ICT, Society and Poverty:
The Vision of Mauritius as a Cyber island from a Development Perspective.

by Christina Chan-Meetoo

It has often been said that Mauritius is set to become a cyber island, a knowledge hub with ICT as the new pillar of this new economy. From 'Tiger of the Indian Ocean' to 'Cyber island', passing through other semantically laden terms and expressions such as 'intelligent island', 'centres of excellence', 'information society', 'IT literacy', 'e-learning', 'IT-enabled', 'e-commerce', etc., the Mauritian population is now very familiar with the long list of buzz words in circulation within the political and economic spheres of decision-making.

But what does this local official discourse herald in practice for the future of our small society, more precisely in the areas of social development and poverty alleviation? This paper aims at scrutinising official rhetorics in order to determine whether the stated vision and mission of successive governments regarding ICT encompass a comprehensive development strategy that could address the problems of poverty and general social progress in Mauritius.

Poverty is multidimensional. Beyond deprivation of material means, it more importantly refers to the situation of people who do not experience well-being. It is a relatively complex notion that encompasses not only issues of material deprivation but also access and ability to use society's available technologies (from water distribution technnologies to digital information technologies) in order to be a part of development and progress in a sustainable way. Issues of inequality of access to information, voice and power for the masses are therefore an integral part of today's notion of social development. In a world where the developed countries as well as the elite groups within countries are increasingly geared towards equipment in technology and connection to the network of networks, such access may be counted among factors to be measured in development indicators. The more so as most theorists claim that, after having moved from the agrarian society to the industrial society, we are now entering the information and knowledge society[1]. The key foundation of this so-called knowledge society is the existence of digital technologies and networks to facilitate access, exchange and use of information in a well-disseminated, pervasive way.

However, certain problems arise with respect to the dissemination of such technologies. The digital divide, that is, the gap between those who have regular access to technology and those who do not, is a crucial issue that warrants attention as it impacts negatively on social development. It exists not only across countries, that is, between developed and developing or least-developed countries, but also within all of those countries, between their upper and lower social classes. This divide refers not only to physical access to hardware technology but also to skills and resources needed to exploit the technology. Many international organisations increasingly seek to address the problem by setting up special sections or programmes to work towards its reduction[2] or, at the very least, to incorporate ICT as an integral part of their reports and indicators. Most modern development goals include the enhancement of access to information through the means of new information and communication technologies. Interestingly, under the UN Millennium Development Goal (MDG) to 'develop a global partnership for development', one target is as follows: 'In cooperation with the private sector, make available the benefits of new technologies, especially information and communications'.

1 See Castells, 2001.
2 For instance, the UN ICT Task Force, The Digital Divide Network.

The imagined and the real

In a context where Mauritius aims at playing a lead role in the region by capitalising on the vision of cyber island and intelligent island, we thus need to stop and reflect about the dissemination of technology within all strata of our society. The public and official vision of becoming a cyber island infers global universal access to new information and communication technologies for all of its inhabitants in order to ensure that all processes, transactions and activities occurring in the island take full advantage of the benefits associated with these technologies. This vision means therefore that all the strata of the society pyramid should have full access to ICT, especially the large base of the pyramid which constitutes the mass and encompasses the least wealthy sections of the population.

However, a close look at the statistics with respect to ICT leads us to conclude that, except for mobile telephony (mobidensity of 61.5% in 2006), the penetration of new technologies is not up to expected levels for the attainment of the cyber island vision. In effect, the some of the latest figures for 2006 published by the Central Statistics are revealing.

- The number of internet subscribers at the end of 2006 reached 137,500, representing only 10.9% of the population (thus 89.1% did not have subscription).
- Households owning a computer represented 24.2% of all households (thus 75.8% did not own a computer).
- Broadband internet subscribers reached 81,069 in 2006, representing 58.9% of internet subscribers (but only 6.4% of the population).
- Some 62.9% of persons aged 12 years and above reported not having any knowledge on IT.

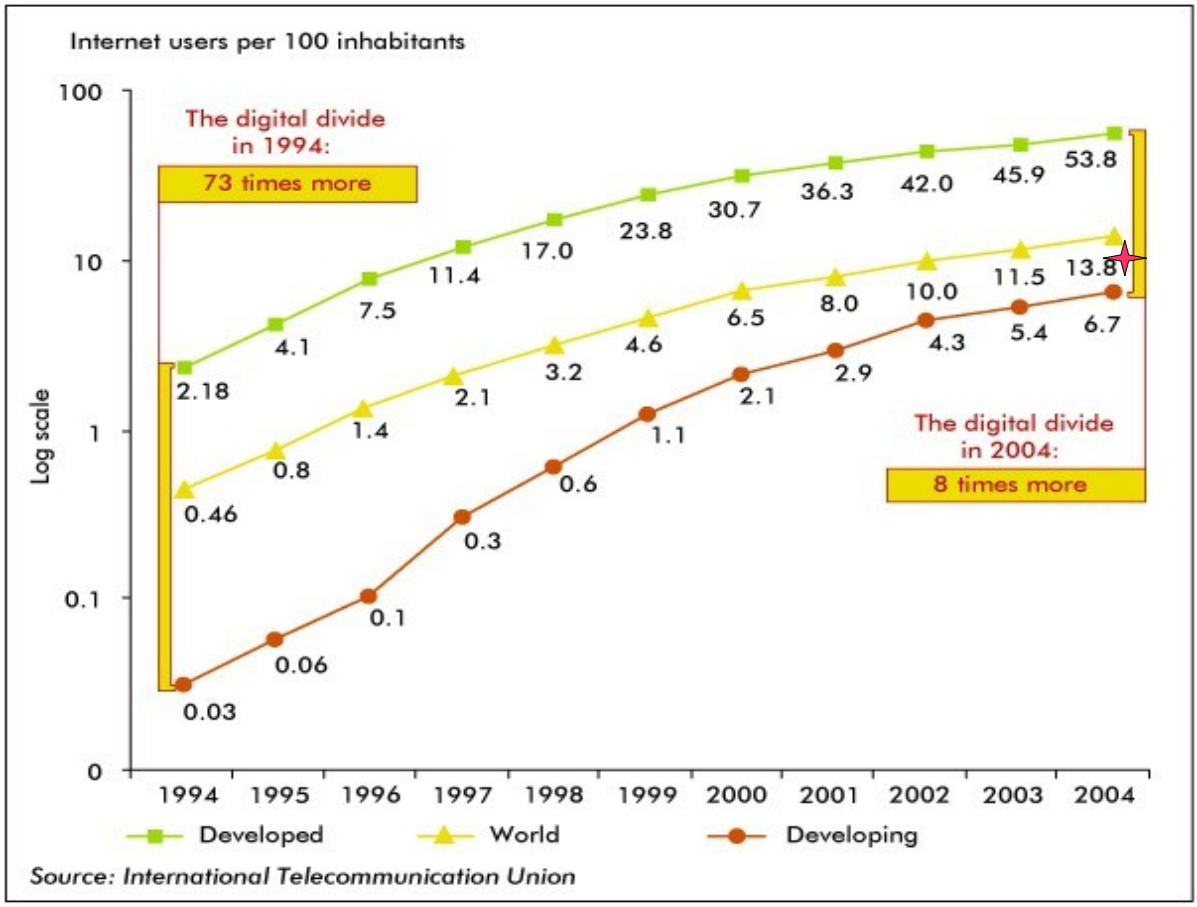


Illustration 1: Internet penetration in 2006 in Mauritius (10.9%) is below the world average of 2004 (13.8%) and very far behind that of developed countries (53.8%)

Although much progress has been achieved since the 'cyber island' vision entered the scene, we are still far from nearing attainment of the vision as testified by the above figures. But before examining further the implications of these mitigated results, it is interesting to delve a little into the history of the grand narrative of the cyber island. How did we shift from the ambition of being the Tiger of the Indian Ocean to that of becoming a cyber island?

From 'tiger' to 'cyber'

Since the 1980's, the expression 'Tiger of the Indian Ocean' has been regularly associated with Mauritius, largely due to the success achieved by the country in turning around its economy by developing and strengthening the Export Processing Zone (EPZ) and the tourism sector. The term 'tiger' contains a clear reference to the Asian mythical imagery, more precisely the Chinese tiger. It connotes agility, performance, and aggressivity. The use of this expression seeks to create an association/comparison with Asian Newly Industrialized Economies (NIEs) such as Hong-Kong, Singapore and Malaysia.

Many observers both on the internal and external fronts have praised the country's economic performance since it has acquired independence in 1968 from the United Kingdom. In effect, we have come a long way from being a poor country with a high unemployment rate[3] to a relatively prosperous one[4]. The late 1970's were a particularly difficult time as the economy suffered from a staggering deficit with the end of the sugar boom, the rise in prices of petroleum and unfavourable balance of payments. The mid-1980's economic boom brought about by the EPZ and tourism sectors thus uplifted the national spirit and this pride was translated into the mouth-filling expression 'Tiger of the Indian Ocean'.

Over the next decade however, the Mauritian economy slowed down as the EPZ sector suffered from competition from Asian countries; wages level were too high in comparison with China[5] and productivity much lower than in Singapore[6]. To reverse the trend, successive governments have concentrated their efforts on enhancing competitiveness through increase in productivity levels. To achieve this, Mauritius needed a population up skilled in know-how and an information based economy.

Although the initial ambition of creating a new economic sector based on information and communication technologies dates back to the late 1990's, the concept of cyber island was popularised in year 2001 when the government of India provided a credit line of $100 million to build the cybercity in Ebène. In 1998, the NCB (National Computer Board) National IT Strategy Plan stated that:

> *The vision of the IT industry is based on a deliberate will to develop substantially the national information technology capability of Mauritius. This requires a far-reaching use of IT in the economy and within the society of Mauritius. In this vision Mauritius will be some 7 years from now the information technology hub of the region. Information technology will be extensively used in the public sector resulting in improved efficiency and effectiveness in the delivery of its services. The private sector will make innovative use of IT for improved productivity and competitiveness. PCs will be widely used at home to enrich every day life*[7].

3 Unemployment rate stood at 16% and per capita income was $350 according to Philip English in 'Mauritius. Reigniting the Engines of Growth, A Teaching Case Study', World Bank, 2002. (http://siteresources.worldbank.org/WBI/Resources/wbi37136.pdf) accessed on 20th September 2007.

4 Today, rate of unemployment is around 9% and per capita income around $5200 (World Bank figures) and Mauritius is currently classified as an Upper Middle Income economy by the World Bank.

5 $1.28 per man hour for Mauritius vs. $0.25 per man hour for China in 1991 (Gray S.)

6 $3,247 per man year for Mauritius compared to $12,157 per man year in Singapore in 1991 (ibid.)

7 Emphasis is mine.

Three years later, this is what was written in October 2001 in the Special Report From Low Tax Online NewsWire[8]:

> *Mauritius: Offshore Cyber-Island*
> *Mr Bérenger, deputy prime minister and finance minister, says: "We are going to move to the next stage of economic development", that of an "information, knowledge, and services economy", he says. The aim is a "quantum leap" to "a knowledge island". Part of the plan involves creating "cyber cities" which would help reduce the country's still heavy dependence on sugar and manufactured exports[9].*

And the online BBC News wrote in May 2002[10]:

> *Mauritius to invest in 'cyber cities'*
> *Mauritius is to look to the information technology sector to help boost its flagging economic growth. It is planning the creation of several "cyber cities" where hi-tech facilities are concentrated and wants to be seen as a "cyber island" Prime Minister Anerood Jugnauth told the BBC's World Business Report[11].*

The idea that Information and Communication Technologies (ICTs) could constitute the fifth pillar of the economy[12] became a dominant vision adhered to by all the successive governments of our Republic. The current official vision of the Ministry of Information Technology and Telecommunications is as follows:

> *To make of Mauritius a Cyberisland and the ICT leader in the Region*

This vision is typically accompanied by ambitious forecasts about the creation of jobs. In 2000, the PTR/PMXD electoral manifesto affirmed that, by the end of year 2005, around 40,000 employment opportunities would be created in the IT sector. In 2001, the figure which was evoked was 20,000 jobs for 2005.[13] The figure has since been reviewed downwards in 2005 to between 7,500 to 13,000 jobs by 2006[14]. And the current level of employment in the ICT sector stands at 8180 for 2006 according to latest CSO figures.

Inevitably, the grand narrative has also given birth to a string of semantically laden terms and expressions some of which are listed below:

intelligent island cyber island - cyber city knowledge hub - knowledge society computer literacy - computer proficiency IT culture - IT hub - IT literacy - IT-enabled e-business – e-commerce – e-economy – e-learning - e-training - e-health - e-world - e-banking - e-government

Box 1: Buzz words associated with ICT

8 http://www.escapeartist.com/efam29/Mauritius_Offshore.html (accessed on 10th September 2007)
9 Emphasis is mine.
10 http://news.bbc.co.uk/2/hi/business/1975400.stm (accessed on 10th September)
11 Emphasis is mine.
12 The other pillars being Agriculture (mainly sugar), Manufacture, Tourism, and Financial and Business Services.
13 http://www.servihoo.com/Aujourdhui/kinews/v3news_details.php?id=994&CategoryID=22 (accessed 20th September 2007).
14 Speech of Minister of Education and Human Resources at the launch of the Skills Development Programme on 13th October 2005.

What 'cyber' really means

The term 'cyber' comes from the Greek word for navigator or steersman. While Norbert Wiener, a mathematician, is often credited for having coined the word 'cybernetics' (the study of systems that embody goals) around 1948, it is William Gibson, a science fiction author, who apparently forged the term 'cyberspace' in 1982[15]. The word became quickly associated with the Internet and the World Wide Web (although some alternative connotations persist in connection with subcultures such as the cyberpunks) as its evocation of a new ether of interconnectedness appealed to the mass media in their incessant quest for novel concepts and ideas that can strike the imagination of their audiences. Soon, the prefix 'cyber' would be conveniently glued with old terminology such as sex, crime, café, culture, law, etc. to forge glamorous new concepts in relation to computer mediated technology and the Internet. Other terms and prefixes have been similarly used (and abused), not least the prefix ' e-', short for electronic.

But, what does the appellation 'cyber island' cover? One can imagine that such a loaded expression refers to a society permeated by latest up-to-date technologies, a country where all activities are conducted or facilitated by new information and communication technologies, and therefore where all citizens have easy, full, instant and rapid access to technological devices, networks and data. In essence, an island with cyber citizens conducting cyber activities thanks to cyber facilities! Although we might make some progress towards such a vision in the not too near future as would no doubt clamour most of our decision-makers, it remains far-fetched for the time being and one can therefore justifiably argue that we are faced with either a case of modern utopia or outright myopia.

Reality checks

Whilst it is undeniable that new information and communication technologies can fuel economic growth, thereby enhancing prosperity and social progress, it is obvious that there are some 'black holes' in the official discourse surrounding the so-called new pillar of the economy. And buzz words and slogans are very convenient in helping mask these 'black holes'. Despite the existence of a National ICT Strategic Plan, there is an inherent lack of communication and understanding about the 'how' and the 'what' of such an endeavour. A simple interview with the layman on the street would reveal the superficiality of the discourse and an underlying relative failure in the achievement of the universal IT education of the population, as testified by the very fact that 62.9% of persons reported not having any knowledge on IT in the 2006 CSO survey.

This is what a newspaper[16] recently wrote about the above results:

> *Deux tiers de la population mauricienne seraient ignorants en informatique. Ces résultats d'un récent sondage officiel sont toutefois contestés. Nos compatriotes ne seraient pas, au fond, des illettrés de l'informatique, mais plutôt des néophytes qui n'auraient aucune idée des applications pratiques de cette technologie dans la vie de tous les jours.*

Many people are actually unable to explain clearly what the 'cyber island' means in practice except for mentioning the magic words 'computer' or 'Internet', this even within social categories who have benefited from secondary and tertiary education and occupy blue-collar jobs. As for the lower social classes, Information and Communication Technologies are almost as far remote from their world as space travel. The only technology which has extensively penetrated all social strata of the Mauritian society is mobile telephony, thanks to the low cost of entry-level models of telephone and continuously declining prices of the technology[17]. The current government has recently declared,

15 According to Wikipedia, he later declared in a documentary in 1996: 'All I knew about the word "cyberspace" when I coined it, was that it seemed like an effective buzzword. It seemed evocative and essentially meaningless. It was suggestive of something, but had no real semantic meaning, even for me, as I saw it emerge on the page'. (http://en.wikipedia.org/wiki/Cyberspace – accessed on 20th September 2007)

16 L'express-Dimanche of the 9th September 2007.

17 Mobidensity stood at 61.5% for 2006 according to CSO.

through the Minister of Information Technology and Telecommunications, that it aims to connect 400,000 people to the Internet by July 2008[18]. Such determination is laudable but the relative trend in Internet penetration does not seem that promising, especially when we have a close look at the comparative growth in Internet penetration in Mauritius over the last 6 years according to CSO data[19].

Year[20]	Number of Internet subscribers	Percentage growth
2000	35,000	-
2004	78,000	122.9%
2005	128,600	64.9%
2006	137,500	6.9%

Table 1: Internet penetration is growing but at a slower pace over the years.

How do we compare?

According to the *2006 African Broadband and Internet Markets*[21], while Internet is growing on the African continent, market penetration is still very low at around 4% in 2006, with the highest penetration recorded in the Indian Ocean (Reunion, Seychelles, followed by Mauritius). But several African countries such as Cote d'Ivoire, Morocco, Senegal, Sudan and Tanzania have experienced triple-digit growth rates in Internet usage in recent years. Thus, one can infer that, although Mauritius is one of the top countries in the region in terms of ICT penetration for the time being, the trend in our growth rates does not compare that favourably and we run the risk of being rapidly overtaken in our digital endeavour. It seems that we are nearing a plateau with respect to Internet penetration. Such a trend is also noticeable in Northern America and Northern Europe with the difference that their penetration rates exceed the 60% mark whereas ours stands at 11%. Which warrants the question: 'Are we coming to a standstill?'.

Of course, our Digital Opportunity Index which stands at 0.50 in 2006 has improved from 0.45 in 2003 (A DOI of 1 indicates the highest digital opprotunity and 0 is the lowest). As stated by the Central Statistics Office, 'Improvements are noted in all the three sub-indices constituting the DOI. However, while the sub-index for “Opportunity” is high (0.97), those for “Infrastructure” (0.38) and “Utilization” (0.16) are low'.

Views from the Mauritian cyberspace

To gain some insight into the public perception with respect to the 'cyber island' project, a small online survey which attracted responses from some 40 Mauritian Internet users was conducted during the month of September. Although the results of this survey cannot be considered as representative of national trends due to the small sample size, they nevertheless provide some preliminary information about how Mauritian Internet users perceive a project with which they are already somewhat engaged.

All respondents (except one who evoked the risk of dehumanisation) expressed conviction that new information and communication technologies are important to society, cannot be ignored and can indeed help society in general. Most (84%) felt ICT can help Mauritius achieve social progress with some specifically referring to the potential of such technologies for reducing economic disparities and alleviating poverty by generating jobs and wealth, and others evoking the facilitation of

18 L'express-Dimanche of the 9th September 2007 – Interview of Minister Sinatambou

19 It should be noted that the CSO does not specify whether these figures pertain only to households subscription or encompasses business subscription as well.

20 CSO does not provide data for years 2001, 2002 and 2003

21 Research and Markets, http://findarticles.com/p/articles/mi_m0EIN/is_2006_May_8/ai_n16347551 (accessed 20th September 2007)

communication and also the easier connection with knowledge centres and other nations. Yet, respondents also stressed the importance of clear policy, proper planning and means as well as a need for a change in mindset, particularly as far as ethnic and religious matters are concerned.

When probed about the potential of ICT for alleviating or eliminating poverty, 59% firmly believed such technologies can effectively help (by contributing to education which helps people out of poverty, by creating employment, by increasing productivity and generating wealth which may be subject to taxes to be used for poverty reduction or even used by businesses for CSR[22] programmes targeting poverty). 18% did not agree (they think ICT only increase the gap between the rich and the poor, that elimination of poverty is an unachievable objective) and 23% did not know.

Interestingly, above 60% of respondents expressed moderate to serious doubts about the 'cyber island' project. Many evoked the difficulties related to purchase of equipment, the lack of adequate logistics and policy, the inadequacy of education and training with respect to ICT, the insufficient bandwidth available, and the fact that too much emphasis is laid on call-centres.

- *It's pure rhetoric. So much has been said but little done. no great results. we are just a call-centre island and we are not thinking over and above that..all other possibilities that exist to really transform the island..What cyber island when so many homes don't even afford a PC!*
- *The project is a good one but the IT base has to be widened and make computers available in every single house*
- *['cyber island' is] a generic term that is beyond the ability of any government in the foreseeable future. A cyber island would require nationally developed supports and logistics that allowed countries like Japan and the USA to develop exponentially*
- *To me making Mauritius a cyber island is just a lure, it is still expensive for some people to get access to a computer, training are being done but are not sufficient to make the island a cyber one*
- *Mauritius can't become a cyber island unless it has a decent enough Internet access :(*

Box 2: Respondents' perception vis-à-vis the 'cyber island project.

Regarding progress achieved towards realising the project, only one respondent felt that the vision is a reality to a very large extent, 41% felt it has been partly realised, another 41% thought not much has been achieved and 13% felt nothing has been achieved. While some felt that the cyber towers are a step forward, that many youngsters are working in the ICT sector and that computers have entered most spheres of our life (*'offices, hospitals,banks, schools, colleges, university'*), others felt that this is not enough. The latter complained that our public services are not computerised (e.g. no computerised archives in the health system), that the standards of ICT education is much lower than those of developed countries (with whom the respondent feels we should be compared, not African countries) and even felt that employment in the sector is insignificant. One pointed out that free access to the Internet which used to be available at the Mauritius Post Ltd is no longer offered.

Nearly 67% felt that the local conditions for ICT deployment and use are inadequate and insufficient to bring social progress in Mauritius. They criticise the lack of resources especially in primary schools[23] but also in terms of affordability and quality of access to broadband, the superficial results of promotion of ICT ('*People only have certificates in IT but don't use it in everyday life*', wrote one respondent) and the inadequacy of policies and political will.

In essence, it seems that current Internet users agree that ICT are an important feature of modern societies and, as such, the use thereof should be promoted in order to impact positively on social inclusion and development. Yet, they also feel that the grand 'cyber island' rhetoric is overstretched as there is a gap between the discourse and the practice.

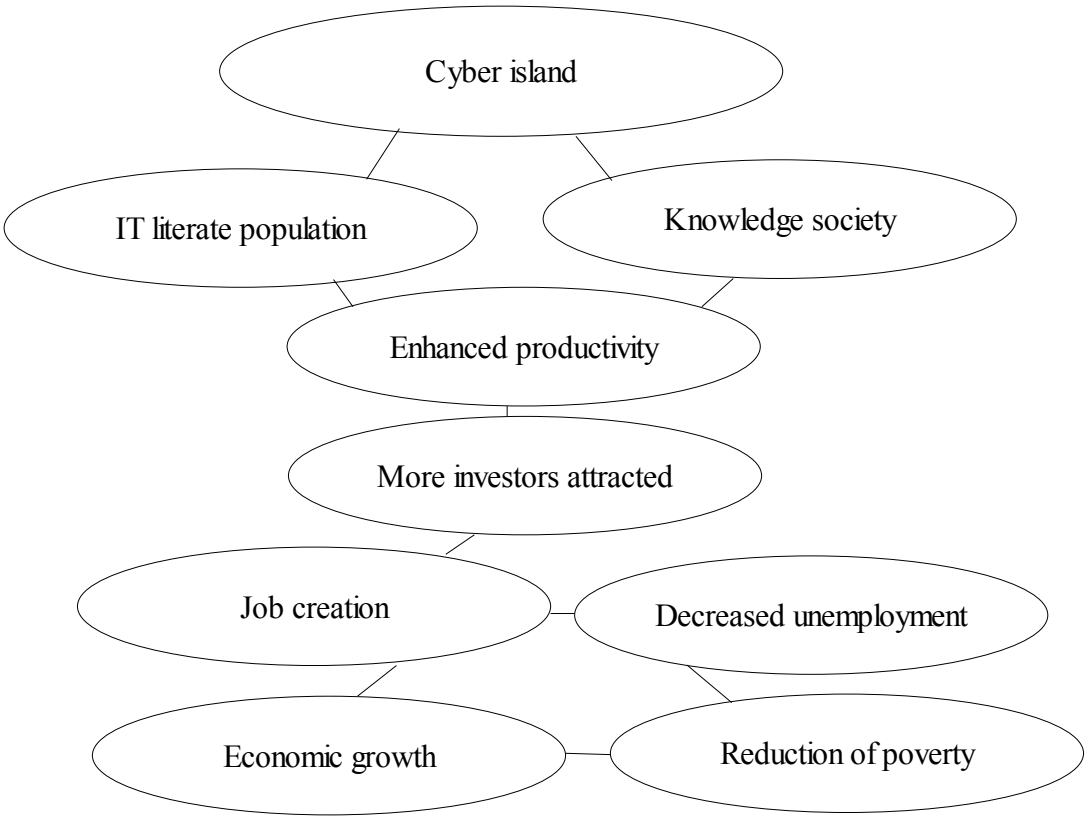
22 Corporate Social Responsbility

23 Latest figure (2005) is one PC for 185 students in primary schools! (http://www.gov.mu/portal/goc/cso/scanict/ict.pdf, accessed on 12th September 2007)

As stated in the WSIS 2007 report:

> *... the digital divide is evolving from inequalities in basic access to ICTs and their availability, to differences in the quality of the user experience. Access to ICTs increasingly determines access to wealth and income, and will, in turn, determine the leaders in tomorrow's knowledge economy. The debate over the future of the digital divide is now moving away from "quantity" in basic connectivity and access to ICTs to measures of "quality" and "capacity", or speed of access.*

In effect, the rhetoric of the 'cyber island' masks an equation which is founded as may be illustrated with the following diagram:



ICT can help

Indeed, ICT can act as a major enabler to achieve development goals, including those agreed to by world leaders under the Millennium Development Goals umbrella. As underlined by a UNESCO article about a 2004 report on research in ICT innovations for poverty reduction, "ICT based interventions can help reducing poverty"[24]. New technologies have the potential to positively impact on efforts to reduce poverty. Reducing the digital divide can help achieve more economic growth and social mobility, more equality in access to resources and information, more dialogue for enhanced democracy and can enable good governance. Provided however that the right strategies are adopted and implemented, proper dissemination is ensured, adequate facilities are provided and grassroots actors are involved. And a pro-poor approach is adopted.

24 http://www.digitalopportunity.org/external/?url=http%3A%2F%2Fportal.unesco.org%2Fci%2Fev.php%3FURL_ID%3D17249%26URL_DO%3DDO_TOPIC%26URL_SECTION%3D201%26reload%3D1095833507 (accessed on 10th September 2007)

Such initiatives as telecentres in India and other developing countries and the Grameen Bank projects have shown that a grassroots approach can be successfully adopted to promote social development. The one laptop per child project as well as open source initiatives also provide hope for the extension and dissemination of new information and communication technologies for the poor and the socially excluded.

In Mauritius, if we really want to work towards the realisation of the 'cyber island' vision, then we have the duty to ensure that those who are socially excluded, the poor and the minorities, are taken on board for real and well disseminated sustainable socio-economic development. There is therefore an urgent need to tackle the 'cyber island' project from the grassroots by encouraging and multiplying initiatives such as those listed above.

After all, as stated in the National ICT Strategy Plan 2007:

> *The use of ICT for social development is an area that needs to be explored further as there are real opportunities for Mauritius to improve the quality of life of disabled persons, senior citizens, unemployed, young people and women through ICT.*

And, the official Mission Statement of the Ministry of Information Technology and Telecommunication is:

> *To provide the right environment for the harnessing of Information & Communication Technologies to generate employment, increase national wealth, improve quality of life and create new opportunities for sustainable socio-economic development of Mauritius*

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Addendum

Extract of the WSIS Declaration of Principles – 2003 (signed by Mauritius)

2 Our challenge is to harness the potential of information and communication technology to promote the development goals of the Millennium Declaration, namely the eradication of extreme poverty and hunger; achievement of universal primary education; promotion of gender equality and empowerment of women; reduction of child mortality; improvement of maternal health; to combat HIV/AIDS, malaria and other diseases; ensuring environmental sustainability; and development of global partnerships for development for the attainment of a more peaceful, just and prosperous world. We also reiterate our commitment to the achievement of sustainable development and agreed development goals, as contained in the Johannesburg Declaration and Plan of Implementation and the Monterrey Consensus, and other outcomes of relevant United Nations Summits.

8. We recognize that education, knowledge, information and communication are at the core of human progress, endeavour and well-being. Further, Information and Communication Technologies (ICTs) have an immense impact on virtually all aspects of our lives. The rapid progress of these technologies opens completely new opportunities to attain higher levels of development. The capacity of these technologies to reduce many traditional obstacles, especially those of time and distance, for the first time in history makes it possible to use the potential of these technologies for the benefit of millions of people in all corners of the world.

9. We are aware that ICTs should be regarded as tools and not as an end in themselves. Under favourable conditions, these technologies can be a powerful instrument, increasing productivity, generating economic growth, job creation and employability and improving the quality of life of all. They can also promote dialogue among people, nations and civilizations.

14. **We are resolute** to empower the poor, particularly those living in remote, rural and marginalized urban areas, to access information and to use ICTs as a tool to support their efforts to lift themselves out of poverty