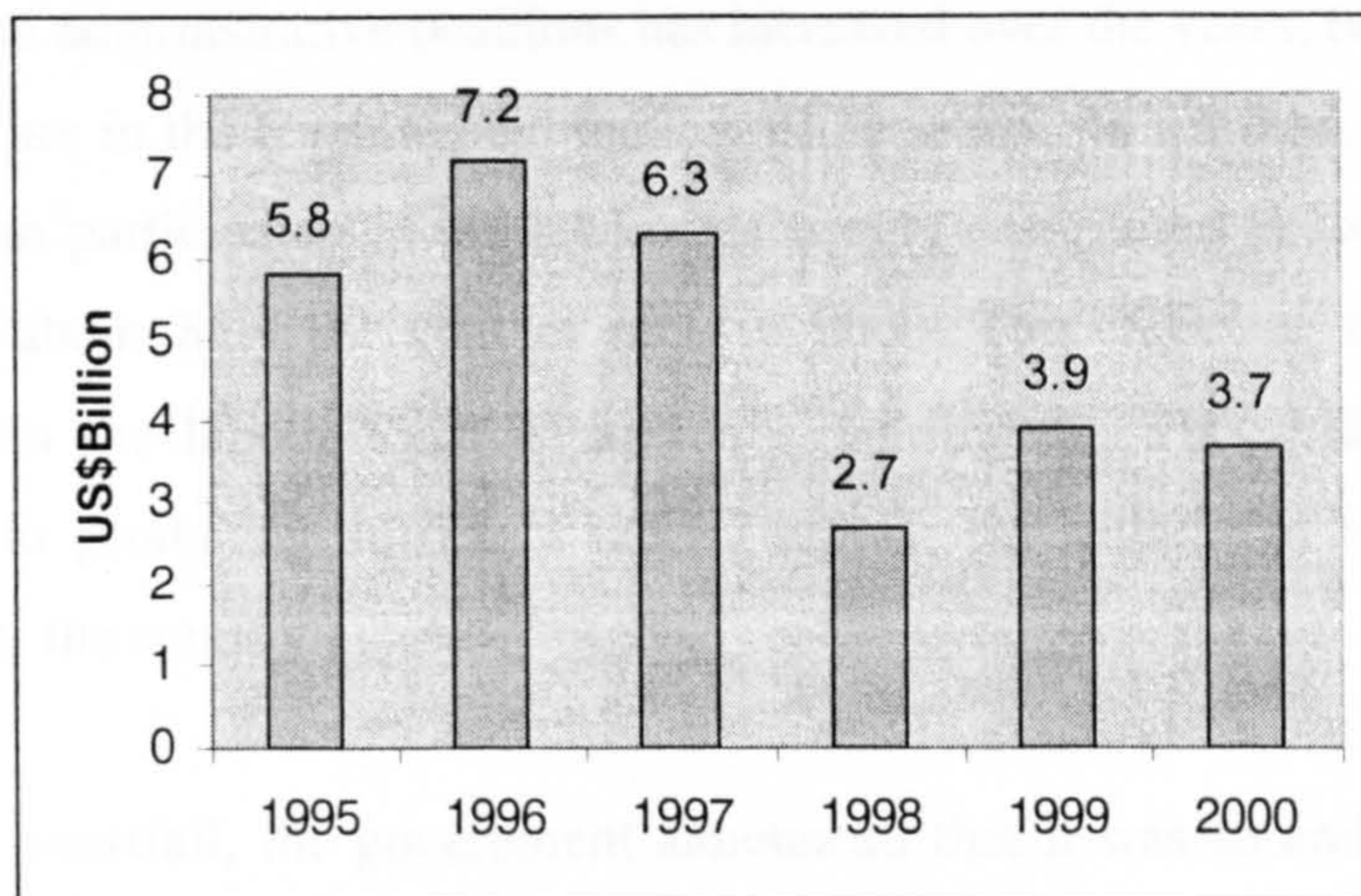
The government's favourable towards private capital could be clearly seen through various incentives which it introduced. These included lower interest rates, *ringgit* depreciation to promote export and to encourage foreign investment (as a result of the 1997 financial crisis), greater labour flexibility and the increased availability of cheap migrant labour and the privatisation of government enterprises and public projects. As a result, the country experienced an extensive period of economic growth during the NDP period. FDI made an excellent contribution to the economy (see sub-section 3.3.1) and the GDP rate for the country stayed at roughly 8 per cent per annum.

However, the liberalisation process and the opening up of the country's economy were not without consequences. In late 1997, the Asian economy, including Malaysia, began to face a currency crisis. Parts of the economic sector such as manufacturing and services were badly hit. Meanwhile, the previously good FDI contribution to the economy started to slow down. Figure 3.1 clearly indicates that, while the inflow of FDI started to increase in 1996, it then experienced a drop, particularly after the financial crisis in 1997, and reached its lowest point in 1998. Although the FDI in Malaysia started to rebound in 1999 before experiencing a slight drop in 2000, the low FDI contribution during this period compared to the early and middle 1990s, suggested that its competitive advantage started to be questioned. This was particularly due to the low number of applications from foreign companies (EPU, 2001). Besides the impact created by the currency crisis, the shift towards producing

high value-added products and greater competition from the low wage countries like China and Vietnam were among the reasons for lower inflow of FDI into the country (ADB, 2000, Utusan Online, 2004).

**Figure 3.1**

**Foreign Direct Investment in Malaysia (US\$bn)**



Source: Based on data retrieved from:

<http://www.unctad.org/section/press/docs/asean-spotlight.pdf>

Meanwhile, internal factors such as rising production and labour costs, a serious shortage of skilled personnel, the lack of scientists and R&D and the domination of men in the labour force compared to women which resulted from the changing pattern of work composition, would obviously all have their consequences for Malaysian competitiveness in the global market. There is increasing evidence that parts of the employment sector such as manufacturing and services have been gaining momentum in recent years. In terms of gender, the higher employment categories such as the administrative and managerial sectors have been continuously dominated by men who constituted over 80 per cent of the total in the period from 1992 to 1998. On the other hand women mostly occupied low-skill and low status occupations in the production, clerical and related workers categories. For example, in 1992, about 31.1 per cent of women were being employed in these employment sectors and the situation remained little changed up to 1998 (Sim & Ling, 2003:237).

Since the manufacturing sector became the most prominent employment sector, the high number of women being employed under this category is not in doubt. For example, in 1980, about 85 per cent of the workforce in electronic industries and 71 per cent in the textile industries were women (Yun, 1984:11). This could be the result of the migration of mostly rural women searching for low-skilled jobs, particularly offered by manufacturing industries which increased from, 1000 people in 1970 to 60,000 in 1990 (Roziyah, 2003:126). Although the number of women in professional, managerial and administrative positions has increased over the years, large portions of these women are in the teaching and nursing professions. In addition, the proportion of women who participated in the labour force only constituted about 44.5 per cent compared to about 85.4 per cent of men in 2000. This indicates that the gender participation in the labour force is unevenly distributed. This will then have its implications in producing sufficient labour supply, particularly in the high-skilled workforce that the country currently needs.

Realising the shortfall, the government announced that it was to embark on further economic growth and modernization, known as Vision 2020, on 28 February 1991. Using ICTs as the point of departure, action such as the establishment of the Multimedia Super Corridor (MSC) in 1996, was taken in the hope that the present strength of the economy in sectors such as manufacturing and services will be the new engine of growth by producing a high technology/high skill industry for the country to further develop and compete in the global economy. With the objective of achieving the status of a developed country by the year 2020, it is also hoped that both the economy and the society will become more prosperous and the means for Malaysia to create its own national identity will be further enhanced (Malaysia, 1991:3-4, Mahathir, 1998:27).

### **3.5 Malaysian Politics**

In order to understand Malaysian political structures in a multiethnic society, many observers and analyst of Malaysian politics regard ethnicity as the basis in understanding the whole situation. This due to the fact that the power struggles between the Malay and non-Malay (mainly Chinese) communities have been going on for over a long period of Malaysian history. Driven primarily by ethnic tension and

the compromises this requires Malaysian politics have 'always been controlled by an unequal alliance between the elites' of both major communities (Crouch, 1993:136). With its formal democracy and strong authoritarian tendencies, Malaysia has been ruled since 1955 by a coalition government of United Malays National Organisation (UMNO), the Malaysian Chinese Association (MCA), and the Malaysian Indian Congress (MIC) known as *Barisan Nasional* (National Front). These three major parties representing Malays, Chinese and Indians have won all eleven parliamentary elections held since the first one in 1955.

The success of *Barisan Nasional*, as the coalition has been known since 1974, means that it has held more than four-fifths of the seats in parliament in all elections. This has been due to their superior electoral strategy to win substantial support from both the Malays and non-Malays<sup>15</sup>. Unlike the other coalition party, UMNO, political supremacy and legitimacy have been almost unchallenged. For most of the Malays who regard themselves as the original inhabitants, their success in having a Malay Sultan as the head of the state, Malay as the national language and Islam as the religion of the state written into the 1957 constitution were seen as the symbols of Malay dominance politically, socially and culturally. Indeed, after 1969 the questioning, even in Parliament, of the pre-eminence of the Malay special rights, non-Malay citizenship, the status of the national language, Islam and the constitutional provisions pertaining to the Sultans could result in prosecution under the Sedition Act which has been defined as a "sensitive issue" and is seen by many as an authoritarian means of ruling (Crouch, 1996).

Moreover, the privileges that the government enjoyed under the existing constitution and Acts such as the Sedition Act, 1948; the Official Secret Act, 1972; the Defamation Act, 1957; Internal Security Act, 1960 and Printing Presses and Publications Act, 1948 act to limit political and legal debate and further strengthen the governments authoritarian tendencies, especially in ensuring that the Malay-dominated government remains in power. This can be clearly seen, not only by limiting the power of the judiciary and monarchy (Brown, 1995:550), but also in the

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<sup>15</sup> Like the opposition party such as Democratic Action Party (DAP), their support largely drawn from mainly Chinese community, while Pan-Malaysian Islamic Party (PAS) is religious-based party focusing totally on Malay voters.

extensive control over the media through government control and ownership of broadcasting networks and leading newspapers. Not only do publishing licences need yearly renewal and government appointment of editors, but also most of the leading newspaper and private television stations are directly or indirectly owned by individuals or corporations connected to the government (Gomez, 1990:178).

In addition, the reason for UMNO's continued dominance over the government was their ability to sustain and maintain the ethnic divisions and class structures in Malaysian society, especially among the Malays who formed the majority of the electorate. But as has been noted earlier, the government's high concentration on creating Malay capitalist and middle class has left large numbers of Malays, especially in the rural areas, not really well catered for. For such a reason, another Malay opposition party, namely the PAS, has used the lack of modernisation processes in many rural areas, which tend to be Malay dominated to gain more support. PAS's victories in the state of Kelantan for the past two decades including the recent 2004 general election, as well as in Terengganu after the 1999 general election alarmed the coalition government who see the beginning of a continuous threat. Whether this situation will lead to the PAS taking over as the leading Malay party or whether it will split the Malay vote need to be examined (Zakaria, 1982:98).

It was very obvious that the PAS supported the idea of an Islamic state. With a strong religious stance as compared to UMNO, aspects of government policy, such as the creation of a Chinese Consultative Committee, which in the fundamentalist Islamic view is the government giving privileges to Chinese exploiters caused increasing support for the PAS because of the feeling that the principles of Islamic justice had been ignored.

For the government, concern about the rise in support for extremist Islamic views, exposure to Western cultural settings and most importantly, the threat posed by the PAS to establish an Islamic state has persuaded the government to take the lead in 'Islamising the country and actively promoting its own creed of Islam' (Terzinni, 2001:341). The government view is a relatively liberal and progressive interpretation of Islam. While being in the position of actively promoting and sustaining rapid industrialisation and social mobilisation, the government doesn't view Islam as a

threat to modernisation. Despite they sees Islam as a means to further strengthen their superiority in all fields such as in modern knowledge, industry and commerce (Mahathir, 2000b:112). The government hopes that, by having a proper liberalisation policy accompanied by strong “Asian-Muslim values”, the aim of becoming an industrialised country set out in Vision 2020 will become reality. Moreover, as part of the process of globalisation the government’s lead in championing many Muslim causes, such as Bosnia and Palestinians will further strengthen their position as a ‘true’ Islamic fundamentalist government among the Malay/Muslim communities.

As for non-Malays, under the 1957 “consociational bargain” it was clearly understood that, by giving the Malays the means to control the government, the non-Malays would acquire citizenship by birth, freedom to vote and the assurance of freedom of economic enterprise in exchange. Moreover, the non-Malays’, especially the Chinese, continuous domination on economic matters was almost assured, and their rights to practice their religions and customs without any hindrance was confirmed. However the special preferences to the Malays in terms of language, culture and Islam, which is virtually embedded within the national language and culture, caused some resentment among the non-Malays.

Their resentments over the policies that “discriminate” their rights as a Malaysian citizen were expressed in the slogan of a “Malaysian Malaysia”, articulated especially by the opposition parties such as DAP, implying that all Malaysians irrespective of their race, culture and religion should have an equal stake in the country (Esman, 1994:73). Being a political vehicle for non-Malays who insisted on complete equality in the country which they regarded as their homeland, the ability of the DAP to draw support from the mainly Malaysian Chinese middle class and professionals posed another threat to the *Barisan Nasional*, especially the MCA. Moreover, the MCA was unable to influence many policy decisions since it had not held influential ministerial posts in finance, trade and industry since the 1970s and now found itself unable to act as a legitimate protector of the Chinese community because of a lack of unity among the Chinese towards the end of 1980s (Gomez, 1999:186). For MCA and subsequently the MIC, their inability to check UMNO’s growing influence in the *Barisan Nasional* was because of their awareness that ‘their chances of securing

electoral victory were virtually impossible without the Malay support UMNO could provide' (ibid:181).

The consequences of the economic recession in the late 1980s badly affected the country and resulted in the setback in the 1990 general election. The government's share of the vote fell to 82.6 per cent compared to 98.8 per cent electoral support in the 1986<sup>16</sup> parliamentary election. This led the government to embark on more liberal policies. These included a move towards liberalisation policies in the economy through a "National Development Policy (NDP)" and "Vision 2020" with the goals to achieve 'an economically just society with inter-ethnic parity'. The priority was to embark on an income-based policy rather than equity. The promotion of greater tolerance of non-Malay cultural expressions, the promotion of the English language and education at tertiary level and the tremendous economic growth of the early 1990s increased the support from various strata of society, especially the non-*bumiputeras*, which benefited the UMNO as well. Thus, the 1995 general election saw dramatic gains in electoral support for the *Barisan Nasional* government.

However, the financial crisis that hit the country at the end of 1997, followed by the sacking of ex-deputy Prime Minister Anwar Ibrahim, proved to be another turning point in the history of Malaysian politics. Anwar was subsequently charged in court on five counts each of corruption and being a promiscuous bisexual and "sodomist". Anwar on the other hand defended himself as being a government target after voicing concerns about the growing cronyism and nepotism among party members and the government. These events gave momentum to issues such as human rights, democracy, freedom of assembly and expression as well as concern about the government's accountability, which has been by the NGOs, particularly the opposition parties, to attack the government and to gain more support. As a result, UMNO in particular had become a deeply factionalised party divided between Anwar supporters and those behind the government.

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<sup>16</sup> See Baharuddin and Sankaran (1994) for detail breakdown of seats contested and won during the 1986 and 1990 general election between the Basrisan Nasional and Opposition Parties.



The 1999 general election saw a dramatic decline in the vote for the government with the government struggling to gain two-thirds of the vote during the election. These problems were due to the division described above (see Kamaruddin, 2000:27). Meanwhile, some have concluded that the heavy promotion of ICTs, such as the Internet by the government in recent years has been another contributing factor. This is due to the observation that the inability to extensively use the mainstream media led to the Internet being heavily used by the oppositions to rally their support during the election (Baharuddin et.al, 2001).

### 3.6 Concluding Remarks

For the past three decades, Malaysia has made considerable progress in terms of its economy, politics and social life. Indeed, the combination of the complicated economic progress and political background makes it an ideal subject for study pertaining to policy and its consequences for future development.

Economic liberalisation, privatisation and deregulation have taken place in the country in the past decades and have helped the country to evolve from an agrarian state into a newly industrialised one within short period of time. Coupled with various affirmative action policies, such as NEP and NDP, the country is enjoying growth in its economic attainments and social progress with large contributions from its strong manufacturing and service-based industries. Not only has the poverty level declined dramatically, but there is also evidence of changes in work composition, which has contributed, to the increase in income levels.

But the progress is not without challenge. The opening up of Malaysian economy to the global market has raised questions about its competitive advantage. In order to remain competitive, particularly in attracting FDI for its sustainable growth, the government has embarked on a more ambitious and vigorous policy shift, namely Vision 2020. Using ICTs as its point of reference, it is hoped that the move towards high skills and high technology will help to perpetuate the economy and become a developed country in the next two decades. Being a multi-ethnic society with a diverse political background, the means needed to embark on its own type of

modernity have raised important questions. These are based on the view that the technological development, such as ICTs, would have its own unintended consequences as a result of both economic and political decisions. As to whether a distinctive Malaysian identity will emerge or whether Malaysian society will be further divided as suggested by the concept of the digital divide is yet to be discovered. Most important is the impact of this is for Vision 2020. In order to see the linkages, the next chapter examines past and present Malaysian policy developments, their relationship with ICTs and the consequences.

# Chapter Four

## Policy Development: The Case of Malaysia

### 4.1 Introduction

For the past thirty years, Malaysia has been making progress in changing both its economy and social attainments mainly due to deliberate government policy designed to address key features in the country's development. Starting with the effort to correct economic imbalances among major ethnic groups through the New Economic Policy (NEP), the country has witnessed a series of policy initiatives. An example of this was the introduction of the National Development Policy (NDP) and the recent Vision 2020. The reason is simply to adjust and adapt to the current circumstances within the volatile and dynamic global economy.

This chapter will look at the comprehensive background of the policy developments, particularly those related to the use of ICTs in Malaysia, in order to understand their consequences for both the economy and social development in the country. Through this, it is also hoped we will be able to understand the important links between technology and society that the government is trying to emphasise. To abandon consideration of the social consequences of ICTs would be a mistake since it would lead us into areas of technological determinism, which would not meet the aims of this study. In order to achieve Vision 2020, it is critical for the government to balance out both the technological and social factors. The implications for Malaysia of doing this form the substance of this chapter.

Unlike the previous chapters, this chapter largely is a descriptive one. It is by using this approach that the historical and developmental processes will be charted in order to acknowledge the interrelation between one policy and another and to fully understand the consequences. As such, this chapter will be divided into three main sections: 'Malaysia's Development Plan', 'Policy Evolution', and 'ICT Policies, Strategies and Initiatives'. In the first section, the focus will be looking at a general view of the government's economic plan. In the second section, the aim is to provide a detailed outline of the major economic plans such as NEP, NDP and Vision 2020. Meanwhile the final section will be looking at the specific ICT policies and the strategies adopted by the government in recent years.

## **4.2 Malaysia's Development Plan**

Development planning in Malaysia was first accepted as a function of the government in the 1950s with the preparation of a Development Plan covering the period 1956-60. The formation of the Economic Planning Unit (EPU) in the Prime Minister's Department in 1961, enabled development planning to be carried out with authority and through the successful use of the inter-agency and planning monitoring mechanism.

Four planning tools are used in Malaysia, each with a different planning horizon. This four-tiered, cascading planning mechanism consists of the Outline Perspective Plan, the five-year development plan, mid-term review of the five-year plan, and the annual budget, all of which are later to be guided by Vision 2020. It thus serves as the basis for planning Malaysia's future. It has added a new sense of urgency to the tasks that lie ahead, requiring a re-appraisal of the current situation and a prospective assessment of the needs of the future. It demands a new approach to planning and requires the alignment of socio-political objectives to growth targets and the bringing into play of all major factors and production system (EPU, 2001a:6).

The system of preparing medium to long-term plans in the form of the five-year and the outline perspective plans has been said to be successful in garnering support for national development (ibid:8). The plans also serve as indicative plans to enable the

private sector to understand Government's economic policies and strategies and thus respond in a manner appropriate to national aspirations.

The *Outline Perspective Plan* sets the broad thrusts and strategies in the development agenda for the nation over the long term. It sets the macro-economic framework and long-term targets through which the vision of the society is to be achieved. The macro-economic framework is followed by sectoral policies and strategies, which determine the direction and thrust of the programmes for all economic and social sectors including infrastructure, industry, energy, communication and multimedia development. The First Outline Perspective Plan (OPP1) was a twenty-year plan covering the period 1971-1990. The Second Outline Perspective Plan (OPP2) covered the period 1991-2000 whilst the recently implemented Third Outline Perspective Plan (OPP3) covers the period 2001-2010.

Unlike the Outline Perspective Plan (OPP), the *Five-Year Development Plan* sets out the macro-economic growth targets as well as the size and allocation of the public sector development programme. In addition, it stipulates the role envisaged for the private sector as well as providing guidance as to the sectors that ought to be promoted. The private sector uses this guidance in determining its investment policies. Eight five-year development plans have been introduced and implemented, namely the First Malaysia Plan (1966-1970), Second Malaysia Plan (1971-1975), Third Malaysia Plan (1976-1980), Fourth Malaysia Plan (1981-1985), Fifth Malaysia Plan (1986-1990), Sixth Malaysia Plan (1991-1995), Seventh Malaysia Plan (1996-2000) and recently the Eighth Malaysia Plan covering the period 2001-2005 which is currently being implemented.

Beneath the OPP, are the *medium-term plan, mid-term review and annual budget*. The medium-term plan for the five-year period formulated in the context of and within the framework set by the Outline Perspective Plan. This is the key working document for the implementation of the Government's development programme. The mid-term review of the five-year plan not only determines whether the plan is being implemented in accordance with the stated targets and is proceeding on time, it is also reviews macro-economic and sectoral policies and strategies and makes adjustments if necessary. Lastly is the annual budget, undertaken by the Ministry of Finance in

conjunction with its annual budget preparation. This arrangement has been particularly useful in ensuring the effectiveness of the medium and long-term plans. It is in essence a rolling, overall implementation of the development plan (EPU, 2001a:10)

### 4.3 Policy Evolution

The evolution of Malaysian development policies can be classified into the following major phases, namely the pre-New Economic Policy (NEP) period, the NEP period (1971-1990) and the post 1990 policies such as those envisaged in the New Development Policy (NDP), Vision 2020 and the New Vision Policy (NVP). During the pre-NEP period, including the First Malaysia Plan (1966-1970), the *laissez-faire* policy was adopted. The emphasis was on economic and rural development aimed at promoting growth with strong emphasis on export markets. Efforts were directed towards building up the physical infrastructure as well as the social infrastructure. Policies were also directed to expand production, particularly in the tin mining activities and the plantation sector. A modest start was also made in encouraging manufacturing activities to produce light manufactured goods to reduce imports and to generate employment.

#### 4.3.1 New Economic Policy (NEP)

In 1970, the NEP was launched under the OPP1 (1971-1990). The NEP sought to eradicate poverty and to restructure society. The basic philosophy was “growth and equity” with national unity as the overriding objective. It was targeted that the level of poverty in Peninsular Malaysia should be reduced from 49.3 per cent to 16.7 per cent by 1990. Meanwhile the ownership of share capital in the corporate sector should be restructured such that proportion held by the *bumiputera* would increase from 2.4 per cent to at least 30 per cent, while that of other Malaysians would increase from 32.3 per cent to 40 per cent. For the foreigners, the policy was to reduce their holdings from 63.3 per cent to 30 per cent. In addition, it was also targeted that the

employment pattern at all levels should reflect the racial composition of the population.

This socio-economic engineering exercise was to be undertaken within the context of an expanding economy so that in the process of distributing the benefits of development, no ethnic group would experience any sense of absolute deprivation. To achieve the NEP objectives, the public sector was expected to play a major and active role in the economy, including the productive sectors, while private sector activities were encouraged to be the engine of growth. The policy also sought structural changes so that the economy would be more broadly based and, hence, would be less susceptible to external fluctuations. Many related policies and strategies were introduced during this term. The most notable of which were the Look East Policy, Malaysia Incorporated, and privatisation, ostensibly to make the Malaysian economy more competitive in the global marketplace.

#### **4.3.2 National Development Policy (NDP)**

In mid-1991, the Malaysian government announced its National Development Policy (NDP), with ten-year Second Outline Perspective (OPP2) for 1991-2000, followed several weeks later by the Sixth Malaysia Plan (6MP) for 1991-1995. Hence, while the OPP2 and 6MP are supposed to provide a medium-term economic policy perspective, Vision 2020 was announced to provide the long-term objectives. Since then, Vision 2020 has been the government's benchmarking process for any future development planning in the country.

With the aim of replacing the NEP, the NDP, which was implemented over a decade from 1991 to 2000, was the bringing about of a more balanced development. The basic policies of the NDP have been maintained since experiences of the last twenty years have shown that growth, combined with effective government policies about poverty and restructuring, contributed significantly towards the substantial improvement in income distribution and the reduction of ethnic imbalances in the country (Malaysia, 2001b:51). Unlike the NEP, the New Development Policy very much focuses on the economy and income distribution rather than on deadlines for

ethnic restructuring and wealth distribution. This can be clearly seen in the NDP's objectives, as follows:-

1. 'Striking an optimum balance between the goals of economic growth and equity;
2. Ensuring balanced development of the major sectors of the economy;
3. Reducing and ultimately eliminating the social, economic and regional inequalities and imbalances;
4. Ensuring material welfare while instilling positive social and spiritual values;
5. Priority to human resource development;
6. Making science and technology an integral component of development planning;
7. Ensuring the protection of the environment to maintain the long-term sustainability of the country's development.'

(Information Malaysia, 1997:392).

It can be noted from these objectives that, while the NDP maintains the basic strategies of the NEP Policy it also introduces several new dimensions. These dimensions include shifting the focus of the anti-poverty strategy to address hardcore poverty; emphasising employment and the rapid development of an active *bumiputera* Commercial and Industrial Community (BCIC) as a more effective strategy to increase active and meaningful participation of *bumiputera*/Malay in the modern economic sectors; relying more on the private sector to achieve the restructuring objective and at the same time strengthening the human resource development to respond to higher demand in global markets.

### 4.3.3 Vision 2020

The OPP2 is in line with the objective of Vision 2020, which envisions Malaysia to be an industrialised and a "fully developed" country in her own mould in the next three decades. Looking at a glance, Vision 2020 can be seen as a projection of a competitive, market-driven mindset. But it is more than an economic statement. The ultimate goal of the NDP is still 'national unity' in accord with the concept of



*rukunegara*<sup>17</sup>, envisaged since the introduction of NEP. Since the ‘united society’ was viewed as being fundamental to social and political stability and development, it was reflected clearly in an important document in the form of working paper – Malaysia: the Way Forward (Vision 2020) – which was first delivered by Dr. Mahathir on 28 February 1991 during the first meeting of the Malaysian Business Council. The paper represented Dr. Mahathir’s vision of Malaysia in the twenty first century and his hope that, by the year 2020, Malaysia would be a developed and industrialised nation. In this paper he outlined nine “challenges” which the Malaysians had to face before they could achieve developed and industrialised status. As he mentioned:

‘There is no fully developed Malaysia until we have finally overcome the central strategic challenges that have confronted us from the moment of our birth as an independent nation. The first of these is the challenge of establishing a united Malaysian nation with a sense of common and shared destiny. This must be a nation at peace with itself territorially and ethnically integrated, living in harmony and full and fair partnership, made up of one “Bangsa Malaysia” with political loyalty and dedication to the nation.’

(Mahathir 1991:5)

The thrust of the vision is the creation of a United Malaysian Nation, which is “fully developed” in all aspects: economically, politically, socially, spiritually, psychologically and culturally. It is said to be based on the concept of “total development” which represents the culmination of the concept of balanced development to improve the quality of life and standard of living of the population to the level enjoyed by the developed nations. With a view to accelerating industrialisation, growth and modernization, the nine “central strategic challenges” are summarized as follows:

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<sup>17</sup> Rukunegera - is made up of five pillars or principles introduced after the bloody racial riots in 1969 to accommodate the launching of NEP in 1971-1990. The five principles are 1) Belief in God, 2) Loyalty to King and Country, 3) Upholding the Constitution, 4) Rule of Law and 5) Good Behaviour and Morality. It declares that the Malaysian nation will be dedicated to achieving a greater unity of all her peoples; to maintaining a democratic way of life; to creating a just society in which the wealth of the nation shall be equitably shared; to ensuring a liberal approach to her rich and diverse cultural traditions; to building a progressive society which will be oriented towards modern science and technology.

1. 'Establishing a united Malaysian nation with a sense of common and shared destiny... at peace with itself... (and)... made up of one "Bangsa Malaysia";
2. Creating a psychologically liberated, secure and developed Malaysian society with faith and confidence in itself..., psychologically subservient to none and respected by the peoples of other nations;
3. Fostering and developing a mature democratic society, practising a form of mature consensual, community-oriented Malaysian democracy that can be a model for many developing countries;
4. Establishing a fully moral and ethical society..., strong in religious and spiritual values and imbued with the highest of ethical standards;
5. Establishing a mature, liberal and tolerant Malaysian society in which Malaysians of all colours and creeds are free to practice and profess their customs, cultures and religious beliefs and yet feeling that they belong to one nation;
6. Establishing a scientific and progressive society..., innovative and forward-looking; one that is not only a consumer of technology but also a contributor to the scientific and technological civilisation of the future;
7. Establishing a fully caring society and caring culture, a social system in which society will come before self..., not around the state or the individual but around a strong and resilient family system;
8. Ensuring an economically just society... in which there is fair and equitable distribution of the wealth of the nation;
9. Establishing a prosperous society, with an economy that is fully competitive, dynamic, robust and resilient.'

(Malaysia, 1991b:2-4)

In an effort to industrialise and modernise the country, the plan was aimed at promoting the growth of new industries and new technologies such as ICTs and the Multimedia Super Corridor (MSC). Under these extensive and ambitious plans, the government hopes to leverage the rollover effect to the whole nation and lead the country to become a developed country by the year 2020. Many related policies and strategies were and are being introduced based upon the said vision. The greater details of these strategies will be discussed in the next section about Malaysian ICT policies and strategies.

#### 4.3.4 New Vision Policy (NVP)

The OPP3 (2001-2010) has been formulated based on a policy called the National Vision Policy (NVP). With national unity as its overriding objective, the focuses of the NVP will be based on building a *resilient and competitive nation*. It is built upon

the efforts initiated under the country's past development plans and strengthens the basis for transforming Malaysia into a developed nation as envisaged by Vision 2020.

In an environment characterised by rapid advances in ICTs, globalisation, economic liberalisation and the increasing reliance on knowledge for value creation, the way for Malaysia to become a developed country and hence achieve the goals of Vision 2020, is by leveraging ICTs as a strategic tool for national development to increase its global competitiveness. This is becoming more and more crucial. As OPP3 put forward the challenges to Malaysia's long-term growth in the 21st century, it mentioned the following:

'Malaysia faces challenges on both the global and domestic fronts. Globally, the rules of competition have changed with the onset of the Information Age and a more integrated global economy as well as greater liberalisation of the markets. A country's competitive advantage is no longer dependent on factors such as labour, land and natural resources, but on its potential to produce, acquire, utilise and disseminate knowledge. The availability of knowledge enhances the potential for lower-cost developing countries to move into high value-added products at a faster pace, and enables new entrants to compete with established producers. With their huge domestic markets, these countries threaten to undermine the comparative advantage in some areas of manufacturing that Malaysia enjoyed for the last 30 years. On the other hand, the industrialised countries, which are focusing on knowledge as an important input in their production processes, have increased the share of high-technology industries in their total manufacturing value added and exports. They are more advanced in terms of human resources, technology research and development (R&D), innovative capability and infrastructure. Consequently, Malaysia will have to intensify its efforts to stay ahead of the more dynamic developing countries and catch up with the developed countries.'

(Malaysia, 2001b:4)

It is noted that the policy drawn from OPP3 is directed towards strengthening the nation's capacity, capability and resolve in meeting the challenges ahead. It emphasises the need to build a resilient and competitive nation, as well as an equitable society to ensure unity and political stability. For Malaysia to enhance its competitiveness on the global and domestic fronts, the key thrusts under the NVP stated below are directed towards:

1. 'building a resilient nation by fostering unity, inculcating the spirit of patriotism, nurturing political maturity, cultivating a more tolerant and caring society with positive values, raising the quality of life as well as increasing economic resilience;
2. promoting an equitable society by eradicating poverty and reducing imbalances among and within ethnic groups as well as regions;
3. sustaining high economic growth by strengthening the sources of growth, the financial and corporate institutions as well as macroeconomic management;
4. enhancing competitiveness to meet challenges of globalisation and liberalisation;
5. developing a knowledge-based economy as a strategic move to raise the value added of all economic sectors and optimising the brain power of the nation;
6. strengthening human resource development to produce competent, productive and knowledgeable workforce; and
7. pursuing environmentally sustainable development to reinforce long-term growth.'

(Malaysia, 2001b:7-8)

While the NVP incorporates the key strategies of the New Economic Policy (NEP, namely, eradicating poverty irrespective of race and the restructuring of society, and the National Development Policy (NDP), which emphasises balanced development, it also introduces new policy thrusts. The new policy dimensions that are given emphasis were directed towards developing Malaysia into a knowledge-based economy and knowledge-based society to enhance efficiency and productivity through knowledge utilisation. In addition it also helps to create new knowledge industries and strengthen Malaysia's competitiveness and opens up new opportunities for the country (Yu, 2001:100). This is to enable Malaysia to be more competitive in meeting the challenges of globalisation and market liberalisation.

For such reasons, measures to facilitate the process will be introduced. With ICTs as its strategic tools, the critical areas that will be addressed are human resource development, S&T, R&D and 'infostructure'. In addition, efforts will be made to change the mindset of the society to be more receptive to the adoption of ICTs and continuously promote the culture of a learning society. While doing that, parallel measures will be introduced to ensure that this development does not lead to a knowledge divide, particularly between the rural and urban communities and different income groups.

Meanwhile, the capability and capacity in acquiring and utilising new knowledge and technologies will be very much determined by the quality of its human resources. That is another reason why the policy thrusts of the NVP seem to focus more on strengthening Malaysia's human resource development to face the challenges of globalisation. The efforts are to be made namely through providing a strong foundation in education and training by raising the level of proficiency in English as well as other foreign languages; intensifying the use of ICTs in all schools and institutions; directing the training and education system to be more effective in imparting skills as well as focusing on areas required by the economy; raising the standard of the teaching and learning of mathematics and science to promote creativity and innovation to enhance S&T and R&D activities (Malaysia, 2001b:133-134)

Unlike the past development plans, the NVP under the OPP3, which constitutes the second decade of development under Vision 2020, will be more rigorous in equipping the nation to be a developed country by the year 2020. The obvious progression from the earlier laissez faire policy, to import and export-substitutions and the recently to the more liberal economic policy, has witnessed the country's strong commitment in moving towards globalisation. ICTs have been seen to be playing a major role in enhancing the processes and activities to meet the challenges (ibid).

It is thus with this wider background of Malaysian development policies very much in mind, a backdrop which is crucial for understanding the development and future direction of ICTs in Malaysia, that we now turn to more specific ICT Policies and Strategies in the next section.

#### **4.4 ICT Policies and Strategies**

Vision 2020, which was adopted by the country in the early 1990s set out Malaysia's strategic direction for the next 30 years. The successful implementation of the National Development Policy (NDP) during the 1990s, which marks the first phase of Vision 2020, has enable the country to achieve rapid growth with wide-ranging transformation of its economic, social, physical and institutional landscape.

But in the midst of the Information Age, both a more integrated global economy and greater liberalisation have once again changed the rules of competition. Knowledge rather than factor inputs are being perceived as a determinant force for a country's competitiveness (Yu, 2001:79). Malaysia's comparative advantage in traditional manufacturing is being challenged by dynamic lower-cost developing countries, while industrialised countries are forging ahead with their focus on knowledge and ICTs. As such, Malaysia has adopted a strategy of being more disciplined and competent in the economy so as to produce goods and services that can compete in the global marketplace in favour of high-technology activities through the development of a knowledge-based economy. What the government hopes is that, a greater knowledge inputs into these activities, the economy will gain higher returns, meanwhile the existing productivity will be raised and opened up into new investment opportunities (Mahathir, 1998:92-93).

Since the mid-eighties, the government has been more explicit in emphasising growth, modernisation and industrialisation as national economic priorities. It was during this time that the private sector was given a renewed leeway at the expense of the public sector through privatisation, and some economic liberalisation, including deregulation. Telekom Malaysia was the first public sector organisation to be corporatised by the government. Its corporatisation in 1987 was the first step in the government's programme to deregulate and liberalise the industry to set the stage for increased investment and growth in the country. As for Malaysia, to progress towards becoming a modern, industrialised nation by the year 2020, the telecommunications sector needs to grow in strength and sophistication. Significant progress in fostering the development of the telecommunications and later communications and multimedia industries during the last decade are summarised in some of the most significant advances and milestones as shown in Table 4.1 below.

Malaysia's telecommunications industry has certainly come a long way since the privatisation of *Telekom Malaysia* and the rationalisation of the industry. The most significant key policy initiatives events in the drive to create an educated and information-rich society to realise the objectives of Vision 2020 were the introduction of the New Telecommunications Policy (NTP) and the setting up the Communications

and Multimedia Division (CMD), after the promulgation of the Constitution of The Ministry of Energy, Communications and Multimedia in 1998.

**Table 4.1**  
**Policy Changes for the Telecommunication Industry In Malaysia**

<b>Year</b>	<b>MAIN POLICIES</b>
1987	<b>Deregulation of the Industry</b> * Corporatisation of Telekom Malaysia * Restructuring of the Department of Telecommunications Malaysia (JTM) as a Regulatory Agency
1989	<b>Liberalisation of Customer Equipment and Value-Added Services</b>
1990	<b>Market Liberalisation</b> Increase in the Number of Market Players
1994	<b>Industry Development Policy</b> Introduction of National Telecommunications Policy (1994-2020)
1995	<b>Introduction of Competition in the Market</b> Interconnection
1996	<b>New Tariffs and Rates</b> First Phase of Tariffs Realignment
1997	<b>Rationalisation of the Industry</b> Introduction of Policy to Encourage Consolidation Among Market Players
1998	<b>New Development Policy</b> Formulation of the Communications and Multimedia (Convergence) Policy
1999	<b>Enhancement of Competition Policy</b> Equal Access (Call by Call) Interim Model for Universal Service Obligations (USO)
2000	<b>Introduction of Market-Force Tariff for Cellular Services</b> Restructuring of the Internet Market Structures Introduction of Regulation on the Voice Over Internet Protocol (VOIP)

Source : MECM, 2001

The NTP is important because it provides guidelines for the development of the telecommunications sector in Malaysia to create a modern, dynamic and sophisticated telecommunications infrastructure to support national development, in line with national aspirations. Meanwhile, the CMD of the Ministry is responsible for the policy and strategic planning of the communications and multimedia industry, coordinating its implementation and monitoring its performance. For the promotion of the utilisation of ICTs, the establishment of the National Information Technology Council in 1994, the launching of National IT Agenda (NITA) and the establishment of the Multimedia Super Corridor in 1996 were seen as key initiatives by the

government to usher in the development of IT in Malaysia. Let us now turn to each of these developments to understand its roles and functions in realizing the said vision to facilitate the migration of Malaysians and institutional structures to meet economic priorities to be able to participate, develop and grow in the emerging networked global society of the 21st century (Freeman and Soete,1997:408)

#### **4.4.1 The National Telecommunications Policy (NTP) (1994-2020)**

The telecommunications sector is expanding rapidly with the introduction of the latest services and equipment and has become a catalyst for the growth of the nation's commercial and industrial sectors. As an industry in its own right, the sector has contributed much to the nation's economic development in moving towards the Information-Technology-based future. Thus, the formulation of the National Telecommunication Policy (NTP) in 1994 was indeed crucial to the provision of a framework and proper guidelines for the development of the telecommunications sector in Malaysia. It is hoped that this development will help to spur future challenges and support the attainment of the objectives of Vision 2020.

Starting from a simple network of telephone and telegraphic services introduced after the First World War, this sector has developed to become a sophisticated telecommunications network. It has expanded from helping to run the government's administrative system in its early days into the business and industrial sector and later for public use. With the nation's manufacturing and economic services sector becoming more complex, the need for a more sophisticated telecommunications network was even more essential. For example, during the Second Malaysia Plan (1970-1975), there were about 169,600 telephone subscribers. At the end of the Fifth Malaysia Plan (1986-1990) the figure increased to 1.58 million subscribers. The number of telephones for every 100 persons increased from 6.5 in 1985 to 19 in 2000. It is expected that this number will gradually increase to 30 in 2005 and 50 by 2020. Meanwhile the demand for telephone services in terms of basic line capacity will increase from 64 kbps to 150 Mbps (NTP, 2002:1& 10). Besides that, the number of customers who make use of other services such as mobile telecommunication radio, telefax and paging systems is experiencing rapid growth. It gives an indication that



the telecommunications industry in the country needs rapid changes to meet the growing demand.

Moreover, the means to support the Vision 2020 target for the creation of an information-rich society and intelligent nation were deemed to be more crucial. Under its provision, the NTP will need to provide facilities for an IT network infrastructure throughout the nation by supplying fibre optic channels along with microwave and satellite network linkages. These should be backbone of a permanent and reliable IT superhighway which will also help Malaysia to link with the rest of the world and from country's regional and international telecommunications hub. The NTP's commitment towards this effort is clearly spelled out below:

'The macro objectives supporting the National Development Policy are aims of national unity and integration by encouraging interaction between the races and regions through telecommunication facilities and services. In addition, the NTP also helps to realise the objectives of Vision 2020 in creating an educated and information-rich society through the application of a modern and sophisticated telecommunications network. The dissemination and expansion of information technology will produce a society capable of contributing towards the development of new technology to enhance the country's economic and industrial growth. Besides information technology, the application of telecommunications technology in all sectors of the nation's economy will be enhanced'

(NTP, 2002:3)

#### **4.4.2 Communications & Multimedia Division (CMD)**

Several policy changes have been introduced during the post-privatisation period to further enhance the efficiency levels of the communications and multimedia industry. Among the most significant policies are liberalisation, national development plans, rationalisation, initial realignment of rates and tariffs along with competition in the wireless, national and international segments of the market. (Please refer to the evolution of the policy and regulatory framework above, that took place between 1987 and 2000).

Since then, several changes in terms of institutional arrangements, regulatory and legislative structures to shape the new regulatory landscape for this industry have been put in place. Among the most significant institutional and legislative changes has been the establishment of the Communication and Multimedia Division (CMD) after the promulgation of the Constitution of the Ministry of Energy, Communications and Multimedia and the introduction of new related Acts (Table 4.2 and Table 4.3).

**Table 4.2**

**Institutional Changes (Telecommunication Industry in Malaysia)**

<b>Year</b>	<b>Main Changes</b>
1908	Integration of The Department of Post and Telecommunications
1946	Establishment of The Department of Telecommunications Malaysia (JTM)
1968	Incorporation of The Departments of Posts and Telecommunications of Sabah and Sarawak into JTM
1963	Promulgation of The Constitution of The Ministry of Transport and Communications
1969	Promulgation of The Constitution of the Ministry of Public Works, Post and Telecommunications
1976	Promulgation of The Constitution of The Ministry of Energy, Telecommunications and Posts
1998	Promulgation of The Constitution of The Ministry of Energy, Communications and Multimedia Establishment of the Communications and Multimedia Commission Established as the Regulatory Agency for the Industry

Source: MECM, 2001

In light of the convergence of technology in the fields of communications, broadcasting and computing, these changes are necessary. Recognising the importance of convergence in harnessing the economic and social development in the country, the strategic approach in the communication and multimedia sectors was taken up by the government by establishing the Communication and Multimedia Divisions (CMD) in 1998, which marked an important turning point in accelerating the growth of the sectors and obtaining maximum benefit from the process.

Table 4.3

**Legislative Evolution (Communication and Multimedia in Malaysia)**

Year	Key Legislative Changes
1950	Telecommunications Act 1950
1985	Successor Company Act 1968
1986	ATUR Regulations 1986
1988	Broadcasting Act 1988
1996	Telephone Regulations 1996 Postal Act 1996
1997	Digital Signature Act 1997 Computer Crime Act 1997 Copyrights Act 1997
1998	Telecommunications Act 1950 and Broadcasting Act 1988 abolished Communications and Multimedia Act 1998 was introduced Communications and Multimedia Commission Act 1998
2000	Revocation of Regulations pertaining to Cellular Tariffs/Services

Source: MECM, 2001

Under these provisions, the CMD of the Ministry is responsible for the policy and strategic planning of the communication and multimedia industry, coordinating its implementation and monitoring its performance. The main objectives as provided in the Communications and Multimedia Act 1998, are:

1. to establish Malaysia as a global centre and hub for communications and multimedia information and content services;
2. to promote a civil society where information-based services will provide the basis for continuing enhancements to quality of work and life;
3. to grow and nurture local information resources and cultural representation that facilitate the national identity and global diversity;
4. to regulate for the long-term benefit of the end user;
5. to promote high levels of consumer confidence in service-delivery by the industry;
6. to ensure and the equitable provision of affordable services over a ubiquitous national infrastructure;
7. to create a robust applications environment for end users;
8. to facilitate the efficient allocation of resources such a skilled labour, capital, knowledge and national assets;
9. to promote the development of capabilities and skills within Malaysia's convergence industries; and
10. to ensure information security and network reliability and integrity.

(Communication and Multimedia Act, 1998:17)

From the objectives, CMD are committed to carrying out three main activities, namely the policy planning, strategic planning and implementation coordination. Under the policy planning, cross-sector activities need to be carried out, especially in the sectors involved in the communication and multimedia industry. These sectors included market liberalisation; consumer rights control; accessibility, universality and connectivity; licensing and regulation; security, integrity and reliability of the network and system assurance; competition and tariff.

As to strategic planning, the CMD is responsible for preparing the short, medium and long term plans for the development of the communications and multimedia industries as well as for the guidelines for the R&D. Meanwhile, in implementation coordination, its responsibilities cover the coordination of policy and implementation for the communication and multimedia industries, in line with the government's long-term objectives, such as Vision 2020.

To complement the above policies and propel the industry to a greater height, the government has also adopted several high-level policy initiatives to build an early stake within the emerging global information age namely the Multimedia Super Corridor and National IT Agenda (to be discussed in greater detail later). The growing digital divide within society and the effort to turn Malaysia into a developed nation based on an information-rich society require a high level of performance from the of communications and multimedia sector. For this reason, the three basic principles of the concept of Universal Service: 'availability', 'equitable access' and 'affordability', need to be addressed first. As the sixth objective of the National Communications and Multimedia Policy, 'availability' means that the coverage of network services (telephone, Internet etc.) must be made available nationwide by whatever means. 'Equitable access' means that all consumers, regardless of their geographical locations, should be treated equally in terms of price, service and quality. 'Affordability' means that network services must be affordable to the consumer. Meanwhile, Universal Services require a balanced development between different areas and groups in society so as to bridge the digital divide between the 'information rich' and 'information poor' (MECM, 2002:22-23).

Under such provision, the Ministry of Energy, Communication and Multimedia through its CMD has formed its initiatives and strategies to enhance the rate of computer and Internet penetration across the nation for the purpose of bridging the digital divide. Among the initiatives are the Universal Service Programmes such as Universal Service Obligations (USO), PC Ownership Campaign, Rural Internet Centre Programmes and Local (Rural) Content Development, e-Community and Community Awareness Programmes.

#### 4.4.3 Legislation of Cyberlaws

The Malaysian Government has passed a number of pioneer cyberlaws since 1997 to provide a comprehensive framework of societal and commerce-enabling laws, which encompass aspects concerning security of information and network integrity and reliability. Cyberlaws that have been passed in Malaysia are:

##### *The Communication and Multimedia Act 1998*

The most significant legislation, brought into force on the 1st April 1999, was the Communication and Multimedia Act 1998. This legislation provides the policy and regulatory framework for the convergence of the telecommunications, broadcasting and computer industries. The Act is based on the basic principles of transparency and clarity; more competition and less regulation; bias towards generic rules; regulatory forbearance; emphasis on process rather than content; administrative and sector transparency and industry self-regulation.

##### *The Malaysian Communications and Multimedia Commission Act 1988*

This provides for the establishment of the Malaysian Communications and Multimedia Commission, a single regulatory body for an emerging and converging communications and multimedia industry.

##### *The Digital Signature Act 1997*

Regulates the legal recognition and authentication of the originator of an electronic document.

*Copyright Amendment Act 1997*

Guaranteed full copyright protection for multimedia works. It clarifies cyber space/multimedia-specific issues such as the legal status of digital transmissions and the reasonable use of licensed multimedia works and their components. The Act will be enforced by the Ministry of Domestic Trade and Consumer Affairs.

*Computer Crimes Act 1997*

This aims to clearly define cyber fraud, unauthorised access, interception, and illegal use of computers as crime. It will provide special rights of interception to law enforcement agencies in the context of fulfilling their duties. A Computer Crime Unit has been set up in Malaysia's Royal Police Department to enforce the Act.

*The Electronic Government Act 1997*

This act specifies how public services should be provided in the multimedia age and how confidential civil information can be shared and protected. The Act will guide the implementation of electronic government as a flagship application.

**4.4.4. National IT Council (NITC)**

It has been evident that comprehensive policies are being developed to encourage ICTs' use in various sectors of the economy, as well as to accelerate the growth of the ICT sector. Even though those policies can be traced back as early as the 1980s with such measures as the reduction of tariffs on computers, peripherals and software; emphasis on education and training in computers; increased use of computers in the government sector; and privatisation of the state-owned telecommunication company in 1987, most of the policies related to IT during the 1980s were not properly documented or well coordinated, rather they were implicit in the government's statements and/or actions (Raman and Yap, 1996:112). As a result there were no firm policies pertaining to ICTs. Besides the NTP, CMD and the new legislative framework, the establishment of the National Information Technology Council (NITC) in 1994 marked another strong government commitment towards establishing the direction of ICTs for the nation's benefit.

The creation of the NITC was to act as a think-tank at the highest level and advise the government on matters pertaining to the development of ICTs in Malaysia. Under the chairmanship of The Honourable Prime Minister of Malaysia, the other council members represent three different sectors, namely the public, private and community interest groups. The composition is to help forge appropriate partnerships or strategic alliances in carrying out the council's mandate. The Prime Minister appoints council members for a three-year term. The aims behind the establishment is to promote utilisation of ICTs as a strategic tool for national development and transform the nation into a value-based, knowledge society in line with Vision 2020. The setting up of the National IT Agenda in 1996 and the launching of five 'Strategic Agenda Thrust Areas' by the NITC in 1998 were the core initiatives established to facilitate the incorporation of Malaysians and their institutional structures into the developing, globally networked society of the 21st century.

#### 4.4.4.1 National IT Agenda (NITA)

With the theme "Turning Ripples into Tidal Waves", NITA focuses on the development of people, infostructure and applications to create value to provide equality of access to all Malaysians and to qualitatively transform the society into a value-based knowledge society by the year 2020. Within this theme, the 'ripples' will be the initiatives taken by the government to provide an environment in which the people will be able to make a 'tidal wave' for the realisation of NITA's vision. The creation of MSC for instance, can be considered as the earliest strategic initiative for creating such a 'ripple', followed by the introduction of the Demonstrator Application Grant Scheme (DAGS) to encourage Malaysians to participate in and utilise the opportunities made available by ICT. Since the establishment of DAGS in 1998, 37 community projects have been introduced under the scheme with total expenses of RM 48 million. e-Thalassaemia, NutriWeb and CyberCare are among the examples of DAGS projects (NITC, 2002a).

Three actions plan have been identified under the NITA framework, which are the 'development of people', 'infostructure' and 'application' (NITC, 2000:2). Under 'human development', the strategy is to prepare a strong human resource base to support development of the knowledge-economy and value-based knowledge society by reorienting the education system by such means as setting up smart schools;

providing all schools with Internet and Intranet access; the expansion of computer literacy programmes; emphasis on English literacy; promotion of e-learning and the setting up of a Multimedia University to meet the demand for ICT graduates by to the expansion of the ICT industry in Malaysia. Besides that, emphasis will also be given to the strengthening of the human resource base through skill development by retraining and reskilling in the ICT field to minimise the structural unemployment and to meet the new skills required by all sectors due to the widespread diffusion of ICTs (ibid:4).

For 'infostructure' development, the ultimate aim is to ensure an equitable distribution and access to ICTs based on the three basic principles of availability, accessibility and affordability. This should narrow down the digital divide within the society. This will include both the 'hard' and 'soft' infrastructure such as computer hardware, databases, networks and the implementation of the various laws and regulations, which regulate activities in cyberspace. Among the laws that have already been promulgated, the Digital Signature Act 1997, provides a basis for securing on-line transactions through the use of digital signatures; the Computer Crimes Act 1997 regulates offences related to the misuse of computers; the Copyright (Amendment) Act 1997, gives protection to the intellectual property rights; the Telemedicine Act 1997, is an avenue for 'telemedical' services; the Communication and Multimedia Act 1998, is a regulatory framework for the convergence of the telecommunications, computing and broadcasting industries.

Meanwhile, in the third element, which is 'application' development, emphasis will be given to enhancing and promoting the creation of indigenous content and the cultural compatibility of ICTs such as the introduction of Demonstrator Application Grant Scheme (DAGS). With the initial allocation of RM50 million in the 7th Malaysia Plan to fund a total of forty-eight Demonstrator Applications, the allocation was doubled to RM100 million in the 8th Malaysia Plan. The aims of DAGS are to focus at 'creating, developing and promoting new applications using ICTs, which create new value of content for community development within specified contexts' (NITC, 2002a). The intent behind this development is to ensure that Malaysia is able to maintain its future competitive position in the marketplace through the utilisation and innovative use of ICTs. Other programmes taken up under this initiative were the



Mobile Internet Unit (MIU), Subang Jaya 2005 (SJ2005) and TIGeR (acronym for 'Technology', 'Industry' & 'Government' for e-Revolution).

#### 4.4.4.2 Strategic Agenda Thrust Areas

With a strategy for Malaysia's migration into the e-World of the new millennium, the NITC has formulated five "Strategic Agenda Thrust Areas" to support NITA realisation. The migration was seen as a people-driven transformation. The key challenge is to engender in people and institutions the requisite mindset to successfully become part of the emerging, networked global society, currently known as the "Strategic Agenda Thrust Areas" (Table 4.4). The areas are, E-Community, E-Public Services, E-Learning, E-Economy and E-Sovereignty.

**Table 4.4**  
**Strategic Agenda Thrust Areas**

<b>THRUSTS</b>	<b>VISION</b>	<b>KEY FOCUS</b>
<b>E-Economy</b>	All sectors of the Malaysian Economy creating value and wealth through successful participation in the emerging knowledge-driven global Economy	Knowledge-driven Economy
<b>E-Public Services</b>	The Public, Private and Community Sectors Providing people-oriented, Customer-focused services Electronically	Delivery mode of public goods and services
<b>E-Community</b>	Networks of Communities dynamically participating in the process of governance to enhance the quality of life of Malaysians	Participating in governance for quality of life
<b>E-Learning</b>	Formal and informal Networks providing the Opportunity and cultivating an ethos of life-long learning for individual, organisational, institutional and societal Advancement	A life-long learning culture
<b>E-Sovereignty</b>	Citizens and institutions focused on enhancing national identity, integrity and societal stability in the face of borderless challenges to our sovereignty	Resilient national identity

Source: NITC, 2000

From the above areas, five Working Groups were formed in March 1999 under the auspices of the “Strategic Thrusts Implementation Committee” (STIC). It is a body that integrates, coordinates, monitors and evaluates the operationalisation of the NITC policy framework and ‘Strategic Thrusts Agenda’. The primary function of STIC is to chart the way forward in implementing the policy, programme and project recommendations of the working groups. Since its establishment, STIC has been ‘actively’ promoting and implementing 30 programmes and projects undertaken by various agencies and organisations using various approaches but in line with the objectives of Vision 2020 (NITC, 2002b).

#### **4.4.5 Multimedia Super Corridor (MSC)**

The ambitious Multimedia Super Corridor (MSC) project is to propel Malaysia to the status of a developed country by the coveted year 2020. Malaysia is to enter an “Information Age” where ‘information, ideas, people, goods and services move across borders in the most cost-effective and liberal ways’ (MDC, 2002d). The establishment of MSC is to assist in the economic transformation from an industrial-based economy to one that lays emphasis on information.

To underscore its commitment towards the development, the government had promised in the 7th Malaysia Plan (1996-2000) to spread the development of Information Technology (IT) throughout the society. Those commitments are summarised as follows:

1. ‘to ensure widespread diffusion and application of IT within an across sectors, in order to stimulate productivity and competitiveness and further to improve the quality of life;
2. to develop a national action plan to ensure a more systematic approach to managing IT development in the country. In particular, this will involve the development of an IT culture, the implementation of national projects such as the Multimedia Super Corridor (MSC) and “smart cities”, and the creation of the necessary telecommunications infrastructure;
3. to expand IT education and training in line with the anticipated demand for IT-related skills, knowledge and expertise;

4. to review laws and regulations that restrain the development of IT;
5. to promote the development of the local IT industry, including the design and production of innovative products, systems and services in order to generate new growth opportunities, as well as skills and employment in high-tech areas;
6. to develop Malaysia into an IT hub, with international IT companies operating from Malaysia; and
7. to enhance IT awareness among the population.

(Malaysia, 1996:460)

In line with these aspirations, the government has allocated a total of RM2.3 billion to ministries and government agencies for investment in IT-related programmes and projects in the 7th Malaysia Plan period. From the total amount, 273 million alone will be allocated for MSC Flagship Applications, 394.7 million for security services, 144 million for social services, 1.1 billion for economic services and 75.9 million for general administration (Malaysia, 1996:456-457). Furthermore it is expected that some RM25.4 billion will be invested in the same period in developing telecommunications infrastructure that will enable IT to be applied on a larger scale. Meanwhile, in the Eight Malaysia Plan (2001-2005), the total investment has been doubled to RM5.2 billion to further enhance the government's commitment towards all matters pertaining to IT (Malaysia, 2001a:411).

In harnessing the plan, the Multimedia Super Corridor (MSC) primarily spurred by the Malaysian Government in 1996 to create an ideal environment for ICT-related production as well as to provide the backbone for an information superhighway was established. Situated in a corridor and with an area of 750 square kilometres, an area that is larger than Singapore Island, the corridor spreads from Kuala Lumpur City Centre in the north to Sepang in the South, where the newest and largest international airport in the region, Kuala Lumpur International Airport (KLIA), is located. Among others, MSC also connected Technology Park Malaysia, the Petronas Twin Towers, and two of the world's first 'smart cities', namely Putrajaya and Cyberjaya.

Being the new administrative capital of Malaysia, Putrajaya is the place where the concept of electronic government will be introduced. Meanwhile Cyberjaya, will accommodate multimedia industries, research and development centres such as the Multimedia University and the operational headquarters of the transnational corporations which are expected to direct their worldwide manufacturing and trading

activities using multimedia technology. As an intelligent city, Cyberjaya will be equipped with an advanced IT and telecommunications infrastructure based on a high-speed telecommunications network with a capacity of 2.5-10 gigabits per second, which will be able to support its multimedia flagship application, multimedia interactive, as well as mobile communication services. It is also estimated that by the year 2020, there will be around 500 local and international IT multimedia companies located in the city with about 10,000 knowledge workers expected to live in the area (MDC, 2002a). The intent behind the creation of MSC, is to create spill over effects in the rest of the Malaysian economy and at the same time enable Malaysia to leapfrog into the Information Age (Mahathir, 1998:29).

Being managed by the Multimedia Development Corporation, the full implementation and execution of MSC as a “one-stop shop” is expected to take 20 years. Within this period of time, three phases of activity have been identified:

**Phase 1:** The MDC will create the MSC, attract a core group of world-class companies, launch seven Flagship Applications, put in place an innovative framework of cyberlaws, and establish Cyberjaya and Putrajaya as the world’s first “smart cities”.

**Phase 2:** The MDC will link the MSC to other cybercities in Malaysia and the world. It will create a web of corridors and establish a second cluster of world-class companies. It will also set global standards in Flagship Applications, champion cyberlaws within the global society, and establish a number of globally linked “smart-cities”.

**Phase 3:** In this final phase, it is expected that Malaysia will be transformed into a knowledge-based society – a true global laboratory for new multimedia and IT applications and the home of a record number of multimedia companies. It will have a cluster of “smart cities” linked to global information superhighways, and will become the platform for the International Cybercourt of Justice’.

(MDC, 2002d)

The establishment of MSC in 1996 was to extend the economy towards higher productivity through information technology and higher economic values. It is a project, in other words, to help Malaysia transform itself from being an industrial-based economy to one that lays emphasis on information, which in turn facilitates greater industrialisation, trade and commerce. As a launch pad for Malaysia’s leap

into the Information Age, the MSC is set to provide 'perfect investment and operational conditions' with the objectives that the MSC would:-

1. 'Help Malaysia achieve the goals of Vision 2020 by catalysing productivity-led growth through development of a highly competitive cluster of Malaysian multimedia and IT companies that become world-class overtime;
2. Help Malaysia leapfrog to leadership in the Information Age by fostering smart partnership between leading firms within Malaysia and abroad;
3. Help build global bridges between Malaysia and other intelligent cities for mutual enrichment'.

(MDC, 2002d)

As a giant test bed for a global multimedia and IT hub, the initiatives of MSC are to establish smart partnerships between leading global IT players and Malaysian companies to enable the creation of a highly competitive cluster of Malaysian multimedia and IT businesses that would become world-class over time. With that it is hoped that it will have the ability to supply added multimedia services and products to global customers and other regions, particularly in Asia and the Pacific. Three phases were to follow in the development of the MSC, Phase I, Phase II and Phase II. For these reasons, on the recommendation of NITC, the Multimedia Development Corporation (MDC) was created to supervise, monitor and promote the MSC globally. Meanwhile, to strengthen the future establishment of MSC, the International Advisory Panel comprising 41 global IT and multimedia personalities such as Bill Gates, the CEO of Microsoft, were set up in February 1998.

But the crucial element that Malaysia is facing with the MSC is stiff competition from similar high technology parks in neighbouring states in providing proper infrastructure and support facilities for the operation of the MSC. Moreover, projects such as Singapore One, Cyber Port in Hong Kong and Science Based Industrial Park in Taiwan, which have been in operation for several years, have achieved considerable maturity and advancement compared to MSC. This means that Malaysia has to compete with these countries based on its ability to attract foreign IT companies to invest in the MSC through high efficiency of its IT infrastructure and world-class facilities and services (Sayed Hossain, 2001). As such, the government is offering a package of financial and non-financial incentives to companies that qualify for MSC

status who are prepared to set up operations in the MSC. The financial incentives will be a) Tax exemption or Investment Tax Allowance; b) Duty free importation of multimedia equipment; c) Malaysian Exchange of Securities Dealing and Automated Quotation (MESDAQ); and d) R&D grants for local Small and Medium Enterprises (SMEs).

For the *Tax exemption or Investment Tax Allowance*, the companies who obtain MSC status will be totally exempted from income tax for up to 10 years, or receive a 100 per cent Investment Tax Allowance (ITA) with no duties being levied on their multimedia equipment. This applies to both companies setting up new businesses and those who are already operating in Malaysia's MSC-designated cyber cities. New businesses will enjoy a full five-year income tax exemption commencing from the date when the company starts generating income. The exemption can be renewed up to 10 years depending on the company's performance in transferring technology or knowledge to Malaysia. Alternatively, those companies engaging in highly capital-intensive activities such as infrastructure projects or non revenue-generating businesses will be granted an ITA with a deduction of 100 per cent of qualifying capital expenditure from its statutory income for five years, commencing from the date on which the first qualifying capital expenditure is incurred. Those who are already operating in Malaysia will continue to enjoy the present MSC tax incentives as mentioned above. Moreover, these companies will also be enjoying other incentives such as unrestricted employment of foreign knowledge workers and no import duties for multimedia equipment.

Under the *duty-free importation of multimedia equipment*, the MSC-status companies who are using the multimedia equipment directly to facilitate their operational processes are allowed to import such equipment with a duty free incentive, regardless of the equipment not being meant for direct sales and trading or use as components in manufactured items. Meanwhile, for multimedia products manufactured in Malaysia for export purposes using dutiable components, the MSC-status companies are allowed a refund of the duty paid on the re-exported components under the scheme "Drawback of Import Duty" scheme.

*Malaysian Exchange of Securities Dealing and Automated Quotation (MESDAQ)* is a stock exchange-based system established by the government tailored for high growth and technology companies with strong potential either with or without any track record with the aim of promoting technology-intensive industries through the strategic capital market system. What this means is that, in order to assist the development of the MSC, the multimedia companies are encouraged by the government to be part of the system by offering their shares to the public to enhance market-making activity.

*R&D grants for local SMEs.* Meanwhile, to encourage R&D activities in small and medium-sized enterprises (SMEs), and the growth of indigenous technology, Malaysian majority-owned enterprises with MSC status are allocated with the R&D grants for local exemption from Malaysian income tax. These are renewable up to 10 years, or 100 per cent of ITA, by the government. Being known as the MSC Grant Scheme (MGS), the fund is currently being increased to RM 300 million under the Eight Malaysia Plan (2001-2005) compared to only RM 200 million for the period of 1996-2000 (Malaysia, 2001a:378).

In addition to the financial incentives, the MSC-status companies will also be enjoying non-financial incentives as follows:

- a) Unrestricted employment of foreign knowledge workers;
- b) Freedom of ownership;
- c) Freedom to source capital globally for MSC infrastructure and the right to borrow funds globally; and
- d) Other MSC benefits.

*Unrestricted Employment of Foreign Knowledge Workers.* MSC-status companies will be permitted to employ any number of foreign knowledge workers, who will be granted a work visa for an initial period of up to five years. The visas will be granted to an individual who meets any of the following criteria:

- a. At least five years of professional experience in multimedia or information technology businesses;

- b. A university degree (any discipline) or a graduate diploma (in multimedia or IT) from a technical college with two years or more of professional experience in multimedia or IT businesses;
- c. At least a master's degree in any discipline.

*Freedom of Ownership.* Under the incentive, the MSC-status companies can be wholly owned by foreign legal entities but need to be incorporated in Malaysia. Meanwhile, in the case of a company setting up a branch in Malaysia, registration with the Registrar of Companies (ROC) under the Companies Act of 1965 will be needed.

*Freedom to source capital for MSC infrastructure globally and the right to borrow funds globally.* Companies that are involved in developing infrastructure for the MSC are permitted to source funds globally for their investment without any control. Moreover these companies will be given an exemption by the Controller of Foreign Exchange from exchange control requirements as an added incentive for sourcing capital globally. With the foreign currency exemptions, the companies will be free to:

- a. Execute transactions in any currency in Malaysia or elsewhere in the world;
- b. Borrow any amount from financial institutions, associate companies, or non-residents;
- c. Hedge their foreign-exchange exposure;
- d. Remit globally for any purpose; and
- e. Open foreign currency accounts in Malaysia or abroad with no limits on the balances, including accounts for the retention of export proceeds.

Both financial and non-financial benefits for the MSC-status companies operating in the cyber-cities are part of a "Multimedia Bill of Guarantees" introduced by the government to bring about the realisation of the MSC together with other benefits that the MSC companies will also be enjoying. The other benefits are a) Intellectual property protection and the world's first comprehensive framework of cyberlaws; b) World-class physical and IT infrastructure; c) Globally competitive telecommunication tariffs and service guarantees; d) No censorship of the Internet; e) High-quality, planned urban developments; g) Excellent education facilities, including

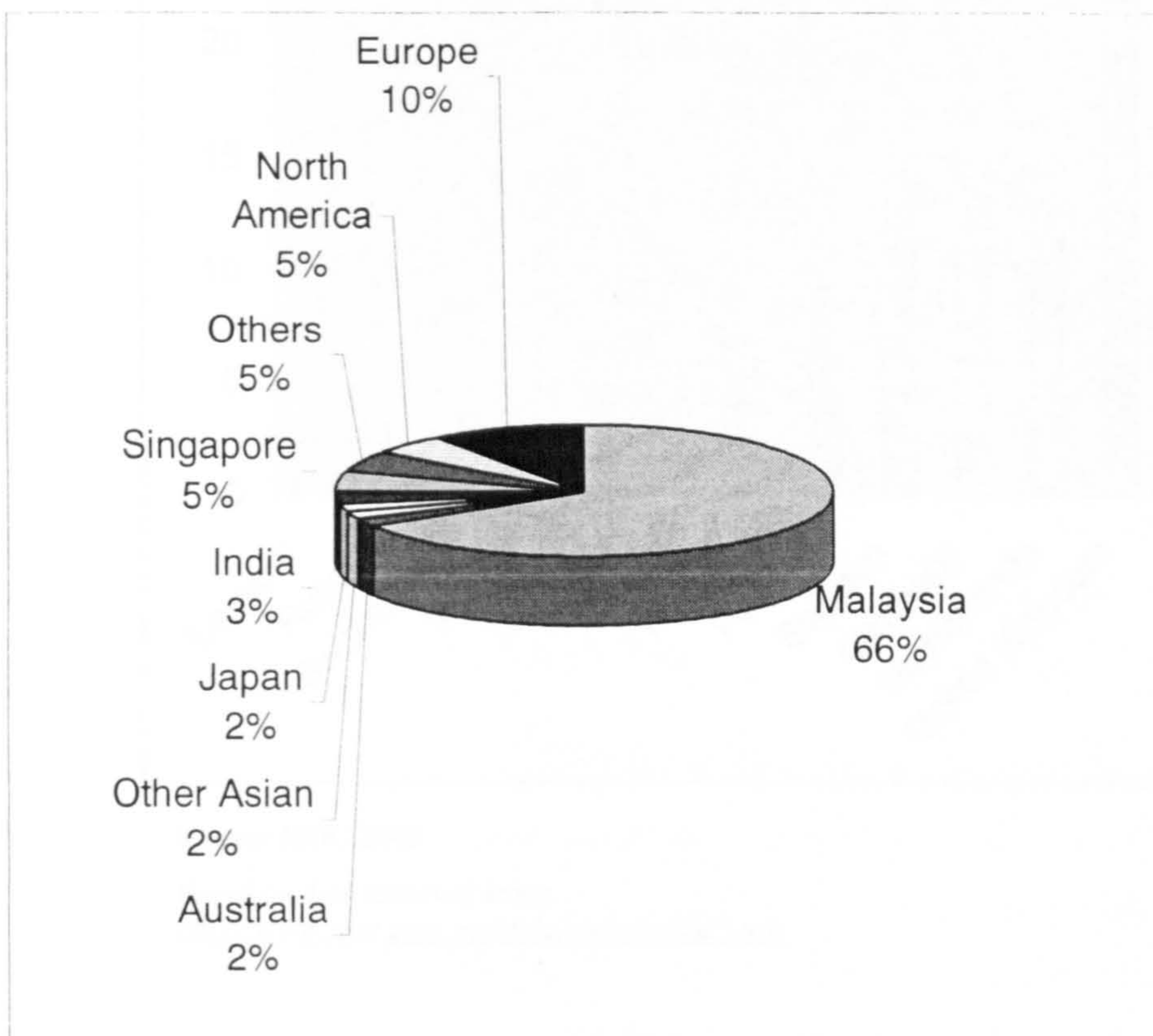


the region's first Multimedia University; and h) a Green environment protected by strict zoning (Mahathir, 1998:51).

As of April 2004, 1,016 companies were granted MSC status including higher education institutions and incubator companies: of these total 702 companies are 51 per cent or more Malaysian owned, which made up 66 per cent of the overall majority shareholding for MSC companies (see figure 4.1). For foreign companies, Europe

Figure 4.1

**Majority Shareholding by Countries/Regions  
In the MSC Companies**



Source: MDC, 2002a

Based on data retrieved from:

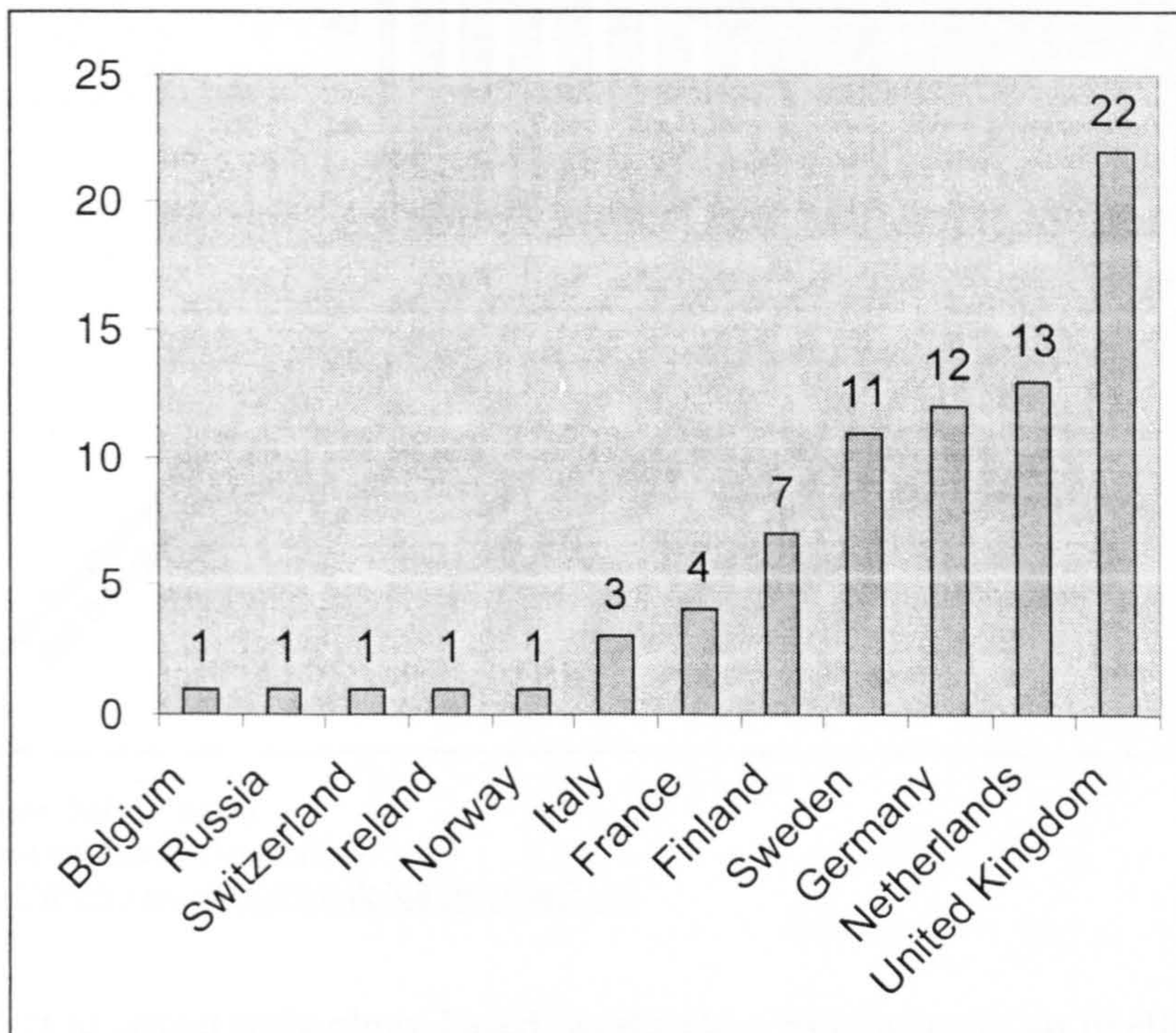
<http://www.msc.com.my/mdc/statistic/stat2.asp>

had a total of 77 companies, which constitutes of 10 per cent of the total (Figure 4.2). From the total companies approved, more than 200 are engaging in software development, either for business or engineering applications, followed by 84 companies involved in creating Internet-based businesses such as solution providers

and content development which made up of 79 companies (Figure 4.3). The smallest proportions of companies are those engaged with Incubator activity and biotechnology, which accounted for not more than 10 companies. Among the biggest players in the international IT arena are Lucent Technologies, Motorola, NEC, Acer, Sun Microsystems, Silicon Graphics, Alcatel, Errisson, EDS, Lotus Development Corp., NIIT and Philips.

**Figure 4.2**

**Breakdown of European MSC Approved Companies**

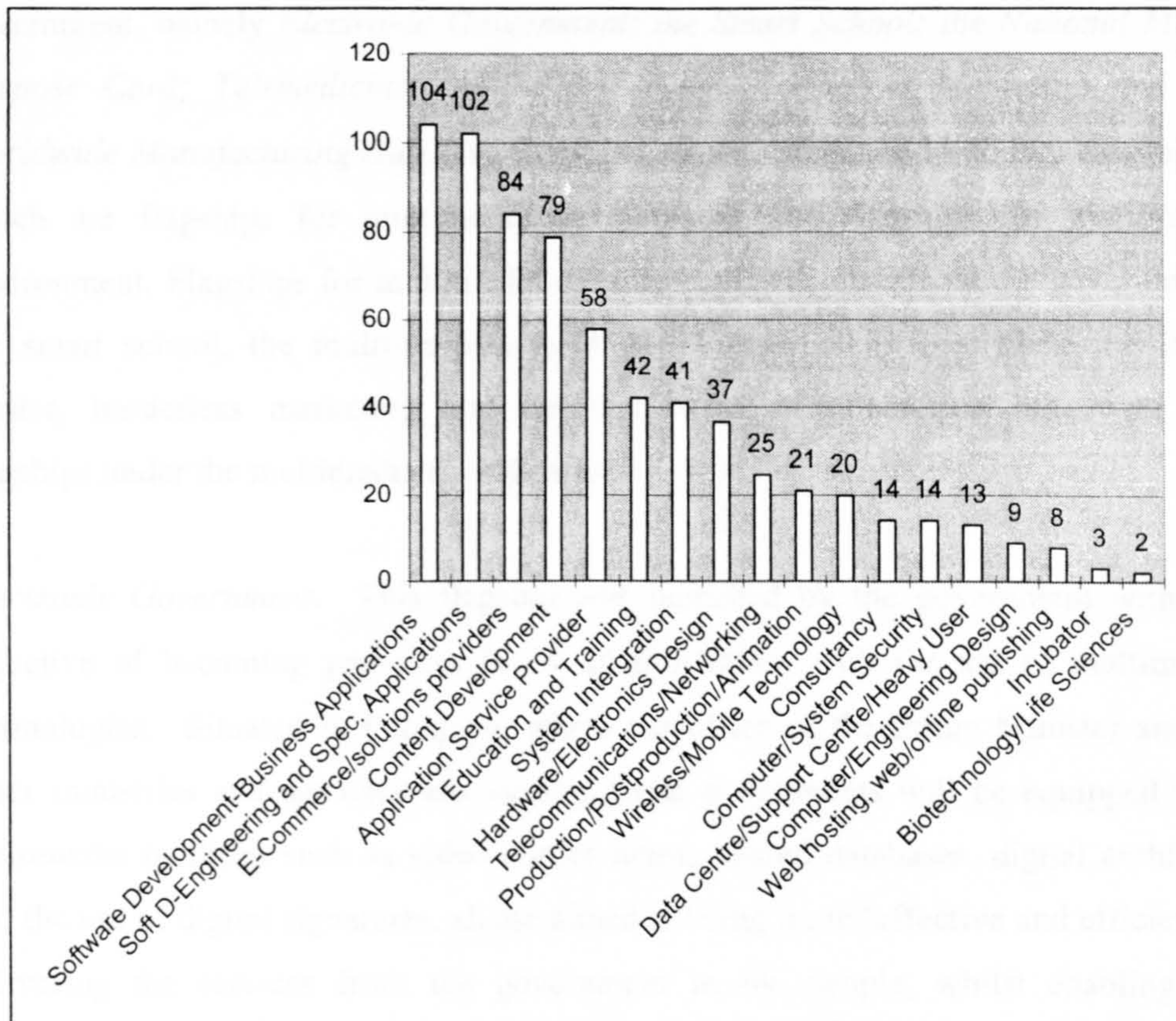


Source: MDC 2003

Based on data retrieved from:  
<http://www.msc.com.my/mdc/statistic/stat3.asp>

Figure 4.3

## Approved MSC Companies by Sectors



Source: MDC, 2002a

Based on data retrieved from:

<http://www.msc.com.my/mdc/statistic/stat2.asp>

In an effort to attract technology-based, world-class companies to an intelligent, eco-friendly, multimedia environment in Malaysia, five cyber cities have already been built in the MSC area, these includes Cyberjaya, Malaysia Technology Park, University Putra Malaysia-Malaysia Technology Development Cooperation (UPM-MTDC), Petronas Twin Tower and Kuala Lumpur Tower. As a first smart city, Cyberjaya will act as a prime mover or town hub for other cities in Malaysia. Meanwhile Putrajaya, the new government administrative centre, will be the place where the concept of electronic government will be taking place.

#### 4.4.5.1 MSC Flagship Applications

For further development of the MSC, and at the same time to extend business opportunities for private sector participation, seven flagships were introduced by the government, namely *Electronic Government; the Smart School; the National Multi-Purpose Card; Telemedicine; the R&D Cluster; Borderless Marketing and the Worldwide Manufacturing Hub*. The flagships can be categorized into two categories, which are flagships for multimedia development and flagships for multimedia environment. Flagships for multimedia development includes electronic government, the smart school, the multi-purpose card and telemedicine, meanwhile the R&D cluster, borderless marketing and the worldwide manufacturing hub were the flagships under the multimedia classification.

*Electronic Government.* This flagship was launched by the government with the objective of becoming paperless in its administration with the aid of multimedia technologies. Situated in Putrajaya, where the office of the Prime Minister and 15 other ministries and agencies are located, these departments will be equipped with multimedia facilities such as video conferencing, shared databases, digital archiving and the use of digital signatures, all are aimed at being more 'effective and efficient in delivering the services from the government to the people, whilst enabling the government to become more responsive to the needs of its citizens' (Mahathir, 1998:68). Acting as a 'smart buyer', the government officials will be equipped with the latest technology for quick and easy access to information and data to obtain services and goods on line. Under the flagship, 6 pilot projects were introduced namely Electronic Administration, the Generic Office Environment (GEO), the Human Resource Management Information System (HRMIS), the Electronic Labour Exchange (ELX), the Electronic Procurement and Project Monitoring System (PMS).

*Smart School.* The implementation of the smart school flagship, is aimed at creating a new knowledgeable Malaysian generation who are ICT literate, creative and innovative 'to be able to perform in a global environment and use Information-Age tools and technology to improve productivity' (ibid:65). To achieve that, IT equipment and services will be allocated to most schools in Malaysia, meanwhile IT skills amongst teachers and students in national public schools will be upgraded. With about 7,000 primary and 1,500 secondary schools currently operating in

Malaysia, the government aims to provide between 12 and 43 computers with multimedia and Internet facilities to each school in the country. It is also reported that the government envisaged making all these schools into smart schools by the year 2010. As a pilot project during the period of Seventh Malaysia Plan, 81 schools were chosen to be upgradeable into smart schools with a further 9 schools still being under construction (Malaysia, 2001a : 372).

*National Multi-purpose Card.* The purpose here is to introduce the use of a card with multi-purpose functions to Malaysian citizens. The multi-purpose card is a plastic card embedded with a chip or microprocessor that has the capability to perform a wide range of functions, including data processing, storage and file management. As a rollout project, eight applications have been selected for inclusion in the card. These are national ID, driving licence, immigration, health card and electronic cash, which with debit, ATM and credit cards and can act as an “electronic purse”. With the introduction of the card, it is hoped that the routine transactions with the government and private companies will be much easier, especially for ordinary Malaysians. However in the long run, the security and privacy measures of the card are still being debated (Zaharom and Mustafa, 2002:11).

*Telemedicine.* With the advancement in ICTs, the planned aim of healthcare in Malaysia is to provide easier and greater access to health education and information about healthcare by empowering the individual ‘to manage his/her own personal health’, and integrating information to allow for ‘the smooth flow of services and products throughout the healthcare system’ (MDC, 1998). The key elements of telemedicine include distance learning, remote consultation, diagnosis, treatment and virtual patient records. A national, electronic network and the development of the associated technology will largely emphasise preventive medicine rather than being treatment based. The assumption that every Malaysian has a personal computer and, as a result, has easy access to healthcare information and the ability to pay for the services rendered is problematic for low-income groups, especially those in rural areas. Hence, telemedicine doesn’t seem to be the answer to the current healthcare problem. Above all, it is not an issue of technology rather it is a social one (Schiller, 1996:79).

*R&D Cluster.* Recognising the importance of being in the forefront of R&D in multimedia technologies and having a continuing role in technological innovation, an environment that is conducive to research has been established within the MSC strategic initiatives. A number of agencies, institutions and companies are expected to collaborate and provide support for R&D initiatives within the MSC. These include the Multimedia University, other local universities, the Malaysian Institute of Microelectronics System (MIMOS) and the Technology Park all of which form the foundation for creating the research community in the MSC environment.

*Worldwide Manufacturing Hub.* This initiative is to provide an optimal environment for manufacturing industries and their service companies to establish regional hubs to create and deliver value-added services and products to their customers around the world. Through the development of this application, companies have been encouraged to build links with a wide range of support services, including Research and Development (R&D), product development and customisation, manufacturing control, design, engineering, procurement, logistic and distribution support to control their own operations around the world from the central MSC location. As an open invitation to transnational corporations who are constantly seeking overseas sites for their manufacturing plants, the incentives provided aim at 'strengthening the networking of the transnational corporations concerned' and will thereby reinforce their position as dominant global players (Zaharom and Mustafa, 2002:13)

*Borderless Marketing Centre.* Telemarketing, Online Information Services, Electronic Commerce and Digital Broadcasting have been identified under the development of the Borderless Marketing Centre flagship. With the aim of spearheading the growth of multimedia-based service industries, companies and businesses are invited to broaden and strengthen their marketing strategies across time zones and physical borders with the aid of multimedia technology supported by incentive made available by the government such as the MSC Grant Scheme (MGS) and the encouragement to make full use of the MSC facilities. With such attractive incentives and the nature of international capital to accumulate wealth, even across national borders and cultures, the means of gaining bigger profits, especially among the major global players, will be much more appealing. 'Indeed, one finds it is almost impossible to pinpoint where knowledge-transfer figures in this scenario' (ibid:14).

#### 4.4.6 IT Infrastructure

The development of ICT in Malaysia, especially the survival and attractiveness of the Multimedia Super Corridor, very much depends on the development of the telecommunications infrastructure. As such, the Malaysian government is working hard to provide an environment that is characterized by high-capacity, fully digital telecommunication facilities that will instantly link the MSC to regional and global centres worldwide. Thus, Telekom Malaysia, the leading telecommunications provider in Malaysia and new global telco, will be investing more than US\$ 2 billion to develop the fibre-optic network between 1997 to 2007 (Malaysia, 2001a : 381-382) to support ICT development in Malaysia.

Towards the end of 2000, 62,600 kilometres of fibre-optic network have been laid throughout the country connecting every state and main city in Malaysia. This link is capable of sending data, voice and video at very high densities and capacities. Meanwhile, for satellite technology, Malaysia already has four satellite links in Kuantan, Labuan, Melaka and Sarawak for communication traffic with other countries, especially those in the Indian Ocean and Pacific region. Even though huge investments have been made to boost the infrastructure for ICT development, it was reported that the national average penetration rate for cable that has been installed was only about 23.2 per cent, whilst the penetration rate in rural areas was only 11.7 per cent (ibid : 382).

Internet and wireless technology, such as mobile phones and Wireless Application Protocol (WAP) are two fast technologies that have been built established as part of the telecommunication environment. Within the period 1996-2000, six Internet Service Providers (ISPs) have been granted licences to provide Internet services to the customer. Despite that, only three ISPs are operating, namely the TMNet, JARING and Maxisnet. Meanwhile, to strengthen the ISP, 43 Access Service Provider (ASP) licences have been granted, with most of them mainly operated in the Klang Valley and Pulau Pinang.

For the MSC, the key features of the multimedia infrastructure include: a fibre-optic backbone (with a 2.5-10 gigabit-per-second capacity); a high capacity direct fibre link

(to international centres in ASEAN, Japan, the United States and Europe); open standards, high-speed switching and multiple protocols (that bring power and flexibility to the development and implementation of multimedia applications); regional satellite communications services (provided through the Malaysia East Asia Satellite System [MEASAT]); wireless communication and other value-added services; integrated management, as well as service reliability and security; best-in-class performance guarantees; and internationally-competitive telecommunications tariffs (Mahathir, 1998:38-40).

#### **4.4.7 Human Resource Development for ICTs**

The continuous development in ICTs has entirely changed the workforce composition and labour market system. Demand for ICT workers in Malaysia such as hardware and software engineers, system analysts, computer programmers and technical support staff has increased dramatically from 88,160 in 1998 to 108,200 in 2000, which accounted about 10.7 per cent average growth a year compared to only 3.7 per cent during the period between 1991 to 1995. Above all, technical support staff and system analysts were in most demand with 32.1 per cent and 23.7 per cent respectively (Malaysia, 2001b:157).

On the supply side, it was estimated that in 1999, 20,260 students graduated from public and private institutions in courses related to ICTs and engineering. From the total number of graduates, 71 per cent have graduated from private institutions compared to only 29 per cent from public institutions. As of October 1999, there are about 170 private institutions and 28 public institutions offering subjects and courses related to ICTs, with most of the private institutions offering the courses at diploma and first-degree level. For public institutions, most of the programmes were offered at first degree and postgraduate levels.

In an effort to increase ICT workers in Malaysia, especially in the MSC area, the government established the Malaysia Multimedia University (MMU) in 1998 consisting of two main campuses, in Cyberjaya and Melaka. At the end of 2000 about 9,000 students had been registered in different courses and subjects. From the total number it was estimated that about 22 per cent were registered for degrees in



Information Technology and Communication. Moreover, as part of the government effort to facilitate the increase in the number of knowledge workers in Malaysia, MSC status will be given to those institutions and faculties that are giving more emphasis to ICTs, engineering and management training. Another important link between ICTs and human resource development is the emphasis on upgrading the ICT skills and knowledge of workers through ICT-based training. It was estimated that about RM101.6 million (14.7 per cent) were allocated to the Human Resource Development Fund (HRDF) during the Seventh Malaysia Plan. This money was disbursed for post-employment training, particularly in ICT related courses (Malaysia, 2001a:383).

Realising the shortages of knowledge workers in the nation, additional incentives to attract skilled Malaysian workers who were working abroad to come back to Malaysia were announced in the 2001 Budget. On top of the unrestricted employment of foreign workers, the means to attract Malaysians to come back to Malaysia formed part of the government effort to prevent the “brain drain” from the national economy. It was reported that about 51 per cent of foreign IT workers in Singapore are Malaysian due to high remuneration being offered there (Sayed Hossain, 2001). The incentives for returnees include:

- a. Income remitted to Malaysia within the period of two years will be exempted from income tax;
- b. All personal effects brought into Malaysia, including two motorcars will be given tax exemptions; and
- c. Husbands, wives and children who are not Malaysian citizens will be given permanent residence status within six months (Malaysia Budget 2001, 2002).

In order to meet the existing need for knowledge workers, particularly in the MSC area, the government has adopted a more liberal employment policy for foreign knowledge workers. As of May 2001, there were about 2,728 foreign knowledge workers working in MSC companies. Of the total number, workers from India formed the highest percentage of workers being employed in the area. They accounted about 56 per cent or 1,528 personnel, followed by workers from Europe with 342 personnel (12.5 percent) and Asia with 300 personnel (11 per cent)(Table 4.5).

The shortage of knowledge workers has becoming a serious problem, not only in Asia but also particularly in Malaysia. For instance, only 200,000 IT professionals were produced in a year in India, compared with the projected demand of 2.2 million by the year 2008. For Malaysia, the demand for IT workers by 2005 is estimated at not less than 100,000, Hong Kong 17,000 in 2005, Thailand 800,000 over the next 15 years and in 2002 Korea needed to have 50,000 IT workers (Nayan Chanda, 2000, Chandra Devi 2000; cited in Amat Taap Manshor, 2001:104).

**Table 4.5**  
**Foreign Knowledge Workers for 256 MSC Companies**

Countries	Personnel	%
India	1,528	56.00%
Japan	80	2.90%
West Asia	21	0.80%
Asia (others)	300	11.00%
Europe	342	12.50%
Britain	168	6.20%
US/Canada	132	4.90%
Australia/New Zealand	137	5.00%
Africa	14	0.50%
South America	6	0.20%
<b>Total</b>	<b>2,728</b>	<b>100.00%</b>

Source: MDC,2003

Realising the serious outcome, the strategic thrust for human resource development in the Seventh Malaysia Plan (1996-2000) and Eighth Malaysia Plan (2001-2005) or even OPP3 (2001-2010) have put strong emphasis on increasing the supply of skilled manpower and knowledge workers to support the country's restructuring efforts towards knowledge-based and capital-intensive activities. Strong education and training of IT related programmes from both public and private education, more allocation and expenditure on education and training and collaboration between government and private industry to make training more market-driven, were among the government's efforts to meet the shortages in the country's labour supply.

#### 4.4.8 ICT Policy Thrust for 2001-2005

Whilst developing its ICT strategy for the period 2001-2005, the government came to understand the importance of strengthening related policies. This can be clearly seen from the amount allocated to ICT-based programmes and projects for the same period of the Eighth Malaysia Plan as shown in table 4.6 below. The amount was

**Table 4.6**  
**Allocation For Programmes and Projects Development**  
**Related to ICTs, 2001-2005**  
**(RM million)**

<i>Programmes and projects</i>	<i>Allocation</i>	<i>%</i>
<b>Flagship Applications</b>	<b>1,824.90</b>	<b>35.4</b>
Electronic Government	434.8	
Smart Schools	401.1	
Telemedicine	400	
Multi-purpose Card	418.1	
R&D Cluster	1.9	
Application Integration	169	
<b>Computerisation</b>	<b>1,641.80</b>	<b>31.8</b>
<b>Research and Development</b>	<b>300</b>	<b>5.8</b>
<b>Narrowing the Digital Gap</b>	<b>1,098.00</b>	<b>21.3</b>
Infodesa	30.2	
Internet Desa	3	
Worldwide Services	119.8	
Computer Infrastructure for Schools in Rural Areas	945	
<b>Content Development</b>	<b>10</b>	<b>0.2</b>
<b>Others</b>	<b>284.4</b>	<b>5.5</b>
<b>Total</b>	<b>5,159.10</b>	<b>100</b>

Source: Malaysia, 2001a

increased from RM 2 billion in the last Plan to more than RM 5 billion. From the total amount, RM 1.8 billion will be allocated for widening the first phase of MSC flagship applications; meanwhile RM 1.6 billion will be allocated to computerisation programmes in ministries and government agencies to upgrade their quality and

services to the people. Another RM 1 billion will then be allocated to narrow the digital gap between urban and rural areas through programmes such as 'Infodesa', 'Internet Desa' and providing computer and IT infrastructure to schools in the rural areas. Others include R&D and local content development.

As the government continues to play a positive role in providing a conducive environment to accelerate ICT use among Malaysians, the private sector and local investors are not only expected to increase the usage in IT but also are expected to take advantage of opportunities in the global IT and multimedia market through the development of IT and multimedia industries. In order to reinforce the existing strategic initiatives that were rooted in the Seventh Malaysia Plan, the focus of the ICT Policy Thrust for 2001-2005 will continue to position Malaysia as a major global ICT and multimedia hub; upgrade and expand the communication infrastructure; enhance human resource development in ICTs; promote e-commerce and enhance its use; foster local capabilities in creative content development; roll out the MSC flagship applications; nurture a critical mass of ICT-based small and medium sized enterprise; and promote R&D activities for the factors spelled out in the Eighth Malaysia Plan as listed below:

*Positioning Malaysia as a major global ICT and multimedia hub.* During the period 2001-2005, the effort towards strengthening the development of this sector by the government will focus more towards achieving world standards in terms of its existing services. Affordability, productivity and competitiveness will be its major aims. Even though the Communication and Multimedia Act of 1998 clearly stated that the basic tool to achieve high-standard performance will be the willingness to compete in a very healthy manner, the means for Malaysia to position itself as a major global ICT and multimedia hub will be the willingness of Malaysian ICT companies to provide good quality infrastructure and services which are innovative and competitive in price. A new framework related to this will be made available during the period 2001-2005.

*Upgrading and expanding the communications infrastructure.* To strengthen the communication network in step with the advancement in technology, continuous investment will be made under this sector. These efforts will also include the further use

of a high-speed telecommunication network of 10 gigabits per second to connect the Northern, Central, Eastern and Southern parts of Peninsula Malaysia and Sabah and Sarawak. In an effort to narrow the digital gap between urban and rural areas, more effort will be made to expand the ICT infrastructure, particularly in the rural areas. It is expected that by the year 2005, the telephone access rate in these areas will be increased to 17.5 telephones for every 100 people compared to only 11.7 in 2000. Programmes such as 'Infodesa' will be expanded thoroughly; meanwhile the locations for 'Internet Desa'<sup>18</sup> will be increased to 100. Lastly, the new, solid policy framework and action plan pertaining to narrowing the digital gap through ICT infrastructure will be made available during this period. The emphasis will be on worldwide access, the development of local content, equal access for ICT products and services and access to lifelong education.

*Enhancing Human Resource Development in ICTs.* According to the Eighth Malaysia Plan report, Malaysia will be in critical need of ICT workers by the year 2005. It is forecast that by that year, the demand for ICT workers, including hardware and software engineers, system analysts, computer programmers and technical support staff will increase to 181,600 compared to 108,000 in 2000. To further meet the demand for ICT workers, efforts will be made to further upgrade ICT education. It is expected that by the end of 2005, 8,000 schools throughout the country will be supplied with computer and Internet facilities, especially those in the rural areas. More courses in ICT and engineering will be introduced both in public and private higher education institutions. The Human Resource Development Fund (HRDF) will continue to support the expansion of ICT training; meanwhile tax incentives and releases will be made available by the government to companies who wish to expand their ICT training programmes.

*Promoting e-commerce and enhancing its use.* During the period 2001-2005, the expansion of e-commerce activities will focus on promoting and enhancing its usage as a new tool for doing business. Existing laws pertaining to e-commerce, such as the Digital Signature Act 1997, will be strengthened to build confidence among Malaysians about the safety of on-line transactions.

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<sup>18</sup> 'Infodesa' and 'Internet Desa' are among the government's initiatives to enhance the usage of IT and the spread of information via ICT among rural communities.

*Fostering local capabilities in creative content development.* In an effort to make Malaysia a global hub in ICTs and multimedia, the initiatives will focus on instilling and fostering local capabilities in creative content development, especially those related to local cultures and languages. The initiatives, including minimizing the government control of local content development and clearer guidelines pertaining to intellectual property rights, will be laid out. Those related to an effort to curb piracy activities will be emphasised.

*Rolling out the MSC flagship applications.* The main strategy under this section is to launch the second phase of flagship applications with continuous efforts to narrow the digital gap. At the end of the plan, 8,000 primary and secondary schools will be upgraded into smart schools. Telemedicine will be expanded, especially to health centres and clinics in the rural areas. The second-phase application will also be expected to attract technology inventors to be part of the MSC development programmes as it will help to nurture the R&D activities and technology transfer to Malaysian society at large.

*Promoting R&D activities on “soft factors”.* Realising the importance of understanding the unpredictable consequences caused by the technology, the government, with the support of public policy and higher institutions, will conduct research on “soft factor” elements in the context of ICT development. The areas of priority will include those in monitoring and assessing the ICT implications and consequences to households along with the public and private sectors. These include Internet awareness, usage and penetration as well as changes in work culture due to the increase in information/knowledge workers.

*Nurturing a critical mass of ICT-based small and medium sized enterprises (SMEs).* Under this sector, the initiatives will include making a successful company a role model to other SME companies, helping the SMEs in their marketing strategies to penetrate international markets and ensuring sufficient funding especially to new SME ICT-based Companies (Malaysia, 2001).

## 4.5 Concluding Remarks

We have seen throughout the chapter, the development of the various policy initiatives taken by the government from independence to the present day. From this chapter we have witnessed a series of diversifications in government economic policy. Starting with the NEP, introduced in the early 1970s with the objective of correcting economic imbalances and reduce inequality among major ethnic groups, the NDP in the early 1990s had taken a forward step. Unlike the NEP, the NDP seems to focus more on income and economic distribution rather than deadlines. But the most obvious policy establishment during this period was to strengthen human resource development in response to the higher demand in the global market.

As the country becomes integrated further into the economic globalisation, once again we have witnessed a diversification in economic policy. Known as Vision 2020 when introduced in 1991, the focus of the policy is geared towards establishing Malaysia as a developed country over the next two decades. Using ICTs as the tool to realise this vision, it is hoped this will provide an environment conducive to the country being able to compete in the volatile global market. Since then, many related policies pertaining to ICT its strategies and initiatives were and are being taken by the government. The establishment of MSC and its Flagship programmes were among the important policy initiatives to support the realisation of Vision 2020.

The most important outcome of this was that the government has managed to create a balance, which integrates the importance of technology with its social consequences. From the policy it is clear that, while there has been an effort to establish technological infrastructure such as ICT networks to bring about change in its future development, the government also sees the importance of historical antecedents. For example, in Vision 2020, the combination of past experiences of economic and social imbalances continues to be the basis of an understanding of the country's future plans. But still, as far as technology is concerned, the unintended consequences are unavoidable. The consequences of this policy for the varied sociocultural background of a country like Malaysia will be interesting to see. The next chapter's analyses policy pertaining to ICTs, its impact and consequences for both the economy and society.

What is more important, this chapter has provided us with a detailed understanding of the development of economic policies in Malaysia and their interrelationship. Largely using the descriptive approach in explaining this development, it is hoped that this chapter could be the basis for explaining the consequences of government policies particularly those related to ICTs, in understanding the country's future development.



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*Part 2*

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# Chapter Five

## Globalisation, Development And National Identity

### 5.1 Introduction

The aim of this chapter is to analyse the nature of globalisation and its consequences for Malaysian development policy to bring about changes in its economic and social attainments while at the same time maintaining its national identity. This chapter will be the basis for our understanding of Malaysia's incorporation into the global economy, the change in the government's role and those sectors of the economy, which depend on ICTs. For this purpose this chapter has been divided into three sections – 'Globalisation, Privatisation and Economic Liberalisation', 'ICT Investment, MSC and Private Participation', and 'Education and Training: Creating A Knowledgeable Workforce'. It is hoped that through this analysis, we will understand the degree of openness of the Malaysian economy and its implications for sustaining future growth under its own concept of modernity as repeatedly mentioned in Vision 2020.

There are many claims and it is widely asserted that the process of globalisation is dissolving many parts of our social lives including national cultures, economies and even national borders. In many instances, it is the process of economic globalisation that has been internationalised and its basic dynamics are contributing to the centrality of this perception. What is claimed is that the growth of a global economy along with the development of communication technology is fundamentally challenging the process of governance and accountability in the modern state. Among the important

elements of this are the claims that globalisation is denationalising the territory of the nation state. Saskia Sassen (1996), in her book 'Losing Control: Sovereignty in an Age of Globalisation' claims that;

'Economic globalisation represents a major transformation in the territorial organisation of economic activity and politico-economic power.... From the perspective of national state... offshoring creates a space economy that goes beyond the regulatory umbrella of the state.... In much of the developing world, it has assumed the form of free trade zones and export manufacturing zones where firms can locate production facilities without being subject to local taxes and various other regulations; such zones exist in many Latin American and Asian countries. In this cases, an actual piece of land becomes denationalized'

(Sassen, 1996: 1&8-9)

In explaining this, both Ohmae (1990, 1993) and Reich (1992) have argued that the nation-states are losing control, as they can no longer independently dictate the level of economic activity or employment within their territories. Rather, they are dominated by uncontrollable market forces and by the choices of internationally mobile capital. Ohmae (1995:1-5) further argued that inability to control their internal affairs make the notion of the nation-state and national economic management increasingly irrelevant and obsolete. Or in other words, nation-states are seen to be becoming less sovereign than they used to be. Does this mean that Malaysia's incorporation into the global economy would also result in the diminishing of its territorial border and the irrelevancy of both the national state and economic management?

For Giddens, the idea presented by Ohmea is not totally wrong, and only needs to be examined more closely and carefully. This was due to the claim that some aspects of the nation-state are expanding and changing as a result of globalisation as well as the diversity in the notion of nation-state itself (Giddens, 1998:31-32; McGrew, 1992:87). There are four aspects of nation-states and the effect of globalisation, which are critical in understanding the changing nature of the state, namely its competence, its forms, its autonomy and its authority (Bell, 1987:140).

For some critics this was due to the reducing role of nation-states that has changed and weakened the state's capacities for governance, especially in national

macroeconomic management (Hirst and Thompson, 1999:256). However, many have argued against this view. Morse for instance would regard this as the systematic interdependence in the effort to meet the demands of its people. Not only has this caused the disintegration of the traditional boundaries, but it has also contributed to the declining power and competence of the state due to its inefficiency in controlling the formulation of state policy as well as the outcomes of that policy (Morse, 1976; McGrew, 1992:87-88). It is believed that it is the pressure produced by the dynamism of globalisation through international coordination and co-operation, which has helped the transfer of 'executive power' to international regulatory agencies such as the WTO and IMF. This imposes tighter limits on the state's power of decision across policy domains and contributed to the further decline in the power of the nation-state. (McGrew, 1992:88).

However, both Hirst and Thompson agree and disagree with the above claims. According to them, although nation-states are losing their capacity for governance, they remain 'pivotal institutions, especially in terms of creating the conditions for effective international governance' and that there is a 'continuing place for the nation-state' (Hirst and Thompson, 1999:256&269). This is based on the argument that the increasing involvement of national governments in the international market and other economic processes has led most nation-states to be accountable to and seen as being legitimate by the forces of both the 'supranational' and 'subnational' governance. Although this function might seem less 'sovereign', the fact that the nation-states are still the source of the rule of law, which is prerequisite for regulation through international law, and their accountability within their territory and population, strengthens the point that there is still a role for them to play, albeit in a different way. This is what they called 'new role' in governing today's economy (ibid:257).

The best example of this is the transformation of China's economy from once being a centrally planned command economy into a more "market-friendly" system. Indeed, the effort by the Chinese government to considerably reduce many of its direct state interventions in microeconomic management by abolishing mandatory planning in 1980s was an important explanation of its sustained annual growth rate (close to 10 per cent) for nearly two decades (see for example Lu and Tang, 1997). The state is now seen as an enabler and supplier, which allow the market to flourish, and the

government's role has shifted considerably from being a primary economic actor to a more secondary role, which is relevant when explaining the role played by the developing economies in the increasingly globalised world.

How does a small open economy like Malaysia position itself in its reaction to globalisation? What are the implications of Malaysian economic policy for the last thirty years with regard to this reaction? Most importantly, what will be the government's role in providing the nation with an economy that is 'fully competitive, dynamic, robust and resilient' in the present economic circumstances? Also what are likely to be its future challenges and what solutions must be found in order to bring about change while at the same time maintaining its own distinctive identity?

In order to fully understand its consequences, the first section of this chapter will provide us with an analysis of the changes in the Malaysian economy in response to globalisation. Tracing back through the historical context of its economic development, the objective of this section is to establish the level of openness in Malaysia and to identify its relevance as an economic actor in the global market. In the second section, the focus will be on Malaysia's efforts to leverage its economy through the use of ICTs such as the creation of the MSC and increasing private participation, both locally and globally. Obviously, issues such as neo-colonialism will be part of the broader picture in understanding this section. Finally, the third section will examine the effort taken by the government to create a more knowledgeable workforce as a result of the extensive deployment of the ICT policy developed by the government in recent years. The reasons for incorporating this analysis is that it has direct implications for Malaysia's future competitive advantage that may be somewhat undermined.

To further strengthen the analysis of the whole arguments, both Chapter five and later Chapter six largely depends on secondary sources such as government policy documentation and data. As mentioned in Chapter one, the dependence on secondary analysis is essential, particularly when dealing with policy implementations and their broader social and economic consequences. Both of the analysis chapters will make extensive use of secondary data, but in some instances, interviews with policy makers, implementers and evaluators will also be incorporated.

## 5.2 Globalisation, Privatisation and Economic Liberalisation

Much has happened in the Malaysian economy since independence in 1957. The legacy of British colonialism's divide and rule policy, coupled with the characteristics of a classical colonial economy led to Malaysia's economic attainment and progress after the independence to be rather mixed. Since independence, the Malaysian economy has undergone a series of transformations from having agriculturally-based (1957-1969) into, first a manufacturing-based economy (1970-1980s) and later into a service economy. Most recently has been the shift towards high-technology manufacturing industry. As mentioned in Chapter 3, at least three phases under three political regimes have been identified in shaping the development progress of the Malaysian economy, namely Laissez-Faire, Growing State Intervention and Economic Liberalisation.

Being a country that is rich with natural resources such as rubber and tin, the focus on Laissez-Faire policies (1957-1969) was to promote industrialisation progress through import-substitution while at the same time emphasising the heavy reliance on the export of its primary commodities (forestry, agriculture and mining). The promotion of import-substitution industrialisation was to encourage foreign manufacturing companies, particularly the British investors, to expand their market share and investment in the country. As a result, public development expenditure in infrastructure was increased. As reported by Gomez and Jomo (1999b), almost half of the total public development expenditure gained from the First and Second Malaya Plans (1955-1965) and First Malaysian Plan (1966-1970) was heavily invested in expanding public infrastructure such as power, transportation and communication (Gomez and Jomo, 1999b:16).

Apparently, during this period the Malaysian economy grew at a rate of approximately seven per cent per annum and Malaysians enjoyed a relatively high standard of living compared to their counterparts in the region such as Indonesia and the Philippines whose economies grew at less than 6 per cent (Rao, 1980). Despite the import-substitution, the impressive growth of the average annual GDP rate was also due to a large extent to the export of its primary commodities such as rubber and tin. However, due to sharp fluctuations in prices and uncertainty in the world

commodities market in the 1960s, the government has made some considerable changes in its sectoral composition. It was noted in the early 1970s, that the government encouraged palm oil production and Malaysia grew to become the major producer and exporter of palm oil in the world.

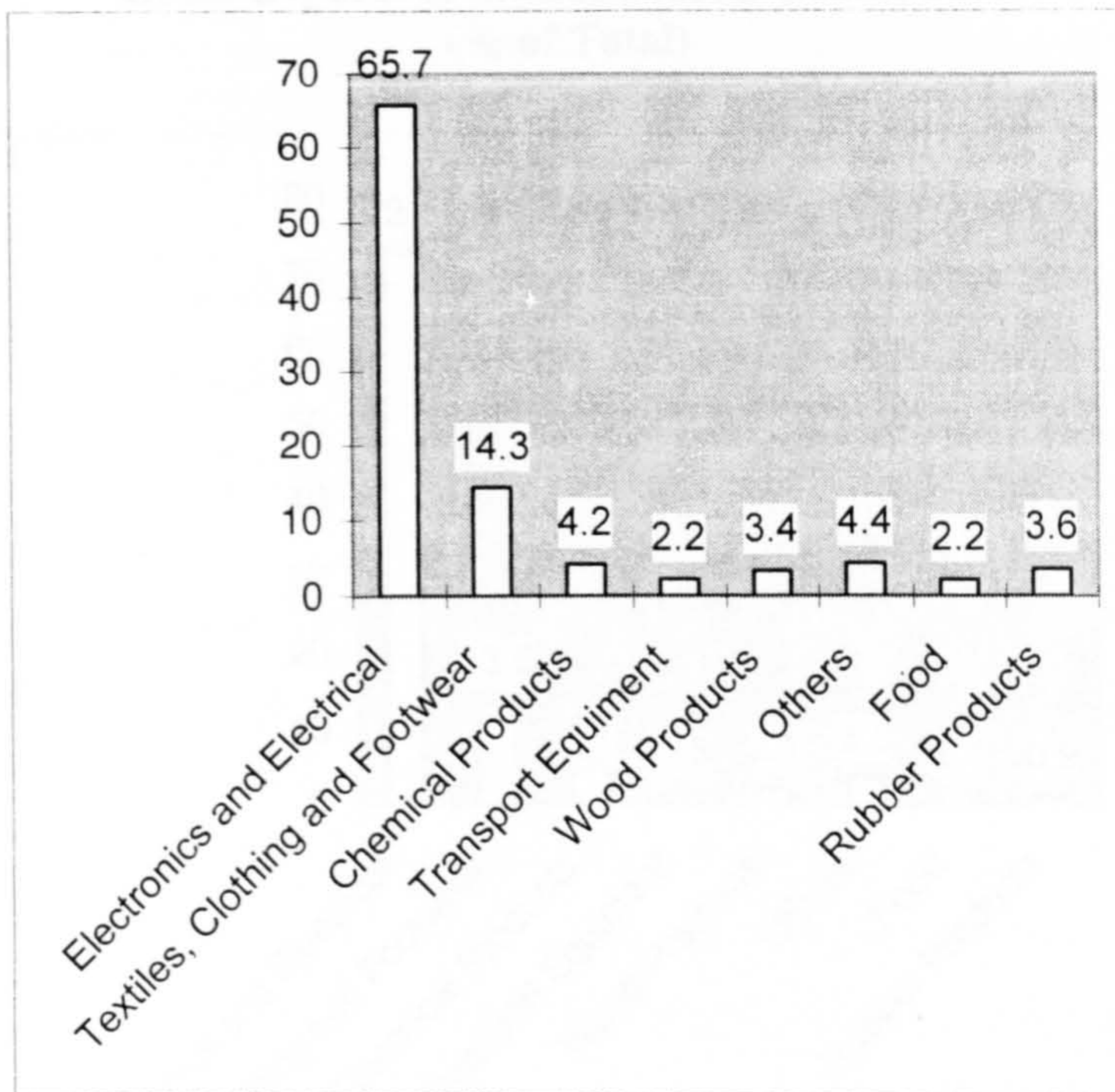
While retaining the agricultural sector, the most notable diversification in the economy was to engage in manufacturing industry. The rising unemployment rate, the growing inter-ethnic and even intra-ethnic income disparities, especially among Malays, coupled with the bloody racial riots in 1969, are factors that contributed heavily in shifting the sectoral composition of the economy. As noted by Gomez and Jomo (1999b), this occurred because of the strong focus of the export of rubber and tin 'with development concentrated in urban, rubber plantation and tin-mining areas, largely ignoring other rural areas' (Gomez and Jomo, 1999b:19). As a result, growing state intervention took place during the period 1969-1986, replacing the previous *Laissez-Faire* policies. Even though it is difficult to separate previous policies from newer ones due to the possibility of overlapping initiatives, the effort being made since 1969 to achieve national unity, social restructuring and economic stability among the races through the New Economic Policy (NEP), expansion of the public sector and the promotion of export-orientated industrialization such as FDI to encourage employment growth demonstrates the government's interventionist policies during this periods.

While having moved towards social restructuring and economic stability, the major shift during this period was to promote intensive manufacturing industries to encourage investment and job opportunities. The passing of the Free Trade Zones Act of 1971 to encourage investment and export activity, particularly by manufacturing companies in new industrial estates known as free-trade zones, showed the seriousness of the Malaysian government in seeking to promote export-oriented industrialisation.

Within a decade, Malaysian manufactured exports in these zones managed to overtake resource-based industries, such as in the primary commodities, for export purposes. For example by the end of 1995, total exports of Malaysian manufactured goods amounted to RM147.3 billion with electronics and electrical contributing about 65.7

per cent of overall exports (Figure 5.1). By 2000, the amount doubled to RM317.9 billion, meanwhile the export percentage of electrical and electronics grew to 72.5 per cent (see Figure 5.2).

**Figure 5.1**  
**Gross Exports of Manufactured Goods, 1995**  
**(% of Total)**



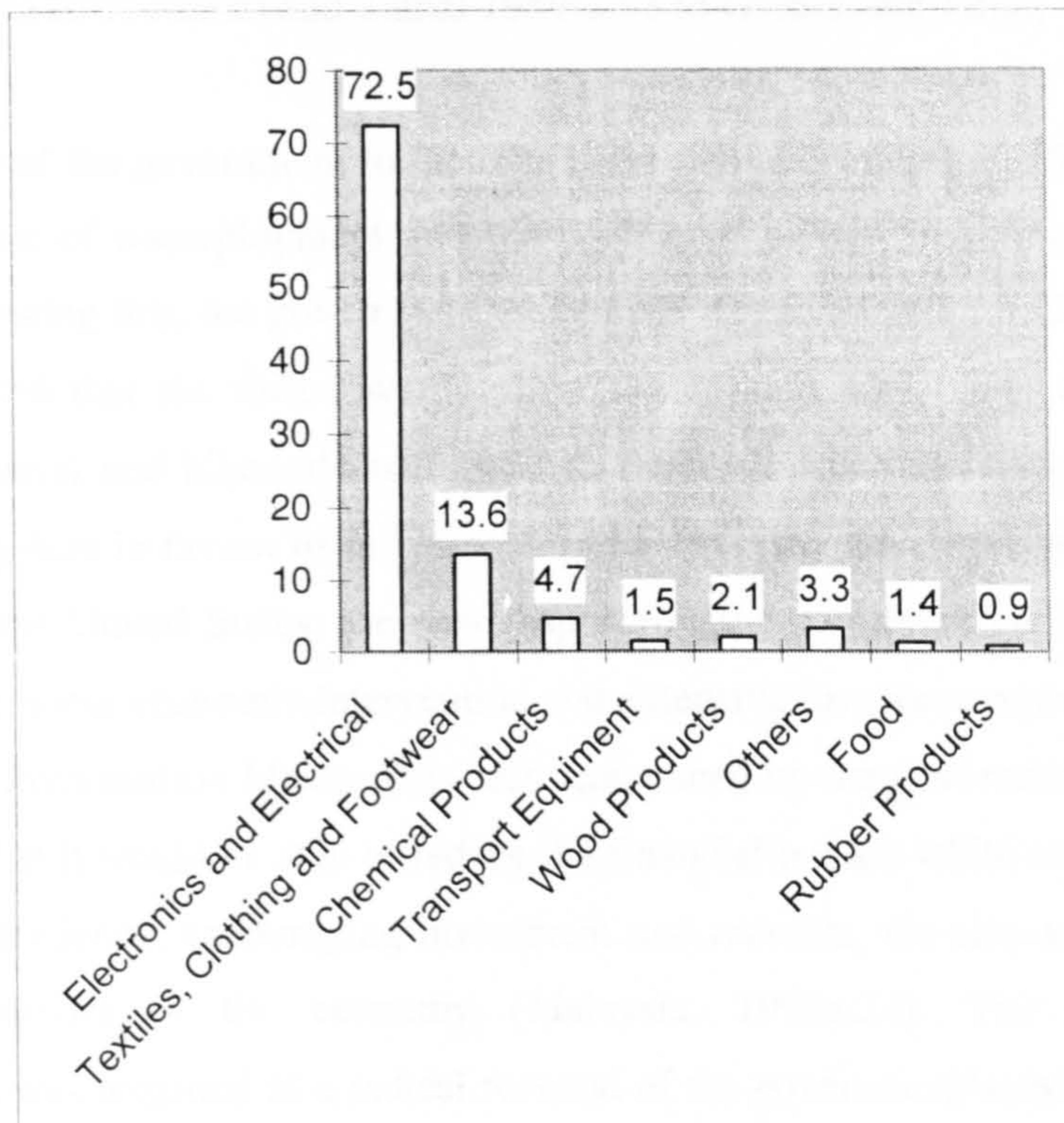
Source: Malaysia (2001a:32)

More importantly, the share of the agricultural and manufacturing sectors' contribution to GDP has undergone major changes. For instance, agriculture's share of GDP in 1995 had fallen to 10.3 per cent from 29.0 per cent in 1970; meanwhile the manufacturing share has risen from 13.9 per cent to 27.1 per cent during the same period (Jomo, 1999:96). Unemployment rates had also sharply declined from 8.0 per cent in 1970 to 5.1 in 1990 and again to 3.1 in 1995, while the general incidence of poverty within society had been sharply reduced from 49 per cent in 1970 to 16 per cent of the overall population in 1990 (Gomez and Jomo, 1999b:27). As for Malaysian per capita income, it had been more than doubled since 1970 from USD400 to USD2,306 in 1990 (Hoffmann & EE, 1975:226, Ohmae, 1995:123). The real GDP growth rate for the Malaysian economy had also constantly grown at an



average of 6 per cent during the period before experiencing a decline to 5 per cent in 1985 due to the global economic recession of the early 1980s. The ability to emerge successfully from the recession with the GDP growth rate at about 8.8 per cent in the 1990s was the result of the country's extensive economic expansion programmes after 1987 and changes in its policy direction.

**Figure 5.2**  
**Gross Exports of Manufactured Goods, 2000**  
(% of Total)



Source: Malaysia (2001a:32)

Another major contribution towards the shift in its economic priorities during this period was to increasingly promote the private sector at the expense of the public sector by privatisation and deregulation. During the period of government intervention and the implementation of the NEP, the public sector was highly regarded while undergoing a rapid expansion. It was reported that in 1970 the public sector's share of GNP rose from 29.2 per cent to a peak of 58.4 per cent in 1981, before falling to 25.3 per cent in 1993. However, its contribution to GDP growth in 1984 was reported as being negative, even though its contribution has grown from 4.8 per cent to nearly 6 per cent since 1982 (Jomo, 1999:97).

Poor management, lack of competitive entrepreneurship and weak financial discipline were among a number of reasons that contributed to the decline in public enterprises' performance in Malaysia. Furthermore, a serious shortage of *bumiputera* managerial expertise, especially in the 1970s, was another factor contributing to the inefficiency of public enterprises. To add to this, the government was facing an increasing fiscal burden due to the low profits of its own investment resources. For example, in 1984, with the accumulated losses of RM137.3 million, the Ministry of Public Enterprise could report an annual return from only 269 public enterprises out of a total of 900 (Supian 1988:120-3; Kamal and Zainal 1989:22-3 in Gomez and Jomo, 1999b:77).

The inability of the government to increase more public spending in 1982 resulted in the steady rise of unemployment and the decline of private investment in the mid 1970s. Following this, the government announced its privatisation policy in 1983. It was also noted that the shift towards privatisation came under increasing pressure from multilateral and bilateral institutions to establish economic reforms. Coupled with a strong bias in favour of private enterprise by many developed nations such as Britain and the United States, the new disposition led by private enterprises was to reduce government economic intervention and extensive involvement in the economy. As such the Privatisation Master Plan was announced by the government in 1991. It was hoped that it would be able to reduce the financial burden while at the same time improving efficiency, encouraging investment and reducing the size and presence of public enterprises in the economy (Malaysia, 1991a:21). The shift towards privatisation was regarded as a radical reversal of the government's earlier promotion of public enterprises.

Ostensibly, the government's moves in favour of private enterprises marked the major phase of its economic liberalisation and deregulation. Many divestments of government state-owned companies, corporatisation and licensing took place during the period. Among them were the divestment of the Telecoms Department to Syarikat Telekom Malaysia Berhad (STMB), the National Electricity Board to Tenaga Nasional Berhad (TNB), the licensing of Malaysia's first private television station, (TV3) in 1983 along with a number of telecommunications companies for satellite services and cable television networks such as Binariang Sdn.Bhd and Cable Television Sdn. Bhd.

The experience of the global economic slowdown while having to successfully overcome the recession contributed heavily to the government's shift in favour of liberalising the economy. The change in policy direction came with the adoption of the New Development Policy (NDP) in 1991 to replace the previous NEP. The economic priorities during the period were to emphasise growth, modernisation and industrialisation.

Malaysia's growth over the past two decades has been closely related to its trading activities under its industrial development policies. It has been described as one of the most open policies adopted in Asia. With the emerging and rapidly industrialising economies in East Asia aggressively competing for foreign investment, the government's shift towards export-oriented industrialisation in the early 1970s has successfully encouraged massive foreign direct investment inflows into the country. The combination of the provision of structural support in export-processing zones and incentive packages has been the selling point in attracting multinationals, particularly the FDI. Incentives such as taxable income deduction linked to domestic performance and local content, other tax allowances, location incentives, double deduction for promotion of exports, tax-free areas with liberal customs controls for manufacturers that assemble at least 80 per cent of their product in the nine Free Trade Zones are among the major factors in attracting multinationals. It is also reported that this attractiveness has been strengthened with the availability of trained manpower and good physical infrastructure as well as strong economic growth and political and macroeconomic stability (Islam and Chowdhury, 1997). As a result, Malaysia experienced massive FDI inflows during the period 1989 to 1998. During this period, Malaysia was recorded as being one of the top five recipients of FDI and received the biggest share in the Association of Southeast Asian Nations (ASEAN) region, particularly in 1995. Moreover the GDP growth rate rose by about 8.8 per cent in 1991 and was recorded as the highest in the world (Business Times, 1992:4-17).

Among the major sectors, manufacturing industry received a significant share of foreign capital with at least 74 per cent of the products being directed to the export market. Since the early '80s, industry has grown tremendously and contributed heavily in building up downstream industries such as domestic anchor companies and small-and medium sized (SME) industries while at the same time contributing to

overall manufacturing employment. This has been evident with the steady rise of manufacturing's share of GDP since the 1970s as its new engine of growth, especially in the electronics and electrical sectors (refer to Figure 6.1 and 6.2). As a result, by 1987 it was reported Malaysia had become one of the world's largest exporters of semiconductors and room air conditioners after Japan and the United States. While in consumer electronics, Malaysia was the third-largest exporter of VCRs and CTVs (colour televisions) in the world after Japan and South Korea (Edington and Hayter, 2001:69).

It has been noted that the Malaysian economic growth and success has been underpinned by the investment from abroad facilitated by FDI. Eager to receive the associated boost to both physical and human capital, especially after the 1970s, FDI has been encouraged by the government ever since. Various incentives are made available in an effort to attract huge amounts of FDI and TNC participation in Malaysia. With manufacturing overshadowing agricultural industries over the last decades, it has been evident that these incentives are having targeted towards those that invest in manufacturing and high technology companies. Reports by the Malaysian Industrial Development Authority (MIDA) note that multinational corporations from more than 40 countries, particularly from the developed economies such as Belgium, Canada, Denmark, Finland, Japan, the UK, the USA Germany and Italy have invested in over 3,000 projects in Malaysia's manufacturing sector. This has made Malaysia one of the world's top locations for offshore manufacturing operations (MIDA, 2002)

On a broader scale, from the total cases of approved FDI between 1992 and 1997, the number of Japanese firms investing in Malaysia accounted for an estimate of 28 per cent and 20 per cent by value (JACTIM, 1998). Even surveys undertaken by JETRO (Japan External Trade Organistaion) showed that in mid-1999, there were over 1,400 Japanese firms in Malaysia, of which around 800 firms were involved in the manufacturing sector. It is noted that the local Matshushita Electronic Industries Corporation accounted for about 3-4 per cent of Malaysia's total exports alone (Edington and Hayter, 2002:69). Being one of the leading foreign investors in manufacturing industry in Malaysia, Matshushita has invested more than RM 6 billion for the past 35 years. As of today, there are 23 Matshushita companies operating in

Malaysia including 15 manufacturing operations and 3 R&D centres with the groups employing a total of 31,000 employees and having an output of RM 9.1 billion. This making Malaysia Matsushita's leading manufacturing base in Asia outside Japan (ibid:70)

Despite the various incentive packages offered by the government, the largest portion of production factories for the export market that have been located in Malaysia since late 1970s has been due to Malaysia's access to the generalised system of preferences (GSP) privileges. Under GATT the GSP offered by industrialised countries to the poor nations, the tariff exemptions has been the means by which TNCs have been able to relocate their production to low wages countries with the intentions of exporting the majority of their finished goods to the EU (European Union) and North America. The attractiveness of this arrangement has been said to play an important role in shaping the continuous growth of Japanese regional production strategies in Malaysia.

For many Japanese firms, their involvement in manufacturing industries in Malaysia was geared towards consumer electronics products such as colour TVs, VCRs, computer display monitors or generic electronic goods such as magnetic heads. Using only 45 per cent of its local content imported from Japan, the remaining outsourcing came either from Malaysia or other Asian countries. As such the "vendor-development"<sup>19</sup> programme was encouraged by the government as a linkage between foreign investors and local SMEs through the establishment of domestic investment initiatives (DII). This strategy is to encourage domestic investment by supplying export credit financing facilities to foreign investors in return for higher local content. Interestingly, after the launched of DII in 1993, the amount of approved domestic investment experienced a tremendous growth of 19 per cent or more, exceeding the approvals in the foreign investment itself (NEAC, 1999).

Unlike many Japanese subsidiaries, Western firms tended to concentrate more on semiconductor production. This difference was due to the heavy reliance on their own proprietary sources coming from their affiliates located in third countries. Such

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<sup>19</sup> The vendor-development programme is a programme associated with subcontracting activities taken-up by small firms registered with Ministry of International Trade and Industry Malaysia (MITI) under the umbrella concept.

companies as Siemens, National Semiconductor and Texas Instruments were among the long established international firms involved mainly in manufacturing sites either for semiconductor assembly and testing or electrical engineering and electronics.

Since the early 1980s, this industry has grown tremendously. The massive growth has contributed significantly to both the overall manufacturing industries and employment in Malaysia. With a huge amount of foreign capital flowing into Malaysia came also the means of transferring capital technology into the country. As such, throughout the 1990s, Malaysia experienced a constant annual GDP growth rate of 8 per cent and was regarded by many as an emerging new industrialised economy and among the new “Tigers” in the Asia-Pacific region before the Asian financial crisis occurred in 1997.

Compared to the many global recessions and economic slowdowns experienced by the government during the last twenty years, the Asian financial crisis of 1997 recorded the greatest impact on the country. With the currency exchange rate tumbling to 40 per cent of its value in September 1997, the blame was placed on global currency manipulator such as George Soros. Beginning in 1997, the government had maintained a fiscal pump-priming policy to boost domestic demand, aimed at preventing recession and keeping unemployment down in the wake of volatility and uncertainty in the global market. But the biggest move made by the government to be able to overcome the crisis was to engage in capital control formation with the foreign exchange rate remaining fixed at RM 3.8 to the US dollar, and following the dollar down, the “ringgit” depreciated generally against other major currencies. The strategy was to stimulate investment; particularly from the private sectors domestically and internationally. Those includes accommodative monetary policy by Bank Negara Malaysia (National Bank of Malaysia) to support private sector activities, reduction in many important taxes such as personal income tax rates, lower import duties on certain intermediate goods, adjustment in investment allowances and depreciation, and changes to tax holiday coverage for enterprises (Malaysia, 2001a:107)

In the wake of the crisis the domestic economy was badly hit. Some of the economic sectors such as construction, manufacturing and service industries suffered a major

decline in exports and sales. Since 1996 there has been a sharp decline in FDI. The general decline in investment in the country following the onset of the crisis may be treated as part of the decline of FDI flow into Malaysia (Table 5.1). The downturn was caused by factors such as a reduction in Japanese investment overseas following the fall in value of the yen, the tight labour supply in Malaysia and an increase in portfolio investment following the measures to liberalise the capital account.

**Table 5.1**  
**Investment Applications and Approvals**  
**In Malaysian Manufacturing (US\$ billion), 1996-99**

	1996	1997	1998	1999
<b>Applications</b>	16.7	12.2	5.1	3.8
FDI	7	5.1	3.2	1.6
Locals	9.7	7.1	2.9	1.2
<b>Approvals</b>	13.6	9.2	6.7	4.4
FDI	6.8	4.1	3.3	3.6
Private Domestic	6.8	5.1	3.4	0.8

Source: National Economic Action Council, Malaysia (NEAC), 1999

With some affirmative action taken by the government, the country experienced quite an impressive recovery. The GDP growth rate in 2000 was recorded at 8.3 per cent. But the inability to control the global market forces and the reliance on investor sentiment or any slight hint of economic, political or social instability in the country or region may well result in capital flight. The incident of September 11, 2001, the growing number of terrorist attacks, the conflicts in Afghanistan and Iraq and the outbreak of Severe Acute Respiratory Syndrome (SARS) in the region were among several downside risks that adversely affected the economy and undermined some government projections. The GDP growth rate in 2001 for instance was recorded as being among the lowest in Malaysian economic history at 0.4 per cent even though the rate has considerably increased to 4.2 per cent in 2002 (ADB, 2003).

To mitigate the adverse impact of the external slowdown, pro-growth policies and strategies through the pre-emptive stimulus package was taken by the Government on 11 March 2003. The strategies are to ensure an efficient and competitive capital

market while at the same time sustaining the economic growth. The package comprises four main strategies, namely the i) promoting private investment, ii) strengthening the nation's competitiveness, iii) developing new sources of growth and iv) enhancing the effectiveness of the delivery system (NST, 2003). It is obvious that, while having to reinforce these measures, the government's continuous reliance on private consumption indicates its greater support for private investment in generating the country's economic activities. For example, in promoting private investment, the strategies include the further development of SMEs and the liberalisation of foreign investment by reviewing the Foreign Investment Committee (FIC) Guidelines to provide greater flexibility for foreign equity participation in local companies with the objective of enhancing the nation's competitiveness in attracting FDI (ibid)

Despite its ups and downs, the Malaysian economy has undergone different modes of economic development. The development has said to contribute well to the progress of the nation. The success can largely be attributed to the government's industrial development policy over the last twenty years. Above all, manufacturing industries and electronics outperformed other sub sectors and will continue to contribute to the economy and are expected to be the main engines of growth, with the service sector continuing to play an important role. As shown in table 5.2, manufacturing and services, which accounted for about 85 per cent of total GDP, are likely to grow by 3-4 per cent and 2-3 per cent, respectively between the years 2000 to 2005.

But the more Malaysia is moving towards liberalising its economy and its interconnectedness with globalisation, the more challenges the country seems to be facing on both the global and domestic fronts. On the global front, with greater liberalisation of the markets and a more integrated global economy, Malaysia's competitive advantage, especially in some traditional manufacturing industries that it had enjoyed for the last thirty years, is being threatened and undermined. It is noted that the challenge is coming from both the lower-cost economies such as China and India and those from the industrialised countries whose economies are forging ahead due to ICT and knowledge.



**Table 5.2**  
**Gross Domestic Product by Industry**  
**Of Origin, 1995-2005**  
**(% of Total)**

Sector	1995	2000	2005
Agriculture and Forestry	10.3	8.7	7
Mining	8.2	6.6	5.5
Manufacturing	27.1	33.4	35.8
Construction	4.4	3.3	3.2
Services	51.3	52.6	55.1
<i>Electricity, Gas and Water</i>	3.5	3.4	3.4
<i>Wholesale &amp; Retail Trade,</i>	15.2	14.9	15
<i>Hotels &amp; Restaurants</i>			
<i>Transport, Storage &amp;</i>	7.4	8	8.6
<i>Communication</i>			
<i>Finance, Insurance, Real</i>	10.4	11.8	12.4
<i>Estat &amp; Business Services</i>			
<i>Government Services</i>	7.1	7	5.7
<i>Other Services</i>	7.7	7.5	8

Source: Malaysia (2001a:35)

No doubt for the last couple of decades the growth in manufacturing industries particularly has made a significant contribution to increasing job opportunities and growth in Malaysia. However, the high growth also meant an acute shortage of labour, and hence rapidly rising labour costs. Obviously, as an export-oriented production country, especially in the manufacturing industries, international standards of price and delivery have to be met. Moreover, in a more advanced and growing manufacturing sector, indigenous skills of labour and management are more needed than ever (Chudnovsky, 1996:277-278). Ultimately the rising costs unmatched by productivity and with an inadequately skilled workforce have become a serious concern to the Government and investor alike. For example in the recent Eighth Malaysia Plan (2001-2005), the rising concern about the shortage of labour, especially skilled workers is evidence that the country's competitive advantage is somehow being challenged. It is believed that the estimated shortage of 100,000 IT workers in 2005 can only be met by employing foreign knowledge workers.

Based on the Growth Competitiveness Index (GCI) Report 2000-2003 released by the World Economic Forum (WEF) (Table 5.3), Malaysia's Growth Competitiveness Ranking has made some improvement from 30 in 2001 to 27 in 2002. However, in

**Table 5.3**  
**Growth Competitiveness Index Ranking**  
**(2000-2002)**

Country	Growth Competitiveness Ranking 2002	Growth Competitiveness Ranking 2001	Growth Competitiveness Ranking 2000
United States	1	2	1
Finland	2	1	5
Taiwan	3	7	10
Singapore	4	4	2
Sweden	5	9	12
United Kingdom	11	12	8
Japan	13	21	20
<b>Malaysia</b>	<b>27</b>	<b>30</b>	<b>24</b>
China	33	39	40
India	48	57	48

Source: WEF, 2003

comparison with China and India for instance, Malaysia's improvement in the GCI ranking was considered small. Both China and India registered a substantial improvement from their earlier position from 39 to 33 and 57 to 48, respectively (WEF, 2003). This indicates their position as the new emerging-market of low wage economies. The interview with one of the policy makers directly involved with ICT policy implementation shows that this position is well known. As he mentions that:

'Recently, Malaysia's comparative advantage has gone down substantially. The lack of skilled workers and R&D activities, more importantly the competition posed by the growing new venture markets such as China, India, Vietnam and India were the reasons for the lost in its recent comparative advantage. Although there are still hard industry such as multinational companies exporting for global markets in the Malaysian economy, but as far as the globalisation is concerned, Malaysia is still not moving as fast as it should be'.

(PD 4 - MDC)

Meanwhile for the United States, Finland and Taiwan, their position in the top rank was due to their high involvement in technology. The United States owes its position mainly to its performance on technology-related factors such as receptivity to innovation and leadership in ICTs. For Finland and Taiwan, their high scores resulted from their high levels of technological sophistication and technological index (ibid). Taken together these factors give an impression of their direct involvement in high skilled technology and knowledge industries.

As an open market economy, it is crucial for Malaysia to accommodate the importance in generating technological growth hence maintaining high productivity to be able to continue to be competitive in the global marketplace. Being aware of the situation, the announcement of Vision 2020 by the government in 1991 was indeed another major shift to propel the economy into being more competitive. With the vision to become a developed country by the year 2020, it is expected that the GDP growth rate for the country will be doubled in the next three decades and eight times greater than it was in 1990. It is also expected that, while manufacturing and services continue to play important roles in the economy, knowledge will be the basis of its new driving force in chartering the direction for the future (Mahathir, 1998:27). Even the establishment of the Multimedia Super Corridor in 1996 and its eight Flagships has been used as a “test-bed” to reinvent important sectors of the economy to maintain its competitiveness in the global marketplace. It is obvious that the government’s decision to embark on high-skill and knowledge industries, the creation of the MSC and the vision to become a developed country can be attributed to the long standing involvement in manufacturing industries, especially those in the electronic sector. To find this vision the government appears once again to be relying on private enterprises since many of the policies that have been introduced have been geared towards private participation.

Despite the deregulation in the telecommunication and ICT industries, the incentives such as tax exemption, duty-free importation of multimedia equipment, R&D grants for local SMEs, unrestricted employment of foreign knowledge workers, freedom of ownership and freedom to source capital for MSC infrastructure and the right to borrow funds globally are evidence of the government’s strong bias in favour of private capital to generate the economy. Another incentive is the attractive

infrastructure packages made available in the MSC and Cyberjaya areas to attract foreign investment in the high-skill and knowledge industries. It is hoped, along with strong positioning of manufacturing and services industries and the government's pro-business policy in supporting of the private role domestically and internationally, that knowledge will be the basis to generate Malaysia's future economic competitiveness in the global market place.

The diversification of the Malaysian economy and a change of its policy direction over the last thirty years have been due to many factors. Historical antecedents of late colonial economy and social factors have been recognised as the major push towards the multiple patterns of diversification. The 1969 racial riots that occurred due to the uneven distribution of wealth and rising incidence of poverty within society spurred the government to take aggressive steps in paving the way for affirmative action policies to develop the economy in order to reduce inter-ethnic inequality. With the main objective of eradicating poverty by increasing income levels and employment opportunities, while at the same time restructuring the society to cope with the new economic functions, the implementation of NEP in the early 1970s was indeed the transition period in Malaysia's development policy.

Ever since, the Malaysian economy has been open to the global market place and this has contributed tremendously to the progress of the nation. This is evident from the massive inflows of FDI, privatisation and the economic liberalisation policy, especially during the second half of the NDP and the recent implementation of NVP for the 2001-2010 period. Enormous deregulation and privatisation have taken place so far during this period. Many policies that have been introduced continuously encourage international foreign capital to invest in Malaysia. The Telecommunications industry has been fully liberalised, private agencies and institutions have been urged to play an important role in producing skilled workers either through education or training, while private sectors within the ICT industries, such as MSC, will be major catalytic agents for the development of a knowledge-based society.

Official policy has been the main driving force in the determination of industrial and technological development in Malaysia. In many cases it has been substantially

geared towards the promotion of private enterprise and foreign investment in the country. What is more important, the analysis has shown that, although the government's role as an economic actor has changed considerably, it is still relevant in many ways. Unlike in the early years after independence where the focus seemed to be more on primary products and actively intervening in the market, the recent developments in the global economy have made the government realise the importance of shifting its role as economic actor. As evidence from the increasing liberalisation and deregulation measures taken by the government, the state is more prominently taking on role of an enabler to private industry. The reason simply is for the market to flourish. It is hoped that this would be the means for the country to further compete in the global economy to harness the growth in the country's economy as well as to benefit society. The change in many government policies, including greater emphasis on ICTs in both social and legal institutions such as Vision 2020 and MSC, is increasingly evident. What is more important is to ask how far this could be the basis for the increasing elements of neo-colonialism in Malaysia and, more importantly its consequences for the rest of society? The rest of the analysis tries to answer these important questions since the failure of the government to do so would further jeopardise the efforts to become a developed country as envisaged in Vision 2020.

### **5.3 ICT Investment, MSC and Private Participation**

The global socio-economic landscape is fast changing. The spread of knowledge facilitated by improved communication, the widespread availability and use of technology, the active expansion of multinational firms, are among the variety of forces that have contributed to the globalisation of economic activity. It is increasingly noticeable that this phenomenon is being facilitated by the unprecedented growth in information and communication technology (ICT). Due to the blurring of national borders and time-space compression, the forces are also creating an environment in which knowledge is pervasively used to change the way socio-economic activities are undertaken (Dunning, 2000:28).

Unlike the input-driven economy, the leverage of knowledge in driving the economy coupled with the salient implications of science and technology, are now increasingly

being recognised as an important source of economic and productivity growth and as the basis for competitive advantage (Freeman and Soete, 1997:316). As such, many developed and developing countries are harnessing the importance of the knowledge-based economy<sup>20</sup> in maximising their economic attainments and opportunities. Countries within Asia such as India, Singapore, Malaysia and Thailand have embarked on various national programmes and are competing among each other to create an environment conducive to a knowledge-based economy. For that purpose these countries have undertaken many strategies. These include liberalising telecommunication industries, providing better ICT infrastructure, creating infrastructure, investing in a high-skills workforce and many other incentives to attract investors locally and globally.

For Malaysia, the shift towards a knowledge-based economy has been a great concern since the early 1990s. The computer bubble that emerged in the '80s coupled with the growth of ICTs in the middle of the last decade were among the major factors showing that change was needed. However, the competition posed by emerging low-wage economies such as China and Vietnam has somewhat undermined Malaysia's position as a low-cost production centre that it had enjoyed for decades. Moreover the Asian financial crisis that hit the country in the late 1990s, has made the government realise the importance of searching for new sources of growth in order to be able to sustain its economic attainments and remain competitive in the long run (Malaysia, 2001b:4)

It was reported that ICT utilisation from the period of 1995-2000 had undergone rapid growth and contributed further to the country's economic growth. Investments in ICTs during the period were expanded at a rate of 9.2 per cent per annum from RM 3.8 billion to RM5.9 billion (Table 5.4). Among many other sectors, manufacturing

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<sup>20</sup> The OECD definition of a knowledge-based economy is one that is directly based on the production, distribution, and use of knowledge and information in all socio-economic activities. Information and knowledge are strategic resources (apart from land, labour and capital) for generating output. It is typically characterized by knowledge-based industries for a sizeable share of the GDP/GNP; a rising share of technology products; high-tech exports; a high share of R&D; and increasing employment in high-skills industries.

**Table 5.4**  
**ICT Expenditure by Sector, 1995-2000**  
**(RM million)**

<i>Sectors</i>	<i>1995</i>	<i>%</i>	<i>2000</i>	<i>%</i>	<i>1996-2000</i>	<i>%</i>	<i>Yearly Average Growth Rate (%) 1996-2000</i>
Banking and Financial	1,026	27.2	827	14	3,732	15	-4.2
Manufacturing	494	13.1	1,182	20	4,041	16.3	19
Government	380	10.1	532	9	2,062	8.3	6.9
Telecommunication	-	-	473	8	2,323	9.3	-
Distribution	304	8.1	650	11	2,586	10.4	16.4
Oil and Gas	380	10.1	296	5	1,623	6.5	-4.8
Utility	266	7	236	4	1,253	5	-2.3
ICT Professional and Services	125	3.3	236	4	236	1	13.5
Others							
Health	-	-	59	1	59	0.2	-
Education and Research	114	3	236	4	1,008	4	15.6
Transportation	114	3	177	3	1,147	4.6	9.1
Household	76	2	473	8	2,004	8	44.1
Mining and Quarrying	76	2	-	-	100	0.4	-
Others	418	11.1	532	9	2,736	11	4.9
<b>Total</b>	<b>3,773</b>	<b>100</b>	<b>5,909</b>	<b>100</b>	<b>24,901</b>	<b>100</b>	<b>9.2</b>

Source: Malaysia (2001a:365)

recorded the highest investment in ICTs to a total of RM1.2 billion or 20 per cent of the overall ICT expenditure in 2000, followed by banking and finance. In the broader context the total expenditure for the MSC-status companies alone, up to May 2002, amounted RM4.77 billion, of which RM3.56 billion is made up of operational expenses while RM1.2 billion was for capital expenditure. Meanwhile the breakdown of total expenditure by ownership for these companies shows RM2.7 billion spent by local companies, RM313 million by foreign ones, RM547 million by joint ventures and RM1.2 billion by world class companies (MDC, 2002e). This rapid growth in ICT utilisation and expenditure was largely due to the increasing awareness of the government in improving its competitiveness and overall economic performance with regard to the uncertainty in the global market place.

Therefore, Malaysia has made a move to embrace the knowledge-based economy by harnessing the potential for creativity and innovation through creating an educated and skilled workforce and investing in appropriate infrastructure. In this context, it is hoped that, while manufacturing and services continue to contribute to the nation's economic development, knowledge will be the basis to further the country's competitiveness. For that purpose, the Multimedia Super Corridor (MSC) was created and established in 1996 as a vehicle to transform the future social and economic landscape of Malaysia.

Besides being fully supported by the government and business leaders, the implementation of the MSC is largely driven by the private sector. The unique creation of MSC is aimed at attracting leading companies around the world to relocate their multimedia activities in the country while at the same time harnessing the growth of local multimedia SMEs to transform themselves into world-class companies. With such a strategic effort, it is hoped that the country's socio-economic landscape will be enhanced and the country successfully moved into a developed status by 2020.

Along with the establishment of Vision 2020, the creation of the MSC will be the giant test-bed to reinvent many sectors in the economy. Located within an area measuring 15 kilometers by 50 kilometers between Petronas Twin Towers and Kuala Lumpur International Airport, MSC is an ambitious project that was designed to create a world-class multimedia and content environment. Within the area are both Putrajaya, the new administrative capital for the federal government, and Cyberjaya, an "intelligent city" with all its ICT activities. In order to avoid costly mistakes, it is hoped that the MSC will make the first ripple, which will then spread out to affect the whole of the Malaysian economy (MDC, 2002a).

Using ICT as its new engine of growth within all economic sectors, the time frame for the full implementation of MSC will take about twenty years. The development is divided into three major phases (Table 5.5): Phase I (1996-2003), focusing on the establishment of the MSC itself, attracting world-class companies, launching its 8 flagships and establishing the framework of cyberlaws; Phase II (2004-2010), will be involved in linking the MSC to others in a web of corridors, both locally and globally;



and Phase III (2011-2020), which is expected to attract more world-class companies to form a critical mass of small and large ICTs companies within a cluster of other intelligent cities linked to the global superhighway. This, it is hoped, will be able to transform Malaysia into a developed nation based on knowledge by the year 2020.

Even though MSC's regional competitors such as Singapore ONE and Hong Kong's Cyberport are similar in terms of competition for foreign investors, knowledge workers and the usage of latest technology; in some instances they differ in scope and approach (Tyndall, 2002:181). Distinguishing features such as flagship applications, bills of guarantees, international advisory panels and comprehensive legislative frameworks are among the elements that set the MSC apart from its competitors (ibid)

**Table 5.5**  
**MSC Developments and Targets**  
**(1996-2020)**

Phase I (1996-2003)	Phase II (2004-2010)	Phase III (2011-2020)
a. One Corridor	a. Web of corridors	a. All of Malaysia
b. 50 world-class companies	b. 250 world-class companies	b. 500 world-class companies
c. Launch 7 Flagship Applications	c. Set global standards in flagship applications	c. Global test-bed for new multimedia applications
d. World-leading framework of cyber-laws	d. Harmonised global framework of cyber-laws	d. International Court of Justice in the MSC
e. Cyberjaya as world-leading intelligent city	e. 4-5 intelligent cities linked to the other global cyber-Cities	e. 12 intelligent cities linked to the global superhighway

Source: MDC (2002a)

For flagship applications, there are primarily eight areas of multimedia development that have been identified. They are known as electronic government, smart schools, telemedicine, multi-purpose cards, R&D clusters, worldwide manufacturing webs, borderless marketing, and technopreneur development. These applications are then divided into two main categories, namely "multimedia development" and "multimedia environment" (Table 5.6). As for the former, the strategic initiatives are to ensure that

**Table 5.6**  
**MSC Flagship Application**

<b>Flagship applications</b>	<b>Key objectives</b>
<b><i>Multimedia development flagships</i></b>	
Electronic government	To reinvent how government works by improving the way it operates and delivers services to the public.
Multi-purpose Card	To improve the ease of conducting routine transactions with government agencies and private sector.
Smart schools	To develop a technologically literate and thinking force to transform Malaysia from an industrial to knowledge-based Economy.
Telemedicine	To empower individuals to manage their health and integrate the flow of products and services through the healthcare system.
<b><i>Multimedia environment flagships</i></b>	
R&D Cluster	To foster collaborative efforts among leading R&D firms, local universities and public research Institutions, and to support the growth of SMEs.
World-wide manufacturing web	To provide a conducive environment for high value-added manufacturing and related services.
Borderless Marketing	To spearhead the growth of multimedia-based service industries in the MSC with emphasis on telemarketing, online information services, Electronic commerce and digital broadcasting.
Technopreneur Development	To facilitate the growth of entrepreneurship and world-class SMEs.

Source: MDC (2002a)

the applications of multimedia development are able to transform Malaysia's social system in areas such as public administration, education and healthcare through the means of technology infrastructure. Meanwhile, the latter is aimed at creating a business environment within the MSC. By attracting companies into the area to use innovative products and multimedia technologies, it is hoped that the flow of foreign

investments would foster the creativity of the skilled Malaysian workforce and create a 'multimedia utopia' within the society (Welsh, 1999:269).

The government's continuous commitment to ICT development and its strong support of private enterprises, especially foreign investment, are further enhanced with the introduction of a ten-point "Bill of Guarantees". It is clearly stated that the "Bill" allows for unrestricted employment of foreign knowledge workers, freedom of global sourcing of capital, freedom of foreign ownership of MSC-status companies, duty-free importation of multimedia equipment and tax exemption or investment tax allowance. It is also expected through these commitments that massive inflow of the foreign investment will be generated, which would have staggering effects as there are expected to be 50 to 500 world-class companies in Malaysia by the year 2020 (refer to table 5.5).

Although the initiatives helped to attract as many investors as they could, in many instances the leeway given by the government through all the incentives has enhanced the ability of these transnational corporation to have more control over government policy, for example, in the case of allowing for unrestricted employment for foreign knowledge-workers. The consequences will be that the global sourcing for cheap and more talented knowledge workers, such as from India, will impact upon the government's badly needed effort to uplift Malaysia's knowledge workers. Meanwhile, the growing quantity of international private capital that the government is hoping to attract by the year 2020 indicates its continuous high dependency on foreign capital to generate Malaysia's economy even in the case of ICTs.

For the execution and full implementation of the MSC, the Multimedia Development Corporation (MDC), a government-owned agency was established. As a lead agency to develop and manage the MSC while at the same time advising the government on ICT-related policies and strategies, MDC is also responsible for promoting the MSC globally, particularly to attract the world-class companies to invest in it. Apart from that, it will also be a bridge linking foreign investors and potential local partners and financiers. Acting more like a private agency with full governmental powers, the MDC has been urged to play a vital role in ensuring that the goals of the MSC are to be achieved effectively.

As of April 2004, 1016 companies were granted MSC-Status, with 702 companies being Malaysian-owned (51 percent and above), 287 are foreign owned (51 per cent and above), while 27 companies are joint-venture companies. Meanwhile from the total foreign-owned companies, 60 are world-class companies (see appendix 3 or the full list of world class companies) (MDC, 2004). Out of the total, approximately 60 per cent are local companies and the remaining 40 per cent foreign. For the world-class companies, most are engaged in leading-edge multimedia technology, which includes companies like Oracle, Microsoft, Sun, NTT, Intel and Compaq. For example, a company such as Oracle was granted MSC status in 1997 and has been engaging with regional initiatives to develop platform tools for telecom networks and operations. As for Intel, it is a US-based company heavily involved in research and development on broadband functionality and networking. Apart from that, there are also joint-venture companies, such as between Malaysia and the British Virgin Islands basically involved in Internet content creation, electronic commerce and kiosk production. This can be the case as most of the products and services either for the local market or export falls into almost same categories. Most of the products are for Business to Customer (B2C) or Business to Business (B2B) software development, such as in educational content and courseware, telecommunication products and satellite services and those related to Internet system and management.

It is also noted that, as business and economic activities are developing within the area, jobs and population density will obviously be affected. As for job creation, MSC-status companies have already created more than 17,000 jobs between 1997 to 2003. From the total number, about 3,000 personnel are foreign knowledge workers (MDC, 2004). No doubt this number is expected to increase, but what is worrying, based on the latest reports and statistical figures, is that Malaysia is deemed to have a shortfall in its future supply of ICT-trained knowledge workers. For example, compared to the available numbers of knowledge workers that already reside in the MSC, the estimated overall demand for these workers in 2005 is not less than 100,000 and consequently 300,000 by 2010 (Malaysia, 2001b:157). As a pro-business government, the shortfall might have implications for attracting FDI into the country, but in many instances it shows the inability of Malaysia's education system to provide enough knowledge workers for the ICT industry.

Meanwhile, as more commercial and residential spaces are available in the MSC, the population of Cyberjaya alone (not including Putrajaya) is expected to increase from the present 8,000 to 240,000 people in 2005. The idea of developing a critical mass of people staying in and around the MSC is to form a cluster-induced dynamic, as is evident in innovation-rich places such as Silicon Valley. Undeniably, over time the high-technology areas and its surroundings will enjoy a high standard of living produced by rapid technological development and industrialisation (Castells and Hall, 1994:23). But what will then be the case for other non-technological areas such as those in the state of Kelantan, Perlis, Kedah, Sabah and Sarawak? Does this mean that inequality will become more intense? This possibly will be discussed in Chapter six.

As of 2004, it was reported that the government has already invested more than RM14 billion into the development of the project. From this amount, RM9 billion was invested for KLIA, RM3 billion for the Petronas Twin Towers and RM2 billion for Cyberjaya (NST, 2000a). It is also noted that the RM14 billion figures does not include other related expenditure such as telecommunication networks, other infrastructural work and many of the MSC's pilot projects. This indicates the government's commitment to harnessing the potential of ICTs as the basis for socio-economic development in the country.

Also, to further enhance the country's ICT industries, private local companies, especially the SMEs, have been encouraged by the government through various funds and incentives. Since the Seventh Malaysia Plan (1995-2000), many policy implementations have been very much geared towards urging these companies to play a vital role in developing the ICT industries. As such, the Eighth flagship application namely the "MSC Technopreneur Development" was launched by the government in 2002, in addition to the other seven existing flagship applications that had already been introduced since 1996. Through the applications, it is hoped that the growth of local entrepreneurship and SMEs, especially those involved in the ICTs and multimedia, will be facilitated and over time become a world-class entity.

Among the various funds and incentives made available by the government to both the MSC-Status and non-status companies are Venture-Capital (VC), Grant Schemes

and Debt Financing. Venture Capital is an alternative source of financing by venture capitalists instead of the traditional bank loans. It is suitable for new start-up companies that are rich in innovation and marketable products/services but have weak financial standings. Out of the RM2 billion worth of funds in the Malaysian industry, approximately RM1.3 billion resides with local ICT-focused VC funds. In line with the government policy to develop the ICT industry, continuous efforts have been made by the government to support the VC industry particularly by providing adequate liquidity to meet the industry needs. The government also established a RM500 million VC fund managed by the government-owned company, namely the Malaysian Venture Capital Management Berhad (MAVCAP) while the Kumpulan Modal Perdana Sdn. Bhd. for the management of Technology Acquisition Fund amounting RM190 million (MDC, 2002b).

Unlike the VC, which has a clear exit point, the Grant Scheme primarily has its developmental objectives. There is neither a requirement to provide collateral or give up equity nor any repayment or interest payments for grant applicants to obtain the grant. Basically, the grants covers a wide variety of activities, but high priority will be given to ICT related industry; for example in R&D, marketing and acquisition of intellectual property. The Demonstrator Application Grant Scheme (DAGS)<sup>21</sup> and the Multimedia Super Corridor Research and Development Grant Scheme (MGS) along with many other grants have been provided by the government to spur the growth of the ICT industry. Targeted at increasing the amount of local content, the DAGS has been allocated with an initial sum of RM100 million in the Eighth Malaysia Plan compared with only RM 50 million when it was first launched in 1998. As for the MGS, the scheme's emphasis is on helping innovative local companies or joint ventures, particularly the MSC-Status companies, through its R&D activities, which then contribute to the overall development of the MSC. Since it was first launched in 1998, the initial sum of RM100 million has been allocated for the schemes and this was raised to RM200 million under the Eighth Malaysia Plan (2001-2005) (Malaysia, 2001a:355).

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<sup>21</sup> The Demonstrator Applications Grant Scheme (DAGS) is a small project focused on solving particular problems through the means of ICTs, within the target community with a time frame for the implementation that does not exceed 12 months. Ideally the project emphasises on community inclusion, community building and local content.

Meanwhile, for companies that do not meet criteria for venture capital funding but still have a clear innovative potential, debt financing has been made available by the government to further enhance the growth of SMEs and entrepreneurship. Unlike the grant scheme or even the VC, the debt financing required some form of collateral or fixed deposits and repayment of principal or interest over some period of time. MAVCAP Debt Ventures is an example of such funding in the ICT-related industry. It is the first-ever scheme in Asia for project debt financing focused on high value-added ICTs and high-growth sectors.

However, the sources of VC in Malaysia are in rather short supply. Until 2001, there were only about ten venture capitalists investing in ICT-related industry worth RM 76 million (MDC, 2002b:3). Even though available VC funding was among the factors that contributed to the success of many innovative companies such as in the Silicon Valley, the limited success of VC in Malaysia has largely been due to a lack of competent, effective business plans from many local-start up companies (AWSJ, 2000). Moreover, foreign VC capitalists were less enthusiastic to invest due to the unpromising performance of the Mesdaq (equivalent to the Nasdaq in the United States). Also, some would argue, there has been a lack of global marketing skills among Malaysian entrepreneurs (Tyndall, 2002, 190).

The uncertainty in the global economy and the need to realign its competitiveness has made the government realise the importance of engaging with new sources of growth. The strong positioning in manufacturing industries and Malaysia's long-standing capacity to attract foreign investors has contributed significantly to the country's economic development. But the forces of globalisation have somewhat undermined some areas of Malaysia's traditional industry and have caused the government to reconsider its present situation. Under such circumstances, while manufacturing and services continue to play a vital role, knowledge will be the basis to chart the development of these industries into the so-called high-skilled industries. Using ICTs as a tool, it is expected that these developments will then lead to the knowledge-based economy and further enhance the nation's competitiveness and growth.

Much effort has been made by the government, starting with the introduction of many related ICT policies followed by huge and massive investments such as the creation of

the MSC and encouraging funding by many private companies, to harness the growth of ICT-related industries. However, the road has not been straight and easy. It has been argued by many authors that the process is an example of Schumpeters's 'creative gales of destruction' with the introduction of such new technology requiring an exhaustive reconfiguration of and fundamental changes in societal attitudes and institutions. In the case of ICTs, adoption of the profile of the labour force to a new skill profile, the replacement of copper wire with new fibre optics cabling, the redesigning of new management structures and work organisation, the societal attitudes and perceptions, not to mention changes in many related policies, are some of the things which have been needed as a part of an extensive and continuous effort by government and industry.

Based on reports by the respective lead agencies such as the MDC, the MSC and its flagship applications are making progress, albeit at different rates. Some would even argue about the effectiveness and long-term consequences of this progress, especially during the Asian economic meltdown when the pace of ICT development was slowing down somewhat (Tyndall, 2002: 192, Sayed Hossain, 2001:165). During that time, many flagship applications were reviewed and the implementations of others delayed. The impact on the investment and on the MSC was severe. It was reported that many local or foreign operations planning to relocate their investments had to postpone the move whilst others adopted a "wait-and-see" attitude.

However, even after some recovery, the crisis has resulted in a more gradual progress of these flagships. A case in point is the multi-purpose card flagship. Even though there were two cards instead of the one originally intended, the second card, which facilitated payment and banking transactions that was supposed to be introduced in early 2001 was delayed and only launched on September 2003. It is also noted that the technology of embedded chips contained in the multi-purpose card is unavailable locally and has to be imported from abroad. If this continues to happen, it is likely that the MSC will lose out in its competition with other similar "technopoles"<sup>22</sup> around the world (Sayed Hossain, 2001:160). For the electronic government flagship,

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<sup>22</sup> The term "technopoles" is a term borrowed from Manule Castells and Peter Hall (1994) as the means to describe technology-related areas or high-technology industrialisation parks such as in California's Silicon Valley or Science City in Tsukuba, Japan.



many of its pilot projects such as human resources and e-services are still at different levels of testing. In the case of smart schools, even though the technology infrastructure has already been installed and tested in ninety schools, it still needs to undergo some refinements, while thousands of schools around the country are still waiting to be upgraded and extended (Tyndall, 2002:191)

Meanwhile, the R&D Cluster Flagship and the MSC Technopreneur Development Flagship are also reported to be progressing very slowly in terms of securing funding and grant scheme facilities. For example under the R&D Cluster Flagship, as of June 2002 only RM55 million worth of MGS's grants had been disbursed from the total amount of RM 300 million that was allocated. Since 1998 there were only 128 applications. From this total number, 60 were assessed and only 26 companies managed to be funded, while the remaining, are not funded or still under review (Table 5.7). Thus this indicates that the R&D activities within the industries are rather weak or lacking in innovative skills and potential. As for DAGS under the MSC Technopreneur Development Flagship, only RM64 million has been disbursed from the total allocation of RM 150 million to support some 48 projects since its inception in 1998 (Utusan Malaysia, 2002). Obviously, if this continues to happen, the effort to create info-structure based on local content will take a much longer time, hence slowing the process of narrowing the digital gap in the country.

**Table 5.7**

**Summary of MGS Applications (as of June 2002)**

<b>No. of Applicants</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>Total</b>
Received	14	20	25	42	27	128
Assessed	4	9	17	14	16	60
Funded	3	5	10	6	2	26
Not Funded	1	2	5	7	1	16
Applicant Withdrawn	0	1	2	1	0	4
Grant Withdrawn	0	1	0	0	0	1
Under Review	0	0	0	0	13	13
<b>Grant Approved (in Million)</b>	<b>7</b>	<b>8</b>	<b>22</b>	<b>13</b>	<b>5</b>	<b>55</b>

Source: MDC (2002c)

Besides these limitations, the government continues to pour money into the development of ICTs. As evident from this discussion, it has invested billions of *ringgit* aimed at enhancing long-term industrial competitiveness and labour productivity through spending on infrastructure development and education, and training for human resource development. What can be seen is that the budget allocation for education and training within ICT related-industry, labour productivity improvement, R&D and technology and flagship applications has increased tremendously from RM 2 billion in the Seventh Malaysia Plan to more than RM 5 billion in the Eighth Malaysia Plan (Malaysia, 2001a:388). It is clear that many policies introduced by the government for this purpose have been very much geared towards private participation. The increase of funding allocation for ICT private companies, the move to increase the number of SMEs based on ICTs in the country, the continuous effort in providing adequate liquidity to support the VC industry and the increasing number of fund managers are all examples of the government's pro-business policy in favour of private enterprise.

No doubt the country's shift towards greater engagement of ICTs in the economy has contributed to economic growth, but the heavy reliance on private enterprise when remuneration criteria become the major issue, could lead into another phase of destruction (Schiller, 1986:38). Since in many instances, the local ICT industry seems to be less successful, it appears to be certain therefore that large portion of MSC activities are likely to be dominated by foreign companies. This can be clearly seen by the aggressive promotional activities by MDC, whereby many attractive incentives are offered to lure the investors. These include the "Bill of Guarantees" and more flexible immigration policies. Even with these incentives, the country will witness massive inflows of world-class companies in ICT-related industry by the year 2020 leading, eventually, to its domination by these foreign entities. Nevertheless, even though foreign inflows to support such a giant project are needed, it is likely that the continuous heavy dependency on foreign investment will lead Malaysia into a new sort of imperialism. One of the evaluators commented on this, as follows:

**'The ICTs and the use of computer in Malaysia is the shelf, there is no height, because the height is not control. In the sense the government and non-government bodies must be responsible to counter market dominant. It is not only the question of market, the capitalists will do anything to exploit and we are allowing them to do so. For example in the case of MSC, it is another means of exploiting'**

**(EV 1 – Associate Prof. Ahmad Murad Merican)**

As the degree of openness to foreign investment is not showing any sign of slowing down, even in the case of ICTs, the neo-colonialist element is becoming apparent in the context of economic domination that is gradually taking shape in Malaysia. Judging from the fact that many of its flagship applications are still progressing at different rates, the achievement of Vision 2020 may take a much longer time than anticipated.

#### **5.4 Education and Training: Creating a Knowledgeable Workforce**

The emphasis on economic development from a production-based economy to a knowledge-based economy is developing a greater momentum and increasingly becoming one of the main challenges of the new millennium. Evolving around knowledge and information is arguable that these changes are becoming an important source for productivity growth and development (Castells, 2000a:77). But in many instances, it is the conflict between deskilling and reskilling that always lies at the heart of the arguments. Such arguments will help to develop our understanding of the relative relevance of technological development and productivity as a basis for economic growth.

As argued by many, the notion can be well connected to the transition from Fordism to post-Fordism as a result of the growth in ICT that is giving rise to the transformation in many work processes. As some observers would argue, the transition towards post-Fordism in the context of ICTs is actually worsening the situation. Obviously, as more machines becoming automated, the replacement of workers by these machines could lead to what Noble (1984) and Shaiken (1986) described it as a process deskilling. The reason for this is being simply to ensure the organisation could gained more profit, since the machine was seen being able to do far better and quicker job than human beings (Braveman, 1974).

Meanwhile in other instances, it is the skills of the workers that are increasing as a result of their changing functions in the automation and computerisation of work or, in other words, these are elements of reskilling that are occurring (Webster and Robin, 1986:154; Zuboff, 1988:23). For example in the case of learning and adapting to the personal computer, the more adaptive a person is to the process, the more knowledgeable the person will be in operating the system. As such, not only will it further enhance the individual's capability but it becomes the basis of organisational productivity and competitiveness (Castells, 200a:165-166). But still the element of education is critical in this sense, as it will determine the level between the two fixed categories of labour; the 'generic' and 'self-programmable' (Castells, 2000b:372). Unlike the skills that tend to be obsolete as a result of technological change, education, on the other hand, is a constant source of redefining the necessary skills. Even Harold Perkin (1989) in his notion of the rise of the professional society, stresses the importance of the innovative use of training and education system in dealing with today's challenges. As he mentioned:

'The professional ideal, based on trained expertise and selection by merit, .... highly skilled and differentiated labour rather than the simple labour theory of value, and selection by merit defined as trained and certified expertise' and the 'privileged in education'

(Harold Perkin, 1989:4)

It is also noted that a new class of intellectuals has arisen and is undergoing rapid expansion and dominating the economic sphere of the twentieth century (ibid:xiii) and beyond. Even more important, the unprecedented growth in technology, information and the push towards globalisation coupled with the recent shift to a knowledge-driven economy has made the management of human resources, particularly in creating the knowledgeable workforce, become more critical than before.

No doubt under the development of informational economy and globalisation, both types of labour are important, but it is the 'self-programmable' labour that is increasingly becoming in demand. Its natural flexibility and expandability has prompted many governments, organisations and economic units to gear their production towards maximising their productivity and competitiveness (Castells, 2000b:372). Obviously large segments of the economy will have to undergo certain

transformations as suggested by Schumpeter's creative destruction, however, in many circumstances it still depends 'upon countries' technological capability, political culture, and labour traditions' (Castells, 2000a:256) for such an economy to function well.

Realising the importance, many global business environments, particularly the rapidly growing economies in Asia, have created a demand for a more skilled and educated workforce. This can be the case as many nations today have increasingly recognised that their human resources are at the heart of their competitive advantage where most of its achievement are increasingly dependent, to a large extent on a pool of readily available workers and the skills they possess (Noe, 1999:16). The shifts in Malaysian economic policies away from raw materials to engage in high technology manufacturing industry are another clear example of this.

With the world becoming interdependent in a global economy, it is noted that the competitiveness of both nations and enterprises will be on an international basis. As such, not only will those who have the ability to add value to global economic products and services be eventually in the forefront of the new economic domain, but also those with the ability to create their own knowledge and skills-based workforce as a competitive weapon. From this situation, not only will enterprises increasingly have to update the skills of their employees regularly in response to globalisation and rapid technological change, but also to compete in producing high quality human systems and processes behind their products and services (Castells, 2000a:262 ).

Under such circumstances, Malaysia in particular started to realise the importance of creating a highly skilled workforce in order to sustain its competitive advantage. Being a pro-business government that is highly dependent on FDI, the inability to compete in the global economy might result in the flight of that international capital which had contributed so much to its economic development over the years. As mentioned in the last section, it is not only Malaysia that is facing the threat from the low wage countries such as China and India but also those countries with a strong economy such as the US, the UK and Finland whose economies depend on knowledge as their driving force. To avert such stiff competition, the government has decided to move many of its production areas into high-end sophisticated goods and services

through the means of a knowledge-based economy. It is hoped that, by moving into the knowledge-based economy, a competitive advantage would be provided and Malaysia would finally realise its dream of becoming a developed county by the year 2020.

For Malaysia, the establishment of the Multimedia Super Corridor is the best example of such efforts in shifting its economy while at the same time harnessing the growing numbers of the country's knowledge workers. Obviously, for any country that wishes to move towards a knowledge-based economy, a highly skilled and educated labour force will be a key asset for the functioning of that economy. A large pool of readily available, highly skilled personnel is needed for such an economy to be successful. But it is not always easy to produce the requisite human resources to fuel such an economy in a short period of time. Unfortunately, Malaysia does not have the resources at this point in its development history, to train a specialised labour force comparable to that of India for instance. In India the move towards producing a highly skilled labour force, particularly in knowledge-based industries such as software development, started in the 1960s and 1970s. For Malaysia, its efforts to produce its own knowledge workers were only acknowledge and made clear during the introduction of Vision 2020 in 1991 and the establishment of the MSC in 1996. Apparently through the objectives of Vision 2020, the government has provided a clear definition of how Malaysia should move to become 'a scientific and progressive, innovative and forward looking society' for the country to be able to achieve a developed-country status by the year 2020 (Malaysia, 1991b:2-4). Undoubtedly, education and training will play a critical role in making this vision a reality.

Taking ICTs as a pillar in developing its economy, the dream of becoming a developed country is a challenging one. The challenge is that the industrialisation policies, particularly the education policies that have served it well over the years, need to undergo structural change. It also needs the creation of the requisite human resources, which is not an easy feat to achieve. With the world fast becoming interdependent in the global marketplace, the rapid changes in science and technology and the exponential growth of knowledge are now becoming global trends. Not only knowledge and skills need regular updating, but also schools and other education and training institutions need to attain the ability to learn and instil the value of lifelong

education and training. Even more important, the programmes developed for continuous learning not only need to be developed by these institutions alone but also by the professional bodies as well.

Realising the importance of providing adequate manpower supply, particularly the supply of knowledge-workers, at least two areas from the government's strategic thrust for human resources development were given emphasis in supporting the development of knowledge-based activities and the economy. Primarily the areas are; a) expanding the supply of highly skilled knowledge manpower through the expansion of the education and training system and facilities, and b) Increasing the supply of S&T manpower (Malaysia, 2001a:114-115). It is noted that the effort to increase the supply of skilled workers has been made since the Seventh Malaysia Plan (1996-2000) and later strengthened in the Eighth Malaysia Plan (2001-2005). The allocation for education was raised from RM17,948.5 million to RM18,660 million, whereas the training allocation rose from RM2,237.3 million to RM4,000 million over the period of the Plan (ibid:128).

In the effort to expand the supply of highly skilled knowledge manpower, the overall capacity of education and training institutions will be increased, expanded and upgraded, for both public and private institutions. For example, over 600 institutions of higher learning were established and are currently in existence compared to only 167 in 1996. From the total number of institutions as of October 1999, there were about 170 private institutions and 28 public institutions offering subjects and courses related to ICTs. Meanwhile, in an effort to increase the number of knowledge workers and research activity, particularly in the MSC area, Multimedia University (MMU) was established. It is expected that MMU will be the core institution for producing a substantial number of knowledge workers while at the same time serving as a centre of research activity within the area. It is also expected that from 9,000 students registered in 2000 in the MMU alone, 22 per cent will graduate in Information Technology and Communication courses (Malaysia, 2001a:167).

Apparently, the Malaysian education system will be reoriented to enable students to acquire both the thinking in the higher level of explicit knowledge as well as entrepreneurial skills. As such, more trained and motivated teachers will need to be

supplied, while the curriculum, teaching approaches and suitable facilities for the ICT environment will need to be enhanced. Among the earliest examples of the government's effort in this area is the establishment of Smart Schools under the Smart Schools Flagship Applications. At the end of 2002, 90 schools have been provided with ICT facilities with most of them located in major cities and the urban areas. It is hoped that through these efforts, a dedicated and well-versed, ICT-literate generation will be generated to cater the country's future knowledge workers.

Besides that, the private sector is expected to intensify its efforts and involvement, particularly in the aspects of training. The government, which has been the sole provider of training, previously, has recently made a shift in its policy by encouraging private enterprises to become involved in many areas of training activities. It is expected that these enterprises will given emphasis to new approaches for training and retraining in skills particularly in the field of ICT, by making them more market-driven. To this end, the Human Resource Development Fund (HRDF) was introduced. Adopted in 1992 under the Human Resources Development Act, it is compulsory for all employers with 50 employees or more to contribute to the fund. With the strain on the existing national training system due to the increasing shortages within the country's labour supply, it is hoped that the fund will be the basis for conducting more training and retraining within enterprises. At the end of 2000, RM833 million was collected and RM488 million or 58.6 per cent disbursed for post-employment training (Malaysia, 2001a:110). Besides that, many private enterprises, particularly education institutions, are encouraged to achieve the MSC status and so receive more privileges and incentives such as tax exemption, local grants and unrestricted employment of foreign knowledge workers.

Meanwhile, in an effort to increase the supply of S&T manpower to meet the demands of a knowledge-based economy, the capacity of S&T-related education and training programmes need to be further expanded. The target ratio of science to arts students at tertiary level will change to 60:40<sup>23</sup> compared to the current ratio of 30:70. Recognising the importance of creating a critical mass of scientific and technical manpower, enrolment in the S&T degree programmes in local tertiary institutions will

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<sup>23</sup> What is currently reported the number of arts student far exceeding the science students at the tertiary level with only about 30 per cent science students compared to 70 per cent of arts students.



be increased substantially. Local R&D capabilities, especially in the institutions of higher learning, will be further developed through joint R&D activities between universities and industry. It is hoped that these efforts will increase the ratio for Malaysian scientists and technologists from 10 per 10,000 labour forces to 30 by the year 2005. To address the shortage of R&D personnel, efforts such as attracting foreign R&D personnel and Malaysian scientists working abroad will be intensified.

Since the government decision to embark on the knowledge-based economy, a considerable number of efforts and policy shifts have been made by the government, notable in its education and training activities, to intensify the growth of the country's knowledge workers. However, based on many reports there still currently exists a shortage of knowledge workers in Malaysia. Being an economy that wishes to embark on high-skill manufacturing industry, the shortfall of such workers is becoming a major concern, especially in the short-to-medium term. For an economy to be driven by the creation, exchange, and diffusion of innovative ideas, technically competent and talented workers are often a pre-condition. In the case of Malaysia, even though there are ongoing efforts being made to overcome the shortfall, the excess of demand over the supply of such workers is alarming. It is estimated that the demand for ICT workers in Malaysia by the year 2005 will be not less than 100,000 and eventually about 300,000 by the year 2010 (Table 5.8).

**Table 5.8**  
**Malaysia Demand for ICT Workers (persons)**  
**2005-2010**

<b>Occupation</b>	<b>2005</b>	<b>%</b>	<b>2010</b>	<b>%</b>
System/Hardware Engineer	15,930	14.8	37,860	12.3
Software Developer/Engineer	10,410	9.6	26,680	8.7
Business/System Analyst	25,620	23.7	71,020	23.2
Computer Programmer	21,320	19.7	62,820	20.5
Technical Support	34,720	32.2	108,230	35.3
<b>Total</b>	<b>108,000</b>	<b>100</b>	<b>306,610</b>	<b>100</b>

Source: Malaysia (2001a:157)

Although there are no hard statistics for the current numbers of ICT workers or for their immediate supply in Malaysia, but looking at the availability of ICT workers in the MSC alone it is difficult to see how the demand can be met. Being the most critical area with a high need for such workers, MSC only managed to produce 17,000 workers as reported in 2003. From this total number, about 86 per cent or 14,620 were knowledge workers while the remaining were clerical and support staff (MDC, 2004). Ostensibly, the 3,000 foreign knowledge workers that already resided in the MSC were part of the total number. Moreover, despite the global shortage of knowledge workers, particularly in the Asia region (Amat Taap, 2001:104), the issues the 'brain drain', the small number of tertiary enrolments, the large number of arts students compared to science students, the lack of a critical mass of scientists and engineer, and the lack of emphasis on both its R&D activities and expenditure, which are critical to drive such an economy are factors that will heighten the situation. As an economy highly dependent on international private capital such as the FDI, the limited ability to create its own knowledge workers will be the greatest challenge for Malaysia's aim to compete in the global economy and also slow the process of becoming a developed country by the year 2020.

In India, even though there are problems in its infrastructure, the readily available pool of knowledge workers managed to attract foreign investment in ICT that continues to flow in (Singhal and Rogers, 2001: 228). It was even reported that the collaborations between Indian and foreign companies, particularly in the software industries, took place as early as the 1980s. The attractiveness of the Indian ICT industry to these international markets is due to 'its endowments of cheap but skilled labour' (Balasubramanyam and Balasubramanyam, 2000:355). For example in 1994, the average yearly earnings for a software engineer in the UK were around BP26, 000, whereas in India it was only around BP1, 000 to BP2, 000 a year (ibid:355). Among many other industries, the development of the software industry in India has made the greatest impact to on economy. From the combined revenues of Indian domestic software sales and exports alone, there has been a tremendous jump from USD150 million in 1990 to US\$5 billion in 2000 and this is expected to reach to USD150 billion by 2010 (Singhal and Rogers, 2001:223). The continuing development of Indian ICT industries is largely drawn from its readily available pool of skilled workers particularly knowledge workers. It is noted that in 2000 there were about

400,000 people employed in the Indian software industry. It is also estimated that about 4.5 million technical workers are currently being trained at some 1,900 institutes of higher learning and technical training (ibid:228).

India benefits its from the number of its skilled professionals who have been “exported” to work on leading-edge ICT technologies in the United States and Europe. Many of these professionals who migrated during the 1960s and 1970s have eventually returned home to set up their own businesses or establish networks with their Indian counterparts or divided their time between India and other countries. This phenomenon is described by V.N. Balasubramanyam and Ahalya Balasubramanyam (2000: 354) as the ‘to-and-fro brain drain’. Faced with the serious global shortage of knowledge workers, particularly in the Asian regions recently, it is questionable if Malaysia would have enough time to benefit from a similar phenomenon.

Undeniably, the high presence of such workers in many developed countries such as the US and UK with no exception to low wages country such as India, is their promotion towards tertiary education particularly in science and technology. As mentioned by R.N. Kastoff cited in Micheal H. Best (2000:466), ‘an advanced pool of knowledge must be developed in many fields before synthesis leading to innovation can occur’. In the case of India mentioned earlier, the benefit of its promotion of tertiary education in providing a skilled workforce is enormous. It is the universities and institutions of higher learning which produce a stream of engineers, technicians and scientists that seem to have played a critical role in helping the development of many technology parks around the world (Castells and Hall, 1994:230). Not only has the university has been be able to produce a large pool of workers needed by industry but also the research activity taken up by these universities is generating flourishing forward and backward linkages and spin-offs. A fair example is the evidence of Stanford University in Silicon Valley and Cambridge University in Cambridge, UK. These universities have become the breeding grounds for providing highly trained personnel to support the development of knowledge-based industries. For a country like India, besides its heavy promotion of its education system, its attractiveness might be due to the ‘cheap but skilled labour’ available. Meanwhile, for countries such as the US and the UK, their main attraction might be the attractive working

conditions, superior career prospects, high remuneration packages, high standard of research activity and highly trained personnel.

As has been mentioned earlier, the level of educational attainment is playing a critical role in providing the basis for the advancement of the knowledge-based economy, both in lower and tertiary education. At school level in the long-term, the government is focusing its efforts on the establishment of the smart schools programme under the Smart Schools Flagship Application. It is hoped that through this programme would nurture the country's future knowledge workers from the early stages. It is reported that the budget allocation for this application alone amounted to more than RM 400 million for the period of 2001-2005. As of 2000, there were about 87 schools that had been upgraded into smart schools. From the total number, 4 were in the primary and 83 were in secondary school (Ministry of Education, 2001:8-4).

No doubt over the long-term this effort is excellent, but what is worrying is the slow rate of growth in smart schools since its inception in 1999. For example, as reported in 2003, the number of smart schools had increased by only 3 to 90 schools since 2000 (Ministry of Education, 2003). Even worse, the approximate 100 smart schools represent a very small proportion of 8,876 schools (7,231 primary and 1,645 secondary schools) throughout the country (Department of Statistics, 2002:117). From that total number only 300 schools have Internet facilities, which currently make up the ratio of 1 Internet connection for every 200 students (Ministry of Education, 2001:8-6). Even the study undertaken by NITC had revealed that 70 per cent of primary and 46 per cent of secondary schools in Malaysia do not have access to computer facilities. Neither do 90 per cent of primary and 66 per cent of secondary schools have access to the Internet (NST, 2000b), which is deemed to be crucial for Malaysia's efforts to prepare its own pool of knowledge workers for the future.

Meanwhile in the tertiary level, although the overall level of educational attainment has improved, the level of tertiary education is still small (Table 5.9). Even though there has been a substantial increase in enrolment at the tertiary level among the 17-23 age cohort to 25 per cent following the increase in allocation for tertiary education, compared to many newly industrialized economies (NIEs) the number is still low

(Table 5.10). It is also recognized that enrolment at first-degree level, particularly in the public institutions, continues to be biased towards arts courses.

**Table 5.9**  
**Educational Attainment of the**  
**Labour Force, 1990-2000**  
**('000 persons)**

Level of Education	1990	%	2000	%
Primary	2,380.20	33.8	2,607.90	27.4
Lower & Middle Secondary	4,042.10	57.4	5,571.80	58.7
Tertiary	619.7	8.8	1,319.30	13.9

Source: Malaysia (2001b:124)

**Table 5.10**  
**Public Expenditure in Education and**  
**Tertiary Enrolment in Selected Countries**  
**(%)**

Country	Public Expenditure On education (of GNP), 1996	Tertiary Enrolment (of population 20-24 years), 1993
Australia	5.5	42
Canada	6.9	103
China	2.3	4
India	3.2	6
Ireland	6	34
Japan	3.6	30
South Korea	3.7	48
Malaysia (a)	5.2	25
New Zealand	7.3	58
Singapore	3	38
United Kingdom	5.3	37
United States	5.4	81

Source: The World Competitiveness Yearbook, 1998, 2000 in Malaysia, (2001b:125).

Note : (a) Refers to year 2000 and age cohort 17-23 years.

Even though arts courses are important, a higher enrolment in science and technical courses is necessary to create a critical mass of scientific and technical manpower and is even more important in the context of the knowledge-based economy. For example in 1999, the enrolment on to science and technical courses constituted only 31 per cent of the total. This was due to the small number of science students at only 25.7 per cent of the total number of students in 1998 at the secondary school level (Malaysia, 2001b:124-125). With this, obviously the target ratio of 60:40 of science to arts will be difficult to achieve. This would also have some implications for the effort to increase the number of Malaysia's future scientists and engineers.

Referring to Table 5.11 below, it is obvious that Malaysia is still lagging behind some countries that have successfully built an indigenous capability to innovate as well as design new products such as Japan, Korea and the United States. It shows that the

**Table 5.11**

**Public Sector R&D Expenditure and Number of Scientists and Engineers for Selected Countries**

<b>Country</b>	<b>R&amp;D Expenditure (% Of GDP) 1998</b>	<b>Scientists and Engineers (per million population) 1985-1995</b>
Australia	1.7	3,166
Canada	1.6	2,656
China	0.7	350
India	0.7	149
Ireland	1.5	1,871
Japan	2.9	6,309
South Korea	2.7	2,636
Malaysia (a)	0.4	500
New Zealand	1	1,778
Singapore	1.8	2,728
United Kingdom	1.9	2,417
United States	2.5	3,732

Sources: The World Competitiveness Yearbook, 2000  
World Development Report, 1999/2000 in Malaysia (2001b:126)

Note : (a) Refers to preliminary figures for year 1998

allocation to research and development (R&D) activity in Malaysia only constituted 0.4 per cent of the total GDP in the year 2000. Compared to those countries such as Japan (2.9 per cent), Korea (2.7 per cent) and the United States (2.5 per cent) the figure for Malaysia is relatively low. It is also noted that, Malaysia's S&T and R&D capabilities were partly constrained by the critical lack of scientists and engineers. For example, in 1998 there were only 500 scientists and engineers per million populations in Malaysia. This figure is comparatively low compared to countries like Japan and the United States where there are no less than 3,000 scientists and engineers per million populations.

In its movement towards, the low R&D expenditure and the small number of scientists seems likely to impact upon Malaysia's efforts to be in the forefront of the global market. The country will continue to depend significantly on the latest technology and its development being acquired from other advanced capitalist countries that are already at the forefront due to their high levels of R&D activity. If this continues to happen, not only will it show that these countries have more economic power but at the same time it will strengthen the elements of neo-colonialism that are beginning to be seen in the context of the Malaysian economy.

This situation becomes more disappointing. According on the evaluation done by *Asiaweek* on the ranking of higher institutions in Asia in the year 2000, the participating Malaysian universities ranked quite low, particularly in research (cited in Mohd Ridzuan Nordin, 2001:26). The Malaysian public universities, which participated in this exercise, were University of Malaya (UM), 'Universiti Sains Malaysia' (USM) 'Universiti Putra Malaysia' (UPM) and 'Universiti Teknologi Malaysia' (UTM). From the 76 institutions, which participated under the multi-disciplinary category for research activity, UPM was ranked 48 followed by UM (64) and USM (68). The top three institutions were Tohoku University (Japan), Seoul National University (Korea) and Nagoya University (Japan).

Meanwhile, under the Science and Technology Category, UTM was ranked 35 out of the 39 institutions that participated. The Korean Institute of Science and Technology, Pohang University of Science and Technology (South Korea) and the Indian Institute of Technology, Bombay were the three leading universities under this category. Their

scores were 18.93, 9.93 and 9.76 respectively compared to only 1.72 for UTM (ibid:26-27). What this suggests is that Malaysian institutions of higher education need serious attention if their research activity is to be ranked near that of the best institutions in Asia and those in the developed nations. Also, they are to have the ability to improve significantly and play their part in helping Malaysia to transform into a knowledge-based economy. As mentioned earlier, from the experience of many developed nations, it is the role played by these educational institutions that helps to generate the supply of manpower needed while the research activity undertaken by these institutions would help to spur the linkages between industries which leads to economic success.

Looking at the above discussions, Malaysia is struggling to provide an adequate supply of its own knowledge manpower. Based on the increasing number of institutes of higher education and enrolment in ICT related courses, no doubt there will be a substantial number of graduates in the IT and engineering-related courses produced by the country over time. But there are a number of issues that need to be readdressed here. One is the issue of quantity versus quality and the other is the issue of the brain drain. For the former, there are questions relating to the ability of the fresh graduates to develop a program once they graduate. Another equally important issue is the time frame given by the IT companies for these graduates to gain their experience. Based on these concerns, one of the implementers mentioned the following:

‘Many of these graduates may have paper qualifications, for example Bachelor’s Degree in Science Computer. But can they get started immediately or if you put them in front of the terminal can he or she start developing an application? ...there is no luxury for IT companies, as some companies might not even be around in six to eight months. Not like other companies, they may have more time to train new employees. So, if I were to recruit a person, I expect that the person be productive right from the Day One, and that is not happening with the current crop of people coming out. The IT industry is compounded by the highly dynamic nature of the business environment itself’

(IM 1 – Sun Microsystem (M) Sdn. Bhd)

Ironically the situation is an unfair demand on the students, workers and on the government to suddenly have to start creating its own knowledge workers in a very short period of time. But that is the reality that the government is facing. Coupled



with intense competition in sourcing knowledge workers due to the global shortage, the situation is even worse for Malaysia. Not only is the number of IT workers required getting bigger, but also the brain drain issue is overriding the government's effort in providing its own workers to feed growing local demands. For example, the announcement of some developed countries like the US and Singapore recently aimed at sourcing more foreign IT talent would eventually impact upon Malaysia's efforts in producing an adequate supply of its own IT workers.

It was reported that in the year 2000, the US government has provided more than 600,000 new visas for overseas workers looking to work in the country's high-tech industry (The Star, 2000a). As for Singapore, although there are no hard statistics, it is believed that there are large numbers of Malaysians currently working in the Island's IT sector (The Star, 2000b). Obviously the attractiveness to move into these countries from the growing economies like India, China and Malaysia in particular will be the high salary and remunerations packages offered. But some would argue that, as in the case of India, even though there might be the big wave of migration of its IT personnel, eventually the country benefits from their returnees. It is hoped that Malaysia will also benefit from such a situation, as one of the Policy Developers mentioned:

'Obviously it is not a major issue for us to bring them back immediately. When the time is right they will come back and from there onwards we will make use their ability, experience and the transfer of technology they gather for the benefit of the country'

(PD 2 – Ministry of Human Resource)

However, looking at the demand that not only exists locally but also internationally, the question is, does Malaysia have enough time to wait for the cycle to be completed or would it ever be completed? Realising the situation, the government has initiated an effort to "do unto others" through a policy "entice, beg, borrow and steal talents from overseas". Since 1996, the government established the MSC and introduced policies allowing for unrestricted employment of foreign knowledge workers, particularly for the MSC status companies. Even the government itself has established the Knowledge Workers Exchange (KWX) programmes through an MDC subsidiary to headhunt for more qualified IT personnel from within and outside the

country. This is not surprising as it is most critical for MSC to have sufficient manpower supply for Vision 2020 to be realised.

As a result, as of April 2004, there were about 2,728 foreign knowledge workers working in 1,016 MSC companies. From the total number, almost 60 per cent or 1,528 are workers from India followed by Europeans (12.5 per cent) and Asians (11 per cent). It is strongly suggested that the large number of Indian foreign knowledge workers exceeded other workers due to the fact that they are both highly trained and also affordable to employ. The advantage of exploiting imported resources would be that the government would make more savings in its training and education expenditure that it could then channel into other forms of ICT development, infrastructure and facilities. However, this may only be appropriate for a short-term period. In the long run, the inability to cultivate its own resources and over-dependency on imported resources may cause the country to loose out in terms of its competitive advantage in the global market. Even more important, these foreign nationals may have more economic power than the locals.

With regards to the requirement to recruit foreign knowledge workers, qualified personnel must possess at least five years professional experience in multimedia or a university degree in any discipline or a graduate diploma in multimedia with two years of professional experience. With the kind of qualifications and experiences needed, obviously these personnel will be holding important positions once they are recruited. Besides having the prerogative to either transfer or not transfer their knowledge to the locals, the bulk of fresh local graduates with no experiences may possibly treated as “second-rate workers” as they will be given lower positions, which could give the impression that these local knowledge workers were being insufficiently valued.

The above discussion shows the government’s effort to generate the country’s knowledge workers are still far behind what was expected. Although a lot of effort and heavy investment to provide a larger pool of local knowledge workers have been made by the government to accommodate the growing demand of local ICT industries, the setback in many of its efforts suggests that the vision to become a developed country would take a much longer time than anticipated. Moreover, the

unpromising progress of smart schools, the small number of tertiary graduates, the lack of scientists and technologists, the relatively low R&D expenditure and research activity coupled with the issue of the brain drain and the increasing dependency on knowledge workers are all likely to contribute to the slowing progress of the government's efforts. More importantly, a question much hangs over the future of Vision 2020 if the means to produce a scientific, progressive, innovative and forward-looking society are not being realised.

### **5.5 Concluding Remarks**

For the past thirty years Malaysia has enjoyed its good economic achievement relative to other developing countries. Starting with the effort to narrow the economic disparity between major ethnic groups, the country has witnessed a number of policy shifts in order to bring about change in both its economic and social achievements.

However, the character of globalisation and the uncertainty in the global market has changed the government's role as an economic actor considerably over the period. Unlike the primary commodities, which formed the mainstays of its economy in the early days after independence, the shift towards producing secondary products has lessened the scope and depth of direct state intervention in the micro economy. The reason is simply to continue to be competitive in the global market. What can be seen is that the institutional changes towards a more market-oriented economy have led to this new orientation of the state's role in the economy. Characterized by numerous preferential policies such as Vision 2020, which aims to influence firms' decisions to achieve specific national goals, the government's new role as an economic actor is still both relevant and active in many ways. Effort in building up social institutions, including the legal framework compatible with a market economy (liberalisation and deregulation) while at the same time focusing on the development of both soft and hard infrastructure (such as education and ICTs infrastructure), can be seen in the important policy shifts and changes in the government's role to accelerate the country's progress. The reasons for this activities are simply to further compete in the global market while at the same time harnessing the growth in both Malaysia's

economic and social development in order to further developed the country as clearly stated in Vision 2020.

Based on the above analysis, it is clear that the changes in many of the government policies and roles have been to enable the market to flourish. What the findings have shown that the establishment of ICT policy with regards to ICT development in Malaysia did play an important and significant role in the country's economic progress. Since the announcement of Vision 2020 in 1991, steps towards the establishment of ICTs in both the soft and hard infrastructure were and are being made by the government. The establishment of the MSC, the rapid growth of ICT utilisation and ICT investment, the expansion of knowledge workers, both local and from abroad, and above all the increasing quantity of private investment and FDI in the ICT industry were the important promoters of such successes.

An important finding is that the government is highly dependent on private companies and organisation, particularly on the global scale as shown by the continued growth of FDI. Coupled with setbacks in many of its MSC Flagship Applications and education attainments, the inability to increase the pool of local-knowledge workers, the slow progress of the local ICT industry and even the loosening of immigration policy all suggest that this degree of dependency is clearly showing no signs of slowing down, at least in the short to medium term. Not only might this further delay the aims of the Vision 2020, but also it might further contribute to the strengthening of neo-colonialism that is already taking shape in Malaysia. For Malaysia, this element would certainly present a problem for the meaning of democracy and the creation of its own national identity in Malaysia. On one hand it might be true that the democratic process aided by ICTs is contributing further to the country's economic growth, however, on the other hand the strengthening of foreign influence under this process could clearly have an impact upon the establishment of the national identity mentioned strongly in Vision 2020. Under what circumstance could this identity be established if the elements of neo-colonialism continue to advance in Malaysia?

Above all, how far might these contribute to the contradictory elements within the policy itself between the effort to develop the economy and at the same time maintain

the social relationship? To examine this, let us now turn to Chapter Six, 'Democracy, Inequality and National Identity'.

## Chapter Six

# Democracy, Inequality And National Identity

### 6.1 Introduction

From the analysis in the previous chapter, it is clear that ICTs play an important role in bringing about changes in the future economic development of Malaysia. Using Vision 2020 as its point of departure, it is hoped that greater engagement in ICTs would not only further advance the economy but also the development of society. As was clearly stated in Vision 2020, without being able to develop these two critical entities the notion of being a developed country by 2020 will be meaningless (Mahathir, 1991:5).

Being a multi-ethnic and multi-cultural society that is becoming interdependent in the global economy, the means to set its own pace of modernity and national identity through Vision 2020 are resulting in multiple reactions and consequences. It is hoped that through aggressive technological deployment such as in the use of ICTs, the economic attainment will create a greater momentum for the country's future prosperity. But the uncertainty in the global economy and the consequences of using ICTs are being experienced in many developed countries, which raises the question of what their effect on Malaysia's social fabric will be. Does this mean that inequality within society is also getting wider? As mentioned in Vision 2020, in order to establish a united Malaysian nation and its move towards being a developed country, there is a need to provide a balanced development in all aspects of life. Particularly important in the establishment of Malaysia's national identity are strong cultural and

religious beliefs and also a strong and resilient family system. Embarking upon the development of ICTs, it is hoped, not only that this will lead into greater accessibility and citizenship participation, but also into greater unity and eventually to the establishment of a national identity. As such the aim of this chapter is to provide a detailed analysis on of consequences of ICTs for Malaysian society. The focus of the analysis will be on regions, gender, class, ethnicity and the relationship between democracy and the public sphere.

Anthony D. Smith (1991), in his book 'National Identity' strongly concluded that national identity in today's world continues to be the main basis of collective identification due to a long history of ethnic ties and sentiments. For him, although both the nation and state continue to be integrated in the global forces, 'nationalism does not appear to be losing any part of its explosive popular power and significance' (Smith, 1991:170).

The above opinion is hardly surprising since the notion of the nation-state that is currently undergoing pressure from both below and above is challenging many forms of present cultural identity. Giddens (1990) for instance, has made a clear distinction between modernity and the traditional system. By taking the basic characteristic of time-space 'distanciation' as a tool to understand globalisation, what he argues is that the development of globalised social activity to be able to connect local and global is undermining some parts of nationalist sentiment towards the nation-state through the process of what he called 'reembedding'. By 'reembedding' he means the '*lifting out* of social relations from local contexts'; a phenomenon that interacted firmly with the separation of time and space through an 'embedding' process from the present context. By this those involved in the 'reembedding' will have the possibility to get away from the self-control of local traditions and customs that are creating a new pressure for local autonomy and regional cultural identity (Giddens, 1990:65).

To support this view, Giddens further argues that under the pressure of globalisation, traditional values are also undergoing some process of being 'detraditionalised'. Not only is it evident in the western countries but also in other societies across the globe that are becoming 'less and less... tradition lived in the traditional way' (Giddens, 1999:43).

In many instances this is very much to do with the notion of citizenship and the concept of group rights. It can be argued that even though more and more human activity is being organized on the global level, one of the important features of current citizenship is that more ethnic groups are seeking independence and equal civil, political, social and even cultural rights. Obviously this is highly associated with the classical model of the nation-state as providing a cultural identity and the weakening notions of citizenship. As a result many countries since the mid 20th century experienced a disintegration of national cultural identity consequent from the 'calls for heterogeneity at the local level and interconnectedness at an international level' (Verma, 2002:53). This can be the case when forces such as globalisation give rise to growing social inequalities and the questioning of the links between citizenship and national identity. The consequences of these are tearing apart many forms of present social fabric (Lamounier, 2002:1).

Indeed T.H Marshall (1950) in his seminal work, 'Citizenship and Social Class' has made a clear relationship between modern conceptions of citizenship and inequality. Corresponding to this are three aspects of citizenship: the civil, the political and the social. The civil citizenship includes individual freedoms of speech, property rights and justice. The political element consists of the right to participate in public decisions and political votes. Social citizenship includes the rights to the provisions for welfare and economic security. What Marshall argues is that in order for citizenship to be well promoted both economic and social rights first need to be established. Without those this may lead into division in the society particularly those related to the division in class (Marshall, 1992:6). According to him, this was a result of the differences of class among groups that emerged 'from the interplay of a variety of factors related to institutions of property and education and the structure of the national economy' (ibid:19).

Emphasising the relationship between education and the occupational structure, Marshall further admits that the refinement and selection process within the education system itself into classifiable groups further contributes to class differentiation. He further concludes that 'through education in its relation with occupational structure, citizenship operates as an instrument of social stratification' (ibid:39). Although Marshall's document remains important to modern citizenship studies (Foucault,



1998), he continues to receive criticism on his differentiation between citizenship and inequality. Without taking seriously other forms of inequality, what Marshall assumed class to be the only means of explaining inequality. In opposing this, some scholars have argued that besides class other elements, such as gender, race, ethnicity and region were also significant in understanding inequality within modern citizenship (Turner, 1986; Isin and Wood, 1999:30).

This chapter will be organised and discussed according to the above concepts. It will examine the detail of ICT development in Malaysia with special reference to its implications for the Malaysian society as a whole. This chapter is divided into four sections namely: ICT Infrastructure and Regional Implications; ICT and Gender Participations; ICT and Growing Class Division; and ICT and Ethnic Composition. It is hoped the discussions will be the basis of understanding Malaysia's engagement in its quest to become a developed country in its own mould while at the same time establishing a progressive and prosperous *Bangsa Malaysia* where citizens can live in harmony and engage in full and fair partnership. Towards this end, it is hoped it would be able to outline the implications for the establishment of national identity and the possible policy contradictions, which may result from the development of ICTs in the country.

## **6.2 ICT Infrastructure and Regional Implications**

It is noticeable and widely debated that the constant expansion in the world market system today has been fostered by the emergence of the new information technologies or technological revolution. Castells (2000a) for instance has claims that the present distinctive economy is fully shaped by the revolution in information technology which gives rise to new forms of social organisation (Castells,2000a:77-78). In addition, it is also important to note that the historical and social origin ushering in the technological processes is also highly significant (Webster and Robin, 1986, Winston, 1998:2).

In a world that is becoming interdependent with countries competing among each other in an open economy, a rapid modernisation process of all sectors of an economy

is required. This is particularly true in the modernisation of its technological development and diffusion. Although, theoretically, the advancement in technological devices and designs derived from the technological modernisation could proceed independently, it is still dependent on the capacity and ability of countries and regions to make full use of their potential (Castells and Hall, 1994:5). However this does not mean that there will be the same technological effect elsewhere, certainly there will be different settings between those introduced in the developed countries and the ones introduced in the developing countries (Kranzberg, 1989:30-31). As with like other technologies, information technologies are likely to have similar unintended consequences that go beyond the original plans (ibid:30).

In the case of Malaysia, it is important to note that with different sets of social, cultural and political compositions and values, the result of technological innovation will be different. Moreover, the situation can become more intense when the ability-to-pay criterion becomes the standard for information access that will eventually deepen the divisions in society between the information rich and poor. This is particularly true for any government that wishes to embark on using information as a means for its future growth as providing an equitable and easy access will always be the main challenge (Castells, 2001:256). With regards to the advancement in information technologies, what will then be the implications for Malaysian society when there exists inequality in terms of Internet access and distribution due to the lack of ICT infrastructure between states and regions? More importantly, how meaningful are the policies pertaining to ICT infrastructure as a means of narrowing these gaps?

There is no doubt that Internet use is increasing rapidly, but the disparity in terms of users and penetration rates around the globe is still alarming. What is worrying, while the traffic on the Internet is doubling every one hundred days, there exists a large gap between developed and developing countries, especially those in the Third World countries. While there is rapid progress of ICT in India, many villages still do not have working telephones. Even within countries there also exists spatial differences between urban and rural areas both in developed and developing countries. Obviously in the urban areas, particularly in the major metropolitan areas there is a tendency to have high Internet penetration rates due to the availability of appropriate infrastructure, while rural and small areas normally lag behind in their access to the

new medium. This is due to the fact that 'the diffusion follows a spatial pattern that fragments its geography according to wealth, technology, and power' (Castells, 2001:212). Malaysia, the 59th ranked for its access to information flows (see table 7.1), is evidently, still lagging behind, even compared to the United Arab Emirates (UAE).

**Table 6.1**  
**Access to Information Flows in**  
**Selected Countries**

HDI Rank	Country	Fix Phones/ 1000		Mobile Phones/ 1000		Internet Hosts/ 1000	
		1990	2000	1990	2000	1990	2000
1	Norway	502	532	46	751	19.3	101.1
3	Canada	565	677	22	285	12.7	77.4
6	United States	545	700	21	398	23	295.2
9	Japan	441	586	7	525	2.1	36.5
13	United Kingdom	441	589	19	727	7.5	28.2
25	Singapore	349	484	17	684	6.6	45.2
46	United Arab Emirates	206	391	17	548	0.2	14.3
59	Malaysia	89	199	5	213	0.2	3.1
70	Thailand	24	92	1	50	0.1	1.1
110	Indonesia	6	31	(.)	17	(.)	0.1

Source: UNDP (2002)

Realising the importance of the telecommunications and multimedia sector to the economy and social development, the government has taken many strategic and policy initiatives to bridge the digital divide between states in Malaysia. Among these efforts is the expansion of the telecommunication infrastructure throughout the country to achieve maximum connectivity. In the effort to industrialise and modernise the country as strongly suggested under Vision 2020, the promotion of the growth of new industries based on new technologies such as ICTs is becoming more crucial. Even the government has concluded in Vision 2020 that the means to establish a united Malaysian society living in peace and harmony should be accompanied by both ethnic and territorial integration (Mahathir, 1991:5). As far as ICT is concerned, Vision 2020 suggests that ICT infrastructure should be extensively deployed and enjoyed throughout all the states and regions of the country. It is hoped

through this effort, that the country will be able to realise its vision of becoming a developed country by the year 2020.

It was under such a vision that policies pertaining to ICT infrastructure and its development have been further strengthened. The introduction of the New Telecommunication Policy (NTP) has been the main policy vehicle adopted by the government to provide guidelines for the development of the telecommunication infrastructure in line with national needs and aspirations. It is under such provision that the NTP will play its role in providing the framework for a modern and sophisticated telecommunication network whilst 'encouraging further interaction between races and regions as a basis of national unity and integration' (NTP, 2002:3).

The Communication and Multimedia Division (CMD) was established in order to coordinate and monitor the implementation of the NTP. It was clearly stated under the Communications and Multimedia Act 1998, that the CMD will be responsible for all policy and strategic planning of the communication and multimedia industry in the country. Among the important policy initiatives will be ensuring the three basic principles of availability, equitable access and affordability will be achievable regardless of the geographic locations and groups in society (MECM, 2002:22-23).

Ostensibly, the establishment of the National Information Technology Council (NITC) marked another important policy initiative taken by the government. Acting as a think-tank at the highest level and advising the government on matters pertaining to ICT development in Malaysia, the establishment of the council was mainly to promote the widespread utilisation of ICTs as a strategic tool for national development. It was under this initiative that the National IT Agenda (NITA) was established. Focusing on the development of people, infostructure and applications, it is hoped that the effort will qualitatively transform all Malaysia into a knowledge-based society by 2020 (NITC, 2000). The creation of the MSC was indeed the earliest effort to realise this vision. Meanwhile, in the effort to bridge the digital divide within the rural areas, the government has aggressively embarked on programmes such as the Demonstrator Applications Grant Scheme (DAGS) for the promotion of local content, Rural Internet Programmes, Local Content Development,

e-community and Community Awareness Programmes and the Mobile Internet Unit (MIU).

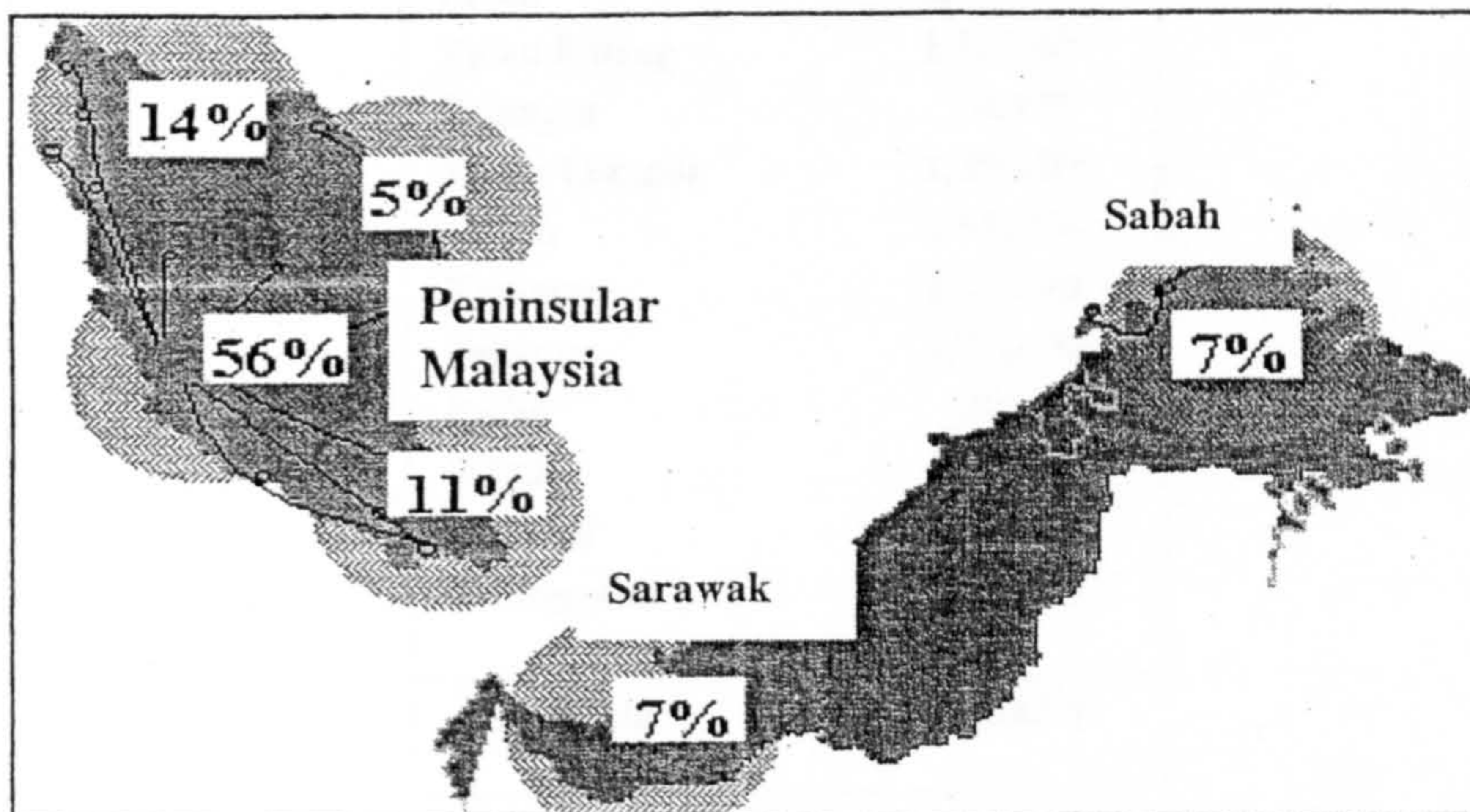
As far as the ICT infrastructure is concerned, it was reported, under the Seventh Malaysia Plan (1996-2000) that the country has witnessed significant progress in its communication sub sector, particularly in providing the trunk backbone capacity. Three major fibre optic routes traversing Peninsular Malaysia as well as a second submarine fibre optic cable connecting Peninsular Malaysia to Sabah and Sarawak have been greatly expanded. Meanwhile, to support the growth of ICT and multimedia applications especially in the MSC area, a 386 route-kilometre high-speed broadband fibre optic cable was installed linking Kuala Lumpur City Centre, Putrajaya and Cyberjaya to KLIA. With a capacity of 2.5 gigabits per second (Gbps), which is upgradeable to 10 Gbps, the backbone network is able to transmit high-speed broadband multimedia applications. It was also noted that ICT usage, either through PC ownership or Internet subscription rates, has increased tremendously as a result of this. For example in 2000, the number of PCs owned by every 1,000 people has increased from 29.5 in 1997 to 95.7, while the Internet subscribers increased from 13,000 to 1.2 million within the period 1997 to 2000. (Malaysia, 2001a).

No doubt ICT development in Malaysia is making significant progress, but looking at the uneven distribution of telecommunication services in many parts of the country suggests that there still exists a big gap, particularly in the East Coast area of Peninsular Malaysia which include Pahang, Terengganu and Kelantan, and in the East Malaysia states of Sabah and Sarawak (Figure 6.1). With more than 50 per cent coverage, the services tend to concentrate more in developed states such as those in the Klang Valley area where the capital city of Malaysia, Kuala Lumpur is situated. As for Sabah and Sarawak in East Malaysia both accounted for only 7 percent coverage. Meanwhile in East Coast area of Peninsular of Malaysia the coverage was even worse with only 5 per cent of the overall coverage.

If we refer to Table 6.2 on population by state, it is clear that there is an uneven distribution of those services compared to the population of Malaysia, particularly in the east coast area and Sabah and Sarawak. Comparing for instance the states of Kelantan and Pulau Pinang. Although both of these states have an almost equivalent

population of 1.3 million people, the telecommunication services in Pulau Pinang accounted for about 14 per cent of the coverage compared to only 5 per cent in Kelantan. Even if we were to combine both the states of Selangor and Wilayah Persekutuan together and to compare it to Sabah and Sarawak, the situation is even worse. With a population of more or less 5 million in each of these regions, the services coverage in Sabah and Sarawak only accounted for about 14 per cent compared to 50 per cent in Selangor and Wilayah Persekutuan. The clear disparity of those services in the above states also implies that it will obviously create its own set of implications in terms of Internet access between regions in Malaysia.

**Diagram 6.1**  
**Distribution of Telecommunication Services**  
**in Malaysia**



Source: Harris (1999)  
 Cited in Harris et.al, (2001)

Many factors contributed to the situation. In terms of geographical dimension, Castells and Halls (2001) have listed three elements might contribute to the disparity of Internet, access and distribution. They are; technical geography, spatial distribution of its user and the economic geography of Internet production. What they meant by technical geography is that the availability of the telecommunication infrastructure itself that makes it possible for the Internet to be connected. As for the spatial distribution of its users, the concern is more towards the uneven territorial

distribution of the Internet between countries, regions and even within countries – urban and rural – in the context of Internet user. The economic geography of Internet production refers to where the centre of Internet-related technological innovation, such as in the Silicon Valley, is located. Obviously this area will gain a multiplying effect in terms of population density or other forms of infrastructure such as telecommunications and air transportation (Castells, 2001:208-212)

**Table 6.2**  
**Population by State, 2000**

State	Number ('000)
	2000
Johor	2,721.90
Melaka	634.1
Negeri Sembilan	858.9
Perak	2,109.70
Pulau Pinang	1,307.60
Selangor	4,175
Kuala Lumpur	1,370.30
Kedah	1,652.00
Kelantan	1,314.90
Pahang	1,290.00
Perlis	204.50
Sabah	2,656.40
Sarawak	2,071.80
Terengganu	899.00
<b>Malaysia</b>	<b>23,266.00</b>

Source: Malaysia (2001a:135)

As in the case of the existing gaps in Internet access in Malaysia, the three elements mentioned by both Castells and Hall seem to be interrelated with one another. Based on the above evidence, technically the telecommunication services between states in Malaysia are unevenly distributed. Among many other factors, the most critical element in the context of technical geography is the coverage of the electricity supply. As the engine that drives ICT, the electricity coverage in Malaysia, especially in the rural areas, is still not hundred per cent. Although by 2000, the rural electrification in Peninsular Malaysia had been fully completed, the coverage in Sabah and Sarawak are at the 79 and 80 per cent levels respectively (Table 6.3). Although the coverage

will be increased gradually by the year 2005 and the year after, obviously 21 per cent of the rural people in Sabah and 20 per cent from Sarawak at present are further marginalized from the mainstream of ICT development in Malaysia.

**Table 6.3**  
**Rural Electrification Coverage By Region, 1995-2005 (%)**

Region	1995	2000	2005
Peninsular Malaysia	99	100	100
Sabah	72	79	85
Sarawak	67	80	90
<b>Malaysia</b>	<b>92</b>	<b>93</b>	<b>95</b>

Source: Malaysia (2001a:322)

Besides electricity, the fixed phone lines are also critical in supporting the ICT developments in the country. Like the electricity, telephone lines are prerequisites before any line from the Internet can be accessed. Based on Table 6.1 above, on the access to the information flow, for every 1000 people in the US for instance there are about 700 fixed telephone lines, but for Malaysia there were only 199. This is even more alarming when translated into states. The number are unevenly distributed especially those in the states of Kelantan, Terengganu and even in Sabah and Sarawak. Based on the percentage of telephone users by state, Kuala Lumpur and Selangor are leading the other states with 16.5 per cent and 14.8 per cent respectively followed by Johor (13.2 per cent) and Perak (10.1 per cent). These are all major cities in Malaysia situated mostly on the west coast of the Peninsular where most of the economic activities take place.

For the less developed states such as those in the east coast and northern part of peninsular Malaysia, the percentage is far too low. For example, in the states of Terengganu it accounted only 2.8 per cent while in Kelantan about 3.2 per cent. Meanwhile, when combining both the states of Kedah and Perlis together, the percentage does not exceed more than 7.0 per cent, lower than Perak alone (Table



6.4). What this indicates is that there is still a considerable amount of work to be done in terms of extending the communication infrastructure in the country. Failing to do so will contribute to the widening digital divide that eventually will impact upon the government's vision to integrate society through the means of ICTs.

**Table 6.4**  
**Percentage of Telephone Users by State (2000)**

State	%
Johor	13.2
Kedah/Perlis	6.9
Kelantan	3.2
Melaka	3.2
Negeri Sembilan	4.2
Pahang	4.0
Pulau Pinang	8.1
Perak	10.1
Selangor	14.8
Terrengganu	2.8
Wilayah Persekutuan Kuala Lumpur	16.5
Wilay Persekutuan Labuan	1.8
Sabah	5.0
Sarawak	6.0
<b>Total</b>	<b>100</b>

Source: Department of Statistics (2002:249)

The above uneven distribution between states in Malaysia in terms of technical perspective was made even more alarming by the uneven territorial distribution of its user. In the case of Malaysia, most of the states on the east coast and northern areas including those in Sabah and Sarawak, lack the basic needs for accessing the ICT facilities, so it is not surprising that the percentage of Internet subscribers in these states is far too low compared to those in Johor, Selangor, Kuala Lumpur and Pulau Pinang. Referring to the Table 6.5 below, although the percentages are showing an increase for all states over the period 2000 to 2002, again the sates in the east coast, the northern part of peninsular Malaysia and those in Sabah and Sarawak remain still far behind the other well-developed states, which continue to be dominant. For example while the percentage of Internet subscribers in Kuala Lumpur and Selangor

exceeded 20 per cent, the states of Perlis, Kelantan, and Sabah only accounted for about 0.6 per cent, 3.8 per cent and 4.3 per cent respectively. This indicates that the gap between information rich and information poor states in Malaysia is widening.

**Table 6.5**  
**Internet Subscribers By State, 2000-2002 (%)**

State	%	
	2000	2002
Johor	8.8	9.7
Kedah	3.2	3.9
Kelantan	1.8	3.4
Melaka	2	2.7
Negeri Sembilan	2.6	3.5
Pahang	2.5	3.1
Perak	6.3	6.5
Perlis	0.4	0.5
Pulau Pinang	7.3	7.7
Sabah	4.6	4.1
Sarawak	5	4.9
Selangor	38.2	28.8
Terengganu	1.7	2.3
Kuala Lumpur	15.4	18.4
Labuan Federal Territory	0.2	0.5
<b>Total</b>	<b>100</b>	<b>100</b>

Source: Malaysia (2001a:368), MCMC (2003:19)

Another clear example of this is the effort to further enhance the education system through Smart School Applications. Obviously the crucial element of this is to put the proper infrastructure in place. Since its inception in 1999, only about 90 schools have been established. What is more alarming, is that almost half of this small number of schools are concentrated in major cities in Malaysia such as in Kuala Lumpur, Petaling Jaya, Selangor and Pulau Pinang (Table 6.6). Meanwhile, based on the Table 6.7 below on the distribution of ICTs facilities for Smart Schools, it is also noted that the best ICTs facilities have been provided to the schools in these major cities. As we can see from the table, for level A schools, which is mostly dominated by the schools in the economically advanced cities, the number of facilities such as computers and the high Internet speeds are much better than those in level B schools.

Not only do the schools in the lower level have lower facilities, but also they have been categorised only as laboratory models.

**Table 6.6**  
**Numbers and Levels of Smarts Schools in Malaysia**

<b>Level</b>	<b>States</b>	<b>Number(s) Smart Schools</b>
<b>Level A</b>		
	Kuala Lumpur	3
	Petaling Jaya	3
<b>Level Bt</b>		
	Kuala Lumpur	1
	Negeri Sembilan	1
<b>Level B</b>		
	Kuala Lumpur	6
	Selangor	9
	Pahang	6
	Kelantan	6
	Terengganu	4
	Johor	9
	Negeri Sembilan	6
	Melaka	2
	Pulau Pinang	3
	Perak	9
	Perlis	2
	Kedah	6
	Sabah	7
	Sarawak	6
<b>Total</b>		<b>90</b>

Source: Ministry of Education (2003)

**Table 6.7**  
**Distributions of ICT Facilities for Smart Schools**

<b>Distributions of Facilities</b>	<b>Numbers of Computer</b>	<b>Numbers of Notebook</b>	<b>Kbps</b>
<b>Level A (Classroom Model)</b>	520	5	512/256
<b>Level Bt (Limited Classroom Model)</b>	81	2	128/64
<b>Level B (Laboratory Model)</b>	37	2	128/64

Source: Ministry of Education (2000)

Based on the above tables, it appears that the unequal distribution of ICT facilities in the context of the education system of Malaysia will create even greater divisions in society. This is supported by the interview with the evaluator below who mentions that:

‘It is wrongly named. When we say we have established smart schools, we imply that other schools are not smart; we imply other students are not smart. So what is the different between smart and not so smart schools. Essentially what is present in smart schools must be fundamentally present in other schools. When you have a smart school and you have other dual schools, you are creating a “cut”. A “cut” system between culture and education. In essence you create alumni of smart schools and a larger alumni of non-smart schools. Both are expected to generate the future pools of knowledge workers. One will be at the advantage, the other one will be at very less advantage for no good reasons’

(EV 2 – Prof. Hairudin Harun)

Another evaluator also agrees with these views;

‘On paper, the policy seems to be good. What I feel important is the implications of that. Unless smart schools can be an extensive countrywide phenomenon than it will be the case. But if smart schools means just one schools among many, among two hundred thousands, than I think it will be failure. It will only exaggerate the inequality’

(EV 4 – Prof. Dato’ Dr. Raja Abdullah Yaacob)

It is clear that many of the ICT facilities and services available are concentrated in most of the major cities and most developed areas like Selangor, Kuala Lumpur, Pulau Pinang and Johor and all of these states are located on the west coast of Peninsular of Malaysia. Meanwhile those states on the east coast, the northern part of the peninsular and in Sabah and Sarawak continue to behind. From the Table 6.8 below, no doubt the less developed states are developing and their level of income for the period 1995 to 1999 is increasing, but the clear disparity of income between states in Malaysia particularly with more developed states, is reflecting the potential gaps in their ability to access ICTs.

**Table 6.8**  
**Mean Monthly Household Income**  
**By State, 1995-1999**

State	Mean Monthly Household Income (RM)		Average Annual Growth Rate (%)	Incidence of Poverty	
	1995	1999	1995-99	1995	1999
<b>More Developed States</b>	<b>2,227</b>	<b>2,846</b>	<b>5.7</b>	<b>4.2</b>	<b>3.9</b>
Johor	2,138	2,646	5.5	3.1	2.5
Melaka	1,843	2,260	5.2	5.3	5.7
Negeri Sembilan	1,767	2,335	7.2	4.9	2.5
Perak	1,436	1,743	5	9.1	9.5
Pulau Pinang	2,225	3,128	8.9	4	2.7
Selangor	3,162	3,702	4	2.2	2
Kuala Lumpur	3,371	4,105	5	0.5	2.3
<b>Less Developed States</b>	<b>1,376</b>	<b>1,660</b>	<b>4.8</b>	<b>15.6</b>	<b>13.2</b>
Kedah	1,295	1,612	5.6	12.2	13.5
Kelantan	1,091	1,314	4.8	22.9	18.7
Pahang	1,436	1,482	0.8	6.8	5.5
Perlis	1,158	1,431	5.4	11.8	13.3
Sabah	1,647	1,905	3.7	22.4	20.1
Sarawak	1,886	1,276	4.8	10	6.7
Terengganu	1,117	1,599	9.4	23.4	14.9
<b>Malaysia</b>	<b>2,020</b>	<b>2,472</b>	<b>5.2</b>	<b>8.7</b>	<b>7.5</b>

Source: Malaysia (2001a:143)

Even though it is not the intention to discuss the income gaps in this section as it will be further discussed in the next section concerning ICTs and the Growing Class

Division, the facts provided are aimed at supporting the evidence that there is a growing inequality between states in terms of their ability to own ICT. This is to strengthen the point that, not only are these states lacking many ICT facilities but they also lack the ability to own ICTs due to income gaps. This will further prevent them from taking advantage of ICTs. This is based on the assumption that, the less disposable income the less their ability to take the advantage of ICTs. As in the case of income gaps in Malaysia, those states with higher mean monthly household incomes like Selangor and Kuala Lumpur will have far better opportunities than those with mean monthly household incomes of only RM 1,091 as in the case of Kelantan. Looking at the disparity of incomes coupled with other shortcomings mentioned earlier, it is clear that inequality in terms of information rich and poor between states in Malaysia is widening. As such, those in the more developed states like Johor, Selangor, Pulau Pinang and Kuala Lumpur will have far more advantage than those in states such as Kelantan, Terengganu, Pahang or Sabah and Sarawak.

From the evidence and results of the interviews, the most important consequence is that the uneven distribution of ICT infrastructure between different regions in the country will eventually impact upon the effort to unite the people by the creation of a unique identity into one *Bangsa Malaysia*. Under what circumstances can this be achievable if the gaps among the people due to the lack of ICT infrastructure are getting wider and wider? Obviously those in developed states with all the advantages will be at the forefront while those in the less developed states in Malaysia continue to be in the most disadvantaged position. As far as the ICT infrastructure is concerned, it is hard to suggest that the effort to integrate the society through ICTs, strongly advocated in Vision 2020, will be able to be realized.

### 6.3 Gender and ICT development

The subject of the digital divide, particularly related to the gender-gap within the online community, has received widespread study and concern by many governments and policy makers around the world. As for many, this signifies the growing gap between information haves and have-nots or, as some might term it, as 'Internet-haves and have-nots' (Castells, 2001:247). The root of this concern is that the inability to curb the disparity may result in further marginalized groups within societies 'where

basic computer skills are becoming essential for economic success, personal advancement, entry to good career and educational opportunities, full access to social networks, and opportunities for civic engagement' (Norris, 2001:68).

Drawing attention to this disparity, the U.S Department of Commerce has concluded from their study conducted since 1993 that the digital divide based on the lack of access to computers and the Internet commonly found in American households is not only those related to racial and class gaps, but also to gender, particularly among women (NTIA, 1999). A study by the OECD in 2000, confirms the familiar pattern of Internet disparity among population in Canada, Australia and Finland (OECD, 2000:85).

Among the many debatable issues concerning the digital divide, the question of gender variance in IT-use patterns is becoming an interesting phenomenon. There still appears to be little understanding of how men and women use IT tools differently and of the connections with employment and a range of other social activities. Based on the Pew Report, entitled "Tracking Online Life: How women Use the Internet to Cultivate Relationships with Family and Friends", cited in Lisa J. Servon (2002), there are obvious differences in their use of IT. From the study, it was reported that more women are keen to seek information regarding health, religion, playing games online, emailing, exchanging activities and searching for new jobs compared to men. While men, are likely to go online to search for news, financial and stock trading information, accessing government websites and sports. The only equal engagement from the study between men and women in the online activities are chat rooms, instant messaging, online banking and activities related to travel arrangements (Servon, 2002: 42-43).

Even with that, when it comes to their use of technology for career and professional development, the proportion of men and women varies. For example from 20,000 students who took the Advanced Placement (AP) computer science exam in 2000 in the United States, only 15 per cent were female students while the remaining 85 per cent were male (ibid). Even in the case of the UK, the numbers of female students enrolled in the computer science courses is dropping, and the trend continues (Spender, 1995:166). Typically, some studies reveal, that this is due to their long-

standing negative attitude and underexposure to science and technology since an early age and issues related to the content available on websites and in computer games (Bolt and Crawford, 2000)

Despite these plausible reasons, many of the present surveys have reported that gender parity in many developed and advanced capitalist economies is becoming increasingly evident. For example in the case of European countries, while the online gender gap in countries like the Netherlands, Sweden and Italy remains very noticeable, the difference between women and men in Denmark, Belgium, France, Portugal and the United Kingdom is becoming statistically insignificant (Norris, 2001:83). Meanwhile, based on the Nielsen NetRatings reported by NUA in July 2001, even the number of women using the Internet in the Asia-Pacific region has increased by an average of 36 per cent. Not only has the number of women as an audience and users tremendously increased in Australia and New Zealand, but also in South Korea (45 per cent), Hong Kong (44 per cent), Singapore (42 per cent) and Taiwan (41 per cent) (NUA, 2001). But the most interesting result was from the survey reported by NTIA that in September 2001 the number of women is growing equal those of men as Internet users in the US, accounting for about 53.8 per cent and 53.9 per cent respectively (NTIA, 2004).

Ostensibly, the closing gap between genders in the case of the US is not surprising. *Falling through the Net* in 2000 emphasized the importance of educational attainment and participation in the labour force that has contributed considerably to the gender parity of Internet use in the country. The study showed that those in the labour force were more likely to be Internet users. Their Internet use rate was 58.4 per cent compared to 39.3 per cent for those not in the labour force. Surprisingly those in this category tend more to be women (60.8 per cent) than men (56.2 per cent) (NTIA, 2000). The Internet use by women increased from only 24 per cent in 1995 to 52 per cent in 2000 almost certainly due to the almost equal numbers of women and men in the US labour force. As reported by the US Department of Labour in 2002 there were about 76 per cent of men and 66 per cent of women participating the country's labour force (USDOL, 2004). Meanwhile, in educational attainments, adults with no more than an elementary level of education had Internet use rates of less than 4 per cent, while people whose highest level of education was a bachelor's degree or higher had



the highest Internet use (74.5 per cent) (NTIA, 2000). What this revealed was that both labour force participation and level of education eventually impacted upon the increasing of income level, thus playing a crucial role in closing the gender gap for Internet use in the US.

For developing country like Malaysia whose dominant functions such as its economic attainment and social groups are increasingly organised around ICTs, the issue of social inequality in access to ICTs needs even great attention (Utusan Online, 2002). Like some of the developed countries, the issue of a gender gap in the use of the Internet is also becoming an important concern for the government. The study conducted by the NITC on the digital divide in Malaysia has identified the possibility of women being excluded from ICT developments, especially those in the age band 15-64 but outside the labour force (NST, 2002). This is important since the disparity in gender participation in ICTs will not only contribute significantly in widening the gap in ICT use in the country, more importantly it will also impact upon the government's effort to democratise the existing mature and community-oriented society as mentioned in Vision 2020. As far as the ICTs are concern, the gender gap in the use the Internet in Malaysia is currently highly visible (Table 6.9).

This is based on the fact that, from an estimated 4 million Internet users in Malaysia, there tend to be more male than female users. The table, which shows the Malaysian Internet User Profile by PIKOM (Association of Computer and Multimedia Industry of Malaysia) in 2000, reveals that male users in Malaysia accounted for about 74 per cent compared to female users with only 26 per cent. It was also reported that the users are mainly single people with most being highly educated and with good occupations. They range between the ages of 16 and 35. In terms of personal monthly income, almost 50 per cent of both genders earn about RM 2,500 monthly. This indicates that more than 50 per cent of women who fall between the ages of 15 and 64 but are outside of the labour force and have less personal monthly income are likely to be marginalized from the ICT perspective.

**Table 6.9**  
**Malaysian Internet User Profile (2000)**

<b>Age</b>	45% 16-25 years old 34% 26-35 years old 15% >35 years old
<b>Gender</b>	74% male 26% female
<b>Education</b>	14% vocational/technical or Associates diplomas 48% bachelor's degrees 14% postgraduate degrees or professional certificates
<b>Occupation</b>	31% in professional or management positions 14% in technical field 7% self-employed 27% fulltime students
<b>Marital Status</b>	34% married 66% single
<b>Personal Monthly Income</b>	27% <RM1,000 46% RM1,001 to RM 3,000 27% >RM3,000

Source: PIKOM (2000/2001:4)

Meanwhile on analysing on the primary use of the Internet among Malaysians, the wide division between genders with regards to their purpose for accessing the Internet, further strengthens the above arguments. As shown in Table 6.10 below, a snapshot of the Malaysian Cyber Population, one third of the Internet users in Malaysia access the World Wide Web in search of information. Another third rely on the Internet as a means of communicating with friends and relatives, using e-mail to keep in touch. Others go online to search for and download software for entertainment or shopping.

More importantly, the table shows that there are clear divisions in terms of Internet use between genders in Malaysia. Use of the World Wide Web is dominated by males in every category. As the table shows, from the 38 per cent of the cyber population under the “researchers” group, 72 per cent are men. As for “communicators” groups, which made up 36 per cent of the total cyber population,

although there are a significant number of female users in this segment (33 per cent), there are still twice as many males (67 per cent).

**Table 6.10**  
**Malaysian Cyber Population (2000)**

The Types	Key Traits	Summary Profile
<b>Researcher</b> 38%	Looks for information on the net for personal, academic or work-related Purposes	76% are aged 16 to 35 years old 72% are male 46% tend to earn RM1,001 to RM3,000 monthly
<b>Communicator</b> 36%	Communicates through e-mail to keep in touch with family and friends	83% are aged 16 to 35 years old 67% are male 49% earned RM2,000 or less
<b>Software User</b> 13.50%	Downloads software or uses applications over the Internet	60% are aged 16 to 25 years old 92% are male 54% earned RM2,000 or less
<b>Infotainment User</b> 12%	Looks for leisure and entertainment, news and Content	73% are aged 16 to 35 years old 84% are male 49% earned RM2,000 or higher
<b>Cyber buyer</b> 0.50%	Shops over the Internet	89% are aged 26 to 35 years old 82% are male 88% earned RM 2,000 or higher

Source: Pikom (2000/2001:5-7)

As many Malaysians may have family and friends outside their hometowns or the country, communication through e-mail is a popular use of the Internet. The relatively large number of female users in this category may be due to the fact that e-mail is the easiest means in dealing with the Internet compared to the “software users” who are generally regarded as the most “technology savvy” group among the Internet users. As such within the “software user” segments, the proportion of females represented is very low, accounting for only 8 per cent of the total of 13.5 per cent of the cyber population who falls under this category. This gives the picture that males in Malaysia are more “technology savvy” compared to females as they may have a better grasp of Internet applications and their uses of technologies due to their extended exposure to them. Furthermore the “Infotainment User” and “Cyber buyer” were also dominated by males with 84 per cent and 82 per cent respectively.

As we can see from the table, there are a small percentage of cyber buyers in Malaysia, which accounted for about 0.5 per cent. This is due to the facts that a large percentage of items sold on the Web are quoted in US dollars or foreign currency where credit card is still the preferred mode of payment. It must be noted that in Malaysia, to own a credit card, one must have a fixed monthly income of not less than RM1,500. In the current situation where fewer women participate in the workforce or if they do, many of them are employed as production workers with monthly incomes of between RM 500 and RM 800, which explains why the number of credit card owners by female is small. Referring back to the Table 6.10 above, most of them tend to have a monthly income between RM 1,001 to RM 3,000. This explains why there is a low percentage of female as the Internet users in the country. Without proper action and policy strategy it will obviously impacted upon further participation of women in the ICT development in Malaysia.

**Table 6.11**  
**Profile of Labour Force, 1990-2010**  
**(‘000 persons)**

	1990	%	2000	%	2010	%
<b>Total Labour Force</b>	<b>7,042.00</b>		<b>9,572.50</b>		<b>12,939.60</b>	
<b>Age Distribution</b>		<b>100</b>		<b>100</b>		<b>100</b>
15-24	2,014.00	28.6	2,498.30	26.1	3,112.20	24.1
25-34	2,204.10	31.3	2,979.20	31.1	4,118.90	31.8
35-54	2,436.50	34.6	3,611.30	37.7	4,995.50	38.6
55-64	387.40	5.5	483.70	5.1	713.10	5.5
<b>Educational Structure</b>		<b>100</b>		<b>100</b>		<b>100</b>
Primary	2,380.20	33.8	2,604.30	27.2	1,643.30	12.7
Lower & Middle Secondary	4,042.10	57.4	5,624.50	58.8	6,767.40	52.3
Tertiary	619.70	8.8	1,343.70	14	4,528.90	35
<b>Labour Force Participation Rate (%)</b>		<b>65.3</b>		<b>65.5</b>		<b>68.1</b>
Male		85.6		85.4		86.4
Female		44.1		44.5		49

Source: Malaysia (2001b:151)

Unlike in the case of an advanced capitalist economy like the US, the equal labour force participation rate has been among the most important contributing factors to closing the gender gap in the recent use of ICTs in the country. As in the case of Malaysia, the obvious gender gap in the use of ICTs can also well attributed to the unequal labour participation rate among men and women. Based on the profile of the labour force in 2000 as shown in Table 6.11 above, the labour force participation rate for males was 85.4 per cent while females accounted about for 44.5 per cent. Although there is an almost equal distribution of males and females in Malaysia, an examination of the labour force participation of women in the working age population (15-64 years) shows that they accounted for only one third of the labour force. This shows that women's participation in economic development in Malaysia has yet to reach its maximum potential.

Analysing the employment distribution by sector and gender for the period 1995 to 2000 (Table 6.12), it is obvious that there is still a large numbers of women involved in the manufacturing sector. Their high involvement in this sector can be seen through their employment as production and related workers<sup>24</sup>, which accounted for 22.6 per cent of total female employment in 2000 as shown in Table 6.13. Although women have made a substantial increase in the professional and technical category over the same period, it is still the men who continue to dominate higher-level jobs such as those shown in the administrative and managerial categories. Even looking at the comparison between males and females as public sector employees based on their service scheme, this is still the case (Table 6.14). From the table, especially in the area related to IT employment, it is clear that women tend to occupy lower status and less skilled positions as evident in the large number of women occupying in putting related jobs (computer operator) rather than being involved directly in accessing ICTs.

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<sup>24</sup> Employment as production and related workers means that their involvement as a production operators in a manufacturing-based industry with monthly income between RM500 to RM 800 a month.

Table 6.12

**Employment Distribution by Sector and Gender,  
1995 and 2000 (%)**

Sector	1995		2000	
	Male	Female	Male	Female
Agriculture, Forestry, Livestock & Fishing	21.6	16.9	20.2	14.1
Mining and Quarrying	0.5	0.2	0.4	0.1
Manufacturing	20.2	29.4	20.6	27.3
Construction	11.3	1.5	12.1	1.5
Electricity, Gas and Water	0.9	0.2	0.7	0.1
Transport, Storage and Communication	6.2	1.7	6.1	1.7
Wholesale & Retail Trade, Hotel & Restaurants	16.6	20.5	18.1	22.3
Finance, Insurance, Real Estate & Business Services	4.3	5.6	4.5	5.7
Other Services	18.4	24	17.2	27.1
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Malaysia (2001a:559)

Table 6.13

**Employment Distribution by Occupation and Gender  
1995 and 2000 (%)**

Occupation Category	1995		2000	
	Male	Female	Male	Female
Professional, Technical and Related Workers	8.4	12.7	8.9	13.5
Administrative & Managerial Workers	3.9	1.8	4.7	2.2
Clerical & Related Workers	7.5	17.5	7.1	17.5
Sales & Related Workers	10.5	11.6	11.1	12.1
Service Workers	9.4	14.4	9.5	17.4
Agriculture Workers	21.9	16.6	20.4	14.8
Production & Related Workers	38.3	25.4	38.4	22.6
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Malaysia (2001a:560)

**Table 6.14**  
**Public Sector Employees,**  
**Based on Service Scheme by Gender – 1999 (Thousands)**

Service Scheme	Male	Female	Total	Female (per cent)
Architect	198	82	280	29.3
Engineer	2690	247	2937	8.4
Quantity Surveyor	126	114	240	47.5
Surveyor	217	16	233	6.9
Statistician	105	61	166	36.7
Assistant Statistician	78	105	183	57.4
Statistician Clerk	550	492	1042	47.2
System Analyst	457	360	817	44.1
Programmer	367	521	888	58.7
Computer Operator	388	3222	3610	89.3
Accountant	326	205	531	38.6
Assistant Accountant	640	851	1491	57.1
Accounting Clerk	325	642	967	66.4
Legal officer	392	273	665	41.1
Assistant Legal Officer	134	108	242	44.6
Doctor	3316	2622	5938	44.2
Dental Doctor	204	522	726	71.9
Teacher (graduate)	18269	23656	41925	56.4
Nurse	96	15390	15486	99.4

Source: Azizan Baharuddin (2003:57)

Even in the case of educational attainment it is clear that while the number of female students at the tertiary level continues to increase and level that of male students, the courses related to ICTs, such as those categorised under engineering technology (Table 6.15) for example, continue to be dominated by male students. From the table below it is clear that there were about 17,467 male students compared to only 7,725 female students enrolled in 1999. Not only will this have implications for income levels, but also as evidence of clear gender gaps both in labour participation and Internet use in Malaysia. Without clear attention this will further contribute to the growing digital divide in the country that is already clearly visible.

**Table 6.15**  
**Number of Students (First Degree) in University**  
**by Type of Course and Sex, Malaysia 1995-1999**

Type of Course	1995		1999	
	Male	Female	Male	Female
<b>1. Arts</b>				
a. Arts and Humanities	7,426	9,338	7,343	16,917
<b>2. Professional Arts</b>				
a. Economics, Business and Management	6,726	9,411	11,593	22,682
<b>3. Science</b>				
a. Science (i)	2,427	2,405	3,488	5,268
b. Applied Science	2,463	2,662	7,953	11,752
Human Development Science	184	453	633	1,505
Industrial Science	132	119	958	1,188
Computer Science	919	1,004	3,895	5,622
c. Medicine	1,493	1,899	2,031	3,996
<b>4. Technology</b>				
a. Engineering	7,829	2,159	17,467	7,725
Electrical	1,629	442	3,932	1,615
Industrial Technology	217	181	472	408
Computer Technology	204	75	559	428
Technology Management	335	157	1,113	747

Source: Ministry of Education, Malaysia in Department of Statistic, Malaysia (2002b:157-159)

(i) Biology, Chemistry, Physics, Geology and Quantitative Studies

Since the announcement of Vision 2020 in 1991, the government has introduced many strategic policy initiatives to minimise the digital divide within the society. Among these important initiatives was the promotion of NITA launched by NITC in 1996. It is under such initiatives that it is hoped all Malaysian institutional structures will be able to participate, develop and grow to take their place in the emerging, networked global society of the 21st century (NITC, 2000), whilst minimising the digital divide including that related to gender.

With the objective of providing equality of access as well as utilisation of ICTs to all Malaysians, the focus seems to be more towards strengthening its education programmes to further enhancing its human resource capability. In line with the democratisation of the education policy, the emphasis continues to be given to increasing accessibility to education, both at lower and tertiary levels (Malaysia, 2001a:98). With the aim of creating a critical mass of trained, skilled knowledge-



manpower in line with the technological advances, it is hoped that these efforts will help to boost the rate of labour participation that is not equally distributed among men and women in Malaysia. Not only is it hoped to increase the income level among Malaysian society as a whole, but also eventually to narrow the currently highly significant digital gap, between the genders.

The effort to further enhance the role, position and responsibilities of women in order to increase their participation and involvement in the social and economic life of the country has been aggressively taken up by the government since the Seventh Malaysian Plan. Even in its recent Plan, the government has continued to strengthen this effort by providing more education and training opportunities to improve women's upward mobility and participation in the labour market (Malaysia, 2001a:566). Not only are more women being encouraged to pursue non-traditional fields of study such as science, engineering, vocational and technical education, female students and their parents will be made aware of the information regarding career opportunities in professional and technical fields, while at the same time improving their access to ICTs (ibid:567).

Although presently there is clearly unequal gender participation in the labour force, it has been noted that, women are making a significant progress in both the employment and education. Female participation in the labour market recorded an increase from 43.5 per cent in 1995 to 45.8 per cent in 1997, but declined to 44 per cent in 1998 due to the economic downturn. With the economic recovery, this rate subsequently increased to 44.5 per cent in 2000 (ibid:558). Meanwhile in the employment sector and occupation (refer to Table 6.12 and 6.13), although women were mainly employed as production and related workers, more women are now increasingly moving into higher-paying occupations. As the share of women employed as agricultural workers declined from 16 per cent in 1995 to 14.8 per cent in 2000, the proportion of women in the professional and technical category increased from 12.7 per cent to 13.5 per cent for the same period. Even the proportion of women in the administrative and managerial category registered an increase of 0.4 per cent during the period.

Meanwhile, to further improve and maximize female participation in the labour market, the Employment Act 1995 was amended in 1998. Among others reasons this was to provide more flexible working hours, especially for housewives working part-time to have statutory benefits proportionate to those of full-time employees (Malaysia, 2001a:560). This is to allow more women to be gainfully employed in part-time employment while at the same time meeting their family obligations. Also, teleworking will be expedited among selected categories of public sector employees, while the retirement age will raised to 56 years and re-employment for pensioners with appropriate qualifications and experience will be considered.

While in education, despite the huge investment in educational and training (Table 6.16), which has increased substantially from RM 20 million during the last Plan to RM 22 million for the period 2000 to 2005, the provision of equal access to educational opportunities promoted heavily by the government has enabled the number between male and female students to be roughly equal. IT was reported in 2000, that the enrolment of female students at the primary and secondary levels was now about half of the total enrolment. Intake of female students into public universities expanded significantly from 50 per cent in 1995 to 55 per cent in 2000. As reported in 2000, from the 344,250 students enrolled in the institutions of higher learning in Malaysia, female students accounted about 189,109 compared to the number of male students which only accounted for about 155,141 (Department of Statistics, 2002b:157). With reference to courses, although females continue to dominate in arts courses in which they made up about 65 per cent of the total enrolment (refer to Table 6.15), females continue to make further inroads into science and technical courses. It was noted that about 60 per cent of females now enrol in the sciences and 30 per cent in technical fields in 2000.

It is strongly suggested that with the women's participation in the labour force and education increased, the gender gap in the use of ICTs, such as Internet access, will be narrowed. Since, the significant progress in women's participation in employment and education will obviously have its implications on the increasing of income level, which will eventually have its impacts upon the use of ICTs.

**Table 6.16**  
**Development Allocation**  
**For Education and Training, 1996-2005 (RM million)**

Programmes	7 Malaysia Plan Allocation	8 Malaysia Plan Allocation
<b>Education</b>	<b>17,984.50</b>	<b>18,660.00</b>
Pre-school	123.6	147.4
Primary Education	2,632.00	2,750.00
Secondary Education	5,330.10	4,862.60
Government & Government-aided Schools	3,860.00	3,262.60
MARA Junior Science Colleges	710.00	700.00
Technical and Vocational Schools	760.10	900.00
Tertiary Education	5,362.80	8,900.00
Teacher Education	350.00	300.00
Other Educational Support Programmes	4,150.00	1,700.00
<b>Training</b>	<b>2,237.30</b>	<b>4,000.00</b>
Industrial Training	1,876.00	3,760.00
Commercial Training	71.30	100.00
Management Training	290.00	140.00
<b>Total</b>	<b>20,185.80</b>	<b>22,660.00</b>

Source: Malaysia (2001a:128)

As in the experience of advanced capitalist economies such as the US, Malaysia will most probably go through the same experience as long as the above effort are maintained and those who do not have access to ICTs and are outside the labour force continue to be given the proper policy attention by the government. As one of the policy developers admitted:

‘I think for the younger generations, I do not personally feel any worries or concerns whether the women will be left out because the schools systems is so good. In fact the female students are doing much better than male students, whether in sciences, in social science or physical sciences. It is more than that, my worries are those women who are not in employment sector and didn’t have the opportunity to the ICT as this will contribute to the widening of digital gap in the country. Obviously without proper attention it will gives an impact to our Vision 2020.’

(PD 2- Ministry of Human Resource)

From this analysis, there is no doubt that the Internet gender gap in Malaysia is narrowing. But if we were to compare Malaysia with a country like the US, one result of the genders having equal labour force participation predicted to be the narrowing of the Internet gender gap. However, in Malaysia this will take a much longer time. If we refer back to the Malaysian labour force profile and government estimation of gender participation by 2010 which is still showing a clear disparity (86.4 per cent of males and 49 per cent of females), obviously it will contribute to slow the progress of equalising the Internet use between the genders in Malaysia. What is more important is that this would have an impact upon the government effort to narrow the overall digital gap within society and more importantly delay the achievement of Vision 2020.

#### 6.4 ICTs and Ethnic Composition

Some scholars such as Anthony D. Smith (1986) propose that the concept of an ethnic group should represent a sense of maintaining the group boundary and emphasizing the emotional intensity and historical heritage built upon kinship, commensality and a common cult, along with a proper name and past experiences. Although it may serve different analytical purposes, it seems that the concept of ethnicity has something to do with the classification of people and group relationships with 'majorities and dominant peoples are no less "ethnic" than minorities' (Eriksen 1996:28). This is true, particularly in the most divided societies such as those in Africa and Asia. No matter how much in the minority or dominant the groups are, every societal group is characterized by their symbolic elements such as religious affiliation, language or kinship pattern.

But the most common issues relating to the ethnic community it are often associated with conflict. The political impact of ethnicity, economic inequalities, cultural and religious differences are conflicts that are closely related and mostly associated with the creation and maintenance of nations and national states in the modern world (Hutchinson and Smith, 1996:3). Unlike in the West, ethnicity has a much more direct influence in the non-Western societies, particularly those in the post-colonial states such as in Africa and Asia. Imperialism and colonialism have drawn a new set

of boundaries through the ethnic classification of populations that required some ethnic communities to play special roles in the colonial polity. But the most challenging issues facing the Third World and developing nations today are those related to the effectiveness of the institutional arrangements to deal with ethnic diversity while at the same time to allow these groups to coexist peacefully. Particularly in a condition that exhibits distinct identity differences, peaceful coexistence is highly important for a government to effectively mobilise its social and economic development. Failure to do so may result in low rates of economic growth among its societies (Mbuku, Agbese and Kimenyi, 2001:5). For example the continuous inter-ethnic conflicts such as between the Tutsi and Hutu tribes in Rwanda and Burundi and the Somali people in a region of Ethiopia.

Ethnicity has always been a key feature of the Third World and developing nations, particularly when related to diversity. Although it is not limited to the Third World, since the issues of diversity also persist, even in the most advanced countries such as United States, Canada and Western Europe, it is more serious in the Third World than elsewhere. Compared to other parts of the world, the Third World for instance has the most extreme heterogeneous populations. For example in sub-Saharan Africa alone there are more than 2,000 distinct ethnic communities that vary in size, language, religion and culture.

The elements such as ethnic identity and unity that deal directly with the issue of diversity can be reflected in many post-independence policies. It is hoped, through these policies that heterogeneous populations will be unified by limiting or denying expressions of group differences. It is the assumption that for the various groups to live in harmony, it is necessary for them to be homogenised (ibid).

Concerned about problems of unity after independence, many the Third World countries in particular deliberately designed unifying policies. Realising the fact that the issue of unity among various ethnic groups was a primary concern, ostensibly, the policies were directed towards promoting individual freedom while at the same time creating unity amongst diverse populations. This was based on the belief that 'unifying groups into one national state was considered crucial for political stability' (ibid).

But as we move into the third millennium, it seems that the prospects for ethnicity are becoming uncertain. Scholars such as Anthony D. Smith (1995) have suggested that the processes of state expansion and modernisation leave little room especially for the 'sub-national' identities to continue to flourish. This view is based on the assumption that ethnic myths and the heritage of modern nations in the context of economic globalisation are constantly being renewed (Smith, 1995:85). On the other hand, it also seems that, while global communication and economic trends transcend national boundaries, the contemporary nation-states are undergoing erosion and have little control over these and other processes. This can be clearly seen particularly with the expansion of ICTs. Many reports and surveys with regard to ICTs now continue to focus on the importance of ethnic participation in the digital world. It is believed that, without an effort to bridge it, the ICT gap will eventually create even greater inequality within and between ethnic groups.

A particularly important report was the studies conducted by NTIA that, which showed although the use of the Internet by individuals has increased for each broad race in the US, the ethnic digital divide continue to exist. From the survey, while the Internet use among the Whites and Asian American and Pacific Islanders continues to be persistent at 60 per cent, it is the African-Americans (39.8 per cent) and Hispanics (31.6 per cent) who are lagging behind (NTIA, 2004). What was reported, even after adjustment for education and income level, was that the gaps between African-American and Hispanics are clearly visible. Both income and education are playing a very significant role in determining the level of Internet use. For example, even for households with incomes below 15,000 dollars, there are sharp contrasts on the use of the Internet between the African-Americans (6.4 per cent) and Hispanics (5.2 per cent) compared to over 33 per cent of Asian Americans in the same income group. The great emphasis on children's education by Asian Americans was among the important contributions towards the difference (Castels, 2001:249).

But on the other hand, the growth in Internet use has increased across all races and groups in the US, particularly amongst African-Americans and Hispanics. Reported by NTIA, from December 1998 to September 2001, Internet use among African-Americans grew at an annual rate of 31 per cent, while Hispanics growing at 26 per cent set against growth of 21 per cent for Asian Americans and Whites (19 per cent)

(NTIA, 2004). This indicates that the general trend of Internet use among all Americans is growing. This is particularly important when factors such as access and ownership of a computer are no longer likely to be a major issue in the near future (Castells, 2001:253).

The factors likely to be contributing to this gap are those related to cultural differences, especially language. With more than 94 per cent of links to pages on secure servers being in English as reported by OECD in July 2000, this will obviously have some impact on non-English speaking native groups (OECD, 2001:23; Castells, 2001:253). Even in the case of US, a report by NTIA admitted that language plays an important role in terms of Internet access in the country. Particularly among Hispanics, the Internet use differs considerably depending upon whether Spanish is the only language spoken in the household. What was revealed is that for Hispanic households where Spanish was the only language spoken, the use of the Internet accounted only about 14.1 per cent in contrast to 37.6 per cent of Hispanics who lived in households where Spanish was not the only language spoken (NTIA, 2004).

In such a situation, what will then be the case for Malaysia? Being a country that is undergoing rapid industrialisation and economic globalisation what will then be the future of the multi-ethnic characteristics of Malaysia? More importantly, when this is translated into the country's extensive use of ICT to drive the economy towards higher productivity, will it create even bigger polarisation? As it is, the inability to bridge the increasing polarisation among different ethnic groups will certainly have its own implications for the country achieving its own concept of modernity particularly as set out in Vision 2020.

As far as the government's policies are concerned, the effort to bridge the inequality between major ethnic groups in Malaysia has been made clear by the government since the NEP, NDP and recently through Vision 2020. This is based on the fact that ethnic imbalances due to high poverty levels have been the main issue and the subject of great discussion since independence in 1957. For example, by the end of the 1960s about half of the population were still living in poverty. Compared to non-Malays, the proportion of the poor was proved be notably high among Malays. In 1970, almost 66 per cent of Malays were poor compared to Chinese (27.5 per cent) and

Indians (40.2 per cent) (Ikemoto, 1985). In terms of equity ownership there were also obvious, significant imbalances especially between the Malays and the Chinese. In 1970, the Malay ownership of share capital was only about 2.4 per cent compared to the Chinese, 27.2 per cent (Gomez and Jomo, 1997).

The sharp inequality between major ethnic groups, particularly between the Malays and the Chinese resulted in the bloody racial riots at the end of 1960s. This spurred the government to take more affirmative action to correct the imbalances. Starting with the NEP, the two ultimate objectives of the NEP were to eradicate poverty, irrespective of race, and to restructure the society so that the identification of ethnic groups with economic function could be eliminated (Malaysia, 1991a). In many cases, the introduction of the NEP has given more preference to the Malays and other indigenous peoples. With most Malays lagging behind in many areas, an aggressive government intervention was called upon to speed-up the Malay participation in education, employment and economy. It was hoped that inter-ethnic inequality would be reduced and the aim of the NEP to achieve national unity and to foster nation-building would be enhanced.

As the country moved towards the new millennium, the policy to promote an equitable society by eradicating poverty and reducing imbalances among and within ethnic groups became more important and this was made clear in Vision 2020 and the recent New Vision Policy (NVP). The most interesting aspect of this is that, while the effort to promote equitable distribution of wealth was linked to ethnicity in Malaysia, the government was also focusing at the same time on promoting the ideal of one Malaysian nation, notably through the promotion of its own national language, the *bahasa Malaysia* (Khoo, 1995:331). The reason was simply to ensure that all Malaysians, regardless of ethnicity could continue to hold firm to their own set of customs, culture and religious beliefs and yet still feel that they belonged to one nation. Particularly with the great promotion of ICTs and through Vision 2020, what is important for the government is that by 2020 'the country must be uniquely modern, for example keeping in with the progress that the world has made in every field by then and yet remain uniquely Malaysian' (Mahathir, 2000:158). Since then, the effort to bridge the ethnic digital divide such as through income distribution, education, access to and the promotion of local content such as DAGS has been



aggressively promoted by the government to ensure that the said vision could be realised.

With regard to the aim and objectives of the NEP and notably Vision 2020, the country had undergone a series of transformations in its economic development. The shift from the import substitution policy in the early years of independence to export industrialisation to liberalisation and greater integration into the global economy has enabled the country to achieve remarkable progress both in its economic growth and the reduction of the poverty level. The World Bank (1993) for instance has said that Malaysia's economic development represents one of the success stories among developing economies. The real GDP growth rate for the country was constant at 8 per cent throughout the 90s before the crisis emerged in 1997.

The bulk of FDI received by the country and its aggressive move towards manufacturing industries, particularly during the 90s, has created many jobs and employment opportunities for the people. With such opportunity, not only has the unemployment rate declined from 8 per cent in 1970 to 3.1 per cent in 1995 but it has constantly remained at 3.1 per cent in 2000 (Young, Bussink and Hasan, 1980:6; Malaysia, 2001a:92). In addition, the per capita income of the people also increased tremendously. It was recorded that the per capita income of the Malaysian population had increased from USD400 in 1970 to USD2,306 in 1990 (Hoffmann & EE, 1975:226, Ohmae, 1995:123). As a result of this, the level of absolute poverty in the country experienced an outstanding decline. From half the population living in poverty in 1957/58, there was a sharp reduction to 8.1 per cent in 1999 (Malaysia, 2001a:57).

The affirmative action undertaken by the government since the NEP period has not only reduced the poverty level significantly, but the inter-ethnic and rural-urban inequalities have also experienced a decline. Particularly noteworthy is that the incidence of poverty between rural and urban areas has been tremendously narrowed down. The incidence of poverty in the rural areas has been reduced from 59.6 per cent in 1957/58 to 13.2 per cent in 1999, while urban poverty has fallen from 29.7 per cent to 3.8 per cent over the same period (Malaysia, 1991a:68; Malaysia, 2001a:57). Meanwhile, based on the distribution of household income between urban and rural

areas, the income disparity ratio has also been narrowed from 1:2.14 in 1970 to 1:1.95 in 1990 and again to 1:1.81 in 1999 (Table 6.17). This indicates that, the rural population, which is predominantly made up of the Malays, is gaining from the country's economic growth.

**Table 6.17**  
**Distribution of Household Income and Income Share by**  
**Income Group and Area**  
**(1970, 1990 and 1999)**

	1970	1990	1999
<b>Urban Households</b>			
Mean Income (RM Per Month)	424	1,606	3,103
Top 20%	n.a	3,981	7,580
Middle 40%	n.a	1,255	2,844
Bottom 40%	n.a	558	1,155
<b>Rural Households</b>			
Mean Income (RM Per Month)	198	957	1,718
Top 20%	n.a	2,277	4,124
Middle 40%	n.a	787	1,577
Bottom 40%	n.a	369	670
<b>Urban-Rural Disparity Ratio</b>	<b>2.14</b>	<b>1.95</b>	<b>1.81</b>

Source: Roslan (2002), Malaysia (2001b:89)

The ownership of share capital is also showing a significant reduction of the imbalances among ethnic groups in Malaysia, particularly the gap between the Chinese and the Malays. From only 2.4 per cent of capital being owned by the Malays, the percentage had jumped to 20.6 per cent by 1995 before going down to 19.1 per cent in 1999. While the Malays were making tremendous progress during this period, the Chinese continued to strengthen their position in their ownership of share capital. From Table 6.18 shown below, although the Chinese's share capital had increased tremendously from 27.2 per cent in 1970 to 43.4 per cent in 1995, it seems that by 1999, the share had also experienced a decline to about 37.9 per cent in 1999. The declining share capital for both ethnic groups can be well attributed to the

currency crisis faced by the country in the late 1990s. Whatever the reason, the important issue is that the gap between the Chinese and Malay populations in general is narrowing. Although by 1990, the target of 30 per cent *bumiputra* ownership of share capital set during the NEP was not achievable, the percentage of share capital owned by the Malays after the thirty-year period has been quite impressive. Furthermore, looking at the average annual growth rate for the period 1996 to 1999, it is obvious that both ethnic groups had undergone almost an equal growth rate during the period at 12.6 per cent for the *bumiputra*, and 12.4 per cent for the Chinese. Comparatively, this indicates that, as far as the Chinese are concerned, the Malays are also progressing well.

**Table 6.18**  
**Ownership of Share Capital (At Par Value)**  
**of Limited Companies, 1970, 1995 and 1999**  
**(RM million)**

Ownership Group	1970	1995	1999	Average Annual Growth Rate (%) 1996 – 1999
<b>Bumiputra</b>	<b>2.4</b>	<b>20.6</b>	<b>19.1</b>	<b>12.6</b>
Individual & Institutions	1.6	18.6	17.4	12.8
Trust Agencies	0.8	2	1.7	10.2
<b>Other Malaysians</b>	<b>28.3</b>	<b>43.4</b>	<b>40.3</b>	<b>12.5</b>
Chinese	27.2	40.9	37.9	12.4
Indians	1.1	1.5	1.5	14.9
Others	-	1	0.9	13.3
<b>Foreigners</b>	<b>63.4</b>	<b>27.7</b>	<b>32.7</b>	<b>19.4</b>
<b>Nominee Companies</b>	<b>6</b>	<b>8.3</b>	<b>7.9</b>	<b>12.9</b>

Source: Gomez and Jomo (1997:168), Malaysia (2001a:64)

It must be noted that only was there a remarkable economic growth and development in the country, but also an obvious improvement in the economic position of the Malays. The success of the government's affirmative action like the NEP which brought the Malay community into mainstream economic activities, has not only led into the emergence of a Malay business-class, but also the emergence of a previously unimagined Malay middle-class. (Abdul Rahman Embong, 2002:33). What is obvious is that, the mean household income for the Malays made a significant improvement

from only RM170 in 1970 to RM1,984 in 1999. For the Chinese as well as the Indians, there was even better progress. The mean household income for both ethnic groups had increased from RM390 in 1970 to RM3,456 and from RM300 to RM2,702 for the same period respectively (Table 6.19). Looking at the mean household income among different ethnic groups, it clearly shows that all ethnic groups registered an increase in their income level.

**Table 6.19**  
**Distribution of Household Income by Ethnic Groups,**  
**1970, 1995 and 1999 (RM)**

<b>Ethnic Groups</b>	<b>1970</b>	<b>1995</b>	<b>1999</b>
<b>Malay – M</b>			
Mean Income	170	1,604	1,984
Top 20 %	n.a	3,986	4,855
Middle 40%	n.a	1,461	1,810
Bottom 40%	n.a	572	742
<b>Chinese – C</b>			
Mean Income	390	2,890	3,456
Top 20%	n.a	7,270	8,470
Middle 40%	n.a	2,560	3,168
Bottom 40%	n.a	1,062	1,271
<b>Indian – I</b>			
Mean Income	300	2,140	2,702
Top 20%	n.a	5,100	6,456
Middle 40%	n.a	1,954	2,460
Bottom 40%	n.a	868	1,092
<b>C-M Disparity Ratio</b>	<b>2.25</b>	<b>1.81</b>	<b>1.74</b>
<b>I-M Disparity Ratio</b>	<b>1.71</b>	<b>1.35</b>	<b>1.36</b>
<b>Differences of C-M mean incomes</b>	<b>222</b>	<b>1,295</b>	<b>1,472</b>
<b>Differences of I-M mean incomes</b>	<b>132</b>	<b>553</b>	<b>718</b>

Source: Roslan (2002), Malaysia (2001a)

For the Malays, the mean household level of income for all classes made significant progress over the period 1995 to 1999. Among the Malays, the most outstanding improvement came from the upper income group. This group registered an increase to nearly RM900 for the same period compared to only an increased of RM400 and RM200 for both the middle and lower income groups respectively. While the Malays are making significant progress, the Chinese in particular, are moving even further. Although the disparity ratio between both ethnic groups is narrowing from 2.29 in

1970 to 1.74 in 1999, the differences among all levels of income class have doubled. For example in 1999, while the mean household income for the Malays' upper income groups registered an increase to RM4,855, for the Chinese their mean household income rose to nearly to RM8,500 a month. This indicates that the Chinese are having more purchasing power than the Malays.

It should be emphasised that the increase in the income level among different ethnic groups took place during a period of rapid economic growth and unprecedented affluence in Malaysia. It is very much interrelated with the expansion in the employment and occupational structure. As has been repeatedly mentioned earlier, the rapid industrialisation and economic growth of the last thirty years has very much diverted the country's economy from being agriculture-based towards more manufacturing and service-based industry. It can be seen that the agricultural sector experienced a sharp decline from 50 per cent of the total employment in 1970 to only 15.2 per cent in 2000. Meanwhile manufacturing industry recorded an extensive growth rate from 11.4 per cent in 1970 to 27.6 per cent in 2000. But what is important, as a result from this is that the occupational structure among major the ethnic groups in Malaysia has also undergone a structural transformation (Table 6.20). As for the *bumiputera*, if in 1970 about three quarters or 72 per cent were

**Table 6.20**  
**Employment by Occupation and Ethnic Groups,**  
**1970, 1990, 2000 (%)**

Occupation	Bumiputera			Chinese			Indians		
	1970	1990	2000	1970	1990	2000	1970	1990	2000
Professional & Technical	46.9	60.5	63.9	39.5	29.1	25.8	10.8	7.7	7.6
Teachers & Nurses	-	68.5	73.2	-	24.6	18.4	-	6.4	6.9
Administrative & Managerial	24.1	28.7	37.0	62.9	62.2	52.3	7.8	4.0	5.5
Clerical & Related Workers	35.4	52.4	56.8	45.6	38.6	32.9	17.2	8.6	8.6
Sales & Related Workers	26.7	29.9	37.3	61.7	58.4	49.8	11.1	6.8	6.8
Service Workers	44.3	57.8	57.7	39.6	26.8	21.8	14.6	9.5	8.5
Agricultural Workers	72.0	69.1	61.2	17.3	13.8	10.3	9.7	7.3	7.5
Production Workers	34.2	43.6	44.7	55.9	39.6	33.8	9.6	10.8	10.0

Source: Rajakrishnan (1993:224), Malaysia (2001a:105)

engaged in agricultural work, by 2000 the figure had dropped to 61.2 per cent. The result of this was that the occupations such as those in the professional and technical, administrative and managerial, and service sectors experienced an increase during the period from 1970 to 2000. Although the figure for *bumiputera* participation in agricultural work has declined compared to the Chinese and Indians, the large portion of *bumiputera* in this category suggested that there is still a substantial number of these groups engaged in this sector. For the Chinese, what can be observed is that the overall occupational representation for this group in the last thirty years has experiencing a decline in its share of the occupational structure.

Other ethnic groups, particularly the *bumiputera*, can attribute the reasons for this to the increased share in many of the occupational categories. Categories such as in sales and the retail trade, and those related to administrative and managerial positions continue to be dominated by the Chinese. Although the figures in these categories are increasing for the *bumiputera*, many were in lower-rung professional and technical jobs, such as nursing and teaching. Even by looking at the number of registered professionals for the period 1970 to 1999, although the *bumiputera* representation in the professional and technical category is increasing, the percentage of *bumiputera* is still not as impressive as that of the Chinese (Table 6.21).

**Table 6.21**  
**Registered Professional<sup>(a)</sup> by Ethnic Groups,**  
**1970, 1980, 1990, 1995 and 1999**  
**(Hundreds)**

	1970 <sup>(b)</sup>		1980		1990		1995		1999	
	No.	%	No.	%	No.	%	No.	%	No.	%
<b>Bumiputera</b>	225	4.9	2534	14.9	11753	29.0	19344	33.1	15321	28.9
<b>Chinese</b>	2793	61.0	10812	63.5	22641	55.9	30636	52.4	28565	53.9
<b>Indians</b>	1066	23.3	2963	17.4	5363	13.2	7542	12.9	8183	15.5
<b>Others</b>	492	10.8	708	4.2	750	1.9	939	1.6	884	1.7
<b>Total</b>	<b>4576</b>	<b>100.0</b>	<b>17017</b>	<b>100.0</b>	<b>40507</b>	<b>100.0</b>	<b>58461</b>	<b>100.0</b>	<b>52953</b>	<b>100.0</b>

Source: Roslan (2002), Malaysia (2001b:106)

Notes:

(a) Architects, accountants, engineers, dentists, doctors, veterinary surgeons, surveyors, lawyers.

(b) Excluding Surveyors and Lawyers

It is obvious that the development of the country's economic growth has been successful in raising income, and thus reducing poverty and raising the quality of life of Malaysian society, particularly for the Malay community. This due to the fact that since the mid 1980s, under the impact of globalisation the state has maintained an open economy, which has become more closely integrated with the world economy and thus benefited greatly from the processes. As the country moves forward in embracing ICTs as one of the important avenues to further develop the country, the questions on the use of ICTs such the Internet among ethnic groups in Malaysia raises another important question. Unfortunately, the unavailability of the official data on the use of ICTs by different ethnic groups makes this question even harder to answer. As such, the level of income, education, access and language among others will be used as a factor in determining the digital divide among ethnic groups in the country.

Overall income levels among major ethnic groups appear to have been narrowing as a result of government affirmative action policies over the last thirty years. It also appears that the use of ICTs such as the Internet by Malaysian of different ethnicity will also experience a narrowing gap, as one of the policy developers mentioned:

'Actually it is very sensitive issue to talk about relationship between ethnic in Malaysia. But what I can say, as far as the ICTs is concerned, there are not so much different between Malays, Chinese and Indian in their use of this new technology. Look for example the level of income and even in education, all ethnics are making great progress. This may not be true in thirty to forty years ago, where the gap between ethnic is clearly visible. I think it is a matter of time

(PD 1 – MECM)

Unlike the experience of advanced capitalist countries such as the US where the ethnic gap is still prevalent, for Malaysia it seems that a different model is more appropriate. If income and education levels were indeed the key factors underlying the ethnic digital divide, obviously the trends in Malaysia could be changing soon, given the changes described above. Unlike many advanced capitalist societies where the bulk of their society is currently moving from manufacturing towards service industries, a widening income gap can be attributed to the difference between high and low income groups or between high skill and low skill jobs is almost certain. For Malaysia, although there is a trend for moving from manufacturing to services, the movement of labour from agriculture towards manufacturing for the past three decade

has contributed considerably to reducing the income inequality in Malaysia. The affirmative action taken by government to reduce income imbalances among major ethnic grouping seems certain to narrow the gap in the use of ICTs in Malaysia.

Obviously this can be seen as a success story for Malaysia. But as far as ICT is concerned it is not the end of it. There has been a new responsibility. The elements such as access and those related to culture such as language become important issue that challenges the present narrowing of the income gap that has started to take place in Malaysia. This is supported by the interview results with one of the evaluators who commented on his concerns over this issue:

**'Rural urban divide in Malaysia is getting wider and wider. One step taken in rural areas, you see ten steps in the urban. So there is a consistent leap at the urban areas. When there is a consistent leap compared to the incremental steps of the rural areas the gaps will be wider..... One important example could be the language, because we are talking about the Internet access. We are talking about the language use in the Internet is English. For urban dwellers, the more they get access to the Internet the more they will be exposed. As they have the advantage both in language and the facilities. For those in rural areas which is mostly Malay dominated, their less exposure and understanding of English and the lack of Internet facilities will make them at the disadvantage compared to those in the urban areas. Under that conditions the gaps economically, culturally and even intellectually in the contexts of Malaysian society between rural and urban will be further divided.'**

**(EV 4 – Prof. Dato' Dr. Raja Abdullah Yacoob)**

In the case of access, it was clear from the previous discussion that the lack of telecommunication services and low Internet use in Malay-dominated areas such as Kelantan, Terengganu, Pahang, Kedah and Perlis would certainly have an impact upon government efforts to narrow the overall ethnic digital gap in the country. Meanwhile, in the case of language, one of the policy developers even admits that language plays a crucial role in determining the future use of ICTs in the country, particularly among the Malay community in Malay dominated areas. He says:

**'We understand that the language use in the Internet is mostly English. I'm not so worry about those people in the urban areas, as they are more or less being exposed to English. Even I'm not so worry about our new generation, as our education system being emphasized on the important of English. Our worry obviously to those in the rural areas and less developed areas. Their less exposure to English will certainly make them marginalized from**



ICTs development in the country. For that government through this agency is working very hard to cater this group by promoting the creation of local content such as DAGS and e-community programmes. It is hope this will enhance the use of ICTs among this group of people'

(PD 3 - NITC)

Although there is no hard data on the level of usage of English language in every state in Malaysia, the newspaper circulation will be used as a proxy for the purpose of arguing the fact that there is low English usage in the Malay dominated areas. This serves to strengthen the point that the low usage of English will equate to low Internet usage as in the case of the Hispanic community in the US noted above. From Table 6.22 it is clear that the English newspaper circulation in these states is extremely low.

**Table 6.22**  
**Average Daily Newspaper Circulation by**  
**Type of Newspaper and State, Malaysia, 2000**

Type of Newspaper		
State	Malay	English
Johor	250,471	67,897
Kedah	113,043	32,840
Kelantan	69,256	7,524
Melaka	56,960	27,586
Negeri Sembilan	78,634	32,070
Pahang	88,726	22,571
Perak	132,094	75,636
Perlis	16,875	954
Pulau Pinang	78,508	104,825
Sabah	22,707	10,794
Sarawak	59,263	57,633
Selangor	245,240	410,861
Terengganu	69,184	8,419
Kuala Lumpur	240,579	126,679
<b>Malaysia</b>	<b>1,521,540</b>	<b>986,29</b>

Source: Department of Statistics, Malaysia (2002b:252)

While the number of Malay newspapers is high in the state of Kedah (113,043), Kelantan (69,256) and Terangganu (69,184), the numbers for English newspaper circulation are about 32,840, 7,524 and 8,419 respectively compared to more

developed and urbanised states such as Selangor (410,861), Kuala Lumpur (126,679) and Pulau Pinang (104,825). Generally this indicates that the level of English use in these states is low which obviously needs urgent and proper policy attention to enhance the level of ICT usage by addressing the language use issue or else it will contribute to the digital gap in the country.

There is no doubt that efforts to boost the level of local content through DAGS have been aggressively promoted by the government, but in many instances it is difficult to see them being effective for two reasons. One is that under DAGS, although RM 150 million has been allocated for the project, only RM 64 million has so far been used to support only 48 projects since its inception in 1998 (refer Chapter 5, section 5.3). Under what circumstances can local content be further enhanced if this continues to be the case? Secondly while there has been great promotion of local content there has also been a great emphasis by the government on the promotion and use of English in every aspect of life, particularly in education (NST, 2000c). For example not only has there been a rehabilitation of English in tertiary education, starting from 2001, government has made it compulsory for all schools to teach science and mathematics in English. Looking at the level of English as the dominant language for content on the Internet, it is also difficult to admit that it could easily be bypassed, as one of the implementers mentioned:

'My company involve directly in producing local content such as educational material in Malay language. From my experience the effort to stimulate the use of local content through the Internet is not as aggressive as we thought. Even though the government is doubling the effort, at the end I think we have to come back to English as a means to explore further knowledge in the Internet which is unavoidable'

(IM 2 – Pintar Media Sdn. Bhd. (Malaysia))

As such the ethnic digital divide in the case of Malaysia will continue to be prevalent. Although there are few figures to chart the use of the Internet among different ethnic groups in Malaysia, it seems clear that the percentage of Malay speakers using the Internet will be low like the experience of the Hispanic community in the US. Meanwhile, in terms of access, although some might suggest that it might not be the case in the near future, but looking at the existing uneven distribution of telecommunication services and low Internet use, particularly in the less developed

areas, it seems clear that extra effort by the government is needed or it will further contribute to the ethnic digital divide in the country. But the most important consequence is for the policy itself, especially in the case of language. What is happening is that despite the government's inability to promote local content while at the same time putting great emphasis on English, the use of English in the context of ICTs remains unavoidable. As such, not only will this contribute to the overall ethnic digital divide, more importantly it will have an impact on the creation of the unique Malaysian identity mentioned strongly in Vision 2020. This is based on the view that it will be difficult for Malaysians to maintain their own set of cultural beliefs if they continue to be exposed to other cultures through the medium of the English language that is heavily promoted through ICTs, especially the Internet.

### **6.5 ICTs and The Growing Class Division**

The unprecedented growth in information technology at the turn of the 21st century has resulted in rising inequality and social exclusion and this has become a major concern and dominant feature of modern economic history (World Bank, 2002). Although in the past quarter of the last century the world witnessed a mixed record of development and industrialisation, for example in many East-Asian countries, the increasing inequality and polarisation in the distribution of wealth is alarming and yet continues to stretch across the globe.

The 1996/1999 Human Development Report by UNDP, recorded that in the last thirty years, the share of the poorest 20 per cent of the world's population has declined from 2.3 per cent to 1.4 per cent. Meanwhile the richest 20 per cent has seen their share of global income has rise from 70 per cent to 85 per cent. In 1993 alone, from the US\$23 trillion of the world's GDP, only US\$5 trillion were contributed by the developing countries with more than 85 per cent of the global population receiving only 15 per cent of its income. This is 'yet another indication of an even more polarised world' (UNDP, 1996/1999 cited in Castells, 2000:78).

It is generally claimed that the complex interplay between economy, technology and the rise of globalisation has contributed towards the sharp income inequality between

the upper and lower levels of society in the world at large. The most commonly used measure of income inequality can be summarized by the so-called Gini Coefficient; this Gini Coefficient varies from 0 (no inequality) to 1 (total inequality). According to a report by the World Bank (2002), although the number of poor people has fallen by an estimated 200 million since 1980, the number of people participating in the global industrialisation has been increasing steadily for about a century and this has led to greater inequality (World Bank, 2002:7). This income inequality has not only led to a greater division between the South and the North but has also affected even those within the advanced capitalist societies of Western Europe and North America.

For example, in the case of the United States, there has been a rising concern not only about the increasing inequality but also increasing polarisation within the society. The US Census Bureau has reported that, although the family income inequality in the US measured by the Gini Coefficient has indicated a substantial decline from 1947 to 1968, there has been an increase in income inequality, reaching its 1947 level in 1982 which is 0.412 and increasing further since then. (Weinberg, 2004). The most striking of this was the level of increase before and after 1990 (Table 6.23). Although the

**Table 6.23**  
**Gini Coefficient in the U.S, 1980 – 2001**

1980	0.403	1991	0.428
1981	0.406	1992	0.434
1982	0.412	1993	0.454
1983	0.414	1994	0.456
1984	0.415	1995	0.451
1985	0.419	1996	0.455
1986	0.425	1997	0.457
1987	0.426	1998	0.456
1988	0.427	1999	0.458
1989	0.431	2000	0.462
1990	0.428	2001	0.466

Source: US Census Bureau (2002)

income inequality in the case of the US continues to increase, it was obvious that the level of increase after 1990 was more rapid reaching its highest level so far of 0.466 reported in 2001. This has resulted in the sharp polarisation between the rich and the poor in the country. For instance, in 1999 the after-tax income of the richest 1 percent was \$515,600 compared to \$243,700 in 1977, an increase of 119.7 percent. Meanwhile the lowest fifth saw their income plummet by 12 percent during the same period (Castells, 2000b:130-132). Meanwhile in another survey conducted by OECD between 1985 and 1995, in most of Western Europe with the exception of Denmark and France, the degree of inequality in countries like Belgium, Finland, Germany, Italy, Netherlands Norway and Sweden as measured by Gini coefficient (multiplied by 100), continued to experience both absolute as well as relative increases in inequality (OECD, 1998:35). This widening income gap between the upper and the lower levels of society even in the most advanced country like the US indicates that there is a universal trend towards an increasing gap between the rich and the poor.

As mentioned by Castells, the causes of increasing inequality, polarisation, poverty and misery, at least in the experience of America in the 1990s, are due to six interrelated elements: a) the structural transformation of the labour force due to the shift from an industrial economy to an information-based economy; (b) the importance of a high level of education and the need for the good quality education required by the knowledge-based economy in creating highly skilled workers which has led to the growing inequality in access to better education, particularly by the lower income groups; (c) the growing deindustrialisation processes in industrial production, markets and labour such as the increasing number of skilled workers compared to those in the traditional manufacturing sector as a result of globalisation;(d) the concomitant change of firms under the form of network enterprise; (e) the growing numbers of immigrants; and (f) the incorporation of women into paid labour (Castells, 2000b:135).

Generally this means that there has been a strong indication of the growth of new occupational structures. Castells, -(2000a) in his study of the diversity of the occupational profile across societies in countries like the United States, Canada, France, Germany and Japan has found very strong differences between the occupational structures in the informational economy. He found that typical

occupations categorised under the groups of managers, professionals and technicians have indeed become very strong in the US and Canada since the early 1990s. However, the number of those people involved in craftmanships and operators has substantially dwindled in recent years, showing that there has been great a movement of its labour force towards the services industry. This is what Castells describes as a US 'model' that fits well into the recent 'theory of post-industrialism and informationalism' (Castells, 2000a:233). In the case of Japan, although there has been a substantial increase in information-linked occupations, in recent years compared to the late 1980s, there are also sign of redefining the occupational structure of the previous era while continuing to phase out the unproductive occupational positions such as those in agriculture. Castells mentions that, compared to the US, Japan has posted a different set of models in its movement towards informationalism. In between these two models are Germany and France (ibid).

In the case of the US, the consequence is that two sets of labour, the highly skilled and the lower skilled are becoming well established. What Castells did not mention in his explanation of the transformational change in occupational structure was actually the recasting of class into certain levels of society. Seen simply as rungs on a ladder of inequalities, the concept of class can be further defined and identified as a 'person's relationship to specific kinds of mechanisms which generate inequalities .... of income and power' (Wright, 1994:90). This appears means to that, not only do both the capitalists and workers differ in the amount of income they acquire, but most importantly the means through which they acquire their income, such as those which depend on the level of education are different (Perkin, 1989:xiii). Having good access to a better quality of education as its basic ingredients, the important outcome of this is the growing income inequality as a result of changes in the class system. This is particularly true in an informational economy where firms are willing to pay higher wages to highly educated workers who are crucial for innovation and competition. In this process, this broadens the inequality compared to those who have less access to high quality education such as those in lower income groups, immigrants and minorities. As it is, the structural transformation in the sectoral composition of the labour force tends to widen the divisions between upper and lower levels.

The higher income groups will further benefit from economic growth as they are able to accumulate enough income, for instance to invest in the stock market. More importantly, when this is translated into the use of ICT such as the Internet, those with higher income levels tend to have better opportunities to own and have access to such media. As such the division between upper and lower level in terms of information-rich and information-poor will once again be broadened. For example, a study by the OECD of France, the United States and Japan found that the gap between the lowest and highest income groups for the availability of a personal computer in the home for different levels of household income from 1995-1998 has been steadily widening (OECD, 2000:86). Basically the economic factors both in personal and household income have strong influences on the ability to own such ICT technologies and facilities. In America, household income became one of the strongest predictors in the country. For example as reported by NTIA, in August 2000 there were about 70 per cent of US families with an income of USD75,000 and above using the Internet compared to only 18.9 per cent those with a family income of less than USD15,000 (NTIA, 2004). While in Europe, although the gap between the rich and poor stayed roughly constant from the period of 1996 – 1999, there was no sign of any closure of the digital divide by income, even though its Internet population grew at roughly 10 per cent per annum during the period. Despite the widespread use of the Internet in EU countries, on average, the wealthiest European families were almost three times more likely to be on line than the poorest (Norris, 2001:78-79).

Meanwhile Norris's investigation on the use the Internet among European Union member states on occupation and education from 1996-1999, found that professionals and managers are three times as likely to use the Internet than those in white-collar jobs and manual workers. Despite the availability of laptops and high-speed network connections provided by companies, their high salary income could make the same technology facilities available for the home and family. While in education, those with a college education are seven times more likely to be online than those who left schools at 15, which also closely relates to subsequent occupational status and income (Norris, 2001:86). While the Internet has become pervasive, there is still no evidence that the digital gap, even in the advanced capitalist societies such as Western Europe and the United States, is showing any sign of starting to close or normalise, except in

gender. As a consequence of this, the division between the upper and the lower levels of society is expected to remain large.

Based on the above evidence, there is no doubt that those in the lower income groups with less access to good quality education will be further marginalized. In such a situation what will then be the case for Malaysia? Being a developing country whose function is to drive the economy towards higher productivity through information technology and a high value-added economy, obviously the need to balance the equality within the society is becoming more challenging than before. As in the experience of many countries around the world, including those in the developed nations, does this mean that Malaysia's decision to embark on ICTs based on different income groups and social stratification will have such similar effects? Is the inequality among these groups in the context of Malaysia, getting bigger or smaller? This is important since the bigger the gap between these groups as a result of the ICTs, the bigger will be the implications for the government's efforts to ensure an economically just society with fair and equitable distribution of the wealth of the nation as mentioned in its Vision 2020. This is based on the historical fact that the growing income gap during the years after independence resulted in disunity among the major ethnic groups in Malaysia.

Malaysia's effort to bridge the gap between different income groups through poverty eradication within society has been a long-standing effort since the implementation of the New Economic Policy (NEP) (1970-1990) in 1970. The two-pronged strategy of poverty eradication irrespective of race and the restructuring of society mentioned in the NEP have been carried out through its later implementation of the National Development Policy (NDP) (1991-2000), National Vision Policy (NVP) (2001-2010) and Vision 2020.

Since then, the government has introduced various economic programmes and activities in order to reduce the disparity of income within the society through extensive poverty-eradication initiatives. Officially, poverty in Malaysia is measured only in absolute terms (Malaysia, 2001a:58). The Poverty Line Incomes (PLI) are used to calculate the incidence of poverty in the country and updated annually to reflect changes in the level of prices by taking into account changes in the Consumer



Price Indices (Table 6.24). It is estimated based on the requirements of a household for three major components, namely food, clothing and footwear, and other non-food items such as rent and utilities; furniture and household equipment; medical care and health expenses; transport and communications; and recreation and cultural services. For the food component, the minimum expenditure are based on a daily requirement of 9,910 calories for a family of five persons while the minimum requirements for clothing and footwear were based on standards set by the Department of Social Welfare to welfare homes. The other non-food items are based on the level of expenditure of the lower income households, as reported in the Household Expenditure Survey<sup>25</sup>.

**Table 6.24**  
**Poverty Line Incomes, 1995-1999**  
**(RM per month per household)**

	1995	1997	1998	1999
Peninsular Malaysia	425	460	493	510
Sabah <sup>26</sup>	601	633	667	685
Sarawak <sup>26</sup>	516	543	572	584

Source: Malaysia (2001a:58)

As a result, the incidence of poverty, particularly absolute poverty, in the early years after independence among Malaysians was reduced dramatically from half of the population in 1957/58 to 49.3 per cent in 1970 to 16.7 per cent in 1990 and again to 8.1 per cent in 1999 (Table 6.25). This progressive poverty reduction was enhanced by a proportionate increase in household income. The mean household income for Malaysia for the period 1990 to 1999 increased from RM1,169 to RM2,472 with the top 20 per cent of households experiencing an increased income share amounting for 50.5 per cent in 1999 compared with a much smaller percentage of 14.0 per cent for the bottom 40 per cent (Table 6.26).

<sup>25</sup> see Department of Statistics, Malaysia (2000) *Report on Household Expenditure Survey, Malaysia 1998/1999*. Kuala Lumpur : Department of Statistics, Malaysia.

<sup>26</sup> Adjusted based on an average household size of 4.6 in Peninsular Malaysia, 4.9 in Sabah and 4.8 in Sarawak

**Table 6.25**  
**Incidence of Poverty in Malaysia,**  
**1957/58, 1970, 1990, 1997, 1999**

	1957/58	1970	1990	1995	1997	1999
<b>All Households</b>	<b>51.2</b>	<b>49.3</b>	<b>16.7</b>	<b>9.3</b>	<b>6.8</b>	<b>8.1</b>
Rural	59.6	58.7	23	15.6	11.8	13.2
Urban	29.7	21.3	9.1	4.1	2.4	3.8

Source: Ikemoto (1985), Malaysia (2001a)

**Table 6.26**  
**Mean Monthly Gross Household Income and Income Share**  
**by Income Group, 1990 and 1999**

Mean Income (RM)	1990	1999
<b>Malaysia</b>	<b>1,169</b>	<b>2,472</b>
Top 20%	2,925	6,268
Middle 40%	1,037	2,204
Bottom 40%	424	865
<b>Income Share (%)</b>		
Top 20%	50.0	50.5
Middle 40%	35.5	35.5
Bottom 40%	14.5	14.0

Source: Malaysia (2001b:89)

Looking at the Gini Coefficient, as shown in Table 6.27 below, obviously this can be the case. What can be observed from the Table is that, although there was an increase in income inequality measured by the Gini Coefficient (0 is no inequality to 1 is total inequality) during the post-colonial period from 0.354 in 1957/58 to 0.485 in 1976, the Gini Coefficient after this period registered a reduction to 0.415 in 1990 before experiencing an increase to 0.443 in 1999.

**Table 6.27**  
**Gini Coefficient by Ethnic Groups in Malaysia, 1957-1999**

	Malay	Chinese	Indian	Malaysia
1957/58	0.342	0.374	0.347	0.354
1967/68	0.401	0.391	0.403	0.398
1970	0.466	0.455	0.463	0.461
1976	0.494	0.505	0.458	0.485
1979	0.488	0.471	0.461	0.473
1984	0.469	0.452	0.417	0.446
1987	0.447	0.428	0.402	0.425
1990	0.428	0.423	0.394	0.415
1995	n.a	n.a	n.a	n.a
1997	0.4495	0.4188	0.4092	0.425
1999	n.a	n.a	n.a	0.443

Source: Roslan (2002), Malaysia (2001b:89)

In Malaysia, the outcome of the reduction in the incidence of poverty and eventually in the income gained is highly correlated with the changing occupational structure. In 1970, about 50 per cent of the total workforce in Malaysia were primarily engaged either in agriculture, fishing or forestry, while the labour force who participated in the manufacturing industry was only about 11.4 per cent (Malaysia, 1996). The rising employment rates and the growing inter-ethnic income disparity during the early implementation of the NEP, made the government realise the importance of shifting its policy from Laissez-Faire to the promotion of industrialisation and liberalisation.

As a result, from 1995 to 2000 the employment sector in the country experienced a structural transformation in the sectoral composition of its labour force (Table 6.28). What can be observed from the Table 6.28 is that employment in the agriculture sector decreased sharply to 15.2 per cent in 2000 with its average annual growth rate and net job creation contracting to 1.2 and 6.7 respectively. At the same time employment in the manufacturing sector has increased dramatically, particularly in its average annual growth rate of 4.8 with the biggest net job creation at 41.7 per cent from the total employment during the period 1995 to 2000. What this indicates that the move towards manufacturing from agricultural has contributed appreciably reducing income inequality especially before 1990.

**Table 6.28**  
**Employment by Sector, 1995-2000 ('000 persons)**

Sector	1995	%	2000	%	Average Annual Growth Rate (%) 1995-2000	Net Job Creation	
						'95-2000	%
Agriculture, Forestry, Livestock & Fishing	1,492.70	18.7	1,407.50	15.2	-1.20	-85.20	-6.7
Mining & Quarrying	40.5	0.5	41.2	0.4	0.3	0.7	0.1
Manufacturing	2,027.5	25.3	2,558.3	27.6	4.8	530.8	41.7
Construction	717.1	9	755	8.1	1	37.9	3
Electricity, Gas & Water	67.4	0.8	75	0.8	2.2	7.6	0.6
Transport, Storage & Communication	395.2	4.9	461.6	5	3.2	66.4	5.2
Wholesale & Retail Trade, Hotels & Restaurants	1,323.5	16.5	1,584.2	17.1	3.7	260.7	20.5
Finance, Insurance, Real Estates & Business Services	372.8	4.7	508.7	5.5	6.4	135.9	10.7
Government Services	885.8	11.1	981	10.6	2.1	95.2	7.5
Other Services	676.7	8.5	898.7	9.7	5.8	222	17.4
<b>Total</b>	<b>7,992.2</b>	<b>100</b>	<b>9,271.1</b>	<b>100</b>	<b>3.0</b>	<b>1,272.0</b>	<b>100</b>
Labour Force	8,254.0		9,572.5		3		
Local	7,401.3		8,823.3		3.6		
Foreign	852.7		749.2		2.6		
Unemployment	254.8		301.3				
Unemployment Rate (%)	3.1		3.1				

Source: Malaysia (2001a:92)

Looking at the employment in all-major occupational groups as a result of the country's economic expansion, the occupational composition too experienced a structural transformation. As shown in Table 6.29, the professional and technical sectors as well as the administrative and managerial categories, registered a high growth, particularly towards the end of the 1990s. The professional and technical category grew at 5.2 per cent per annum during the period 1995 to 2000, accounting for 17.9 per cent of total employment created or 227,900 new jobs. This figure makes it the second largest percentage increase in job creation after the production and related group category. As expected, occupation in the agricultural category continues to experience a decline. The consequence of the slowing down in

the agriculture sector and employment was due to a movement of workers to more remunerative jobs in the manufacturing and service industries.

**Table 6.29**  
**Employment By Major Occupational Group, 1995-2000**

Occupational Group	1995	%	2000	%	Average Annual Growth Rate (%) 1995-2000	Net Job Creation	
						'95-2000	%
Professional, Technical & Related Workers	791.9	9.9	1,019.8	11	5.2	227.9	17.9
Administrative & Managerial Workers	256	3.2	389.4	4.2	8.8	133.4	10.5
Clerical & Related Workers	871.9	10.9	1,029.1	11.1	3.4	157.2	12.4
Sales Workers	871.9	10.9	1,019.8	11	3.2	147.9	11.6
Service Workers	887.9	11.1	1,094.0	11.8	4.3	206.1	16.2
Production & Related Workers, Operators and Labourers	2,711.8	33.9	3,041.0	32.8	2.3	329.2	25.9
Agricultural, Animal Husbandry & Forestry Workers, Fishermen & Hunters	1,607.8	20.1	1,678.1	18.1	0.9	70.3	5.5
<b>Total</b>	<b>7,999.2</b>	<b>100</b>	<b>9,271.2</b>	<b>100</b>	<b>3.0</b>	<b>1,272.0</b>	<b>100</b>

Source: Malaysia (2001a:94)

The higher demand for workers, particularly in the technical and professional sector at the turn of the millennium indicates a shift towards occupations requiring high educational attainment and professional training in tandem with the country's strategic shift towards higher value-added activities. As a result, more than a quarter of the employment generated in this category was in technical and ICT occupations. For the most part, this is due to the extensive use of ICT in most sectors.

The government's decision to drive the economy towards higher productivity through information technology and high value-added economic is actively, particularly at the end of the 1990s has resulted in the changing structure of the social stratification of the country. Referring to the above discussion, it is clear that the occupational

composition of its labour force has undergone a structural transformation. More and more highly skilled workers are needed in an effort to drive the economy towards high value-added activities, leaving the traditional employment sectors such as agriculture behind. If it is true for the US and some of the European countries with regards to the growing inequality as a result of the shifts of their economic priorities towards informational-based economic activity as mentioned by Castells, this can be the case for Malaysia, especially after the development of ICTs, which took place in the middle 1990s.

What can be observed is that, after the extensive effort by the government started to divert the Malaysian economy in the middle 1990s, the country has experienced rising poverty and growing income inequality (refer to Table 6.25 and 6.26). In reference to the incidence of poverty, although Malaysia has made a remarkable achievement since independence in reducing the level of poverty from half of its population to 6.8 per cent by 1997, surprisingly the percentage went up to 8.1 per cent in 1999. This can be linked with the growing income inequality. As in the case of income groups, although the mean household income has grown substantially over the period 1990 to 1999, the overall income gap between those in the upper and lower levels in Malaysia is showing clear signs of widening.

It is important to note that only those in the upper level are enjoying an increase in their income share while those in the lower income groups are experiencing a decline in their share. Even income inequality measured by the Gini Coefficient (refer to Table 6.27) from the period of 1997 to 1999 also experienced an increase after experiencing a decline for more than a decade. Although the inequality based on both the incidence of poverty and income share in Malaysia is considered marginal, it nevertheless marks the beginning of a growing inequality within the Malaysian society as a whole, especially among the Malay income class that recorded the highest growing income inequality compared to other ethnic groups (refer to Table 6.26). Although this can be attributed to the currency crisis faced by the country in the late 1990s, this is also a result of shifting the country's economic priority towards high value-added economic activity such as the greater capital intensity and expansion in the use of ICTs in most of its economic sectors during the period. Undoubtedly, if

this trend continues, the experience of many developed countries suggest that the division between different class levels within Malaysian society will grow bigger.

The above arguments become obvious when translated into figures relating to ICT usage such as the Internet among different income groups and different occupational structures. This is because it provides a clear picture of the correlation between both the elements of income and occupation status and the use of ICTs.

In the case of Malaysia, there are clear indications that both income and occupational status are highly correlated with the extensive use of ICTs. A report by the Malaysian Computer Industry Association (PIKOM) on the profile of Malaysian Internet Users for the period 2000/2001 shows that most users in Malaysia are highly educated, hold high positions in their career and earn high monthly incomes. As reported, almost 50 per cent of an estimated four million Internet users in Malaysia earn a personal monthly income of between RM1,001 and RM3,000. Also almost 50 per cent of these users have college degrees and 31 per cent are in professional or managerial positions (PIKOM, 2000/2001:4). Further analysis of the profile of Malaysian cyberbuyers (Table 6.30) shows that there is a growing gap among users in relation to their income level and occupational status. Unlike the Internet users, the cyberbuyer focuses on the average online shopping habits of Malaysian society. The Table shows that 50 per cent of the shoppers hold higher management positions earning between RM1,501 and RM5,000 a month. Even more striking, almost 80 per cent of shoppers in this category have college degrees. The high number of higher income earners holding high employment positions shows that they have strong purchasing power. Besides, this they are also able to own a credit card as a means to shop on online. This is among the reasons why only 6 per cent of students participated in this category. Turning back to Table 6.26, clearly the bottom 40 per cent of Malaysians with a mean monthly income of RM865 recorded in 1999, will never have a chance to be a Malaysian online shopper.

**Table 6.30**  
**Malaysia Cyber buyer Profile,**  
**2000**

Age	Gender	Education	Occupation	Marital Status	Personal Monthly Income
26% 16 to 25	82% Male	78% hold Graduate degree, post graduate degree or Professional Certificate	48% are in professional or management Position	52% Single	22% earn less than RM1,500
44% 26 to 35	18% Female		6% are Students  11% are Business Owners	48% Married	40% earn between RM1,501-RM2,500  13% earn between RM2,501-RM5,000  25% earn more than RM5,000

Source: PIKOM (2000)

The growing inequality between the upper and lower income groups in the use of ICT can also be based on the affordability to use services such as Internet and telephone connection, as well as PC ownership. According to NITC (2000) based on the family financial expenditure pattern, one has to earn a household income of at least RM1,500 per month to be able to afford such services. Based from the Malaysian financial expenditure pattern below (Table 6.31), it shows that items (a) to (f) reflect the compulsory spending for an average Malaysian household. Meanwhile items (g) to (i) are considered optional needs; the purchase of ICT products and services such as TV, radio, computers, telephone etc. is assumed to be within the scope of the 17 per cent allocated to Malaysian goods services (NITC, 2000). This is based on the assumption that to own ICT products and services such as a computer, Internet service charges and Internet telephone charges, one needs to spend within the range of RM200 to RM250 per month<sup>27</sup>. Once again this indicates that the bottom 40

<sup>27</sup> Assumptions of affordability:

For a purchase of a PC with the Internet installation, the calculations are:

Hire purchase price : RM3,000  
Compound interest rate : 10%  
Repayment period : 2 years (24 months)

Monthly Installment for hire purchase of a PC : RM150  
Monthly Internet service charge : RM50



per cent of Malaysians with mean monthly household incomes of RM865 will be further marginalized. Based on the calculation of the disposable income for optional needs that falls within the 17 per cent of family expenditure as stated below, it is evident that the disposable income for the bottom 40 per cent of the population is only

**Table 6.31**  
**Typical Household Expenditure Pattern (RM) - (1999)**

a)	Food	22
b)	Beverages and Tobacco	2.2
c)	Clothing and Footwear	3.4
d)	Gross Rent, Fuel and Power	22.2
e)	Medical Care and Health Expenses	1.9
f)	Transport and Communication	19.0
g)	Furniture, Furnishing and household Equipment	5.3
h)	Recreation, Entertainment, Education and Cultural Services	5.9
i)	Miscellaneous Goods and Services	17.9
	Expenditure on food away from home	10.9
	Expenditure on beverages away from home	1.7
	Other miscellaneous goods and services	5.4
	<b>Average Monthly Expenditure Per Household (0-8)</b>	<b>1,631</b>

Source: Malaysia (2000:37)

about RM147 which is far too low to be able to own an ICT product and access the relevant services (Table 6.32). In contrast, those in the top 20 per cent of mean household incomes would have no difficulties, as the cost will only account for about 20 per cent of their disposable income under optional needs. For the middle 40 per cent, although the proportion accounted for nearly 70 per cent of their disposable income, which is a considerable amount for an ICT purchase, it is still considered marginal.

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Monthly Internet telephone charge	: RM50
Total	: RM250 (NITC, 2000)

Table 6.32

**Malaysian Disposable Income for Optional Needs<sup>(a)</sup>  
(1999)**

Top 20%	: RM1,066 (17% of RM6,268)
Middle 20%	: RM375 (17% of RM2,204)
Bottom 20%	: RM147 (17% of RM865)

(a) Calculated from Table 6.24 above on the Mean Household Income.

In summary, this means that those with a high-income level will have far more advantage in their use of ICTs as compared to lower income groups as mentioned by the evaluator below:

'Generally, the higher income level the more exposed you have to the ICT. The less the income level the less expose to ICT... Obviously, in Malaysia, the lower income group they will be far worst of course. I don't think they can even afford a dial-up. This is because in the new rates, they charged you by minutes. That itself will accumulate end-up paying quite substantial amount of phone bills. In addition, they have to pay access to the ISP. I don't think the lower income will be able to afford. Even if you look at the means of owning a computer by income, the scenario is even worst. Although we felt that those earning thousand of ringgits, they think that the computer are not as expensive as before. For the higher income groups obviously the price is not relatively as expensive as it was, but what about the lower income groups? Compared to what the Americans have to pay, the Americans can now get a Pentium 4 within 300 to 400 US dollars. Considering that the Americans earned about US\$2,000 to US3,000 per month, and that only how many per cent of their salary. Compared to what we have to pay, the cheapest celeron-based computer selling here is about RM1,500 and it took nearly one month of a fresh graduate salary... So there are many things seems to be not in our favour as far as equality of the accessibility of ICT concern, there are many hurdles that need to overcome especially those relating to income inequality in the country'.

(EV 3 - FOMCA)

Based on the interview with one of the implementers who is currently involved directly in making the Internet service available to the end users, he admitted that:

**'I think subscription rate today in Malaysia still one of the cheapest in the world. The rates differ based on the nature of service, level of service and type of service. Meaning, if you are looking on a dial-up service than you will get a rate of 2.5 cents per minute. If you are looking at the broadband, then the rates are RM88 on flat-rate basis. Basically this will affect consumer. Not many people can afford the current prices. For businesses the rate and those in the higher income group this rate is cheaper. For the higher middle income groups shouldn't be any problem. The only problem will on the lower middle income and below. Even though who have the income of RM5,000 a month especially for the family living in the urban centre such as Kuala Lumpur they might have a problem compared for those living let say in Alor Star where the standard of living is very low. If you put a cost of your house, your transport, cost of utility and cost of other family related requirements, then it become very difficult. The computer pricing is still not as cheap, the cheapest PC you are looking at RM1,5000, branded PC go as low as RM1,800. It taken nearly half of the average income of the lower middle and almost all from the low-income groups. Because the computer pricing are not being control by local entities but by foreign multinationals'.**

(IM 3 – TMNet Portal)

Realising these growing issues, the government through various Ministries and agencies has launched various important programmes such as a PC ownership scheme through the Employee Provident Fund (EPF), tax refunds for PC ownership and PC promotional events, as mentioned by one of the policy makers below:

**'Government do realised on the growing digital divide especially among the lower income groups. That is why the government are putting their best effort to make sure that those in the lower income group will continue to enjoy the ICTs development in the country. PC ownership through EPF, tax refundable for owning a computer and PC Fair among the effort taken by the government for such reasons. Even though the government has stopped the PC ownership through EPF scheme for certain reason, at least some of us has benefited from the programmes. It is hoped with such an effort it will further accelerate the use of ICTs among this groups'**

(PD 3 - NITC)

No doubt much effort was made by the government to overcome the growing digital divide between the high and low income groups, but what is annoying is that the effort does not really fit well with the lower income groups. For example in the tax refund for owning a computer, does not benefit a family with an income of RM2,000 a month as they are exempted from tax deduction. In what way can this group benefit from this programme? For that reason, the government introduced the PC ownership

through the EPF to allow easy ownership. From the scheme the contributors were allowed to withdraw their saving up to a maximum of RM3,500. Unfortunately, the scheme was scrapped in August 2002 due to the abuse of the scheme by creditors. It was reported that of the RM 2.2 billion withdrawn by 720,000 contributors, 66.5 per cent of it was misused under the scheme (Utusan Malaysia, 2002). Even the PC promotional events do not really meet the purpose of increasing PC ownership as one of the evaluator mentions:

'I used to go the PC Fair held every once a year. I think the basic idea is good as more affordable computer can be found there. But something that struck me is the price and location. About the price, it might be cheap for the middle income group and above but not for the lower income groups. No doubt the price was down, let say normal range computer from RM2,000 to RM1,200, but still I don't think the lower income groups can afford that. What is more important, about the location. As far as I know, since it first launched in 2000, the fair only being held at the strategic location such as in the major cities and urban areas. What I can see, the event is not more than tapping more profit rather than promoting social obligations'

(EV 3 - FOMCA)

From the above evidence it is clear that the more extensive the country's moves towards embarking on ICTs as a means to develop the economy, the more it experiences divisions in society and growing inequality. Unlike the experience of advanced capitalist societies such as the US who have a long established trend of growing inequality, the growth in income inequality in Malaysia is only recently visible. This is due to the fact that ICT development in the country can be seen as a recent phenomenon compared to those in advanced capitalist economies. But the most important consequence of this will be its impact on the government's effort in creating an economically just society. It was hoped that the society would unite behind this effort and be capable of creating its own unique Malaysian identity. But looking at the recent growth in the income inequality and class division, particularly among the Malays, as a result of ICT development, and despite of the failure of many of its policy implementations to reduce the gap, especially among the lower income groups, it is hard to see that the vision to create its own set of modernity and identity based on income equality will become a reality.

## 6.6 Concluding Remarks

This chapter has explored four major dimensions, 'ICT Infrastructure and Regional Implications', 'Gender and ICT Development', 'ICTs and Ethnic Participation' and 'ICTs and Class Division'. These four dimensions will help in our understanding of the relationship between democracy, inequality and its consequences for creating Malaysia's own national identity with regards to ICTs development in the country.

'ICT Infrastructure and Regional Implications' shows that there is a clear but uneven distribution of ICT infrastructure in Malaysia. Both telecommunication services and the electricity supply are still not well covered, the low percentage of telephone users coupled with the clear disparity of income especially in the east coast regions and those in Sabah and Sarawak are all likely to have implications for the use of ICTs. The evidence of the low numbers of people using the Internet in these regions further supports this argument.

As in the case of gender and its effect on ICT development in Malaysia the findings are showing a mixed results. Use of ICTs such as the Internet, currently demonstrate a highly visible gap but as is evident in many developed countries the trend is for this gap to narrow and eventually close. This can be seen through to the government's extensive effort to provide more equal access in education. Although there is still a clear disparity between genders with a lack of females attending courses related to IT, the growing number of women participating in labour force and their growing number holding high positions which will then impact upon their income, again suggests that the gap will narrow in the future. There are still issues such as those women who are not in labour force and an inability to close the gender gap in labour force participation, which is likely to persist into the next decade. It is therefore hard to suggest that the Internet gender gap will close in a short period of time.

In terms of 'ICTs and Class division' it is clear that there is growing evidence on class division in Malaysia particularly among the Malays. Like the experience of advanced capitalist societies such as US, the recent phenomenon in Malaysia can also be attributed to the emerging trend in the use of ICTs that has recast many of it

occupational structures, which has then had an impact upon the income division in the society. This would have similar consequences for the use of ICTs in the country.

Meanwhile in the case of ethnicity, there is clear evidence of a narrowing income gap between the ethnic groups in Malaysia, which can be expected to have an impact upon narrowing the gap in the use of ICTs. But the most important issues in this area are those related to language and accessibility. The low level of English usage and the lack of accessibility of ICTs particularly in the less developed, mostly Malay dominated areas, suggests that these consequences might contribute to the digital divide between ethnic groups in the country.

Using ICTs as the basis for deployment will help the vision to become a developed country in its own mould achievable. As was clear in Vision 2020 it is important for the country to remain uniquely Malaysian while keeping up with the progress that the world has made in every field. Ideally the effort is basically to promote and maintain social relationships while keeping abreast with the development of the global economy. But as the country is progressing, the issues pertaining to the digital divide, such as the increasing income gap, uneven distribution of ICT infrastructure and the variety of languages and cultures are slowing down the government's progress towards a united society. Under what circumstances can unification be enhanced if there is growing evidence that the society is continue to be torn apart?

As far as the policy pertaining to ICTs and Vision 2020 between democracy and equality is concerned, the findings show that there is an obvious policy contradiction. ICTs might play an important role in the country's economic growth, but the increasing inequality within society as a result of this development suggests that the effort to establish a developed country by 2020 would be in doubt. For Malaysia these are the unintended consequences of Vision 2020 as a result of ICT developments in the country. Although the consequences might somehow or other differs<sup>28</sup> from those in developed countries due to different socio-cultural

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<sup>28</sup> The example of this can be seen in the context of ethnicity in Malaysia. Unlike those in the developed countries where the ethnic gap continues to widen, in Malaysia the results are different. The ethnic gap in Malaysia is closing due to government's affirmative action to correct socioeconomic imbalances among the major ethnic groups. As in the case of ICTs, it is suggested that the growing

backgrounds, this may be the price that Malaysia has to pay. Most importantly these consequences would obviously have an impact upon the creation of Malaysian national identity and the achievement of the Vision 2020 programme itself. For this, let us now turn to the final analysis of this thesis namely the 'Democracy and Public Sphere' to understand the consequences of this to the establishment of own national identity.

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income gained by these groups' means that the use of ICTs among these major groups would also gain momentum.

# Chapter Seven

## Democracy and The Public Sphere

### 7.1 Introduction

ICT policy with respect to inequality in Malaysia is having mixed results. From the previous discussion it is obvious that the various development policies engaged in by the government for the last thirty years are crucial in determining the progress and achievement of its goal attainment of becoming a developed country by the year 2020.

Although the government have introduced greater participation by Malaysian society into the economic realm, the level of inequality among its citizenry is still unsatisfactory. Not only will this have consequences for developing a united Malaysian society, but also when it is translated into the means of creating a greater democratic society through the extensive use of ICTs the elements such as unity and national identity will once again become a major issue.

The development of the public sphere is important in order for 'citizens' to be able to participate fully in democratic process. As pointed out by Dahlgren (1991:2), the concept of the public sphere can be regarded as a normative reference point and as a 'visible indicator of our admittedly imperfect democracies'. Habermas (1989) indeed in his work has made a clear reference to the decay of the public sphere as a result of extensive interests of private entities in public discourse. He sees that this could be the problematic for organising open democratic expression in the public sphere.



Since the 1990s, many national and local governments have attempted to make certain kinds of electronic information widely available to the public via ICTs ostensibly with the aim of improving democratic communication. Also many make the argument that easier access to an electronically mediated public sphere has the fresh potential for creating autonomous expression. Joshua Meyrowitz (1985) for example has suggested that with newer media, new forms of human interaction in the context of multiple discussions groups are beginning to take place, which 'clouded the difference between stranger and friend' (Meyrowitz, 1985:36)

As far as the technologies are concerned, they are not happening instantly. According to Sclove, they are 'contingent social products' (Sclove, 1995:7). What he means is that the reasons for change has always been influenced and accompanied by the prevailing social structures, norms and beliefs. For example in the case of ICTs, while there is possibility of choosing other developments, ICTs are increasingly being 'cited as an emancipatory purposes as well as anti-democratic formations' (Malina, 1999:27)

The most interesting outcomes of this are certainly those related to problems of the use of ICTs as a commercial entity. The claimed that electronic commerce is growing, the worries is that the empowerment and democratic participation in the electronic public sphere would have its own consequences, since the worth of public sphere is very much dependence upon these factors.

This is based on the assumption that, in order for every level of society to participate actively in any democratic process particularly where the rapid development of new technologies is concerned, citizens should have the ability to access and use, as of right, any means of communication required for full democratic participation of a citizen. Golding (1990) for instance has made a remark on the notion of the current failure and structured deficiencies in the use of communication tools which has impacted upon the means of 'our democracy' that 'puts its citizen in blinkers' (Golding, 1990:100). With inequality among society still an issue in Malaysia, the most important question here is how this will affect the government's efforts to create greater democratic participation in society in response to issues of unity and national identity.

The following section sets out to explore the relationship between citizenship and ICTs as the basis of understanding their connection with inequalities and democracy in Malaysia. It is hoped through this exploration, to have a better understanding of the state's role in constructing 'a mature democratic society whose duty is to practice a form of mature consensual, community-oriented Malaysian democracy that can be a model for many developing countries' and a sense of common and shared destiny as mentioned in Vision 2020 (Malaysia, 1991b:2-4). As such it is essential to look into four important elements namely the cultural citizenship and digital divide, e-democracy and electronic government, the global media and Malaysia in particular cultures, and the virtual public sphere in order to understand fully the role of the government in promoting democracy in Malaysia.

## 7.2 Cultural Citizenship and the Digital Divide

Generally, the concept of cultural citizenship is divided between the two meanings of culture and citizenship. As in the meaning of 'culture' it rests upon the notion of mixed public and private institutions such as public museums and the media. Citizenship, on the other hand is usually associated with the idea that membership of a society has to be based on the principle of an equality of rights and obligations. While there has been a distinct separation between both notions, arguably there has been an increasing understanding that both the culture and citizenship should be linked together rather than be separated. For instance, Bryan Turner (1993) and Douglas Kellner (1995) concluded that it is important now to include the elements of cultural rights within respect for cultural diversity while being able to connect it to both the political and economic spheres. Meanwhile, the 'right to be different' (Rosaldo, 1994) and the 'right to consume' (Urry, 1995) such things as cultural goods and symbols should feature among the basis for growing understanding of cultural citizenship

Although it is essential to note the establishment of 'culture' and 'citizenship' or 'cultural citizenship' in the world at large, the actual dimensions of political and economic interest, such as the increasing divisions within a real society, should be open to further debate. Nick Stevenson (2001) for example identified 'the power to name, construct meaning and exert control over the flow of information within

contemporary societies as being one of the central structural divisions today', since 'culture is now a key site of contestation which forcefully brings questions of citizenship to the fore' (Stevenson, 2001:1-2). Indeed the growing thought on the force of globalisation and the rise of the free market system is that in many ways it is increasingly reducing the role of the state and therefore would have its own consequences for the relationship between citizenship and the nation-state. This is due to the fact that as we progress into the 21st century the notions of citizenship, its rights, democratic participation and duty are becoming more important than before (ibid:4).

Many would argue that the methods of democratic participation in the context of ICTs should provide the public with opportunities to obtain better information and so be able to participate actively in the any political discussion. Yet in reality this is not the case especially in the liberal protective democracies as mentioned by Held (1987). He notes a clear separation between the state's politics and the civil society particularly when the concentration of the state is more towards promoting private ownership for the development of a competitive market economy (Held, 1987:98-99). In such a situation, if ICT continues to provide the basis for private capital to monopolise information within the public sphere, what we can expect is an increasing gap between the rich and the poor in the civil society. Evidence that this is taking place already exists (Malina, 1999:28). Even under this scrutiny, T.H.Marshall's (1992) concept of citizenships as a 'full membership of a community' in terms of civil, political and social citizenship must also be questionable. Although Marshall managed to see the emerging tension between citizenship and capitalism, it is important to ask in what sense can people take advantage of freedom of speech, the right to participate in political power and vote, and the benefits of economic prosperity, if their access to the necessary information is being denied?

The advent of the global electronic communications systems such as ICTs and the commodification of information among others have had an impact upon the ways in which citizenship is commonly experienced. Golding (1990) for instance has raised the question of the implications for citizenship if a full participation in political communication is impossible due to socio-economic barriers. What he meant is that the increasing class divide in such areas as employment and income as well as the

denying of access to information were the twin barriers for citizen to have full participation in the democratic process (Golding, 1990:88-90). This is due to the growing body of thought, which argues that, the recent information and communication technologies (ICTs) have the ability to facilitate dialogue and deliberation amongst and between citizens and government, and even challenge the (re) invigorating democratic institutions. But once again it is important to note that issues lingering around the economic, political and even cultural realities, as suggested by Golding, should first be revealed before the hype surrounding 'digital democracy' can be further discussed. This is due to fact that, 'the potential of ICTs to facilitate "strong democracy" must be seriously questioned if people are systematically denied access on the basis of economic status, gender, geographic location, education attainment, and so on' (Hague and Loader, 1999:9).

As has been repeatedly mentioned, culturally Malaysia is a multiethnic, multicultural and multi-religious society. With a population of 24 million people, the varied composition of Malaysia's population remains one of its distinguishing features with the Malays, Chinese and Indians forming major ethnic groups. Of the total population, it is roughly divided into 65 per cent Muslim Malays, 26 per cent ethnic Chinese, of Buddhist, Christian and other beliefs, and 7.7 per cent ethnic Indians, mainly of the Hindu faith (Department of Statistics, Malaysia, 2002a). As for language, *bahasa* Malaysia, which was originally *bahsa Melayu* spoken by the Malay ethnic groups, is the national language and is spoken throughout the country. The majority of Malaysian can speak the language whatever their background. For the Chinese, they speak one of a variety of Chinese dialects such as Cantonese, Hakka, Hokkien, Mandarin and Min. The Indian speak Hindi or Tamil. Many other indigenous languages are also spoken in Sabah and Sarawak.

Historically, the multiethnic and multicultural society in Malaysia developed largely during the colonial period. No doubt, there has been a long history of interaction among these ethnic groups, but still the assimilation and accommodation of a common culture seems to be rather uncommon as each group continues to maintain its own distinct ethnic and cultural identity (Leete 1996:47; Brown, 1995:545). This can be clearly seen through language, religion, marriage and lifestyle. Unlike in the liberal tradition of citizenship that rests upon an abstract appeal of universalism such

as assimilation and accommodation of ethnic and minority groups promoted heavily in many Western liberal democracies, Malaysia is rather different. Instead, Malaysia's encouragement of diversity in religious and cultural practices is clear and of long standing.

Although this distinguishing feature of multiculturalism continues to be maintained in Malaysia, historical factors such as the bloody racial riots of 1969 started to make the government see the importance of uniting the people into one common set of Malaysian ideologies spurred by the *rukun negara*. Adopted under five principles of pillars, this attempt to achieve national unity is based on certain concepts, which are universal and acceptable to all citizens, regardless of ethnic origin or religious affiliation. The denial of citizenship rights through such thing as the socio-economic imbalances of major ethnic groups was the reason for the adoption of the new multicultural ideal in Malaysia.

As in evident from the above discussion, it was clear that the progress of the Malaysian economy for the past thirty years has somehow mitigated the ethnic differences thus maintaining prosperity and unity among her people. But as the country moves towards globalisation, liberalisation and greater promotion of ICTs, the issue of unity, cultural identity and ostensibly the creation of national identity at its own pace has become an important issue both for policy and its implementation. This can be clearly seen under Vision 2020. Using the Malaysian Ideology imbued strongly in *rukun negara* as its basis for continuation, Vision 2020 also bases its policy directions towards becoming a developed country on Malaysian unity and cultural citizenship rights and participation. It was clearly stated that government efforts will continue to establish 'a mature, liberal and tolerant Malaysian society in which Malaysians of all colours and creed are free to practise and profess their customs, cultures and religious beliefs and yet feel that they belong to one nation' (Malaysia, 1991-2-4). Using the elements of an economically just society, what is hoped is that both its cultural citizenship rights and the creation of a national identity based upon the notion of one *Bangsa Malaysia* would further be enhanced (Mahathir, 2000d:158-160 –in *Managing the Malaysian Economy*).

Unlike during the NEP and NDP periods, the policy establishment under the umbrella of Vision 2020 was seen as being more challenging than before. This is based on the notion that in the process of globalisation coupled with the reducing role of the nation state, the relationship between cultural and citizenship participation is becoming more intense (Stevenson, 2001). Particularly under the great promotion of ICTs, the issues such as the digital divide that may eventually deny the democratic rights of the citizenry is also becoming a major concern for many of today's governments. As for Malaysia, it is even more important especially when the search for its own national identity has become the foundation of its participation in the globalised world.

With regards to ICT development in Malaysia, no doubt the country is experiencing the exponential growth in the number of Internet users, but as revealed from the previous findings the inequalities, particularly those related to the digital divide are leading to a mixed results. As in the case of regions, there was an obvious division in the ICT infrastructure, access and usage between rural and urban. The concentration seems to be high in cities and commercial areas such as in Selangor, Kuala Lumpur, Johor Bahru and Pulau Pinang, leaving other states behind. In the case of gender, there were about 70 per cent of men who use the Internet in Malaysia compared to only 30 per cent of women. Relatively, most of the users tend to be single, highly educated, and between the ages of 16 and 35 with a monthly income of between RM1,000 to RM3,000. In terms of usage, generally men tend to use the Internet more frequently than women. As most of the women use the Internet for chatting and emailing, use it in ways, which are considered to be more "technology savvy". Except for gender, where the gap is closing over time, other elements such as ethnic and class composition are proving a mixed blessing. For example in the case of ethnic groups, although the gaps in terms of income between the Malays and the Chinese for instance are narrowing, the questions of the use of language and inter-class division are beginning to emerge.

As in the case of class and inter-class relationship in Malaysia, it is obvious that Malaysian society is increasingly becoming a capitalist society. Especially among the Malays there has been a clear division between the wealthy Malays and poor Malays. For example, while the top 20 per cent of rich Malays are gaining a mean household income of RM4,855 per month, it was only about RM742 for the bottom 40 per cent,

the lower Malay groups. What this is suggesting is that the changing class structure in the context of Malaysian society is highly correlated with the state's moves towards highly skilled industries and the extensive use of ICT. If this is the case, it seems highly likely that Malaysia will continue to experience a growing inter-class polarisation, which will eventually impact upon the use of and access to ICTs as in the experience of many developed countries.

Obviously these financial disparities will have impact on the affordability of ICT ownership in Malaysia. This is based on the assumptions that, to have a personal computer and connectivity to the Internet, one needs to have a disposable income of not less than RM250 a month or a monthly income of RM1,500 a month. This suggests the possibility of 40 per cent of Chinese and Indians being marginalized from the development of ICT in the country and for the Malays the situation would be even worse. Compared to the Chinese and Indians, the mean household income for the bottom 40 per cent of Malays was very much lower than other two community groups (refer to Table 6.19).

But the most important consequence of this would be for the establishment of the policy itself. The growing digital divide within society would have its implications for citizenship rights. What can be argued is that the limited access as a result of growing income inequality, especially among the Malays, affecting the elements of democratic participation such as freedom of speech and the right to participate in political power and vote would also have staggering effects. Not only will it undermine the establishment of a mature, liberal and tolerant society, more importantly it will also undermine the creation of a distinctive Malaysian national identity. This is based on the argument made by Vision 2020 that, in order for full citizenship participation in cultural representation, there should be an equal and fair distribution of both economic and social attainments. It seems that this is not really the case here. No doubt for the past three decades, Malaysia has witnessed a significant growth in its economic attainment such as greater integration into the global economy and high dependency on FDI for instance, but the growing digital divide within the country suggesting that the government's effort to promote the democratisation process is still questionable. It is clear that for the past few years there has been a growing effort by the government to promote e-democracy through

the engagement of ICTs and the implementation of electronic government, but there are tensions between trying to encourage democracy whilst having a strong focus on economic growth. For a further consideration of this let us now turn to the discussion of e-democracy and electronic government in Malaysia.

### **7.3 E-Democracy and Electronic Government**

There has been a widespread belief and hope that the recent development in information communication technologies (ICTs) will contribute to revitalizing the role of governments in representative democracies, facilitating two-way communication between the citizen and the state. It is hoped that it will help to further mobilize social engagement and enrich deliberative democracy. Becker (1998), for instance, in his optimistic view claimed that the potential for new channels of communication and its efficiency would allow a 'quantum leap in the field of democratic politics' (Becker, 1998:343). While others suggest that through ICTs, the effectiveness of government policy and public participation will be further strengthened and enhanced (Fountain, 2002:117). These views represent the notion that government in the post-cold-war era are making enormous initiatives to find ways and means for their citizens to become actively involved in any policy and political discussion via public debates in cyberspace.

This is based on the assumption that e-governance holds the potential to effectively deliver many forms of public services ranging from the licensing of motor vehicles to health care and even connecting people to electoral registration and online voting (Dutton, 1999:198). More importantly, the ability of the Internet to disseminate information about the government's operation and policy development could provide the mechanism for public feedback as well as the citizen's participation in government decision-making. This has contributed to the notion of 'open government', which was earlier seen as being more hierarchical and bureaucratic (Lawson, 1998:7; Frissen, 1997:114-115).

Further, there is also a growing concern about the ability of the digital technologies to transcend government departments and create an organization that can facilitate



greater public participation by giving access to policymakers and the government decision-making process. Nixon and Johansson (1999) for example had voiced their concern on this issue. What they mentioned was that there have been very few opportunities for a 'bottom-up' interaction and discursive deliberation between the individual citizen and decision makers in contrast to the promotion of the 'top-down' model (Nixon and Johansson, 1999:135) found in many of the increasing number of government websites. While the study by OECD on e-governance in eight developed nations during the period 1996-1997 has concluded that the use of new technologies such as the Internet to further enhance the public's interaction with and participation in government and even to expand the government's transparency in their decision-making has failed. What the study revealed is that, although the use of emails has become an important element in disseminating information, it is the traditional methods and channels such as one-to-one interaction, informal meetings, letters and press releases that continue to dominate the two-way interaction between individuals and policy makers. There is a doubt about the ways the government handles information gathering for policy analysis (OECD, 1999), which if this continues to be the case, even in the industrialised nations, what will then be the future of those in the developing societies?

In fact the study by Pippa Norris (2001) on e-governance and the rising doubts about its future and implementation is a most promising and compelling one. Empirically, from the study, more than 14,000 government agencies were found online in the middle of 2000 compared to only 2,941 such websites in 1999. Drawing from the database of more than 105 nations around the world, the remarkable increase of such websites seems very convincing given that the World Wide Web is a recent phenomenon. As predicted, there has been a sharp contrast in the spread of e-governance between developing and industrialised nations. These countries in Western Europe and North America continue to be in the forefront of this development, while countries such as those in the Middle East and Sub-Saharan Africa, which are socio-economically backward, continue to lag behind. Surprisingly countries like India, Brazil, Mexico, Taiwan and Malaysia are among those at the top of the list having many government websites, although connectivity remains low in many of these nations. It has been suggested that the move towards digital government by these countries was due to their decentralized political systems that

bring together their priorities for socio-economic development through their telecommunication strategies (Norris, 2001:115-118).

Essentially, the effort by many governments to increase accessibility and facilitate better transparency via the digital technologies for their individual citizens is becoming more vital. Many of the government website found were integrated to provide centralised information for easier transaction and searchable databases. In the United Kingdom for instance, the website *open.gov.uk* is a fine example of this. The “one-stop centre” approach of the website aims to provide the linkages of information between government departments to allow better accessibility among its citizens. In fact, compared to the earlier conventional dissemination of information such as by annual reports and governmental pamphlets, the level of information transparency of the government function through the digital medium as mentioned by Norris is more striking than before. But she noted from that there is still a lack of interactivity and ‘bottom-up’ mechanisms in many of the government websites. Instead, the maintenance of a ‘top-down’ approach is no more than the replication of an older version of information dissemination using a different form of channel, which is far from the claim that ICTs is reinventing the government itself (ibid:122).

As such it is clear that the lack of functional relationship in many of the government websites suggests that governments are acting more towards providing the relationship between the service provider and its customer as the means to help run the bureaucratic state effectively. It might be argued that ‘e-governance may help to strengthen democratisation, but the process of democratisation does not appear to be its primary cause’ (ibid:126). Moreover, the issue of the limited access to information, the digital divide, and the widening polarisation of society that would result eventually deny the citizens’ guaranteed communicative rights. This would make the process of democracy far from satisfying (Golding, 1990). If this continues to be the case, obviously the democratisation process remains open for further debate. Under such circumstances what will then be the case for Malaysia in its engagement with its future democratisation process through its active promotion of e-governance? More importantly, how will this translate into the development of a mature democratic society and later to have an impact upon the establishment of its own set of identity? As it is clear under the development of ICTs spelled out in Vision 2020

that the effort to achieve developed status by 2020 should be accompanied by the creation of a more matured democratic society through the means of information accessibility and the democratisation process. The clear example of this can be seen through the promotion of e-government with which the government has engaged recently. It is hoped that the ability to create a well-informed society and its participation in e-democracy, will further unify the people and thus allowing a national identity to emerge.

The notion to effectively and efficiently improve government operations has led to the introduction of e-government in Malaysia. Being one of the MSC flagship applications, it is aimed at 'fundamentally changing how the government operates and implies a new set of responsibilities for civil servants, businesses and the people' (Mahathir, 1998:68). It is hoped that, through the extensive engagement of ICTs, the delivery service between the government and the people will be more effective and efficient, whilst enabling the government to be more responsive to the needs of its citizens. Simultaneously, the flow and speed of information, along with the policy development, coordination and enforcement within the government will be further improved. It will also play an important role in catalysing the 'development of MSC, as well as furthering the social, political and economic agenda under vision 2020' (ibid:67-68).

There are seven electronic government applications introduced, namely; *E-Public Services (e-PS)*, *Electronic Procurement (e-P)*, *Generic Office Environment (GOE)*, *Human Resources Management Information System (HRMIS)*, *Project Monitoring System (PMS)*, *Electronic Labour Exchange (ELX)* and *Electronic Government-Electronic Accountant Integration (EG-EA)*.

The *e-PS* will be the 'one-stop window' for the public to access public services electronically. It is a website for all Malaysians that presents a directory of public services to simplify and assist the people in carrying out transactions with the government such as getting the relevant information and downloading, free of charge, the required application forms. Currently there are more than 100 services listed in the services directory ranging from driver and vehicle registration licensing through education and pre-school matters to land and property transactions (MAMPU, 2003a).

The fine example of this is the “Malaysian Civil Service Link” or MCSL. Maintained by the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU), MCSL is a window to Malaysian Government information available on the Internet. Accessible through ‘<http://mscl.mampu.gov.my>’, the website listed all the government websites at the Federal and State level. Users can visit any of these websites by selecting the name of the agency displayed. There is a similar list of the same agencies that can also be obtained through the Agencies index by using the search facility. The address and contact number for each Ministry and State Government are also available to facilitate visitors establishing rapid contact.

Unlike the *e-PS* which is aimed more towards providing accessibility and transparency to the public, the implementation of *e-P*, *GOE*, *HRMIS*, *PMS*, *ELX* and *EG-AG* applications is to enhance better integration within the public sector and simultaneously improve productivity hence changing the way the government conducts business. For example in the *HRMIS*, the application will be using a single interface in order to provide an integrated environment for government employees by using “sharing of services” across agencies, commonly referred to as the *Shared Services Outfit (SSO)*. Meanwhile in the *e-P* application, the aim is to transform the current procurement system and enable the government to become a “Smart Buyer” through fast and cost saving delivery (MAMPU,2003b:4). It is hoped that the suppliers, both large and small, will gain extra benefit more from the transparency created under the new system. Significantly, it is also hoped that the widespread opportunities to centralise, standardise and consolidate IT support will bring even greater benefits to the government and its potential customers (Mahathir, 1998:70).

Although it is not the intention of this study to map out the number of government websites available online, but judging from the effort made by the government since 1998, it is essential to note the enormous increase in the number of government websites. Most importantly the level of transparency in many of the government and public sector agencies using a website to publish and disseminate official information is widely acknowledge. Based on the criteria suggested by Norris for the informational transparency and interactivity of the websites using indicators such as site ownership, contact details, organisational information and the freshness of updated material, opportunities for input and provision of links, most of the

government websites in Malaysia are well organised. By browsing through the MCSL links for example, the 'one-stop window' approach taken by the government is to allow citizens to gain multiple information from different institutions, ministries and agencies. Most of the information on these websites has been classified and organised by policy sector. For example in the MAMPU website, we can easily find many of the government policies regarding the various approaches taken by the government to further modernise the public sector agencies. The policies on and development of e-government, ICT strategic policy and security were among the information available on this website. Meanwhile in the website for the Prime Minister's Office, the user will be able to obtain information regarding detailed government policy from NEP to Vision 2020 and that related to macro economic development such as the short, medium and long term plans.

Judging from these developments, it is essential to say that the government is making enormous progress. The level of transparency is coming to dominate many of the government and public agencies' websites. But yet what is lacking is the communication interactivity mechanism. As usual the "top-down" approach is widely used by many of the departments for greater dissemination of information. There is little opportunity for the public to communicate directly to the policy-makers or to establish two-way communication. There is a gigantic amount of information on official reports, strategic issues, not to mention those related to organisational structures such as mission statements and activity. One might argue that this approach towards paperless information exchange and online transactions contributes to the improvement of services, enabling greater access to more convenient, more responsive, higher quality and potentially less expensive government services and to a lesser extent open up into more towards democratic politics, but in reality, it helps the government to run its bureaucratic state more efficiently. Obviously, the approach is no more than the replication of the older version of government annual reports and pamphlets via different channels and media. ✓

But the most important element that must not be ignored is the level of connectivity within Malaysia itself. Although a superficial examination of the above might suggest that e-government in Malaysia is progressing well, looking at the widening digital divide that lies within the broader patterns of socio-economic stratification in

the country will suggest something rather different. Since connectivity remains the highest priority for the success of e-government, obviously those in the affluent and high connectivity areas and those in the higher income groups will be advantaged in accessing such opportunities. In fact to obtain services such as downloading official forms needs some level of technological knowledge. Even the effort to connect to some of the government services provided to the general public is far from satisfactory. For example facilities for the online application for a businesses permit, a property and land transaction or the simple renting of a public facility are applicable in not more than three constituencies out of the hundreds of constituencies which exist in Malaysia (MAMPU, 2003c). Under what circumstances can e-government flourish if connectivity and the effort to connect to its wider citizens still remain the major issue? With regards to this, one of the evaluators mentions that:

'The idea of electronic government is good. Not before the development of ICTs, where many of the government policy and documentations were hardly accessible. But with ICTs and Internet, more and more of us now can easily get to access to the government latest policies and projects. This is good for those who can access to the Internet, but then what about those without one? ... Without fair distribution of accessibility, I think the e-government and their promotion towards better democracy in Malaysia will be meaningless'

(EV 2 - Prof. Hairudin Harun)

More importantly the meaning of this situation for democracy needs to be explored. Although information transparency is important in building confidence in the electoral process from both the government and competing parties, judging from the government websites alone the move towards reinventing government and transforming it into a direct democracy has some way to go (Norris, 2001:129). This is based on the understanding that, for the democracy to be well represented it needs a two-way interaction between the political leaders and potential voters. The prominent 'top-down' approach in many government's websites, including those in Malaysia, suggests that it fails to advocate 'direct democracy' through the potential use of digital technologies. Moreover, the continuous denial of the citizens' guaranteed communicative rights by reason of the socio-economic divide in Internet access could further accelerate to the notions. For Malaysia these combined effects will have consequences for the establishment of a mature democratic society and the creation of

its own national identity. To further discuss on this issue, let us now turn to the rise of the global media and its relationship to Malaysia.

#### 7.4 Global Media and Malaysia

The discourse of cultural domination by one culture over the others, such as the domination of the West over the rest of the world, the core over the periphery, and capitalism over anything else, have been around in academic circles since the late 1960s. Known as 'cultural imperialism', the thesis has been highly criticised and became less prominent, in the 1990s than it was during its early years. However, the emerging forces of globalisation and the rising issue of the interaction between global and local cultures has made the centrality of the issue increasingly relevant to the sensitivity of late twentieth century societies (Hall, 1991:27; Robertson, 1995:38-39). The question whether we are experiencing a single hegemonic, 'homogenized', global culture or an emerging process of cultural mixing and hybridisation has become to dominate the recent scholarly debate.

The rise of media conglomerates due to mergers, consolidation and the commodification effects among other factors has contributed to the growing notion of cultural globalisation. Martin Woollacoot of the Guardian, for example, wrote on the issue of the merger between Disney Corporation and ABC in 1995, which involved the issues of both cultural imperialism and globalisation (Tomlinson, 1999:80). The American Marxist, Herbert I. Schiller (1976) building from his original thesis of cultural imperialism in the late 1960s has subsequently recognized the continued domination of transnational corporations through their political-economic power and global reach. Being highly critical of the dominant power of American capitalism as the core of a world capitalist system, Schiller sees the expansion of U.S media and cultural products as part of the tactics to dominate the peripheral developing regions. But his most particular concern is the nature of the distribution of commercialised media products ranging from international advertising agencies to technology and the values implicit in TV programs. He also attacks the idea of the 'free flow of information' such as that in the news, media content and even in the hardware as part of its strategy to simply over-rule the weaker countries in a 'laissez-faire' market.

Although Schiller has been heavily criticised for his rather loose empirical base<sup>29</sup>, his prime concern about the global capitalist culture and commodification elements should be taken seriously. Tomlinson, for example has voiced his agreement by saying that 'there is no doubt that the tendency towards commodification of cultural experience in modern societies is a highly significant one' (Tomlinson, 1999:83).

Almost parallel to Schiller's thesis is an interesting work by Herman and McChesney (1997). Like Schiller, the focus of their arguments also tends to rest upon the transnational media corporations as global corporate players. Backed by the hard evidence of empirical research, they manage to point out that the global information flow is being owned and controlled within the parameters of a small numbers of transnational corporate players such as Disney, News Corporation, Time Warner and Viacom. Obviously the consequences of this will have not only economic and political interest but may also lead to 'the widespread acceptance of a global corporate ideology' (Herman and McChesney, 1997:35). But the important notion derived from their argument is that the penetration of these transnational media corporations, particularly in the developing societies will create a new form of colonialism or what they term 'neo-imperialism' (ibid:154).

Although both Schiller and Herman and McChesney made a very strong case, when the comparison between the traditional media, such as TV and film, and the newer ones such as satellite television and the Internet for example is made, it further opens up into the debate. Unlike satellite T.V and the Internet, the element of censorship in the traditional media is highly significant. For example in the experience of Malaysia, the religious and cultural sensitivity in the country has made the government impose strict regulation on censorship, limitation of airtime of foreign-made TV programmes and advertisement content for broadcasting media, particularly for the government-owned media. In the production of TV advertisement for instance, the government

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<sup>29</sup> Look for instance at work by Jeremy Tunstall (1977) on his book entitled: 'The Media Are American'. He argues that the modern mass media are essentially 'American'. This is based on the understanding that most of the media technologies originated in United States before they eventually diffused and became extensively used in other parts of the world. He continues to mention that the concentration of Schiller's figures on the high volume of American TV exports in the mid-1960s were explicitly unreliable as he does not take into account the changes in American influence. Meanwhile Schiller's failure in recognising the influence of European nations such as Britain, Belgium, Portugal and Netherlands on other nation's media system was seen as a weakness.



has imposed a 'Made in Malaysia' policy by banning the foreign images in advertisement, which includes both actors and places (Azizul, 1999:59). This means that any foreign advertisement has to undergo a reproduction stage using local talent and locations. Meanwhile in TV broadcasting, besides the continuous censoring of images such as 'kissing', the government through, the Ministry of Information in 1997, imposed a 30 per cent maximum limit on foreign-made TV programmes for all TV stations. The banning of the film "Prince of Egypt" was another example of the government's sensitivity to the religious and cultural values in Malaysia since, in Islam, it is forbidden to show any of the prophet's face.

The need to further develop the economy and its liberalising process has indeed changed the way the media is being portrayed in Malaysia. It is obvious that the deregulation of broadcasting media in the late 1980s has had socio-cultural implications for the country. The government control of the broadcasting media such as TV and radio since independence was considerable. However, the hunger for more choice of TV programmes and the uncontrollable importation of uncensored video movies has forced the government to liberalise the industry. As a result, the first private television station, known as TV3, was launched in 1985 followed by Metrovision, NTV7 followed by first cable TV in later years. Due to the elements of competition, the government has slightly loosened their control by permitting more foreign programmes to be aired on private television but they must still abide by all the rules and regulations laid down by the government with regards to censorship (NST, 1987)

But the introduction of new Telecommunication Act in 1994 has changed many rules concerning censorship elements in Malaysia. The launching of Malaysia's first satellite into space in 1995 has marked the beginning of the use of satellite dishes, which were earlier highly prohibited. Suddenly, the public has more choices. Although the concern about the issue of cultural imperialism was not as bad for the terrestrial media, the worries were greater for satellite TV. Previously viewers had only a few selected channels to watch but now they have more than 50 TV channels ranging from top international programmes such as CNN International, CNBC, ABN, Discovery, ESPN, Cartoon Network, HBO and Star Movies to local Channels catering for Chinese and Indians viewers. The ability to transmit directly to its users through

the concept of "Direct-To-User" or DTU, the introduction of satellite TV in Malaysia has become highly debated issue among politicians and academics. Among the most discussed issues was the apparently unstoppable manifestation of foreign culture such as those from the West that might have a negative impact on moral values, especially for the younger generation in Malaysia (Baharuddin A., 1997:19).

The elements of Western influence in local cultural identity has been a long-standing issue in Malaysia. Some groups such as Dewan Bahasa dan Pustaka (DBP), the Consumer Association and those engaged in cultural activities have voiced their concern on the issue. What they feel is that ethnic identities in Malaysia have been homogenized by Western influence and are being threatened by it (Utusan Malaysia, 1997). Also Islamic organisations such as the Selangor Islamic Religious Affairs Organisation continuously criticise the media promoting the Western lifestyles in their imported Western programmes (Harian Metro,1998). Although Malaysia has a strong cultural establishment, the presence of Western influence and images ranging from language and music to goods and services in the Malaysia media is undeniable. For example in dress, even though the Malaysian national clothing is strongly associated with every ethnic group, Western dress is widely accepted and preference for it is increasing. The influence of Western music, such as Rock is coming to dominate the music scene in the country. But most criticisms of Western influence on music were mainly about the performers' dress, their performance on stage, the lyrics and their videos are seen as not promoting a healthy and positive values. Meanwhile the expansion of Western fast food, particularly from America such as McDonalds, Pizza Hut, Coca Cola, is spreading in all cities and towns and even in the rural areas (Azizul, 1999:88-90).

No doubt Western influence is increasingly capturing many spheres of Malaysian life, but it is difficult to admit that a linear or direct cultural imposition from the Western world is dominating. Indeed the advance of globalisation has also brought along the notion of cultural mixing and hybridisation (see for instance García Canclini, 1995). In Malaysia, while there has been an increase in the momentum of establishing Western media products such as satellite TV channels, there is also high movement and penetration of other media products from Hong Kong, Taiwan and India. The mixing and adaptation of cultural elements from these countries in locally made

programmes is noticeable. For example in the Malay *silat*<sup>30</sup> movie, there has been an increasing use of “kung-fu” style, which was originally promoted through Hong Kong and Taiwanese made films. While Indian songs through its movies have a very strong influence on the melody of many of Malay songs. These are a few examples of how cultural mixing is emerging as a result of globalisation and its consequences to national identity. As mentioned by Michael Richards (2000:29) that besides ‘stability, firmness and predictability of national, it is itself being challenged, partly by the demise of nation-state, and mainly by the expansion and influence of global media’.

The establishment of media conglomerates through satellite penetration is undeniable and arguments made by both Schiller and Herman and McChesney seems very relevant here. But the most interesting question is how will this relate to the emerging new media such as the Internet and the World Wide Web? Unlike the traditional media, the Internet has a high possibility not to be censored. This is the case in Malaysia where Section 3 of the Communications and Multimedia Act clearly prohibits any form of Internet censorship except for defamatory and false information provided under section 233 of the Act, which allows legal action to be taken. Moreover, the censorship prohibition is built into the Bill of Guarantees for the development of the MSC (Utusan Online, 2000; Mahathir, 1998:51). The total diversification of government policy concerning censorship with regards to the Internet obviously has to do with the policy concerning the establishment of a mature democratic society heavily promoted through Vision 2020. It is hoped that this freedom will allow society to be more exposed to global information and knowledge in order to prepare the nation to join the information society, whilst helping the government to realise its vision of becoming a developed country by 2020 (Mahathir, 2000d:162). An interview with the Ministry concerns, confirms this:

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<sup>30</sup> Unlike the Hong Kong and Taiwan “kung-fu” movies which normally use long swords and their acrobatic ability, the Malay *silat* is a form of traditional self-defence that uses short knives known as *keris* and are very unlikely to have the ability to fly from one tree to another (such as the images portrayed in the Hong Kong movie, “Crouching Tiger Hidden Dragon”)

**'As for the Internet, it is clear there will be no censorship. Not only it is clearly stated on the Communication and Multimedia Act and on the bill of guarantees of the MSC, even the Prime Minister has given specific instructions that there will be no censorship on the Internet. That is the position of the government. The reason simply to promote discerning use of Internet services for the good of society'**

**(PD 1 - MECM)**

But the most important to this is the relationship between cultural domination and maintaining national identity. Clearly stated in Vision 2020 for the promotion of a mature, democratic society, the policy of trying to ensure a diverse culture and eventually the creation of Malaysia's own national identity continues to be well preserved (Mahathir, 2000d:158-159). But the spread of American/global media conglomerate and their domination of the global media through the World Wide Web are becoming enormous and unstoppable. Although in Malaysia it is very early to predict that cultural domination through the Internet will take place and what the implications will be for the maintenance of national cultures and identity, the experience of satellite TV and the establishment of global products and services point to an emerging hybridisation of culture in Malaysia. Obviously the use of the World Wide Web by transnational media conglomerates will further accelerate these developments. This is supported by the interview with one of the evaluators who mentions that:

**'Like radio and television, ICTs is a continuation of colonialism, it is a continuation of cultural domination. In other words, who has the power and authority to control the technology, controls the content...ICTs itself a dominating tools that creates colonialism. It is a technology of colonialism. If ICTs a technology of colonialism, then it covers all aspects of life, because the basis of ICTs is epistemology and when that happen what will transform? Intellectual transformation would follow by cultural transformation, political transformation, economic transformation and it permeates weaker cultures. So when we talking about Malaysia and the Vision 2020, I doubt their effort to embark on their own national identity with regards to ICTs is likely to be emerged'**

**(EV 1 – Associate Prof. Ahmad Murad Merican)**

One important consequence would be for the establishment of national identity and the contradiction posed by the policy itself. On one hand the government is trying to be democratic by providing and allowing its citizens to have their rights to access and communicate, but on the other hand the difficulty of censorship would create a tense

relationship with its Vision 2020 aim for the creation of its own national identity. Under what circumstances the national identity will emerge if this continues to be the case in Malaysia is not clear. Indeed the next discussion on the difficulty to control and censor the emerging new media such as the Internet is broadening the discussion about democracy and the public sphere in Malaysia.

### 7.5 Virtual Public Sphere

In Malaysia, the government control on media is well established. The existing acts such as the Sedition Act, 1948, the Defamation Act, 1957 and the Printing Presses and Publications Act, 1948 were among the privileges enjoyed by the government since independence to extend their control and ownership of broadcasting networks and leading newspapers. The government appointment of editors both in leading newspapers and private television networks and their connection to these corporations (Gomez, 1990:178) were among the examples of such constraints. The reason for imposing such control on the media is clear. It is hoped through this means, that the media will be responsible for helping the government in promoting national development and integration into a multi-ethnic society for the purpose of deterring ethnic tension. Any material that is considered “sensitive” and could undermine the position of the ruling government published by any individual or opposition party will be liable under such Acts. For example, prior to the 1999 Malaysian general election, PAS newspaper was banned by the government from having its normal circulation to the public using the Printing Presses and Publications Act, 1948 due to the government’s disagreement with many of its contents.

The growing understanding of the use of the Internet as an alternative channel by radical groups and political protestors for instance, has received it an enormous boost due its ability to minimise bureaucratic intervention at both local and international level (Kline, 2000). Downey and Fenton (2003) have noted how the Internet plays a crucial role in providing ‘a way not only of communicating with supporters, but also the potential to reach out beyond the ‘radical ghetto’ both directly (disintermediation) and indirectly, through influencing the mass media’ (Downey and Fenton, 2003:198). What they meant is that the extensive use of the Internet by radical groups, both Left and Right, has provided a new basis for organisational protest constructed in the form

of 'virtual counter-public sphere'. It is hoped through this, that the newer media such the Internet will become the centre of public opinion particularly those from the radical groups who have been traditionally excluded from and marginalized by the mainstream media (ibid:98-99). As such, will the use of the Internet by individuals and groups who were once marginalized from the traditional mass media contribute to the emergence of a counter public sphere in Malaysia or could it just be a virtual public sphere?

It was clear in Vision 2020 that, in order for the government to realise its vision to become a developed country by 2020, it is important to develop a mature democratic society, practising a form of mature consensual, community-oriented, Malaysian democracy that can be the model for many developing countries' (Malaysia, 1991b). In the context of ICT development in Malaysia, the example of this can be seen through the agreement of to not censor Internet content while at the same encouraging the society to make full use of the medium, no matter what their political beliefs. But the most interesting aspect of this is to consider under what circumstances can this further contribute to democracy in Malaysia and, more importantly, its implications for the creation of Malaysian national identity.

For Malaysia, the 1999 Malaysian general election marked the beginning of the extensive use of the Internet by radical groups and opposition political parties. In Malaysia, not only is the society is divided culturally and politically the country has also very distinct political parties representing every cultural group. The government is made up of 14 coalition parties under the banner of *Barisan Nasional* (BN) led by UMNO, MCA, and MIC. The rest of the parties are the combination of small and medium parties which is important in strengthening the coalition government. As for the opposition, the group comprises the PAS (Pan-Islamic Party), DAP (Democratic Action Party), GERAKAN (People's Movement Party) and KeAdilan (Justice). Except for PAS, all other opposition parties are opened to all Malaysian citizens regardless of their religion and cultural identity. As for PAS, it is the party devoted to building an Islamic state for the sake of the Muslim community, which a majority in the country. Like the BN, the opposition also combine among themselves to form what they call the *Barisan Alternatif* (Alternative Movement or BA).

Compared to 1995 and the previous Malaysian general election, the general election which was held in 1999 was the most challenging one. The sacking of ex-Deputy Prime Minister, Datuk Seri Anwar Ibrahim, who was accused of power and sexual abuse, was among the important factors, which saw the government struggling for a two-thirds majority. It was noted that this scenario had further fragmented the unity among the Malay community where it was estimated about 70 per cent of Malays voted against UMNO during the election (see for instance Kamaruddin Jaafar, 2000:27). But the interesting phenomenon, which emerged during the political campaign before the election, was the extensive use of the Internet by voters to search for more information about this situation. This information was normally overshadowed by the government's political agenda and propaganda in the mainstream media.

For example, the study conducted by Baharuddin A. et.al (2000) on the 'Role and Influence of The Internet on Voters During the 1999 Malaysian General Election', found that there were about 52 political websites available prior to the election. Besides the existing government's political websites such as *Barisan Nasional*, UMNO and MCA, there emerged new political websites such as the website for the KeAdilan Party and other related websites such as *Laman Reformasi* (Reformation website), *Mahazalim* and *Mahafiraun*. Based on this study, *Laman Reformasi* (Reformation Website)<sup>31</sup> was the most popular website based on the number of visits (Table 7.1). The second most popular website judged on the same basis was the *Harakah Online* (PAS online newspaper), followed by SPR (Suruhanjaya Pilihanraya or Election Commission), a website that could be used for getting information about voters' registration status and their exact polling station. This was followed by the Mahazalim website, a website that was created to criticize the ex-Prime Minister Mahathir's authoritarian government.

Meanwhile the government's political websites such as UMNO and MCA, only managed to be ranked eighth and thirteenth respectively. The only political website

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<sup>31</sup> *Laman Reformasi* or Reformation Web page was emerged during the 1999 Malaysian General Election as part of the *Parti KeAdilan* (Justice Party) effort to voice their dissatisfaction on the ex-Deputy Prime Minister, Datuk Seri Anwar Ibrahim's trial.

that was in the highest ranking was the *Parti KeAdilan* (Justice)<sup>32</sup> which was in fifth place. Also amongst the lowest ranking or the less visited websites were the government-dominated newspapers that were made available online such as Utusan (10th) and NST (15th). The popular preference for opposition media published online

**Table 7.1**  
**The Most Preferred Website by Ranking**  
**During the 1999 Malaysian General Election**

Websites	Total Score	Ranking Score	Final Ranking
SPR	125	6.25	3
Utusan	37	1.85	10
Laman Reformasi	298	14.9	1
Pemantau	71	3.5	6
Harakah Daily Online	141	7.05	2
KeAdilan	71	4.15	5
UMNO	48	2.4	8
International News	55	2.75	7
Free Malaysia	39	1.95	9
Mahazalim	92	4.6	4
STAR	25	1.25	12
NST	11	0.55	15
Doi Moi	18	0.9	14
MCA	21	1.05	13
Mahafiraun	31	1.55	11

Source: Baharuddin A. et.al (2000:114)

such as Harakah Daily Online and *Laman Reformasi*, was due to the easy access to such information as compared to the situation before the emergence of the Internet. Also most of the mainstream media such as television, radio and newspaper were controlled or partially controlled by the government, which was another reason why the government's media published online was so unpopular. It was notable that while the preference towards government media plummeted, it was the *Laman Reformasi* that was reported to have been visited by more than 200,000 visitors a day, and had accumulated about 18 million visitors in the run up to the 1999 election day (Baharuddin A. et.al., 2000:113).

<sup>32</sup> *Parti KeAdilan* or Justice Party, the new party introduced during the last general election. The party leads by the wife of ex-Deputy Prime Minister Anwar, Datin Seri Wan Azizah with the objective to fight the cronyism and corruption in Malaysia. But in reality it is the party to fight for the releases of the ex-Deputy Prime Minister Anwar.



For Malaysia, the popular use of the Internet by opposition parties during the 1999 Malaysian general election marked the beginning of the virtual-public sphere rather than counter-public sphere. To be counter-public sphere one needs to see themselves as a being excluded from mass-media public sphere and as engaging in counter-publicity. The example of this is the use of the Internet by media activists such as Electronic Intifada to counter Zionist version of publicity concerning Israel-Palestine conflict. For Malaysia, it is more towards the mushrooming of communicative public space via the Internet as a result of the extensive use of ICT in the recent years. For example, since the banning of the PAS newspaper or Harakah Daily it can hardly be seen being circulated openly in public, but for sure they have been using the advantage of the Internet to extend their voice online. The websites such as Harakahdaily.net and Harakahdaily.com were examples of the exploitation of greater virtual-public sphere activity. Indeed, through the PAS homepage, the visitors were also directed to other hyperlinks such as to the Malaysiainkini.com or website for Keadilan party and even to their online radio channel, which goes beyond their expectation in the mass-media public sphere. Even an opposition party like PAS also concurs saying:

**'We glad that we have the Internet now. Now our voices can easily be extended. Not like before, with all the banning and censorship make us very difficult to spread out our political mission to all Malaysian society. I think all the party members are now happy with this new development'**

**(EV 5 - PAS)**

This was also supported by DAP, another major opposition party in Malaysia:

**'Among many other opposition parties in Malaysia, we are the most critical one. Look for instance our websites in the Internet, we criticized a lot on the government, ranging from government's projects to the government's political leader. We even questions the Malay dominations as a Prime Minister, which is sometime can only be done in the parliament. With the Internet we can voice almost anything. .... Most important thing, our mission to establish Malaysian Malaysia can be achievable'**

**(EV 6 – DAP)**

The mushrooming of the use of the Internet by opposition and radical groups in Malaysia is enormous. It is development, which is very difficult for the government to control or even to censor. Except for the PAS website that uses the government

connected server such as the “org”, the other websites such as the Harakahdaily, *Malaysiankini* and *Laman Reformasi* are using other proxy servers to be online. Clearly the tendency to bypass government control has encouraged more radical websites to emerge. The websites such as *Mahazalim* and *Mahafiraun* were among the websites used by radical groups in Malaysia to strongly criticise the ex-Prime Minister Mahathir’s administration and his authoritarian regime (see <http://www.mahazalim.net>).

The most interesting consequence of this phenomenon is the further fragmentation of Malaysian society. As noted earlier, unity among the Malays themselves particularly during the last general election has become very uncertain. The need to have more support from Malay voters made the government struggle to reach a two-thirds majority in the 1999 general election. For the government, it is critical and crucial to retain the unity of the Malays to further stabilise their hegemony power (Trezzini, 2001:341). Mentioned by Trezzini is that the increasing fragmentation within the Malay community is indeed due to the capability of the opposition to gain ‘support not only with the traditional Malays living in economically stagnant areas but also with some well-educated urban professional’ (ibid). Looking at the prominent and deepening digital divide between the rural and urban, obviously one way to extend opposition support, especially in the urban areas is through the Internet. Clearly the 1999 general election had been the test-bed for opposition and radical groups to gain more support thus further fragmenting society.

But still this is not the whole picture. The last general election, which took place in March 2004, had a different story. Unlike 1999, in the general election of 2004, not only did the government manage to secure two thirds of the seats in parliament but also they had a majority of 90.8 per cent, which is the highest in the history of Malaysian elections so far and compares with only 56.6 per cent in 1999 (Utusan Online, 2004). If in 1999 the oppositions held 45 out of 193 seats in the parliament, in 2004 they only managed to secure 20 seats from 218. What this suggest is that the means of developing the mature democratic society in the context on ICTs which had its roots in the 1999 general election has been further strengthened in the last general election. In many instances the ability of the Internet as a means for bringing

opposition into mainstream Malaysian society has created a new form of virtual-public sphere that was never dreamt of before the 1999 general election.

Most importantly this has created a new meaning of democracy in Malaysia. Although the political fragmentation seemed no longer to be the case in the last general election, still the issues such as the digital divide continue to be visible in Malaysia, which may lead to the generation of new forms of fragmentation and solidarity. What can be argued that, although a mature democratic society related to political unity is developing in Malaysia, the inability to curb the digital divide may pose a danger to the establishment of future solidarity and eventually to the promotion of Malaysia's own national identity.

## 7.6 Concluding Remarks

In this final chapter on the relationship between democracy and public sphere, there is growing evidence that the government is providing more space for the democratic process and manoeuvring within the public sphere in accordance with the ICT development in Malaysia. This can be seen through the emergence of electronic government and increasing Internet used by the political parties, including the opposition and left-wing groups, as translated to the emerging event of virtual-public sphere. This has resulted from the government decision not to censor of Internet content as clearly stated in the Section 3 of the Communication and Multimedia Act. The reason for this is simply to create a more mature and eventually more knowledgeable society to prepare the country for attaining developed status by 2020. But the move towards more democratic processes would obviously have its own consequences. As is evident from this section the issues pertaining to cultural hybridisation and to some extent to cultural domination, solidarity and those related to accessibility are clearly visible.

But the most important arguments to all this would be related to the establishment of the policy itself, mentioned strongly in Vision 2020. What the findings revealed is that, although there is growing evidence of a more democratic process as a result of ICT development in Malaysia, the increasing digital divide in the country is posing a

multiple threat to the attainment of the government's policies particularly those related to unity and more importantly to the establishment of a Malaysian national identity.

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*Part 3*

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# Chapter Eight

## Conclusion

### 8.1 Introduction

The main objective of this thesis is to examine the development of ICT policy, its impacts and consequences on both the economy and society in Malaysia. The fundamental questions are; can policy pertaining to ICTs in Malaysia contribute further to Malaysian economic growth? What are the implications and consequences of this policy for the establishment of both economic and social attainments in the country? Three areas concerning the impact and consequences of ICT policy were investigated. These areas were: 'ICTs and Economic Growth', 'ICTs and Inequality', and 'neo-colonialism'. For neo-colonialism, the investigation will be based upon the broader context of the whole argument. Since the study focus solely on the ICT policy in Malaysia, the understanding of its impacts and consequences would help us to generate a greater understanding of whether there are contradictions within the policy itself.

In researching this area two approaches were used. They were secondary analysis and semi-structured interviews. The main areas of 'ICTs and Economic Growth' and 'ICTs and Inequality' were largely dependent on secondary sources and library research. The study very much depends on sources from government official policies and data such as the government's short and medium term plans. The examples of these were the NEP, NDP, Vision 2020 and other government economic and social indicators.

The semi-structured interviews were used as a means to support as well as to challenge some of the arguments and evidence collected throughout the analysis and discussion of both areas. The purpose of the interviews is to give greater insight into the development of policy and its consequences. Three groups of people were identified. They were policy developers, implementers and evaluators. Policy developers were those people involved directly with ICT policy establishment such as from the Ministry of Communication, Energy and Multimedia, the Ministry of Human Resources, the NITC and the MDC. The implementers were basically in MSC-status companies involved directly in carrying out the implementations of the policy. Finally the evaluators were the groups of people indirectly involved with ICT policy in Malaysia. Examples of these are academics, consumer associations and political opposition groups.

As mentioned earlier, the final objective of the study is to examine the impacts and consequences of ICT policy for both the economy and society in Malaysia. For that reason, detailed summaries of the findings have already been included in the concluding remarks of Chapters Five, Six and Seven. However, it is important to revisit again the arguments, which underpin these findings.

## 8.2 Review of the General Arguments

The preceding chapters assess the general impact and consequences of ICT policy for the economy and society with regard to the establishment of ICT in Malaysia. Many claims have been made about what consequences globalisation might have for society. The intensification of the global economy induced by the unprecedented growth of large transnational corporations which demand more profit is believed to have changed many ways in which the economy is perceived today. As a result, what we are currently witnessing is the increasing change in occupational structure, the recasting of capital and labour, and an increasing shift towards liberalisation, deregulation and privatisation. What is also believed is that this impact goes beyond current economic trends touches our daily lives through the free flow of ideas and values across national boundaries and which is challenging the present notions of the nation-state and its distinct national economy (Hirts and Thompson, 1999).

Allegedly, as argued by many, the increasing penetration of global forces into every realm of life in every region of the world is being pushed by the recent development in transportation networks and ICTs (Harvey, 1989; Giddens, 1991; Castells, 2000a). The new technologies that have created new industries, such as the computer and information industry, allow a growing ability for large transnational corporations, media and information to instantaneously traverse the globe. This is what Webster referred to as the pressure of capitalism in its newest approach that has changed the course of today's informational trend (Webster, 2002:267).

Not only the change has resulted in greater intensification in the global economy, but equally important are some changes in society, including those which have transformed the work process (Castells, 2000b:372). What can be perceived is that the demand for more flexible and less standardised labour has been greatly enhanced. The reasons are not simply to further compete in the global economy, but also to maximise productivity and profit. This accords well with the current experience of a developing country like Malaysia.

However, all these changes are not without problems. As Kranzberg (1989:247) mentioned in his "First Law", all technologies, including ICTs, tend to have unintended consequences that go beyond the original plan. It seems clear that the intensification of the global economy along with the development of ICTs is creating increasing divisions in society. The demarcation between low skill workers and high-skill workers not only separates the high income and low-income groups; more importantly increase the divisions between the information-haves and information have-nots. Not only can this be seen between countries in the global sense but also between groups and regions in the same geographic locales (Castells, 1989:17). Examples of this growing inequality are increasingly evident in class and ethnicity in many of the advanced capitalist societies.

In many instances, the race for competitive advantage coupled with the dynamism of informational capitalism as mentioned earlier is adding to these factors. It is believed that the race for competitive advantage by many of the governments today including Malaysia, and their heavy reliance on international private capital, presages another set of dangers. Commodification of culture, cultural imperialism, cultural



homogenisation and hybridisation are among the important issues, which continue to dominate our understanding of globalisation and ICTs. Coupled with the digital divide that is increasingly foreseeable, not only will they have implications for democracy and destabilisation of the public sphere, but also those related to the emergence of a new set of fragmentation as well as the questioning of existing shared identities (Castell, 2004:420).

It is around such a framework that this study is trying to develop an understanding of the meaning of the information society. Referring back to Malaysia, it should be stressed that the recent policy change towards greater engagement with ICTs by the Malaysian government has very much contributed to the way information is being handled and used in the country. The change in occupational structure, the restructuring of the education system, the approach towards increasing deregulation and privatisation, the establishment of the MSC and the increasing number of Internet users in the country signifies the seriousness of the government in transforming Malaysia's economy and society.

Like the experience of many other countries, this thesis has shown that Malaysia too is facing almost the same set of implications as a result of ICT development. The concept of a growing digital divide linked to the uneven ICT infrastructure, the issues of gender and their access to ICTs, ethnicity and the language barriers, growing class division and issues of democracy and cultural imperialism is contributing well to understanding the issues. But the most important outcome of this concept would obviously be the consequences for the policy establishment itself, particularly those related to the creation of Malaysia's own national identity. This is based on the argument made by Kranzberg that the same technology can have a different set of implications when introduced into different contexts and circumstances. Under what circumstances can the united Malaysian nation mentioned in Vision 2020 be well established and continue to be the case. Whether or not the policy itself is contradictory will be examined in the next section.

### 8.3 Findings

The Malaysian social system is complex. The multi-ethnic characteristics of Malaysian society and its distinguishing features of culture, religion and even politics make it particularly difficult to understand the process. Historically, the elements of inequality in Malaysia have been long-standing issues and continue to challenge the notion of establishing a united society. The bloody racial riot in 1969 due to the economic imbalance between the major ethnic groups spurred the government to take more drastic action. The establishment of policies such as the NEP to correct these imbalances was among the earliest steps taken by the government to unite its people. The economic achievements over the past 20 years and the government's ability to reduce income gaps and poverty level have contributed to the prosperity of the nation. In many instances the move from agriculture to more labour-intensive economic activity such as manufacturing and the heavy reliance on international private capital are among the important avenues, which have led to success.

However, the intensification of the global economy, the extensive use of ICTs and competition posed by the lower-wage economies such as China and Vietnam are challenging the government's efforts to further develop the economy. The worries are that the inability to sustain its economic growth and maintain equality within society might result in the disunity so often experienced in the past. It was through measures such as the establishment of the NDP and Vision 2020 that the government continued to stress both economic progress and the maintaining of social unity and more importantly the establishment of a unique Malaysian identity.

Realising the challenges and threats, the government started to put emphasis on the importance of ICTs. Many related policies pertaining to ICTs' capacity to move the economy towards more high-skill industries were established and implemented. The extensive use of ICTs in many of its economic sectors both public and private, the concomitant change in the occupational structure based on skills and knowledge entities are among the results of the government's determination to further stimulate the economy. It is hoped that this will help the country to further compete in the global arena, whilst realising the vision to become a developed country by 2020.

The analysis in this study has shown that the greater engagement with ICT in the economy is contributing to an increase in inequality in the country. Looking at the experience of many developed countries, this is something to be expected. The most important question, which needs to be answered is how far can this be attributed to the contradictions within the government's own ICT policy. The inability to curb these contradictions would further jeopardise the government's efforts to unite the society, in order to become a developed country by 2020. As far as this study is concerned, the findings have shown that there are clear contradictions between the policies to further develop the economy and those related to social cohesion. These are results from the consequences of ICT policy as presented in the detailed analysis of the findings below.

1. *ICTs and Economic Growth* - The findings have shown that the ICT development with regards to the establishment of ICT policy in Malaysia plays a significant role in the country's economic progress, but the consequences of this contribute to the growing inequality as is evident in the discussion on *ICTs and Inequality* below. More importantly this would further impacted upon the government's efforts to create its own Malaysian identity as part of Vision 2020.

It is observed that for the past thirty years Malaysia has enjoyed its economic attainments. Starting with the effort to correct economic imbalances among major ethnic groups, Malaysia has witnessed a series of economic transformations from import substitution to economic liberalisation. The opening up of the Malaysian economy in the middle 1970s has spurred the growth of Foreign Direct Investment (FDI) and the establishment of the Malaysian manufacturing sector. The high dependence on labour-intensive industry through this process has helped the country enjoy its economic progress. The poverty level and those related to ethnic gaps have been reduced tremendously. Not only has Malaysia been one of the highest FDI recipients, but also the country's ability to maintain its GDP growth rate at 8 per cent per annum as being recorded among the highest in the world, particularly in the early 1990s.

However, the character of globalisation and the uncertainty in the global market has somewhat mitigated the country's position as a low-cost production centre that it had

enjoyed over the past 20 years. The development of ICTs and the ability of international private capital to transcend economic boundaries in search of more profit like that offered in the low-wage economies such as in China and Vietnam are challenging the government's effort to further develop the economy. Even the evidence from the analysis on the reducing amount of FDI in the country coupled with the financial crisis in the late 1990s made the government realise the importance of searching for new sources of growth.

With the need to continue to position itself in the global economy, the government started to see the importance of ICTs as a means to sustain its economic growth. The government realised that, in order to remain competitive it could no longer rely on labour-intensive and low-wage economic activity. While maintaining the strength and importance of the manufacturing sector, a diversification towards high-skill industries and high technology manufacturing was seen as a mean to boost economic competitiveness.

Many related policies pertaining to ICTs have been introduced ever since. Using Vision 2020 as its framework, the emphasis on harnessing the potential of creativity through an educated and skilled workforce, the approach in increasing deregulation in the telecommunication and ICT industries, the investment in a proper infrastructure have all been taken by the government since the middle of the 1990s. The use of ICTs continued to be encouraged in both the public and private sector and in the education system as well as the provision of various incentives to nurture the growth of a skilled knowledge workforce. In many instances, the establishment of MSC in 1996 was seen as the earliest vehicle to transform Malaysia's future social and economic landscape. It was hoped, not only that it would have a rollover effect for all Malaysian society in its deployment of ICTs, but also that it would be able to attract more FDI into the country whilst becoming one of its main income generator. It was even reported from the analysis that the rapid ICT utilisation during the period 1995-2000 and the expansion of ICT investment from RM3.8 billion to RM5.9 billion, particularly in the manufacturing sector for the same period has further contributed to the country's economic growth.

Despite the various approaches to stimulate the growth of the ICT industry in Malaysia, there is also evidence of strong government bias towards private capital and high dependence on international private investment to regenerate the economy. For example in the case of the MSC, more incentives such as tax exemption, unrestricted employment of foreign knowledge workers, the right to borrow funds globally and freedom of ownership were provided by the government to encourage private investment. This could be seen through the growing number of world-class companies and foreign knowledge workers that will dominate the MSC areas in years to come.

Moreover, the setbacks in many of the government's policies with regards to ICTs suggests that the government will continue to depend heavily on international private capital. The analysis has shown that the slowing progress of the MSC Flagships such as smart schools and its multi-purpose card; the low success rate for encouraging local private participation in the ICT industry; the lack of supply of local knowledge manpower due to the low levels of R&D activity and scientists and the low number of tertiary enrolments in science and technology all make the prospects for the local ICT industry very problematic.

With the preferences and increasing freedom to international private investment coupled with the inability to further mobilise the local ICT industry, the technological control would obviously continue to lie in the hand of international private agency. More importantly this would further contribute to the strengthening of the elements of neo-colonialism in the context of the Malaysian economy. It is worrying that this would further perpetuate the growth of private entities and the decline of the public sphere hence creating greater division in society.

In general, ICT development in Malaysia has played an important role in diverting the country's economic focus from one relying heavily on labour-intensive activity to one that generates a high-skills industry and high-technology manufacturing. Through the establishment of ICT policy, there was evidence of institutional changes such as the increases in liberalisation, deregulation and restructuring in its education system. There is also growing evidence of success in the government's approach to harnessing the growth in use of ICTs within society particularly in generating skills and

knowledgeable workforce. The reason is simply to further compete in the global economy. As evident in many advanced capitalist societies, the move towards high-skill industries through the means of ICTs is creating greater inequality within society. Findings from this study have shown that the consequences of the country's economic growth as a result of greater engagement with ICTs is also generating a growing inequality in society as discussed below. Most importantly, how will the consequences of this ICT policy further contribute to resolving the contradictions in the government's long-term policy to develop the economy while at the same maintaining its social relationships?. This is, however, very much reliant on the detailed findings on *ICTs and Inequality* as discussed below.

2. *ICTs and Inequality* - The evidence from the above analysis on policy pertaining to the use of ICTs to bring about change in the country's economic growth, is that the policy is contributing to the growing inequality in Malaysia. As with the experience of many developed countries this result is expected. Interestingly, being a country that only recently embarked upon ICTs, the results are showing a mixture between the tendency for some inequalities to be reduced and others to become wider. The complexity of the Malaysian economy such as the government's preferential policy towards the Malay in order to close the ethnic income gap and the relevance of government as an active economic actor in the building up of both social and legal institutions contributed well to the notions. However, the findings showed that the more the country is moving towards greater engagement with ICTs in the economy the more evidence there was of growing inequality within Malaysian society. The clear example of this can be seen through the recent growing class divisions, particularly among the Malays and those related to access to ICTs.

The most obvious signs of reducing the gap are those in the cases of gender and ethnicity. For gender, there is a clear gap between male and females in their use of ICTs at the moment. In many instances this clear disparity could be attributed to the recent changes in the government's economic focus. The move towards embracing high skills and a knowledgeable workforce and the uneven labour force participation between men and women that is currently visible also contribute to the gender gap in the use of ICTs.

The findings have, shown that although women are making significant progress in reaching high-level managerial and professional occupations, there remains clear evidence of a large number of women continuing to hold low-level position such as production and related workers. Coupled with the large number of women who are still outside the labour force, the current disparity is to be expected. However, the growing number of females in the occupational sector, the growing number of female students attending ICT-related courses and in tertiary level education, suggest that this gap is likely to close over time. The only setback is the matter related to how fast the gap could be closed. Unlike in the case of US for instance where the closing gender gap was very highly correlated with the proportion of each gender participating in the labour force, as the ability to use ICTs also has to do with the level of income gained. In Malaysia, where the level of labour participation by the genders is unequally proportionate it is doubtful that the gap can be closed in a short period of time compared to a country like the US where this took five to six years. Most importantly, the consequences of this are that it would further contribute to the growing inequality that exists in Malaysia.

As in the case of ethnicity, the narrowing gap among the major groups in Malaysia was very much related to government affirmative action to correct economic imbalances since the NEP period. The government's ability to reduce the poverty level as a result of the prominent move from agriculture to manufacturing-based industry that largely contributed to the increased incomes, coupled with many related preferential economic policies directed particularly towards the Malays are the reasons which explain much of the narrowing of the gap.

The consequences of diverting economic focus by the government through ICTs are not without problems. Like the experienced of advanced capitalist societies such as in the US and the evidence from the analysis above the particular issue on language such as the low level of English usage and lower levels of access to ICTs could be the start to a growing ethnic inequality in Malaysia. Mostly taking place in the less developed regions and the Malay dominated areas this growing inequality could further marginalize the Malays from the advantage of access to ICTs. Consequent to this, reducing the overall ethnic inequality is deemed to be crucial and the implications of

it increasing would obviously be unhelpful to the government's efforts to further unite the society.

Unlike the case of gender and ethnicity, those related to access to ICTs and class show clear evidence that the gap is widening. In the case of access to ICTs, the results have shown that there is an obvious, uneven distribution of ICT infrastructure between regions in the country. From the findings, it was clear that this resulted from the consequences of ICT policy for the economy. The evidence has shown that the concentrations of ICT infrastructure seems to be high in the well-developed areas mostly on the west coast of peninsular Malaysia such as Kuala Lumpur, Johor and Pulau Pinang. While those on the east coast and Borneo regions had an obvious disparity. The lack of telecommunication services, the level of electricity that still has not reached hundred percent, the low usage of telephone and the Internet, and even the smaller number of smart schools in most of these regions further supports the evidence. This suggests that, not only is ICT a possible cause of the greater divisions between regions but also growing inequality in the country. It is clear that the inability to narrow down the disparity in this particular area would further jeopardise the means of achieving the government's aim of solidarity within society.

Meanwhile in the case of class, the result has shown that the gap has started to widen. Obviously this would be another set of areas that could contribute to the growth of inequality in Malaysia. Unlike those in the advanced capitalist societies where the class division based on income is increasingly visible, where Malaysia is concerned, this is only a recent phenomenon. This was due to the lag in the use of ICTs in the country. Although there is no official data on the use of ICTs based on income level, the increasing income gap between high income and low-income groups in Malaysia suggests that it would obviously impact upon the level of use of ICTs in the country and eventually contribute to the increasing class divisions. The move towards service industries, based on ICTs and the concomitant change in the occupational structure towards skills and knowledge-based activities are the reasons for such divisions. Unlike the Chinese and Indians, it is the Malays who are experiencing the increasing class division based on income level. The reason is simply that there are still a large portion of Malays in the less developed areas such as in the east coast of peninsular Malaysia that continue to be marginalized in terms of access and ICT infrastructure.



As far as the ICTs and its policy are concerned, the democratisation process promoted heavily by the government along with the diversification of the economy has shown some significant progress. Unlike before the development of ICTs when media control and media censorship by the government was highly visible, as the economy started to move on the use of ICTs, the country has witnessed continuous evidence of the promoting of democracy in Malaysia. The government promises not to censor the content of the Internet, the increasing level of government information via electronic government for the reasons of enabling more dissemination of information, and the increasing number of websites from both the left and right, including the political parties, are the important elements contributing to this factor. It hoped this would be the basis of generating a more informed and knowledgeable society, hence developing the economy.

The consequences of this are those related to the policy establishment in maintaining its own cultural and religious identity. Although it may be too early to predict the outcome of this in the case of ICTs in the context of Malaysia, looking at the increasing power of transnational media, the impact brought along by satellite television and the increasing cultural hybridisation in Malaysia suggests that the element of neo-colonialism that is becoming stronger will further impact on the establishment of a national identity. The evidence of growing inequality translated through the digital divide would obviously have consequences for the further perpetuation of the means of democracy in Malaysia. However, what the meaning of democracy will be if the issues of access to information via ICTs continues to develop as a major obstacle is not at present clear.

In summary, the findings show that the consequences of ICT policy to further develop the economy in the context of the government's positioning as part of the global economy are creating growing inequality within society. On one hand, it might be true that the ICT development in Malaysia is contributing well to the economic growth as is evident in the increasing quantity of international private capital and the changing occupational structure that helps create the growing income level. On the other hand, the growing inequality linked to the digital divide within society such as the uneven distribution of ICT infrastructure, the widening class division especially among the Malay groups, the issues of language and even cultural establishment are

the important negative factors for the government's efforts to maintain the country's unity.

As Vision 2020 clearly emphasises, in order for the country to be developed, the development of its economy should be accompanied by the establishment of a united Malaysian society with a sense of shared and common destiny. The findings have shown that there is a clear contradiction in the government's efforts to satisfy both its economic and social relationship as translated through the growing inequality within society as a result of the country's economic growth through the use of ICTs. Obviously if this continues to be the case, it is hard to suggest that the creation of Malaysia's own national identity and the achievement of the vision to become a developed country strongly promoted in Vision 2020 are likely to occur.

This thesis has taken a forward step in the study of the consequences of ICT policy for Malaysian society. With the focus of researching the possibility of contradictions within government policy, this study is essentially very broad in its context. It is hoped that the findings here constitute a new research dimension in the domain of social science in Malaysia, particularly those concerning our understanding of a policy and its consequences. This thesis may also provide a platform for studying globalisation, ICTs and national identity for those countries in a similar situation in Malaysia. More importantly, the findings of this research will provide the Malaysian government with a general view when preparing for future outcomes and future policy establishment, focusing especially on maintaining the country's social relationships for the sake of solidarity.

Researching this phenomenon has not been an easy task and this thesis has examined a broad range of areas of government ICT policy in understanding its consequences for the economy and social establishment in Malaysia. The findings have been beneficial in identifying the contradictory factors involved in these consequences, which is very important for the government in preparing for the possible future outcomes. The findings have also shown some consistency with ideas promoted by many 'information society' scholars and theoreticians such as Webster (information and society), Winston (technology and society), Castells (ICTs, economic and social division), Schiller (capitalism and information) and Habermas (the public sphere).

Whatever the theories, ideas and concepts promoted by scholars are, the intensification of global economy supported by ICTs is presenting both opportunities and dangers. The study has shown that, although the engagement in ICTs contributes to many opportunities for economic growth, it also contributes to greater divisions in society. In Malaysia this has presented a clear contradiction. Being a country that is very much dependent on the unity of its society, awareness of these contradictions was seen as being crucial in maintaining future progress. Failure to respond to these difficulties would make the effort to further develop the country based on unity and the establishment of its own national identity and hence achieving the Vision 2020 targets, difficult to achieve. Obviously, this is an unintended consequence of Vision 2020 that the government needs to realise. But still the question here is what could be done to prevent this contradiction? What other choices does the government have in dealing with the matter?

It must be admitted that it is difficult to argue against the beneficial factors that ICTs brought to the economic growth of Malaysia, as it is equally difficult to argue in favour of some of its consequences. For the government, the juncture between both of these is critical. If the government continues to believe that ICTs could be the means of competing in the global economy, then it has no other choice rather than to accept that it will create greater divisions in the society. But to ignore this growing inequality is certainly a mistake.

As to what action could be taken, the only promising hope is to narrow the gap as much and as fast as possible. No doubt many efforts have been and are being made to narrow this gap. Looking at the present situation of growing inequality in the most critical areas such as in regional divisions and the continuous marginalisation of Malay ethnic groups, it suggests that the effort has not been strong enough. As the country's future progress is very much dependent on the unity of her people, growing gaps in society would obviously create a new form of economic imbalance. The worries are that this might impact upon social and political instability, as was the experience during the bloody racial riots of 1969.

Among many other areas it seems clear that the effort to narrow down the regional divide and preferential ICT policies towards the poor rural community groups are the

areas most in need of emphasis. As in the regional divide, there is a need for the government to shorten the period for providing more access to ICTs regardless of region. For example, if the plan for a national ICTs infrastructure is presently a feature of the medium to long-term plans, it is suggested that this effort should be brought forward into the short-term plan. Many setbacks that contribute further to the growing inequality identified in these findings have resulted from the lack of accessibility of ICTs. With the focus on poor rural community areas, it is hoped that a further uplift for these particular disadvantage groups can further narrow the gap. Based on past historical and economic experiences, this is the only means of bringing them up into the centre of economic development. Without this, the idea of creating Malaysia's own national identity will be difficult to emerge and thus the achievement of the Vision 2020 will continue to be elusive.

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*Appendices*

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## Appendix 1 List of the Interviewed Personnel

### Policy Developers (PD)

Category	Name	Organisation/Institution	Position
PD 1	Teo Yen Hua	Ministry of Energy, Communication and Multimedia (MECM)	Under Secretary (Licensing and Regulatory)
PD 2	Datuk Dr Syed Muhamad Syed Abdul Kadir	Ministry of Human Resource	Secretary General
PD 3	Tengku Datuk Dr Mohd Azzman Sharifadeen	National IT Council (NITC)	Secretary
PD 4	Datuk Dr Muhammad Arif Nun	Multimedia Development Corporation (MDC)	Chief Executive Officer

### Implementers (IM)

Category	Name	Organisation/Institution	Position
IM 1	Cheam Tat Inn	Sun Microsystem (M) Sdn. Bhd	General Manager
IM 2	Ahmad Hazman Yusof	Pintar Media Sd. Bhd (Malaysia)	CEO
IM 3	Dr Fadhlullah Suhaimi Abduk Malek	TMNet Portal	General Manager (Corporate Strategy & Services)

### Evaluators (EV)

Category	Name	Organisation/Institution	Position
EV 1	Associate Prof. Dr. Ahmad Murad Merican	Centre for Intellectual History and Malay Thought (INKA)	Fellow and Chairman
EV 2	Prof. Dr. Hairudin Harun	Faculty of Science, University of Malaya	Head of Science and Technology Studies
EV 3	Datuk Hamdan Adnan	Malaysian Consumer Association (FOMCA)	President
EV 4	Prof Dato' Dr. Raja Abdullah Yaacob	University of Information Studies, University Teknologi MARA	Professor of Information Studies
EV 5	Datuk Hassan Ali	Malaysian Islamic Party (PAS)	Deputy President
EV 6	Kerk Kim Hock	Democratic Action Party (DAP)	Secretary General

## **Appendix 2**

### **List of Questions for Semi-Structured Interview**

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#### **Questions on Regional Implications**

1. Could you give your views on Vision 2020 and the development of ICTs in Malaysia?
2. Does the present ICT policy to create knowledge society is equally distributed to all Malaysian?
3. What is your comment on ICT infrastructure in Malaysia? Do you think it is equally distributed to all states? If not why do you think this is happens?
4. What do you think would be the implications to those states or regions, lacking of ICT infrastructure?
5. In your opinion how could the lacking of ICT infrastructure in Malaysia be overcome?
6. In your opinion, how could the creation of knowledge society be applied to all Malaysian regardless of states and regions?

#### **Questions on Gender**

1. Could you give your view on ICT and human resource development in Malaysia?
2. What is your comment on Smart Schools? In what way do you think the establishment of Smart Schools will help to generate future knowledge workers for the country?
3. What is your comment on the level of local knowledge workers?
4. Based on the surveys, it was obvious that male seemed to dominate many areas in ICT industry especially in the context of Malaysia? From your point of view, why do you think this is happens?
5. Could you give your view on women's participation in country's ICT industry?
6. In what area do you think the creation of knowledge society can be equally distributed to all Malaysian regardless of gender?

### **Questions on Ethnic**

1. Could you give your comments on the relationship between ICTs and ethnic composition in Malaysia?
2. From the three major ethnic groups, which group do you think will be in the forefront and be left behind from this development?
3. It was reported that almost 80 per cent of the Internet language is foreign. What do you think would be the implications to the overall Malaysian society especially for those in the rural areas, which are mostly dominated by the Malays?
4. What about the local content? Do you think it will help to bridge the ethnic gap in terms of language?
5. How could the creation of knowledge society be equally distributed to all Malaysian regardless of ethnicity?

### **Questions on Class**

1. Could you describe the relationship between class of income level and ICTs in Malaysia?
2. What is your comment on the rates of Internet subscription and computer pricing in the country?
3. What is your comment on the computer fairs held every year as part of the government's aims to upgrade the level of computer literacy among the society?
4. What is your comment on the computer pricing offered during the fair?
5. Do you think the Internet subscription and computer pricing are affordable to all groups of income level in Malaysia? What about low-income groups?
6. In your views, how could the creation of knowledge society be applied to all Malaysian society regardless of their income level?

### **Questions on Economy, Democracy and National Identity**

1. Could you give some of your notions on the Foreign Direct Investment (FDI) and ICTs in Malaysia?
2. What is your comment on MSC and foreign ICT investors? What do you think would be the implications on the overall local ICT industry such as local knowledge workers and local cultures?



3. **What about the foreign knowledge workers? What do you think would be the implications to future local knowledge workers in the country?**
4. **Do you think the process of globalisation through ICTs in developing the economy would further strengthen the elements of neo-colonialism in the country? Could you give some of your notions on this?**
5. **Do you think that the ICT development is supporting the process of democracy in Malaysia?**
6. **Could you give your opinion on the implications of ICT development on the establishment of own national identity in Malaysia?**

### **Appendix 3**

## **List of International World Class MSC Status Companies, as of June 28, 2004**

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**Nokia (M) Sdn. Bhd.**  
**STIA**  
**SAP Learning Tehnologies Sdn. Bhd.**  
**Siemens Multimedia Sdn. Bhd.**  
**Motorola Multimedia Sdn. Bhd.**  
**Alcatel Network MSC Sdn. Bhd.**  
**Lotus Development Services (M) Sdn. Bhd.**  
**Lucent Technologies (M) Sdn. Bhd.**  
**Oracle MSC Sdn. Bhd.**  
**Ericsson Expertise Centre Malaysia Sdn. Bhd.**  
**Ericsson Academy Sdn. Bhd.**  
**Ericsson Business Consulting Sdn. Bhd.**  
**EHPT Sdn. Bhd.**  
**Asia Pacific Information Services (DHL)**  
**Baan Education Asia Pacific**  
**Shell Information Technology International Sdn. Bhd.**  
**British American Tobacco GSD (KL) Sdn. Bhd.**  
**Reach Internet Services (MSC) Sdn. Bhd.**  
**Rockwell Automation (M) Sdn. Bhd.**  
**Unisys MSC Sdn. Bhd.**  
**Alcatel MSC Sdn. Bhd.**  
**IBM (M) Sdn. Bhd.**  
**Computer Associates (M) Sdn. Bhd.**  
**Lotus Engineering Malaysia Sdn. Bhd.**  
**Biodata Information Technologies Malaysia Sdn. Bhd.**  
**Scope International (M) Sdn. Bhd.**  
**Huawei Technologies Sdn. Bhd.**  
**Fortuna Sendi Prima Sdn. Bhd**  
**IT-305 Malaysia Sdn. Bhd.**  
**Satyam Computer Services Ltd**  
**SmartTrust Sdn. Bhd.**  
**Schlumberger Technologies (M) Sdn. Bhd.**  
**Shell Global Solutions (Malaysia) Sdn. Bhd.**  
**HSBC Electronic Data Processing (Malaysia) Sdn. Bhd.**  
**WIPRO Limited**  
**BMW Asia Technology Centre Sdn. Bhd.**  
**Silicon Graphics Sdn. Bhd.**  
**Panasonic R&D Centre Sdn. Bhd.**  
**Fujitsu (Malaysia) Sdn. Bhd.**  
**Bloomberg (M) Sdn. Bhd.**  
**Intel Malaysia Design Centre (MSC) Sdn. Bhd.**  
**Reuters (M) Sdn. Bhd.**  
**Fujitsu Telecommunication Asia Sdn. Bhd.**  
**Pernec Multimedia R&D Centre Sdn. Bhd.**

**BT Multimedia Sdn. Bhd.**  
**Sun Microsystem (M) Sdn. Bhd.**  
**NTT (MSC) Sdn. Bhd.**  
**Eds MSC Sdn. Bhd.**  
**Compaq Multimedia Sdn. Bhd.**  
**Microsoft Knowledge Capital Centre Sdn. Bhd.**  
**Comptel Communications Sdn. Bhd.**  
**Technomen (M) Sdn. Bhd.**  
**Castlewood System (M) Sdn. Bhd.**  
**Marconi 3G Sdn. Bhd.**  
**USCO MSC Division Sdn. Bhd.**  
**Canal+ Technologies Sdn. Bhd.**  
**NEC System Integration Malaysia Sdn. Bhd.**  
**Tata Consultancy Services Malaysia Sdn. Bhd.**

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