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Incorporating Electronic Business Initiatives in Health Services and Health Tourism: A Case Study of Malaysia

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Abstract

Telecommunications, information communication technology, miniaturization, computers and Internet went through shorter product life styles and achieved widespread diffusion and reformed the nature of business operation and enhanced competitive business environment instantly. This technological advancement has resulted in evolution and innovation of many products, services and business processes. The Internet has resulted in the emergence of virtual markets with four primary distinctive characteristics, which are real time, shared, open and global. The greatest feature of the Internet is the absence of intermediaries; the manufacturers are able to sell their product relatively easier to buyers via Internet. E-business today is no longer technological issue, but is also a business issue.

Incorporating E-business initiatives in health services aims to go beyond the traditional modes of healthcare delivery and instead, provide greater access to better and higher quality healthcare. It is achieved by grabbing opportunities of enhanced multimedia and information technologies and developing new technological solutions. In addition, E-business initiative is incorporated in enhancing health tourism sector through cost cutting strategies and improving quality of patients' care. Thus, this paper attempts to discuss the current states of health services and health tourism and how the emergence of E-business initiative can be capitalized to further boost the industry in Malaysia.

1. INTRODUCTION

In the past recent years, public organization, government agencies and enterprises across the globe have experienced significant changes in their operational information system. Huge investments were made in resources planning system implementations but still they struggle to get timely information that is needed to make effective decision and to ensure continuous development of organization. Placing 'e'

in front of any process or function seemed to be the magic prescription for never ending story of success and rapid returns for organization. E - Business, e - sales, e - payment, e - claim, e - procurement, e - banking, e - delivery, e - CRM, e - CAD are just a few. Internet, for instance is becoming one of the most popular medium in transmitting various data. Users can find any kind of information within a shorter time compared with conventional method that consumes more time. The emergence of the Internet through out the world has contributed such a variety in doing business or organizational operation as well as people's lifestyle.

People nowadays are becoming increasingly proactive about looking for health information and participating in decisions about their medical care. Much of healthcare consists of the ordinary exchange of information between medical experts such as physicians and nurses and patients. With the advancement of information and communication technology (ICT), healthcare provision can be extended far beyond the traditional barriers such as physical, geographical, financial and time factor. As access to information becomes more easily available through various modern means like Internet, people are becoming more informed, thus being more concerned about their own and beloveds' well-being. In the wake of these phenomena, Malaysian government has incorporated in its primary areas for multimedia applications under the Multimedia Super Corridor (MSC) project, Telehealth Flagship. In addition to Telehealth Flagship, other such kinds of flagship are Electronic Government, E-Business, Smart School, R & D cluster, Multipurpose Card and Technopreneur Development. The Telehealth Flagship has long term goals to transform core elements of Malaysia's technology infrastructure and social systems in areas like education, public administration, medical care and health, using multimedia technologies as a critical enabler in the process.

Meanwhile, health tourism in Malaysia is a relatively new sector that is expected to become an important niche market as the population in country and especially in neighbouring countries ages. Health tourism is comprised of two sub-markets'medical or health care tourism and fitness and wellness tourism. Malaysia offers medical services comparable to those in other developed countries. In fact the federal government in the recent years has taken up formidable steps to wooing more health and wellness tourists. These include executing aggressive marketing activities especially in the neighbouring country - Indonesia, upgrading transportation and communication infrastructures, and strengthening networking with travel agencies, private hospitals and private medical colleges. Apart from the government run general hospital, there are several private medical specialists' namely Johor Medical Group, Pantai Group Specialists and Mahkota Medical Center. These private groups offer various medical services and specialisations in cardiothoracic surgery, orthopaedic surgery, diagnostic radiology, clinical laboratory services, dentistry services, executive health screening and neurosurgery (to name few). In addition to distinguished medical services and medical cares, Malaysia also offers competitive and affordable price, not only to patients but also to their relatives and companions as there are a number of world class hotels with reasonable rate. Besides, health tourism attraction, Malaysia also offers homeopathy clinics, traditional health services and consultancies and private veterinary clinic.

2. PROSPECT AND COMPETITION

In the recent report study co-conducted by National Economic Action Council (NEAC) and Ernst & Young, the bed occupancy rate (BOR) of both public and private hospitals showed that there is potential to increase bed occupancy. The BOR of public hospitals surveyed average approximately 68% while the BOR of private hospitals surveyed averaged at 61% in 2001. Furthermore, average length of stay is 5.3 days in 2001 for public hospital compared to 3.3 days in private hospitals. The inflow of foreign patients into Malaysia seeking healthcare services has increased over the past few years. The same study revealed that the number of foreign patient admissions in the public and private hospitals surveyed stood at 14 747 in 2001, a compounded annual growth rate (CAGR) of 27% since 1999. Foreign patients from Indonesia account for the largest majority, with 57% of total foreign patient admissions in 2001. Hospitals in Melaka, Pulau Pinang and Klang Valley generated more than 50% of total foreign patient revenue in 2001. The top four reasons for selecting Malaysia as a destination for health services ranked in order of importance were referrals, high quality of health services, location and competitive price. The study estimated that by 2010, the foreign patient market can potentially increase to RM 2.2 billion through increase in capacity utilisation. In terms of number of foreign patients, it is estimated to grow at a rate of 31% from 14 747 patients in 2001 to 162, 200 in year 2010.

It is also expected that private health services could soon be as common as private schools. This may be due to three factors. Firstly, health care whether private or public has become more expensive in recent years as more people are suffering from high-priced ailments. These so called diseases of affluence, among them heart problems and cancer -C require costly diagnostic procedures and protracted treatments. Secondly, government is passing on the responsibility for advanced medical care to private sector. Malaysia for instance has already turned over a few supporting medical services like the supply of pharmaceuticals, catering and laundry to private firms. However, the idea of privatizing hospitals and other supporting medical services is moving at different speeds since the concept is not yet widely accepted. Lastly, people are opting out of the overcrowded and understaffed public hospital system.

Private health care spending in Asia hit USD 35 billion in 2001. In addition, growing affluence and the advent of private health insurance coverage have generated a market of some 50 million Asian affordable to pay for private health care. Thus, the competition to win this lucrative market is fierce. Singapore, Malaysia and Thailand are all vying to become the region's premier private health services and health tourism hub. It means wooing patient from beyond their borders with offers of the best treatment and the best services for the least cost. Singapore from 1995 until 2000 took major slice of shares in luring foreign patients especially from Indonesia, Malaysia and other Southeast Asian countries. However, ultramodern facilities in lower-cost Thailand and Malaysia have made major inroads into Singapore's niche by offering comparable services -C from life-saving heart bypasses to cosmetic surgery in comparable comfort at savings 70% to 90%. The price cutting has taken a swipe at Singapore's dominance. In other side of globe, more countries have realised the majestic of health services and health tourism industries. India, Cuba, Costa Rica and East European countries including former Soviet Union states, have taken aggressive and moving forward strategies to make inroads into this multi-billion lucrative industry globally. India for instance does not only offer modern medical services but also it's traditional medical care widely known as 'ayurveda'. In addition, East European countries like Ukraine, Romania, Poland and Bulgaria enhance the value of their medical services and medical tourism by offering research and development facilities and remarkable medical education by their formidable institution and tertiary education provider.

Besides rising competition, health services and health tourism are also facing escalation of costs. Components of these cost drivers are hospital charges (premise rental and maintenance costs), prescription drugs, government mandates, litigation and fraud problem. In United States for example, the costs have been increasing at an average annual rate of 10%. To meet those challenges, the players in this respective industry should undergoing a major transformation which would simplify its many and complex financial, administrative and clinical processes, resulting in a more efficient and consumer driven healthcare system. This transformation is a direct result of or facilitated by the rapid growth of the Internet and e-business initiatives.

3. E -C HEALTH INITIATIVES

Telehealth flagship was launched in 1997 by the then Minister of Health (MOH), Datuk Chua Jui Meng. This initiative aims to empower the individuals, their families and their communities to greater access and increase knowledge in personal healthcare managements. It also focuses on the need to provide wider healthcare access and knowledge because it is actually based on the premise that the best healthcare is achieved when each individual and institution involved like the public, healthcare providers, related government agencies, pharmaceutical industries and higher learning institutions have access to and shares useful healthcare information. This initiative offers a mechanism for reversing the healthcare pyramid from a focus on illness to an emphasis on self-care and for healthcare professionals to be partners of individual. In short, Malaysia's telehealth is not just point-to-point teleconsultation. It incorporates the full spectrum of multimedia technologies to bring about benefits to all players in the health sector, thus transform the healthcare services and shape new relationships between people and their healthcare providers.

As with other flagship applications, Telehealth Falgship also has its own set of pilot applications that are implemented. These pilot applications have been implemented at a few selected healthcare centers in the country over a five year beginning 2000. The selected sites were not only as a test bed for these four applications, but also for infrastructure and behavioural assessment. The four applications are

discussed below:-

i. Teleconsultation (TC)

Teleconsultation is the use of multimedia technologies to facilitate consultation on healthcare between healthcare providers who are physically apart. Teleconsultation employs information communication technologies to link healthcare in various different locations, usually in remote areas that do not have medical specialists in attendance at the healthcare centers especially in villages to district and state general hospitals. The basic facilities needed to implement teleconsultation are a leased line or ISDN dial up line, server and PC that is able to support the two types of consultation offered by the MSC Telehealth Teleconsultation Project. The first type of teleconsultation is the store and forward (offline consultation through e-mail and electronic data interchange), whereas the second type is the real time video conferencing (online interactive consultation through video and audio conferencing). It is hoped that this application allow easy sharing of opinions, provide support and deliver care to patients at home or close to their homes between healthcare providers and patients in a multipoint manner or teleconsultation links. In addition, this application is believed to assist in improving the equity of access to quality care, especially to under-served areas and realize the goal of care closer to the home (Multimedia Development Corporation (MDC), 2002)

ii. Continuing Medical Education (CME)

The idea of implementing CME application is derived from the fact that most of the healthcare professionals have to continuously update, develop or increase the knowledge, skills and competency of services. However, previously, by doing so, healthcare professionals then have had to leave their current positions to attend full time courses at universities and training colleges. CME intends to provide continuous up-to-date knowledge and skills to healthcare providers by keeping current on the latest medical advances from different locations without leaving their current positions.

CME application concerns on distance learning methods for healthcare professionals in Malaysia using appropriate multimedia information technology. It is envisioned that healthcare professionals can access training modules, lecturers via videoconferencing, formal distance learning programs, online journals and textbooks and databases containing international knowledge.

Besides, the virtual library will allow healthcare professional to access sources of information via the Internet like medical journals, e-textbooks, evidence-based medicine database, clinical practice guidelines, related government and MOH reports, local and international databases and links to accredited websites. They will also offers JIT CME (just-in-time CME) enabling healthcare providers to provide timely and appropriate information.

The online professional community services utilizes online applications such as e-mail, chat, white boards and also audio visual technologies to create a virtual environment for various communities of healthcare professionals with common interests to interact and conduct discussions electronically. The electronic courses will also be using these online applications and multimedia technologies to make them more interactive (MDC, 2002)

iii. Mass Customized/Personalized Health Information and Education (MCPHIE)

MCPHIE's noble aim is to produce and deliver quality health information and education to the individuals by utilizing the information technology especially multimedia and telecommunication. This application will provide health information, education and advise that is customized and even personalized for different individual. It consists the sourcing and development of information and educational materials followed by the construction of a database. This application of the Telehealth Flagship allows the public to obtain information and updates on areas of health of their specific needs by registering themselves on the specific site (http://www.telehealth.com.my). Among the issues and topics that can be discovered include cardiovascular health, cancer, injury prevention and antenatal/prenatal health. This MCPHIE services will be available via the Internet interactively, and also via healthcare providers or call centers.

Shortly, MCPHIE application will provide information and education services for three target groups, namely the mass or general public, customized or specific target group and also personalized groups. It is hoped that this application will provide Malaysians better control their health affairs and beloveds' health. It will empower and encourage the individual to be responsible for his own state of health. With such support from professional information and advice through MCPHIE, Malaysians will become more proactive in maintaining their state of health and preventing illness (MDC, 2002)

iv. Lifetime Health Plan (LHP)

Of the four applications in Telehealth Flagship, LHP is considered the most complex and comprehensive. It provides a personalized proactive and prospective lifetime health plan to achieve a continuum of care to keep the individuals in the highest possible state of health by trying to reduce premature diseases and disabilities.

LHR is a healthcare guide based on the lifetime health record, a summary of an individual's lifetime health record that is built during the times that the individual visits his physicians or specialists. It is anticipated that the creation and integration of a lifetime health record will develop a personalized lifetime health plan for each and everyone of the country's population. This interactive plan is supposed to maintain updated medical files for each individual and remind them when routine treatments, such as immunizations or regular checkups, should be scheduled and conducted (MDC, 2002)

There are three sub applications in the LHP:-

a. Clinical Support System (CSS)

The effort required to compile Electronic Medical Records for all patients. Among the components of the CSS are the hospital, clinical and pharmacy information systems that record specific health information about the patient. Different hospitals or healthcare providers can use standardized application to facilitate the sharing and transfer of information between them.

b. Healthcare Information Management and Support Services (HIMSS)

It maintains the patient information database. Resulting statistical data can be used to formulate national health policies and plans, forecast outbreak and penetration of diseases and provide data for medical research.

c. Personalized Lifetime Health Plan (PLHP)

This application creates the plan based on patient's information.

Table 1 Difference of Health Service Delivery from Industrial Age Medicine To Information Age Healthcare

Health Service Delivery **Industrial Age Medicine**	**Health Service Delivery** **Information Age Healthcare**
Physical	Virtual
Centralized	Distributed
Fragmented	Integrated

Source: Multimedia Development Corporation, 2002.

Internet technology will bring great benefits to the quality of patients care, thus flourishing health services and health tourism industry. The internet will eventually link health plans, hospitals, physicians, labs, pharmacies, research facilities and employers to get the right information to the right user at the right time. While the potential is unlimited, the following are a few example of how E-Business could be used in enhancing the quality of patients' care and in turn boosting this industry.

- Physicians from their offices would be able to link into local or regional networks to receive and/or transmit clinical and medical information about their patients. Progress in this area will be accelerated by the emergence of more robust standards for clinical data exchange.
- Physicians would be able to send lab order, prescriptions, and nursing care instructions to the appropriate laboratories, pharmacies, or care providers.
- Primary care physicians would have access to specialists without the need for a referral visit, through a multimedia data exchange capability facilitated by internet technology.
- Web based technology will make it easier for health service providers and plans to manage

medical resource utilization and encourage compliance with clinical best practices.
- Use of bar coding to track the flow of medications through the supply chain which would lower the chance of medication errors.

4. INSTITUTIONAL'S ROLE

In discussing institutional role in developing and supporting the development of telehealth in Malaysia, we are focusing on the function and the responsibilities of two institutions that are Multimedia Development Corporation and Telekom Malaysia. Multimedia Development Corporation is government linked company responsible in overseeing and monitoring the success of Multimedia Super Corridor project including its seven flagships. Telekom Malaysia is also another government linked company, which for several years has established itself as a major telecommunication provider in Malaysia.

Multimedia Development Corporation (MDC) has been assigned to facilitate the implementation of Telehealth Flagship for Malaysia, by being the middleman between the parties involved such as healthcare centers, providers like hospitals and information communication technology providers like Telekom Malaysia. MDC also assists in getting skilled workers such as programmers and technical experts who are critical at this early implementation stage to establish the system. MDC provides support through negotiations, marketing and promoting the flagship locally, seeking acceptance and adoption by healthcare providers and the public.

The implementation of the Telehealth Flagship is regularly reviewed by the flagship coordination committee co-chaired by director general of MOH and executive chairman of MDC. This committee looks into the integration and progress of the implementation. The committee promises to lead Malaysian into a new paradigm of wellness in healthcare on both professional and personal levels. It is the committee's hope that Malaysia will soon become a nation of healthier individuals who are empowered to determine their own state of health, mentally and physically.

Telekom Malaysia is one of the top three companies listed on Kuala Lumpur Stock Exchange with RM 37.5 billion market capitalization as on 30 September 2004. It has over 30 500 group employees and 22 250 company employees and operating in seven other countries and representative offices in United States, United Kingdom, Hong Kong and Singapore. As on August 2004, Telekom Malaysia has 4.5 million fixed line customers or 17.5% of Malaysian population, 5.2 million cellular customers or 38.6% of cellular market and internet service with 1.9 million customers or 58.0% market. This information reveals that Telekom Malaysia is substantially well positioned to lead Malaysia's ICT development including electronic health or telehealth flagship.

Telekom Malaysia is committed in developing national ICT agenda in four main areas that are (1) building national and international communication infrastructure such as wired or wireless and narrowband or broadband facilities, internet connectivity, regional and global hub and Multimedia Super Corridor infrastructure, (2) facilitating knowledge society development including Multimedia University establishment, training colleges, research and development collaboration with higher learning institutions, smart school, (3) bridging the digital divine by encouraging e -C community formation and universal service provision and lastly (4) participation and sponsorship of national ICT agenda, industry forum and international events.

Apart from Multimedia Development Corporation and Telekom Malaysia, there are also significant roles of government ministries particularly Malaysian's Ministry of Health and Malaysian's Ministry of Tourism. In addition to their primary role in designing and planning the primary policy regarding the issues concern, both ministries also committed to assist industry players achieving the optimum capacity through less -C bureaucratic procedures, facilitating application of new projects, substantial funding and aggressive promotion internally and at abroad.

Table 2: MSC Visions and Milestone

Phase	1	2	3
Duration	1996 - 2003	2004 - 2010	2010 - 2020

Visions/Targets	Successfully create the Multimedia Super Corridor (MSC)	Grow MSC into a global ICT hub	Transform Malaysia into knowledge society
Milestone	-1 corridor -50 world class companies -Launch 7 flagship applications including E - C health (telehealth) -World leading framework of cyberlaws -Cyberjaya as world leading intelligent city	- 250 world class companies. - Enhance flagship and introduce new ones to increase competitiveness and improved service delivery. - Leadership towards harmonized global framework of cyberlaws. - Enhance ICT industry and become net ICT exporter. - Link to leading smart communities for mutual gain	- 500 world class companies. - Global test bed for new multimedia applications. - international cybercourt of justice in MSC - 12 intelligent cities linked to global information highway

Source: Huay Neo, 2004.

5. PROBLEMS

And as with any introduction of new initiatives, numerous challenges can be expected from the users. The challenges for implementing Telehealth Flagship can be divided into four categories (1) designing and planning, (2) implementation, (3) awareness, acceptance and usage of healthcare services and (4) achieving national aspirations.

The first is the designing and planning which is fairly easy to overcome because numerous professionals and experts from various fields were brought together to design the telehealth blueprint. This was done in 1997. Thus, there were adequate experts to provide ideas to ensure that the concept will assist to realize the health vision. In fact, the planning of the Telehealth Flagship took less than a year to complete.

The second challenge is the implementation of the project where there is a need to interpret the planning concept. This includes organization, staffing, leading and controlling the implementation. There are many ways to get to the same place or to derive or achieve the same outcome. It is very dynamic and consumer expectations change periodically. Therefore, at times, activities, need to be streamlined and refocused, particularly non-capital resources.

For instance, technology is very important in the implementation of the flagship even though the Telehealth Flagship is not technology driven. We need to be constantly aware of new technologies and if adopted will likely provide better health outcome. The Personal Device Assistance (PDA) were not thought to be relevant to medical practitioners before, but they can now use these gadgets to share clinical information of their patients and control of their schedule even when they are away from health facilities. PDAs assist in the portability of health records and health plans. Whilst, it is important that the Telehealth project be rolled out, new, enhanced technologies must be incorporated to make the Telehealth project more receptive to the current environment. Home monitoring devices, establishing call centers and new innovative solutions such as biotechnology solutions in providing continuous care to

individual and the families are being planned for the rollout.

Third is the promotion of awareness and usage of the Telehealth initiatives. Great impact will be made on the public if they can use the Telehealth deliverables as part and parcel of their daily activities. Sadly, not everyone is keen on maintaining his or her health in a wellness state at all times. Not many of us view health as an asset. If we realize this, then the need and demand for quality health information and health management plans will raise. All that remains now is to get the healthcare providers to use the system. As the saying goes, the truth of the pudding is in the eating. Until people can access the system, they will not believe in it. The system has been made to be as user friendly as possible, considering the hectic schedule of healthcare professionals. Thus, they need not spend more time than is absolutely necessary accessing and inputting data into the system.

The final challenge is ensuring that the aspirations of the nation via the MSC flagship are met. The implementation of the Telehealth Flagship must lead to Malaysia being the global telehealth hub, which has high continuous revenue earning potential for the nation. In addition, the right technology transfer from abroad and R&D must be affected to ensure competitive advantage. Various delivery channels must be provided for public convenience to assist in the retrieval of some of the healthcare services from home. As such, the Internet must be viewed as one of the major delivery channels. Appropriate infrastructure is being placed in health centers and hospitals and families need to be encouraged to utilize these services from the home through the Internet. Continuous change management and training must be put into practice to ensure continuous acceptance and usage of these services.

In addition to the challenges discussed earlier, few other imperative aspects remain to be addressed. One of them is research and development aspect. Malaysia still has lack of allocation and trained human resources in research development sector. In 2000, for instance, Grant/Expenses on Research and Development (GERD) over Gross Domestic Product (GDP) was only 0.5% and ranked at number 13th in the world ranking, compared to the first ranking -C Japan which GERD/GDP ratio is 2.8%. In terms of number of researchers over 10 000 labour forces, Malaysia also ranked at 13th with 15.6 researchers from 10 000 labour forces, contradicting from Japan at first ranking with 136 researchers from 10 000 labour forces. The following tables indicate the research development performance in Malaysian sector as well as Malaysian research development performance in information communication technology.

The information obtained from the accompanying Table 3 and Table 4 concludes that the allocation for research and development activities especially to ICT sector is still small, thus it is one of the challenging aspect Malaysian has to address in order to establish as world e -C healthcare hub. Without proper, sufficient and efficient fund, efforts for continuous improvement for both hardware or technologies and software or solution will be hampered.

Table 3: R & D Performance in National Sector (case in Malaysia 2000)

	Private Sector	GRI*	IHL**
Expenditure (CAPEX)	RM 597.3m	RM 124.9m	RM 142.1m
Researchers	2, 304	3,809	8,909
Research priorities	-Applied Science -Information computer and telecommunication technology	-Information and communication technology -Agricultural sciences -Engineering sciences	-Natural resources science -Technologies and engineering -Construction
R & D CAPEX per researcher	RM 259,114	RM 32,554	RM 15,939

* *Government Agencies and Research Institute*

** *Institutions of Higher Learning*

Source: Komiya, 2004.

Table 4: National ICT Performance (case in Malaysia, 2000)

	Private sector	GRI*	IHL**
Expenditure (CAPEX)	RM 125.4m	RM 45.95m	RM 24.10m
Researchers	460	91 (estimated)	No data
R & D CAPER per researcher	RM 272, 608	RM 502, 023	No data

* *Government Agencies and Research Institute*

** *Institutions of Higher Learning*

Source: Komiya, 2004

Besides, other concerning issue that has to be addressed if Malaysia is serious to become leading e -C healthcare is low penetration rate of Internet and broadband (Refer Table 5 and Table 6). Internet was introduced in Malaysia in the mid 80s, however after two decades, the Internet subscriber penetration rate is 11.4% (as at 2003), and that too is based on dial -C up. What is more saddening is that Malaysia's broadband penetration is 0.45% (as in 2003) as compared to Korea and Singapore of above 60% and 50% respectively. Broadband subscribers in the world top four countries as reported by ITU Report, 2004 is United States (27 million), Japan (14 million), South Korea (11 million) and China (10 mllion). This low penetration rate will not encourage greater access and sharing of the latest health information across the nation especially in remote areas. The following tables review the Malaysia ICT statistics on the level of penetration rate.

Table 5: Telephone Penetration Rate (per population)

Year	Fixed line phone, %	Cellular phone, %
1999	31.44	9.7
2000	41.50	12.0
2001	50.37	30.8
2002	56.12	36.9
2003	61.99	43.9

Source: Wahid, 2004 and Kimoya, 2004.

Table 6: Subscribers

Year	Telephone	ISDN	Internet	Broadband

1999	4, 430, 799	18, 089	668, 000	-
2000	4, 634, 345	34, 512	1, 659, 000	-
2001	4, 659, 007	52, 202	2, 113, 000	-
2002	4, 593, 300	64, 976	2, 614, 000	19, 302
2003	4, 531, 642	63, 587	2, 887, 000	110, 406

Source: Wahid, 2004 and Kimoya, 2004.

6. FUTURE PLANNING

With respect to low internet and broadband penetration, the Malaysian government has launched National Broadband Plan (NBP) recently. It is expected to have a significant impact to the nation and industry. The strategies adopted according to Keng Yaik (2004) are as follows:-

a. To create a critical mass
   - 23% household / 5% population penetration (1.3 million connection by 2006)
   - 50% household / 10% population penetration (2.9 million connection by 2008)
b. Initial government intervention
   - fulfilling commitment to a full scale roll out of MSC initiatives
   - leadership role as early adopter
c. Policy and regulatory framework
   - promote competition and infrastructure sharing
   - separation of wholesale and retail market
   - facilitative role of local authorities
d. Provide incentives
   - tax breaks for certain SMEs and industry players
   - access to easy financing (soft loans, VCs etc)
e. Designate focal points to monitor broadband implementaton

The success of National Broadband Plan (NBP) according to Keng Yaik (2004) is important to ensure the smooth creation of knowledge based society and the continuous development of k -C economy, which has the following targets;

a. In a k -C economy, learning would be life long, where the people will continuously learn, unlearn and re-learn to adapt quickly to the dynamism of the global socio-politic and economic environment. To facilitate learning, access to global information sources will be necessary and in this age, information is in multimedia format, thus broadband is required to access those resources.
b. Business and government services will be deployed through the electronic medium. E -C transaction will replace direct face -C to -C face physical transactions and broadband networks would be preferable to engage in e -C transactions.
c. All business processes, including manufacturing processes, information and record keeping, finance and all other functions will rely heavily on ICT, for speed, efficiency and effectiveness. Broadband is necessary for information exchange, communications and interactions, customization of products and services, customer services etc.
d. R & D is an important pre -C requisite for the transformation to a k -C economy and high speed networks will facilitate R & D through more efficient exchange of data and information, communications and discussion among peers and also to conduct experiments through the network
e. Healthcare can be greatly enhanced through telehealth initiatives using ICT; and
f. People's life will revolve around ICT. Working from home or from remote locations would be the

norm. ICT will be used for entertainment and recreation.

In addition, the recent 2005 National Budget tabled by Prime Minister, Datuk Seri Abdullah Haji Ahmad Badawi outlined the following strategic initiative focusing ICT development, which directly and indirectly assist the development and future enhancement of electronic health:

a. Allow 100% foreign ownership of venture capital companies to increase funding and expertise and promote investments in the ICT sector.
b. Roll out MSC to create cyber cities nationwide.
c. Increase use of ICT in government financial tools via e -C Treasury
d. Higher focus on R & D activities on 4 main fields: Biotechnology, ICT, advanced materials and advanced manufacturing.
e. Create skilled manpower, develop technopreneurs, increase international promotions and provide various incentives to investors.

Education related such as provision of computer lab facilities in rural schools, higher tax rebate for purchase of computers and books and expansion of info desa (info village) and internet desa (internet village) programs.

7. RECOMMENDATION

The application of E-Business initiatives in promoting health services and health tourism has succeeded in developed countries particularly United States of America. As Malaysia especially Melaka has decided to venture this lucrative market, serious strategies should be taken to incorporate them with E-Business initiatives. This is crucial since the players in the industry are facing stiffer competition and shooting up of operational cost. Besides E-Business is one of the tools to improve the quality offered to customers. The following recommendations should be considered in depth:-

a. Careful and thorough feasible studies should be carried out before implementing E-Business initiatives in Melaka's health services and health tourism market since a number of unsolved issues remain. Among the issues are economics of scale, return on investment analysis, security, Internet or ICT coverage and connectivity, attitudinal aspects, education, human resources and budget.
b. Strategic partnership and collaboration within the players of industry and with other stakeholders particularly the state government in research and development areas (relevant software development and securities), promotional and creating awareness activities. This kind of collaboration shall be enlarged to include other parties involved in health services and health tourism industries like travel agencies, suppliers of health equipments or drugs.
c. The federal government shall provide more incentives to players in this industry and encourage them to enhance E-Business initiatives. These incentives could include creative tax deduction, tax relief, investment incentives, grants or other types of non-monetary incentives.
d. Continuous human resources training shall be carried out to familiarize the employees in health services and health tourism industry with E-Business application, technologies and software.

8. CONCLUSION

It has been acknowledged that E-Business is the latest initiative taken by different types of industries across the globe in improving internal efficiencies and effectiveness, cutting costs, enhancing qualities, widening targeted markets and increasing level of profitability. In addition, health services and health tourism is one of lucrative markets to date. A number of countries and governments have taken serious steps to acquire some portion of shares in the market as their new source of incomes. The same goes to Melaka's government. Incorporating E-Business initiatives in health services and health tourism industries is promising greater returns. In fact it has been proved by the given study cases in United States of America. However, dynamic yet cautious approach is the best policy in respect of E-Business application in our local health services and health tourism industries. On one side, it offers brighter prospects but on the other side a number of critical issues must be addressed.

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