



Influences of the National ICT Policy on the Socio-Economic Sector

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ABSTRACT

Currently, Ministry of Information, Communication and Technology in Thailand has focused on information and communication technology (ICT) to provide innovation solutions for socio-economic growth. The best concept for ICT Reform is that the Thai government should not dominate the role of providing ICT services, but they should be run more efficiently by private companies. Rather, the role of the government should be to be responsible for planning, structuring and regulation, whilst the private sector may be responsible for management, investment, construction and finance. The transfer of responsibility to the private sector and the introduction of competition should be accomplished through some transparent arrangements including management contracts, capital leases, concessions, sale of assets and rights to operate (Best Practices for Telecommunications Reform, 2002). However, there exist difficulties when the government has to formulate the ICT policy. The policymakers are often unfamiliar with the technologies that they are harnessing for the national development. This article explores the national ICT development models employed in different countries which exhibit some similarities and differences. In overall, the ICT policy is not only the direction about developing the ICT industry or sector of the economy but also encompasses the use of ICTs to engender economic, social, and political growth.

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Introduction

In economics, the main engine of growth remains located in West, the United States and Europe. When this engine stalls which happened to be the case in 2007-2009, the global economy declines. What is the driver to shift the decline paradigm to move opposite side? Of course, the strengthen ICT policy will be one of answers to enable ICT into socio-economic sector. For instant, the developing ICT infrastructure in order to support economic sector restructuring, the use of ICT to access education resources for life-long learning, and ICT for the development for government services and administration in the form of e-government. The role of the governments are primarily for facilitation, while it is the ICT industry that plays a key role in the physical realization of our policy decisions and contributes significantly towards the goals.

In this study, the author used both secondary and primary data in the methodology. Those were certainly collected before producing into a paper. Secondary data collection was a first technique used by the author. Most of the background of the study, problems statements and objectives of the study, related concepts and theories related to the research study, fact findings were analyzed and processed by extracting from the relevant documents, journals, books, internet, research, thesis, conference and so on. Not only secondary data provides the reliable and applicable information, but also primary data can fulfill the valid information to make report completely. The primary data provides current information and getting participation from the related stakeholders. Consequently, it collections were delivered by specific interviewing 6 key interviewees joined the international conference in Korea and Vietnam. Those were related field of study: policy maker, regulator, operator, university professor and consultant.

Specially, governments are expected to develop ICT policy that sharpens the focus on specific area such as agriculture and tourism. The country's leadership must have strong political will and make ICT development an important national agenda, as it is the foundation of economic and social activity that will enhance national competitiveness in economics, trade and industry. It would also lift the well-being and quality of life of the people, and can help bring about equality. Of course, plans will achieve goals or not? Countries can develop National ICT Policy to define by "Government Management". Government has to monitor and evaluate plan seriously. With this study, the author found that not only technological adoption but also a result of compliance the prior plan and then release to achieve consistently is a major success of plan implementation. Like Japan and Korea, they are superior examples for Thailand to improve and develop their government managing system efficiency.

In just a short few decades, the use of information communication and technology system has completely transformed how we live, work and play. New markets and new business models have emerged to support the entry, storage, processing, analysis and presentation of information, and they are continuing to evolve and advance at a rapid pace. Global stock markets are now driven by trade in technology-based companies as much as commodity and traditional industries, and information technology is continually being looked at in new ways as means to deliver improvements in socio-economic conditions, and as a tool for achieving the development goals.

The use of information, communication, and technology (ICT) for economic development requires a proactive public policy push. It requires not only vision but also a strategy and a plan of action. Before proceeding to discuss the National ICT

Policy, let us first discuss “policy”. A policy is a plan of action. It is formally defined as a set of interrelated decisions taken by a political actor or group of actors concerning the selection of goals and the means of achieving them within a specified situation where those decisions should, in principle, be within the power of those actors to achieve (Jenkins, 1978). The National ICT Policy aims for the public good such as providing high quality of public networking infrastructure, it does not always embody the best possible solution to a given issue or problem. Policymaking is not only about technical or scientific response to an issue; but also about the best solution that meets the legitimate needs of the stakeholders (Emmanuel, 2009). This study has chosen to study the National ICT Policy from ten countries: Japan, Korea, Singapore, Malaysia, India, Sweden, Australia, The United Kingdom, The United States and China.

The World Economic Forum's Networked Readiness Index (NRI) measures the propensity for countries to exploit the opportunities offered by information and communications technology. With NRI 2008-2009 record coverage of 134 economies worldwide, the Report remains the world's most comprehensive and authoritative international assessment of the impact of ICT on the development process and the competitiveness of nations. (World Economic Forum 2008-2009) The NRI is a composite of three components: (1) the environment for ICT offered by a given country or community, (2) the readiness of the community's key stakeholders (individuals, businesses, and governments) to use ICT, and (3) the usage of ICT amongst these stakeholders. (Soumitra D, Irene M. , 2009) Thailand is the rank number 47 which the 3 components: environment (49), readiness (46) and usage (51) Whereas, Sweden once again leads the rankings of The Global Information Technology Report 2008-2009, released for the eighth consecutive year by the World Economic Forum. The United States follows suit, up one position from last year, thus confirming its pre-eminence in networked readiness in the current times of economic slowdown. Singapore (4), South Korea (11), Australia (14), United Kingdom (15), Japan (17) and the other selected countries far beyond the top 20.

The main reason is that Japan, Korea and Singapore are the leading countries in ICT development among Asia while The United Kingdom and The United States are the leading countries in ICT development in Europe and America. Whilst Australia is the best practice in 3G development, and Sweden is the best practice in e-Government: Sweden is promoting “an Advanced Information Society” to drive its economy for the regional growth. China and India are rapidly growing and affecting the world economic. Malaysia has successfully developed ICT strategy and just moved forward the country to be recognized as “Multi-media Super Corridor Outsourcing Service” even though it almost has the same ICT status to that of Thailand over the past five years.

Literature Review

The benefits of succeed national ICT policies: By studying and comparing ten countries: The United Kingdom, The United States, China, Japan, Korea, Sweden, Australia, India, Malaysia and Singapore's practices, this article attempts to examine how a national ICT policy can address these challenges and realize the benefits ICT offers, and to explore what lessons developed and developing countries can draw from a comparative approach to policy analysis. There was no doubt about the potential impact of information technology, and promoting the informatization of socio-economy was agreed upon as the most attractive and

feasible future strategy. These national ICT policies have an attitude on competitiveness, employment opportunities, effectiveness of education and training systems, social inclusion, healthy living, effectiveness of public services, participation in the democratic process, cultural identity and diversity, and intellectual rights. These concepts of developing the national ICT policies may be applied to a formation of new ICT policies for Thailand.

The Ministry of ICT missions: For a decade, The Ministry of Information, Communication and Technology of Thailand has planned to show initiatives about ICT development in the region. This is because Thailand has recently witnessed how the neighboring countries have set ICT as the first priority and implementation in terms of an endorsement of policy, a formulation of legal and regulatory frameworks, an allocation of funds, and a facilitation of partnerships that premise the use of ICT in the industry sector in terms of both the infrastructure and market.

Challenge to National ICT Policy Value Socio-Economic Sector

The United States ICT Policy

The US ICT policy model equates customer demands perform free-market under strict regulations; therefore capitalism works as long as the human beings behave as consumers first. When individualistic behaviors come under attack for strict regulation, the capitalist system needs to be flexible enough in order to accept and follow-up. Information Technology also serves as a key component in upgrading living standards and creating employment opportunity.

European ICT Policy

The European pattern has proven to be attractive for Asian people. Since the late 19th century, starting in Japan, Asians have chosen to follow the European guideline; this option has proven to be an effective way out of poverty and towards more social and gender equality. As our recognition, ICT policy drives the European countries to be a global center for a creative industry age. While Asians, especially Japan and Korea, follow the European oriented globalization by emphasizing ICT strategic enhancement in agricultural, industrial and service sectors.

Asia ICT Policy

It is expected that by the next decade, Asian countries will be a new economic powerhouse in the global economy. China and India will drive growth in the old industry and services. By 2015, the ASEAN Economic Community and the countries with which it has concluded free trade agreements, will be highly ranked in the global economic order.

ASEAN integration will impact ICT in many ways. With increased mobility of labor, businesses, industry, investment, education, language, culture and information and knowledge, ASEAN standards in various sectors will be created, similar to what occurred in the European Union. The ICT industry in Thailand and allied countries will grow in cycle with competition.

The Asians, especially Japan and Korea, follow the European oriented globalization as mentioned above. Nowadays, IT industry faces a final challenge to promote commercialization of the technologies developed and reach overseas markets such as trading via online-global market. Moreover, social and community that allows for participatory approaches to local development and management, including the revival and

transmission of cultural diversity, such as way of life, customs, values and local wisdom.

Method of Study

To establish a conceptual framework for analyzing the influence of National ICT Policy are on socio-economic sectors. The approach is used, which is the overall ICT Development Index Analysis. This is defined and discussed in this section.

In according to the main objective of this study is to identify factors affecting the development of National ICT Policy in Thailand. However, to implement the National ICT Policy the study will conduct the research for the year 2009-2010 as the main aim to identify the gap between the present Thailand ICT Policy and other selected countries. At the mean time, the objective of the research is also to demonstrate the fact findings of the current National ICT policy, and then define factors to directly effect on develop National ICT Policy for the Thai government to implement and monitor the National ICT Policy to reach the goals.

The research methodology should be conduct both by the quantitative and qualitative methods. For the quantitative will survey focus on what the critical success factors under government manage efficiency to affect the development of "National ICT Policy in Thailand" to reach the goals.

Qualitative Research

Data Collection

Secondary Data: This researcher will gather information about the National ICT policy implemented in other countries. The main source of information can search from the website related. Further information can also find from result of related meeting at both the national and international level. To gather the unique and key successfulness on national ICT policy in each country where are the lesson learnt. With this information help the author to identify the pros and cons in the selected countries. The secondary data which represents the detail information of selected to review in Table 2 as following;

Primary Data: The researcher will use personal interview and discuss with the experts, for instant the JICA expert who has been working in Thailand for 2 years, IDC Thailand consultants who have contracted with Ministry of ICT for 3 years and National Electronic Computer and Technology Center (NECTEC) that have contracted with the author's department, Ministry of ICT for 2 years and The Office of National Telecommunication Commission (NTC), focusing on how they examine the national ICT policy benefit to Thailand. And then, to interview and discuss with all experts as the authors mentioned above for gather information about the National Broadband Policy management, challenges for their implementation and, also the suggestion or recommendation for improvement an appropriated broadband policy in Thailand. Moreover, to collect data about the number of people who joint ICT International conference and get benefit from the national broadband policy of their purposes. Also, the researcher will generate data focusing on both policy makers and stakeholders.

Quantitative Research: Overall ICT Development Index Analysis

According to the Networked Readiness Index (NRI) combined by the author as table 2, the table identifies the ICT status related to National ICT Policy.

Data Collection

Both secondary and primary data were certainly collected before producing into a paper. Secondary data collection was a first technique used by the author. Most of the background of

the study, problems statements and objectives of the study, related concepts and theories related to the research study, fact findings were analyzed and processed by extracting from the relevant documents, journals, books, internet, research, thesis, conference and so on.

Not only secondary data provides the reliable and applicable information, but also primary data can fulfill the valid information to make report completely. The primary data provides current information and getting participation from the related stakeholders. Consequently, it collections were delivered by specific interviewing 6 key interviewees joined the international conference in Korea and Vietnam. Those were related field of study: policy maker, regulator, operator, university professor and consultant.

Data Analysis

After the information needs are collected, all the information is accumulated altogether. The process is to analyze and investigate through both primary and secondary data. To produce the qualified outputs, the methods are carefully analyzed the primary and secondary data from the respondents' information and National ICT Policy review, respectively. In conclusion, all fact findings and information from interviewing are analyzed, investigated and evaluated into this research study.

Results and Discussion

Classify National ICT Policy

Strength and Weakness on National ICT Development Policy

Comprehensive ICT Policy

In this part, the countries: Japan, Korea, Singapore, Malaysia, China, United Kingdom and Australia are "Policy Overview and Plan Integration". Especially, the United Kingdom and Australia recently launch ICT policy integration in year 2009. India, Sweden and the United States do not present in this categories. The below table identify the countries launch Comprehensive ICT Policy.

Infrastructure Policy

The developing ICT infrastructure is the first priority to ICT development.

In this survey, each country plans to develop narrowband to high-speed broadband, and finally moves to ultra-high speed broadband. For instant, Japan's ICT infrastructure development has been promoted on the regional as well as the national level by Fiber Optic, including improving broadband connectivity in regional communities, with the goal of eliminating broadband-zero areas by the end of fiscal 2010. Whereas, other countries are less capability than Japan; they probably use Wi-Fi and Wi-Max to increase accessibility of ICT infrastructure. This is one alternative in order to bride the digital divide between urban area and rural area.

The ICT technology and service gap among countries is widening. So whilst ICT advanced countries possess sophisticated broadband ICT infrastructure, which offers digitalization, convergence, and mobility, on the contrary, there are still many countries that are left behind even without basic technological infrastructure. However, the survey countries in this study are great lesson learnt. They develop the advanced technology, instant, "RFID and Sensor Network" or "Network Robot" under objective to move on Ubiquitous society.

Malaysia China and India, they are the ICT developing follower among Asia Pacific, although the similar main problem is poverty and population density. It is hard to increase Broadband demand due to less purchasing power. Malaysia aims

to develop broadband in the country at 75 per cent in 2010 coupled with the way "Universal Service Provision" to bring broadband to the community. Whereas India has similar policy goals is bringing broadband to high school and hospital by 2007.

For Ultra-high speed (Ultra Broadband), all survey countries except India, China and United States have a clear policy on broadband. Both India and China are matters of the level of ICT development whereas the United States is in the process of drafting of broadband development strategies. The other countries: Japan, Singapore, United Kingdom, Australia and Sweden target the broadband coverage across the country to at least 90 per cent and set a minimum speed of 100 Mbps within next five to ten years.

Human Development Policy

Human Resources Development is another issue that almost all plan to focus in different dimension. For Instant, Japan has been interested in developing the individual ICT skills-set in several sectors such as enterprises, education reform. Furthermore, Japanese government promotes ICT usage through political participation of citizens as well as ICT usage in elderly and disabled people. Singapore government focuses on business leader development as a result of ICT strategists to create "career path" for ICT professionals to enhance the country competitiveness. In Addition to Singapore government promotes the education development by using ICT as a tool. Malaysia has developed the project talents (competency program) and promote people' development through education (e-learning) as Sweden has no overall policy, but the long-distance teaching program implements highly successful. England focus on people development in economic sectors related to digital. India is trying to solve the education problem is not the continuation of ICT professionals and the education problem for instance teachers cannot adapt themselves to rapid technological changes and industry needs, immediately.

ICT Industry Development Policy

Japan has focused on infrastructure, ICT equipment and supporting to use, sell, create brand for digital content and incubated enterprises in the ICT growth. In term of Korea, it has announced the IT839 Strategy with a priority on market promotion and development of software, components and materials. As a result, Korea's technologies have been recognized worldwide. Singapore has developed a global competitiveness "Infocomm" Industry. In particularly, the broader industry development by supporting the local retail-operators, whereas the depth industry development by supporting the development of ICT systems and allows operators to have greater access to intellectual property. The Malaysian ICT industry has been developed according to technology strategy from MYICMS886. India is another country that focuses on ICT industry development. In this study, Japan, Korea, Singapore, the United Kingdom and Australia have a strategy to drive themselves to a "Creative Capitals" of the world.

Impact National ICT Policy on Socio-Economic sectors

In a country's policy overview, it is easy to understate main aspects of the impact of ICT were identified: "Actions center around users and their reactions". The study indicates that National ICT policy in each selected countries related to an understanding of ICT users' iterative and adaptive people's behaviors and their day-to-day pains in coping with problems of ICT in the local context is necessary for impact assessment.

Although technology adoption depends on the readiness in three factors:

- (1) The environment for ICT offered by a given country or community,
- (2) The readiness of the community's key stakeholders (individuals, businesses, and governments) to use ICT, and
- (3) The usage of ICT amongst these stakeholders as mentioned in Overall ICT Development Index Analysis, the government is key initiative to drive all factors and implements ICT infrastructure and promote ICT usage to people.

Regarding to technology adoption, several major socio-economic trends that will influence technology markets include:

- Expectation of instant response. High-income individuals tend to have money but not time, and they will not wait for anything. Forty-five seconds is too long to wait.
- The aging population often cannot access technology. They may dislike it or be unable to read small screens or press small buttons, but they offer a huge opportunity for connected products (such as in healthcare).
- Single living demands products for lone life styles (such as smaller packs of commodities and security products) because, for most of the day, no one is at home.
- Technology "refuses" may become a new demographic, demanding invisible, not overt, technology.
- Globalization demands multilingual and multicultural products.
- Personalization requires products that match users' values and attitudes.
- New working trends (such as the blurring of work and leisure) can be supported by wireless "always on" technology and collaboration tools. (Scott D., 2005, p 4) Socio-economic trends and Government Policy will influence many of the characteristics of successful telecommunication technology both products and services. Information Communication and Technology (ICT) serves as a key component in upgrading living standards and creating employment opportunity. Also, ICT is continuously increasing the economic and social values by enhance economic competitiveness and raise living standards. These above trends illustrate that technology and socio-economic are inseparable. Each change the other and neither can be considered in isolation.

Conclusions and Recommendations

This section includes two parts. The first part is the conclusion which summarizes the results and discussion that mentioned in Research Findings. The second part is about the Policy Consideration and Recommendation for the study. The details presented as following;

Conclusions

After study the National ICT policy all chosen countries, it is exact that the government can be strengthen National ICT policy impact on socio-economic sectors. Of course, social-economy and political trends will influence many of the characteristics of successful telecommunication technology both products and services. The below table identify each country focus on different policy development.

However, each policy and plan is different in a specific focus as table 4 above. For instant, Japan's policy focuses on creating the "Ubiquitous Society" where everyone can access the network high-speed to support the oldest society in near future. Nevertheless, Japan's policy tries to minimize negative impacts on ICT usage, which may be caused by the increased role of ICT in everyday life of users. While Singapore's plans

focuses on the creating value in ICT usage. This is because of Singapore is a port of world trade. For United Kingdom, the policy focuses on digital content creation and the protection of intellectual property. Due to the United Kingdom is a major exporter of digital content.

The benefit of ICT usage policy in each plan focuses in different way. In case of Japan, u-Japan policy focuses on bringing ICT technologies to solve social problems, in particular the negative impact on shift to the oldest society. Moreover, it also focuses on ICT in education to develop people or the environment. In Korea, IT839 strategy focuses on the development of ICT capacity to compete in the global ICT market. Whereas Singapore directly develops "Infocomm" strategies for industry, the primary goal of the development in 2015 "Infocomm" is used ICT as a tool to enabler and add value to business. Malaysia uses ICT to enhance quality of life and competitiveness. India has led ICT usage for people empowerment and bridging digital divide, besides produces hardware and software as export products.

The prevention ICT Usage Policy clearly appears in Japan's policy u-Japan, MYICMS886 of Malaysia, u-Korea, Korea. The study found that the main content of the policies and plans are not so different, only specific details. The main strategy focuses on infrastructure development, Human development, Industrial ICT Development (hardware, software, and digital content) and the benefit of ICT Usage as mention above.

Policy Consideration and Recommendation

In Thailand, e-Government policies although differing in emphases in accordance with the different responsibilities and purposes of each agency (NTC, NECTEC, MICT and etc.) nonetheless share the same direction. They also refer quite clearly to the role of ICT in development with directly impact on several aspects as following;

- Social and Community that allows for participatory approaches to local development and management, including the revival and transmission of Thai cultural diversity, such as way of life, customs, values and local wisdom.
- Economic and Industries, emphasizing strategic enhancement in agricultural, industrial and service sectors.
- Human Resource Capability, as people are the foundation for national development.
- Building of a stable Natural Resource base, by focusing on addressing environmental problems, including natural disaster warning.
- Infrastructure Structure and the establishment of specialized agencies and institutions to mobilize development.

Thai government should be characterized by policy and regulatory regimes that support innovation, improve confidence and provide security for industry and users, minimize environmental impact, establish a system that nourishes investments for broadband connectivity, and foster creativity in the development and use of content and applications.

In conclusion, plans will achieve goals or not? Countries can develop National ICT Policy to define by "Government Management". Government has to monitor and evaluate plan seriously.

With this study, the author found that not only technological adoption but also a result of compliance the prior plan and then release to achieve consistently is a major success of plan implementation. Like Japan and Korea, they are superior

examples for Thailand to improve and develop their government managing system.

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Table 1 : Sample of selected countries

Location	Samples
Europe (The United Kingdom, Sweden)	2
Asia (China, Japan, Korea, Australia, India, Malaysia and Singapore)	7
American (The United States)	1
Total	10

Source: Combined by the Author (2010)

Table 2: The Networked Readiness Index 2008-2009 and 2007-2008 of 10 selected countries

	NRI (2008-2009)		NRI (2007-2008)	
	Rank	Score	Rank	Score
Sweden	2	5.84	2	5.72
United States	3	5.68	4	5.49
Singapore	4	5.67	5	5.49
South Korea	11	5.37	9	5.43
Australia	14	5.29	14	5.28
United Kingdom	15	5.27	12	5.30
Japan	17	5.19	19	5.14
Malaysia	28	4.76	26	4.82
China	46	4.15	57	3.90
Thailand	47	4.14	40	4.25
India	54	4.03	50	4.06
Vietnam	73	3.79	70	3.67

Source : World Economic Forum 2008-2009, combined by the author (2009)

Table 3 : Comprehensive ICT Policy in selected countries

	JAP	KOR	SG	MY	IND	SWD	AUS	UK	USA	CHN
Comprehensive ICT Policy	X	X	X	X			X	X		X

Source: Combined by the authors (2010)

Table 4 : National ICT Policy 10 countries

Country	Comprehensive ICT Policy	Infrastructure Development	HR Development	ICT Industry Development
Japan	X	X	X	X
Korea	X	X	X	X
Singapore	X	X	X	X
Malaysia	X		X	X
India			X	X
Sweden		X	X	
Australia	X	X		X
United Kingdom	X			X
United States		X		
China	X		X	X

Source: Combined by the authors (2010)