

**ICT for happiness in Thailand: Revisiting Past,
Understanding Present and
Envisioning Future Roles of NECTEC**

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Abstract

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Back in 1995, when Thailand first launched the “IT year”, Information and Communication Technology (ICT – or IT back then) was hardly heard of, let alone understood by ordinary Thais. The country has gradually embraced this technology, particularly for those citizens living in the urban area. For those who have access to ICT, they are able to experience the benefits which ICT brings to their every day life.

In this paper, we illustrate how ICT development in Thailand evolves over the years. To achieve this, we highlight the role of the National Electronics and Computer Technology Center (NECTEC), first set up as national research and development center, but was entrusted to oversee the direction of ICT development for a decade. This latter role was recently shifted to the new organization as the result of government restructure in 2002.

Of particular importance to the conference, the paper highlights how NECTEC activities have contributed, through technology generation and implementation, to the happiness for Thai citizens in various ways. The paper will discuss how ICT was used to empower individuals and communities giving them a wider opportunity to access information and knowledge. Having gain sufficient and relevant knowledge, it is expected that individuals will be able to strengthen their own capability. The work on applying ICT to improve the quality of life for the disadvantaged, mainly from IT project under the initiative of Her Royal Highness Princess Maha Chakri Sirindhorn, will also be presented.

I. Historical background of ICT development in Thailand: Understanding the role of NECTEC

NECTEC was established on 16 September 1986, initially as a project under the Ministry of Science, Technology and Energy (the former name of the Ministry of Science and Technology). In 1991, NECTEC was transformed into a specialized national center under the National Science and Technology Development Agency (NSTDA), a new agency following the enactment of the Science and Technology Development Act of 1991. NECTEC's main responsibilities are to undertake, support and promote the development of electronics and computer technologies through research and development activities.

NECTEC was set up at the time when ICT development in Thailand was still in embryonic stage. ICT, or IT as it was normally called then, was hardly heard of, let alone understood by the Public.¹ Therefore, when the National Information Technology Committee, or NITC, was set up to develop policies and plans for promoting ICT development and their utilization for economic and social development in 1982, NECTEC was assigned to host the secretariat office and to conduct supporting work for the committee. In this capacity, NECTEC has been the driving force in formulating and implementing ICT policies, contributing to the improved quality of life for Thai people as will be described later. These policies include macro policies, such as IT-2000 (the first national IT policy), IT 2010 (current IT policy covering the year 2001-2010) and the first ICT Master plan for 2002-2006; as well as sector-specific policies like Internet Policy.

In October 2002, the Ministry of Information and Communications Technology (MICT) was established as part of the reform of bureaucracy. The establishment of MICT as the front agency in charge of the national ICT development inevitably led to a declining role of NITC. Although NITC has not been dissolved officially, it is defunct in reality. Consequently, NECTEC has refocused itself to contribute to socio-economic development via its research and development programme.

¹ Nearly a decade later, the campaign "IT Year" was organized in order to address the IT awareness issue.

II. Perspectives on “Happiness”

Happiness is defined differently at different level by different school of thoughts. The Gross National Happiness, the concept initiated and championed by Bhutan, was linked closely to the country development approach. In case of Bhutan, four components of happiness were defined: self-reliance; human development, cultural preservation and environmental preservation².

In Thailand, the “Green and Happiness Society Index”, was developed by the National Economic and Social Development Board, and based on three fundamental concepts: (i) sufficiency economy philosophy; (ii) human-based integrated development approach and (iii) vision of Thailand in the Tenth National Economic and Social Development Plan to make the country “Green and Happiness Society” In this respect “Green and Happiness” was defined as

“a spiritual, physical and intellectual contentment found in living a life that is connected to society, economics and environment in a well-integrated, well-balance and ethical manner leading to a peaceful co-existence between man and man, man and nature, man and environment – all under righteous manner.”³

The “Green and Happiness” contains five elements as follows:

1. The Thai people having happy body, mind, soul, knowledge and understanding of their religious faith, virtues, conscience for the benefit of society and reasonable thoughts and actions;
2. Ability to make a decent living – earning a sufficient income and having life security;
3. Having a loving and caring family
4. Living in a livable environment with property and life safety
5. Having rights and freedom and mutual respect for all human kinds

It was clear that “happiness”, as specified in both Bhutan and Thai context, depends on the country’s development approach. Globally, however, countries have agreed on a set of goals to guide

² Karma Ura & Karma Galay (eds.), 2004, Gross National Happiness and Development, The Center for Bhutan Studies

³ NESDB, 2006, Development News Bulletin, Vol.23 No.5, October 1-November 15.

global development. This is known as United Nations' Millennium Development Goals (MDGs) including⁴:

1. Eradicate extreme hunger and poverty
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/malaria and other diseases
7. Ensure environment sustainability
8. Develop a global partnership for development

Achieving MDGs, which address human basic needs, should obviously induce a basis for happiness to individuals, communities, society and the country. The happiness concepts discussed above focus at long-term sustainable happiness, but we should not forget that some circumstances can create short-term, yet severe unhappiness to people lives. Therefore, next section will discuss how ICT can bring happiness to people in short-term as well as long-term manner.

III. ICT and Happiness: NECTEC Contribution

This section has twofold objectives. Firstly, the paper will discuss how ICT was utilized to engender happiness at individual as well as community levels in Thai context. Secondly, it aims to highlight the role of NECTEC in realizing the potential benefit of ICT. In our cases, technologies which contribute to "happiness" do not necessarily mean "cutting edge technologies". Although NECTEC's primary role is research and development, it is the need of individuals, communities and societies which receive the first priority here.

(1) ICT to empower people and community through education

The technological revolution in information and communication technologies (ICTs) brought about by microelectronics and digital technologies, has given rise to widespread debate and

⁴ MDGs were agreed at the Millennium Summit in September 2000.

speculation on the potential of ICT to enhance human development. Particularly, it has been argued that ICTs provide developing nations with an unprecedented opportunity to meet vital development goals such as poverty reduction, and education. ICT power lies profoundly with its capacity to produce, store, process, distribute and exchange information. In this respect, ICT allows people greater opportunity to access information and knowledge which are useful and even transform their way of living.

One benefit of ICT is to empower our youth by linking schools and students to vast amount of information and knowledge on global online library. However, a decade ago the penetration of Internet in Thailand was very low and a clear digital divide existed between schools in urban and rural areas. Commercial Internet service providers (ISPs) were far and few in between and Internet access charge was expensive due largely to the long distance call charge. NECTEC had to step in to bridge the gap through SchoolNet initiative (Box 1)

Box 1: SchoolNet: Youth Empowerment

SchoolNet Thailand was initiated by the National Electronics and Computer Technology Center (NECTEC) in 1995. The project's prime objectives are to provide Internet access for schools throughout Thailand, and provide opportunities for teachers and students to have access to the world's information and knowledge resources, in order to achieve good quality education, and to reduce the gap in education quality between schools in urban and those in rural areas. Consequently, this would lead to the improvement of educational standards in the country.

The project's successful implementation was achieved through the cooperation from the other three government agencies: the Telephone Organization of Thailand (TOT), the Communications Authority of Thailand (CAT) and the Ministry of Education (MOE). Each agency has important role and contribution to project as follows: NECTEC is responsible for technical matters (i.e., design, investment, maintenance and operation of the network and central computer systems), TOT sponsors domestic communications and hosting the network operation centers (NOCs) nationwide, while CAT supports international Internet bandwidth. MOE selects schools and also coordinates, promotes and supports the use of Internet in these schools.

Such multi-agency cooperation makes SchoolNet the first and only network that provides universal access to users (teachers and students) in schools. School all over the country can access the network via dial-up mode, using one easy-to-remember access number #1509, and pay only local call charge, which is three bath he per call.

SchoolNet, as pilot project, has now completed and was already transferred to be under the responsibility of Ministry of Education.

Source: NECTEC (July 2002), ICT for Poverty Reduction: Examples of Programmes/Projects in Thailand

Recognizing the importance of knowledge, NECTEC continues to work in this area to move Thailand towards Knowledge-based Society. The approach is, however, different from the day we were in charge of overall ICT development of the country. Our focus now is to have a research and development program focusing on technology competency development for Knowledge Management – Knowledge Engineering Technology (KET). KET is based on engineering discipline that involves computational knowledge processing in order to solve industrial problem and to serve the technology development need of knowledge society. KET program emphasizes technology areas that are related to the acquisition, collection, accessing, processing, sharing and integration, and services, of knowledge.

(2) ICT for the Disadvantaged

Some people find themselves in unfortunate circumstances which can create short-term or long-term unhappiness. The same group of people was normally excluded from the “Information Society” where everybody can reap the benefits of ICT. Yet, ICT has been utilized to lessen their miserable life in Thailand under “The Information Technology project under the Initiative of HRH Princess Maha Chakri Sirindhorn”. To name a few of the disadvantaged are the disabled, the inmates and sick children.

Box 2 IT for the Inmates

HRH Princess Maha Chakri Sirindhorn believes that vocational skills development, coupled with moral education, can be an effective means to rehabilitate prison inmates. Moreover, if the inmates are trained in skills that are highly in demand, such as computer skills, after their sentences are finished, they will have a high chance of finding a good job and consequently become good citizens. The IT for Inmates programme was subsequently launched in 1997 at Bangkok Central Women's Prison. The prison set up a computer center and provide computer training courses. The course was well-received by the prison inmates, and the programme was later extended other prisons.

Not only providing the course, the programme has also brought job opportunity and skills development to the inmates. For example, in 2000, the Technical Information Access Center under the National Science and Technology Development Agency hired the prison inmates to type Thai and English journal indexes. At present, numerous organizations offer the inmates typing jobs.

In 2002, Her Royal Highness kindly donated a new group of computers with more advanced capacity, allowing the prison to offer more advanced computer training such as the use of graphic applications. With these, the inmates are able to undertake graphics-related jobs such as making cards, leaflets, and image retouching. More over, because of computer skills they have, may former inmates who took the programme are now employed in jobs that require computer skills.

With the unconditional compassion of HR Princess Maha Chakri Sirindhorn, these socially isolated people have been given new hope and opportunity to become good citizens. As for NECTEC, who has served the HRH for this programme, this is to prove that we can use simple technology to contribute to the society and induce happiness into the life of the disadvantaged. Not only research and development at the frontier is to be cherished.

Box 3: IT for sick children

Sick children who have chronic conditions tend to stay in the hospital for many months. The long break from regular schooling can present quite an obstacle to their education. To help lessen the problem, Chulalongkorn Hospital has established the Special Schooling for Children with Chronic Disease project since 1975. However, HRH who regularly visits the ward noticed that the number of teachers were not enough and introduced the idea of bringing in computers for the children. As a result, the Computer Center for Sick Children was launched in 1995. With computers, children do not only have fun as they learn, but interaction with computers can also help to stimulate their brains and muscles.

The Computer Center for Sick Children at Chulalongkorn Hospital proved to be a success and the program was later expanded to other hospitals. Children at those hospitals enjoy coming to the centers to use computers and have been entertained and stimulated as well as worrying less about their health problems. In this respect, it makes the children's unfortunate health conditions more bearable.

This work might not entail the most advanced ICT, but it is the area that NECTEC is proud to be part of. It is most valuable to see the glimpse of "happiness" through the eyes of those suffering children as well as the hope for a better future of the inmates.

(3) ICT response to Natural Disaster

When Tsunami hit the South of Thailand in December 2004, the result was catastrophic. Deaths, injuries and missing persons were reported in overwhelming numbers. At the time of sadness and panicking, we also found the failure in multiple utilities such as electricity, water supply and telephone communications. People needed to communicate to call for help, to contact their relatives and loved ones, therefore efficient communication was important. In the situation, however, normal communication failed due to communication breaking down, collapsed radio towers and power outage. And if not, communications were overloaded with calls.

The Tsunami raised the need for a large capacity ad-hoc communication system for emergency response team to report losses and coordinate rescue mission. In response to this, NECTEC initiated a project to develop the Emergency and Educational Communication Vehicle, often known as EECV. The objectives are:

- To design and develop a versatile emergency communication vehicle with a capability to provide telephone and Broadband Internet access services for emergency response team;
- To drill and practice the system preparedness for emergency situation;
- To deploy the system in rural schools/communities for educational proposes during the non-disaster period;
- To provide a best practice example for telecommunication service providers on the operation for mobile emergency services provisioning for disaster areas.

To date, EECV has been in operation in some of the natural disaster that took place in Thailand such as the flood and mudslide in the Northern area during May 2006, and the flood in Ang-Thong in October of the same year. In this respect, EECV can help sufferings people in a humble way.

(4) *Digital Divide: Bridging the gap*

One of the obstacles in benefiting from ICT contribution to happiness is the prevailing digital divide – the gap between individuals, communities, countries abilities to access ICT. The most transparent one is the gap between those living in urban and rural areas. In general, people living in Greater Bangkok, normally refer to 4 provinces – Bangkok, Nonthaburi, Pratumtani and Samut Prakarn, have a greater chance to access technologies. There is similar pattern whether the technologies in question are computer, telephone services, or Internet. Table 1 illustrates the Internet unequal distribution among people living in different regions.

Table 1. Internet Penetration by Location (2003-2006)

Region	Number of users (million persons)				Users per 100 Inhabitants			
	2003	2004	2005	2006	2003	2004	2005	2006
Overall	6.03	6.97	7.08	8.47	10.4	11.9	12.0	14.2
Bangkok	2.01	2.00	1.63	1.77	26.9	26.6	25.9	28.0
Central	1.34	1.52	1.71	2.03	10.1	11.2	11.9	13.9
North	1.00	1.21	1.29	1.58	9.7	11.4	11.9	14.7
Northeast	1.07	1.49	1.66	2.10	5.6	7.7	8.4	10.6
South	0.62	0.76	0.80	0.98	8.1	9.9	10.2	12.3

Source: National Statistical Office (NSO)

NECTEC has conducted research on technologies which, we believed, can reduce the digital divide. For example, we are exploring the possibilities of using wireless technology to deliver telecommunication services for last mile access (Rural Wireless Broadband Access – RWBA project). We have been working on multilingual machine translation to allow Thai citizen with no or little English knowledge to be able to access variety of knowledge online. We also championed the development and use of open source in Thailand since the price of proprietary software is still expensive compared to the reduced cost of hardware over the years.

In addition to R&D, NECTEC attempted to introduce “telecenter” concept to rural areas where ICT access is far and few in between. Telecenter is a focal place in the community where local people can access and use ICT. We ran a pilot cases at 4 provinces - some are less successful than others.

IV. Future Role of NECTEC

As described in Section I, NECTEC is no longer in charge of overall ICT Development of the country in term of formulating and implementing ICT. Nevertheless, it will contribute to the development of Thailand to be “Green and Happiness Society”, as defined in the 10th NESDP, as a national research and development center specialized in ICT technologies. And, while “happiness” can be quite an abstract term, we will continue to address the issue in a practical and concrete ways to serve the needs and problems of Thai society. This is due to our vision of “being a core organization collaborating with alliances in R&D of electronics and computer technologies for strengthening sustainability of Thai industries and sufficiency Economy”.