E-Government in Thailand: A Social-Impact Assessment

- Dr. Donyaprueth Krairit, Assistant Professor, School of Management, Asian Institute of Technology, Thailand. (donya@ait.ac.th, donya@alum.mit.edu)
- Poondej Krairit, Ph.D. Candidate, Computer and Engineering Management Program, Assumption University, Thailand. (poondej@hotmail.com)

Postal Address for all Inquiries:

Dr. Donyaprueth Krairit
School of Management
Asian Institute of Technology (AIT)
58 Moo 9
Paholyothin Rd., Km. 42
Klong Luang, Pathumthani 12120
THAILAND

Biographical Notes:

- Dr. Donyaprueth Krairit holds a Ph.D. from Massachusetts Institute of Technology (MIT) in Telecommunications Technology and Policy. She was a consultant in telecommunications and a guest speaker at Harvard and Tufts University. Her research has been in the field of telecommunications and sustainable development, economic and policy implications of technologies, and E-commerce, with particular focus on Asian countries and the U.S. She is now an assistant professor at the School of Management, Asian Institute of Technology (AIT), Thailand, and on the external evaluation committee working for the National Science and Technology Development Agency (NSTDA).
- Poondej Krairit is a Ph.D. candidate in the Computer and Engineering Management (CEM) Program at Assumption University, Thailand. He has a Master's degree in telecommunications from Boston University. His current research is on the cost and demand modeling and cost-benefit analysis of integrated wireless network.
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Abstract

In 2003, the Thai government has launched its much-fanfare E-government project. One major goal of the project was to provide Thai citizens with electronic ID cards on which personal information will be stored. Over the implementation phase in the next few years, the e-ID cards will finally be mandatory for every Thai. Although the e-ID cards promise to deliver more convenience to Thai citizens, there are some implicit social impacts that come with its usage. This study aims to present the assessment on what could be the negative social impacts and how the government should plan to deal with them.

Keywords

Smart Cards, Thailand, Developing Countries, E-government, Social Aspects, Privacy, Technology Policy Planning, Technology Implications
I. Introduction

Smart card technologies have been revolutionizing telecommunications and financial transactions for many years. The major driving factors of the growth of smart card usage are the declining cost of smart cards and the added capability that smart cards provide against fraud and security attacks.

The majority of smart cards, by far, are used in the wireless telecommunications sector, where Subscriber Identity Modules (SIMs) are the major applications. Smart Cards have been specified as the access medium to the digital European mobile phone system (GSM). They are ideal because they provide secure access to the network by verifying the subscriber’s identity, and they allow separation of sale of mobile phones from that of services by the network operator and service provider. [24] As a result, smart cards are used more in the European countries, both in their wireless and telephone cards, than in other parts of the world.

There are many ways to categorize smart card technologies. However, for the purpose of this paper, only two major types of smart cards will be discussed. They are:

- “Simple” smart cards or Memory cards: These cards can store more data than the standard magnetic stripe cards. However, this type of card cannot process the information stored on it. This type of card is mainly used to store information only. The major applications of memory cards are the pre-paid pay-phone or store-valued cards.

- “Intelligent” smart cards: This type of card looks like standard plastic cards but are embedded with Integrated Circuit (IC) chip. They can securely stored and process the information on the cards. This type of card cannot be reproduced and therefore is
almost totally secure against fraud. Unlike the passive memory cards, "intelligent" smart cards can process, re-record, and update the information on the real-time basis. These cards can be either in the form of "contact" cards, which need to be physically placed into a card reader whenever the data on the card needs to be retrieved, or "contactless" cards, which use electrical coupling to operate.

II. Literature Review

Despite their usefulness and extensive applications, smart cards have not gained popularity and acceptance worldwide as their supporters once claimed. In some locations, the trial implementation of smart cards was even deemed failure. [16], [23], [24] To this end, several researchers tried to give the explanation as to why smart cards were not accepted well in these cases.

One major case of failure in smart card implementation was the smart card trial in New York City, U.S.A., launched by Citibank, Chase, VISA and MasterCard. In an empirical study of this trial’s failure, Truman, Sandoe, and Rifkin [24] found that despite the fact that the technology’s relative advantages were significantly related to consumers’ and merchants’ acceptance, consumers and merchants were disposed against acceptance of smart card technology. In addition, they found that there was no evidence of any critical mass effects that can be used as a predictor of either consumers’ or merchants’ acceptance.

Another case where smart cards have failed was the case of the smart card-based retail point-of-sale system, called "Exact," which was test marketed for a full year in 1997 in the Canadian market. Plouffe, Vandenbosch, and Hulland [21] conducted a detailed case study of this trial and found that there is an unavoidable "synergistic" aspect
to the diffusion of the smart card technology. Their research clearly indicates that the pure convenience and novelty elements of smart card payment are not enough in and of themselves to ensure the technology’s longer-term viability and acceptance. Consumers only value smart cards if they are broadly accepted at a variety of merchants and service providers. They also found that there were no statistically significant differences in expressed adoption intent across either fender or highest achieved educational level.

In another study done by Kearns and Loy [16], it was found that at the global level, there were still a number of issues that inhibit the widespread use of smart cards, especially in open systems. These issues include the unsettled standards to be used for the Chip Operating System (COS), and the users’ fears against security breaches and attacks of financial data which overweighed the benefits that facilitate adoptions of smart cards.

Other studies stated that obstacles to acceptance of smart cards include: [25]

- Present lack of infrastructure to support the smart card, particularly in the United States, necessitating retrofitting of equipment such as vending machines, ATMs, and telephones.
- Lack of standards to ensure interoperability among varying smart card programs.
- Unresolved legal and policy issues, such as those related to privacy and confidentiality or to consumer protection laws.

While the aforementioned empirical studies provided useful insights into the facilitators and inhibitors of smart card usage, the cases explored in these studies are mostly market trials of smart cards used in the financial and payment transactions. In
addition, these past studies focused mainly on the cases of smart card usage in developed countries, such as the U.S., Canada, and the European countries.

Unlike the past studies, this research hopes to shed lights on the social aspect of smart card technology in developing countries by using Thailand as a case study. In most developing countries, smart card technology was first introduced to consumers by the government, as opposed to the introduction by the private sector in developed countries, through the implementation of electronic identification cards (e-ID). This was the situation in Thailand, where the Thai government is currently planning for the deployment of e-ID and the implementation of electronic government regime.

This study is also different from others because it provides a unique perspective into the deployment of smart cards. Being totally different from the optional usage of smart cards in developed countries; the usage of smart cards in Thailand will be "mandatory" for all Thai citizens within the next few years. This situation provides important policy implications for the government and relevant stakeholders, the Thai citizens themselves.

III. Thailand: A Background Review on E-Government and E-ID Policies

In early 2002, the Thai government announced the E-government policy, and subsequently, the policies on e-ID and e-Citizen. In November 2002, the Information and Communications Technology (ICT) Ministry and the Bureau of Registration Administration (BORA) said they would introduce the country's first ID card equipped with a chip to store personal data by April 2004. The smart card would be only issued on request. [4], [5], [6], [12], [15]

The government said it would launch a pilot scheme for electronic ID cards called "smart citizen e-card," which will cost taxpayers a total of 800 million Thai Baht (USD 2
million) to see if they actually work. The cards will have a 13-digit code exactly like now, be made of plastic exactly like now, contain health records such as blood group and allergies, and hold house registration and health-card details. The government estimated they would cost about 50 to 100 Thai Baht each to produce, depending on what the market will bear; the pilot project will cover about eight million people; if successful, everyone will have a smart card within three years. The government appointed Education Minister Suvit Khunkitti to run the e-citizen card committee.

To date, magnetic ID cards have been provided to some citizens over 15-years-old in nine selected provinces: Bangkok, Chiang Mai, Phitsanulok, Chon Buri, Nakhon Pathom, Nakhon Ratchasima, Udon Thani, Songkhla and Surat Thani. The magnetic cards cannot store information but can be used with other services such an ATM machine.

BORA Director Surachai Srisarakham said government agencies would be able to select the information that would be stored. He added that the card might also be integrated with an e-signature, a driving license, job title, membership of any organizations or be used as an e-purse or e-passport in the future. [15]

BORA expects to set up a central server, separated from the central government database server, which would allow each government agency to select information to be stored in the card and update information. [6]

BORA director noted that the card would only be offered to those who ask for it. BORA will implement the ID smart card in selected provinces as a trial. There will be a 100 Thai Baht fee for the smart card because of its expense to produce. One initial benefit is that the smart card could be used as an ID to access e-services of government agencies or be used as an e-signature with email.
In addition, the ICT Ministry expects to issue a smart card to newborn babies and students in the future. BORA forecasts that it will take at least three to five years before the smart card system is widely used.

BORA director claimed that the Thai public would be able to more easily access government services. The new smart ID card will be able to be used for any kind of government registration service. Currently, 505 district registration offices can provide an electronic registration service, covering nine provinces. The remaining 572 offices in 67 provinces will be ready by the end of 2003. [4], [15]

Once the Cabinet approves the agenda and all 572 offices are computerized, infrastructure will be completed nationwide. After that, BORA will link to other state agencies. BORA director claimed that the use of a single ID card would save costs and is more convenient for people. The public will be able to access the services via a one-stop gateway on the Web at khonthai.com.

The government is now amending existing laws so that it can offer the new services to the people. It is hoping that by using the 13-digit identification card number to apply for any service of the state agencies will eventually lead to e-government.

BORA, meanwhile, will gradually redistribute jobs back to the district government registration offices, while the BORA itself will be a center supporting those offices. District offices need not submit any documents to the center, rather they will have authority to issue documents themselves, such as ID cards. Also by next year, BORA will discontinue its census forms and will transfer information into the ID card itself.
The process will start in Bangkok and a further eight provinces will be transferred to the electronic system this month, including Chiang Mai, Chonburi, Phitsanulok, Surat Thani, Songkhla, Udon Thani, Nakhon Ratchasima, and Nakhon Pathom.

However, the private sector has already voiced concerns over the privacy of personal information. The Association of Thai Computer Industry (ATCI) honorary president Manoo Ordeedolchet said that before the project is launched, the government should clearly outline what information will be stored on the card. He also stated that the information must not be used for further processing or is linked to other database systems such as healthcare or education systems in order to protect consumers' privacy rights. [6]

Meanwhile, the BORA has also developed systems that it hopes will help it to generate income. These include its database of population, investment, and so on, which can be utilized by businesses. He pointed out that BORA plans to offer those services to business by 2004. According to BORA director, the operational cost per year is around 1.3 billion Thai Baht ($29.64 million). By having businesses accessed to the database, BORA expected that 70-80 percent of the costs, or around 800 million Thai Baht ($18.24 million) would be returned in revenue. The revenue will be derived from service fees and transactions. [6], [15]

BORA will this year set up the National Committee on Registration Administration with some 13 organizations that issue official registration documents, such as social welfare, healthcare, revenue, transportation, passport, military and education. The committee will be chaired by the Prime Minister and will comprise of 24 members including the Interior Minister and selected experts. [4], [6], [15]
IV. Research Methodology and Settings

This study was conducted based on two types of data collection; namely, documentary research, and surveys. The surveys were conducted in two locations, Bangkok and Chiang Mai. Both locations are selected for the smart-card trials next year and both are the major provinces of Thailand. The respondents were general consumers who are randomly selected and the distribution of the respondents was also checked statistically to ensure that they were distributed with equal standard deviation across demographic parameters.

Several interview consumers were also conducted over several months. Results of these in-depth interviews provide an insight to the issue being studied.

It should also be noted here that although Thai people have never used the "intelligent" smart cards before, the idea of smart cards in general is not new to them. The government has promoted the ideas of pre-paid store-valued and telephone cards for quite some time already. Moreover, credit cards both in the forms of "simple" smart cards (Memory cards) and magnetic-stripe cards are being widely used in Thailand.

V. Results of the Study

The following Table 1 shows the sample sizes of the survey separated by locations and the respondents' awareness of smart card concepts.

Table 1: Sample Sizes in the Interview Survey

<table>
<thead>
<tr>
<th>Aware of smart card concepts</th>
<th>Location</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chiang Mai</td>
<td>BKK</td>
</tr>
<tr>
<td>Yes</td>
<td>61</td>
<td>54</td>
</tr>
<tr>
<td>No</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>85</td>
</tr>
</tbody>
</table>
The results of the interview and survey showed that more than 90% of the respondents think that the e-ID will provide convenience to them, in terms of reducing the paper work and the service time, when they use government services or deal with government agencies. As a result, most respondents had no reservations against the e-ID project.

Most of the respondents (68%) also had no reservations against using smart cards in commercial transactions. They perceived the convenience as the primary factor in adopting smart cards for commercial use.

While the Thai government has initiated many campaigns on smart-card benefits and deployment, only little amount of information is provided to consumers regarding how their information could be exploited and how it will be protected against fraud and abuse. Not surprisingly, more than 90% of the respondents are unaware of potential risks that come with the smart cards.

However, when the respondents were informed about the government's plan to sell their information to businesses in exchange for money, almost all of the respondents (80%) whose age is 25 or higher shown their frustration over the government's arbitrary business plan. This group of respondents thought that the government should not be allowed to sell the citizen's information without their permission. They also admitted that they did not know or were not informed about this plan before the researchers told them.

However, when asked the same questions on this issue to the younger generation (age 25 or younger), researchers found that they did not seem to be bothered by the government's plan to sell their information. This group of respondents thinks that their information will not be very useful to any businesses anyway because they are still young
and do not earn much money. As can be clearly seen, this misunderstanding and lack of knowledge on how consumers' information could be exploited by businesses could result in negative social consequences including the lack of rights to privacy, rights to obtain information, constitutional rights, and most importantly, personal decision rights as a Thai citizen.

VI. Conclusion

Smart card technology was first introduced in Thailand by the Thai government who planned to use the technology for the government's e-ID and e-Government projects in 2004. This situation is contrary to the introduction of smart cards by the private sector in developed countries. On the research front, this contrast provided an excellent opportunity to study the differences, if any, in factors affecting consumers' perceptions of smart card technologies.

The study shows that Thai consumers are aware of the smart card concepts and have no reservations against the government's plan to use smart card technologies in the e-ID project.

The important focus of this study was on the Thai government's plan to sell the information stored on e-ID cards. Once informed about this plan, most respondents were concerned and thought that the government has no rights to do so without their permission. Moreover, respondents voiced a concern that they were not properly informed about this plan to sell their information and thought that they should be informed more on this issue in the future.

To date, many government agencies in Thailand are still arguing about what information and applications should be put on the e-ID smart cards. The key issue with
respect to using smart cards in Thailand is not so much about which information or
applications are the "right" ones to be put on the cards, but more on the matters of
ownership, management and privacy protection of the consumers' information on the
cards. This issue should be communicated properly and clearly to every Thai consumer.
After all, it is the consumers' benefit protection and the Thai citizen's rights to privacy
that the government should put the most important considerations to when planning for
and implementing the smart card technologies in their e-ID and e-Government projects.
References

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