# Challenges of eGovernment in Developing Countries: Actor-Network Analysis of Thailand's Smart ID Card Project

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**Abstract:** This study seeks to explain the phenomenon of e-government initiatives in developing countries through the lens of the actor-network theory. Part of this theory is made up of the sociology of translation, which was employed as a crucial framework for exploring Thailand's Smart ID Card project. However, this project could not be mobilized, due to structural flaws in the following three stages: problematization, interessement and enrolment.

**Keywords:** Actor-network theory, eGvoernment failure, Smart ID Card, Thailand

# 1. Introduction

During the 1990s, e-government was introduced to enhance and support New Public Management (NPM) reform. It was used initially for information and communication technology (ICT) in order to produce and distribute public information through the Internet. Currently, with more than a decade of experience, e-government has developed as a critical tool in a more advanced application of ICT, which can develop good and responsive government that provides value at a lower cost (OECD 2005). Perhaps, e-government can be claimed as the second revolution in public administration after New Public Management (Saxena 2005).

The implementation of e-government projects has been increasing in developing countries, in the hope they will act as a panacea for enhancing greater public service efficiency. However, 85% of e-government in those regions either partially or totally fails. This high failure rate is responsible for serious financial loss; damaged morale, creditability and trust; and obstacles against the advantages gained from e-government implementation (Heeks 2003). The question remains: what happens to e-government projects in developing countries?

Therefore, this paper attempts to explain the phenomenon of e-government initiatives in a developing country such as Thailand. As a selected case study, the Smart ID Card project set out to enhance Thailand's public services by using ICT. In order to analyse this initiative, the actor-network theory has been applied. While the theory possesses many aspects, this study chose the sociology of translation.

In the information system area, the sociology of translation may be widely used to investigate the case study (see example in Sarker, Sarker and Siradova 2006 and Lee and Ho 2005). However, in the government area it is rarely found. The sociology of translation concept has strength in explaining closely the development of the case study stage by stage. Moreover, it can extend the understanding of association between both human and nonhuman actors in the actor-network. This may contribute the widely used theory in the field of e-government and especially focus on the case of a developing country.

The following section provides the foundation of the actor-network theory, and focuses mainly on notions of the sociology of translation, which is employed as a main theoretical tool in this study.

# 2. Actor-network theory

The actor-network theory supposes everything to be an actor, where elements of any kind hold together such as humans, technological artefacts, organisations, institutions, etc., and it does not differentiate between or delegate a priority of any kind (Walsham 1997; Hanseth, Aanestad and Berg 2004). To analyse the actor-network, every actor or element should be treated with the same analytical vocabulary (Callon 1987; Hassard, Law and Lee 1999). Walsham (1997 p.467) states that "..the rigid separation of humans and nonhumans is a very valuable one in this age of hybrids and blurred and negotiable boundaries". Law (1992 p.97) also states, " … sociologies that do not take machines and architecture as seriously as they do people will never solve the problem of reproduction in society", because they are materially heterogeneous in reproducing themselves.

To translate is "a verb which implies transformation and the possibility of equivalence, the possibility that one thing (for example an actor) may stand for another (for instance a network)" (Law 1992, p.386). The concept of translation focuses on the continuity of the displacements and transformation that happen in the story; for example, displacement of goals and interests, and also displacement of human devices and inscriptions. Displacement happens at every stage

(Callon 1986). Law and Callon (1989, p.52) state that in a translation shaped by a set of compromises between a somewhat different set of actors "… translation is the product of continual negotiation." In conclusion, translation is the mechanism of progressive temporary social orders, or the transformation from one order to another through changes in the alignment of interests in a heterogeneous network (Sarker , Sarker and Sidorova 2006).

Callon (1986) describes that the sociology of translation is composed of four moments, namely problematization, interessement, enrolment and mobilisation.

Problematization is the first moment of translation, which relates to the process of a focal actor striving to become indispensable to the other actors by defining the problem, motivating them in the network, and suggesting that the problem would be resolved if the actors negotiated the "obligatory passage point (OPP)". Problematization describes a product of alliances, or associations between actors by identifying what they want (Callon 1986). OPP refers to a process in which a focal actor convinces all other actors to accept the proposal of a network. OPP also refers to a process in which a focal actor shows an interest in all the actors who accept the proposed network (Callon 1986).

Interessement is the second moment of translation, which relates to a series of processes where a focal actor attempts to lock other actors into a position that they have been offered in the network. Interessement also means the group of actions by which the focal actor aims to impose and stabilise the other actors' identity. These actions are defined through the problematization process. Various devices for different actors are used in these actions. For example, in the scallop case; some devices in the interessement process had a favourable balance of power: the fisherman's devices were the towlines in St. Brieuc Bay and those for their scientific colleagues were texts and conversation, which attracted the actors concerned to follow the project (Callon 1986). If the interessement succeeded, then enrolment could take place.

Enrolment is the third moment of translation, which refers to a set of strategies in which a focal actor attempts to define and interrelate the various roles that allow other actors to enrol. The process of enrolment involves "group multilateral negotiations, trials of strength and tricks that accompany the interessements and enable them to succeed" (Callon 1986 p.211). When the negotiation between actors has been achieved, the inscription appears. The inscription is a process of artefact creation that ensures the protection of some interests (Sarker , Sarker and Sidorova 2006). In brief, an enrolment relates to acceptance from the other actors of the interests defined by a focal actor through the process of bargaining and making concessions (Madon, Sahay and Sahay 2004 ; Sarker, Sarker and Sidorova 2006).

Mobilisation is the final moment of translation, which relates to a set of manners utilised by a focal actor to ensure that all actors have legitimate speakers to represent them in the groups, and avoid betrayal by various collectives from the latter (Callon 1986, Madon, Sahay and Sahay 2004). Speakers or representatives are actors who speak or deputise for other actors (Walsham 1997). In the scallop case, the researchers, as focal actors, were the legitimated speakers for the Scallops at St. Brieuc Bay.

# 3. Research methodology

The actor-network is a unit of analysis in this study. To explore the interrelation in it comprehensively, this research carried out documentary research for data collection, on which this study heavily relies. Formal and informal documentary material was investigated. In the case of formal or government documentation, its crucial source of information was reviewed, especially official policies and plans, government publications, minutes from meetings and memos. For informal documentation, newspaper clippings and magazines, from 2002 to 2006, were used.

In order to analyse large amounts of qualitative data derived from documentary sources, a coding scheme was developed and applied. This involved putting qualitative data into categories and labelling them with a theme (Creswell 2003). The purpose of this process was to group similar events under a comparable heading or classification (Strauss and Corbin 1988). In order to allow the contents to be verified systematically, the codes were separated into different topics and the categories compared continually in order to identify common themes (Glaser and Strauss 1967). However, the data were triangulated to different data sources, so as to build a coherent justification for these common themes (Creswell 2003).

# 4. Background of the Smart ID Card project

The objective of the Smart ID Card project in Thailand was set to enable Thai citizens the convenience of using all government services with only one card. This would not only lead to a more efficient and faster service, but also greatly reduced paperwork, documentation, filing and copying. The Ministry of Interior was made responsible for card issuance, which began with the data collection of holders' birth date, ID number and registration of name/surname. Other public agencies had the right to record and amend the data directory in the fields for which they were responsible, based on the data standard of the card-reading machine, security system, and communication method of the card and reading machine. The planning and implementation of the system was based on

convenience, safety, durability, cost-effectiveness, high quality and uniformed standard across the same database. The government's cabinet also expected to promote and locally produce as much of the necessary hardware and software as possible, with Thailand becoming a base for card and software production. Initially, data in the ID cards of several public agencies should have been combined (National Electronics and Computer Technology Centre 2003).

### 4.1 The 4 –stage goal of Smart ID Card utilisation

The 4 –stage goal was set to deal with applications and the utilisation of the Smart ID Card, as follows (Department of Provincial Administration 2004).

Phase 1, 2004. The Smart ID Card was aimed to substitute the free medical treatment card, social security card and ATM card. Its holder would be able to access and contact electronic services in both the public and private sector via electronic machines or websites.

Phase 2, 2005. The Smart ID Card substituted the cash card, debit card, credit card and telephone card. It could also be used for recording change of address and votes in a referendum and election.

Phase 3, 2006. The Smart ID Card substituted the passport or border pass, national and international driver's license, and national and international cash card, debit card and credit card.

Phase 4, 2007. The Smart ID Card had alternative uses such as 'dual contact'..

### 4.2 Time line for the Smart ID Card project of Thailand

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|---|---|
| May 2002 | The cabinet set up a committee to integrate and reform the registration system, chaired by the Prime Minister. It was proposed that this committee improve and develop the country's registration system as a foundation of e-government. |
| January 2003 | The cabinet endorsed the year 2003 as 'the year of electronic services for citizens'. |
| March 2003 | The government allocated a budget of 2 billion baht (approximately 40 million pounds sterling) for the Smart ID Card project. There were 5 ministries, 6 organisations and 18 subprojects under this project, of which the Ministry of Interior (for card issuance) and Ministry of Information and Communication Technology (ICT) (for production of the ID card, software and hardware) were leaders. |
| October 2003 | The Ministry of ICT reported problems with card production to the government. It was announced that the card might not be produced in time for the opening ceremony. |
| March 2004 | The government aimed to issue the Smart ID Card to all Thai citizens within 3 years (2004-2006). The rate of production would have been 12, 26 and 26 million cards in the year 2004, 2005 and 2006, respectively, for a total of 64 million cards. |
| March 2004 | Conflict arose among the Smart ID Card committee regarding security of the smart card system and card manufacturing. These conflicts caused some key persons to resign. |
| April 2004 | The government commenced with a grand opening ceremony called 'Smart card for Thais at the international level'. The first 10,000 smart cards were issued for VIPs such as the Prime Minister, cabinet members and members of parliament, senators, governors and high ranking bureaucrats. |
| December 2004 | The goal to issue 12 million Smart ID Cards in 2004 was not achieved. |
| November 2005 | Planned issuance of the Smart ID Card failed again. At the same time, the government tried to force relevant organisations to produce the first 12 million cards as soon as possible. |
| July 2006 | Tenders for card production in phase two showed signs of problems, with the possibility of corruption in the process. |
| August 2006 | The government notified 1,077 card issuance stations over the country to stop production, due to a shortage of material, and old fashioned magnetic cards were issued again. |

Sources: Department of Provincial Administration 2004, and The committee for the integration and reform registration system 2003

# 5. Sociology of translation

This section describes the project through the lens of the actor-network theory. Sociology of translation is used as a crucial framework to investigate and explain the Thai Smart ID Card phenomenon.

## 1. Problematization

In defining the nature and problems among actors, the focal actor is necessary in the problematization process. It is suggested that actors negotiate with the focal actor on the obligatory passage point of investigation to rectify this issue. In detail, this process of moments mainly addresses initiation of the project idea, identifies the actors involved, and describes the obligatory passage points (OPP) as well as the mechanism of alliances or associations among actors (Callon1986). These moments are illustrated as follows.

1.1 Identifying Actors

In analysing the actor-network in the construction or deconstruction of something (in this case the Smart ID Card), the actor must be followed (Calon 1986 and Latour 2005). In the problematization process of the Smart ID Card project, the main actors involved could be described as follows.

A) The Government, which sought to enhance Thai public management, finally found the Smart ID Card as the answer. As a focal actor, government had the responsibility of gearing the project as follows. (1.) To encourage government agencies to utilise the Smart ID Card in order to improve and revolutionise public service rendering. (2.) To give full financial support. It could be said that this project was an indicator of the government's efficiency. (3.) To be responsible for final decision making in case the direction of the project was unclear

B) The Ministry of Interior is an organisation that has a database of all Thai citizens. Since the 1980's, it has developed the population registration project. Starting with the innovation of 13 digits in the identification card, these digits represent unique details of each Thai citizen such as what type of person they are (native or immigrant), where they were born, etc.

C) The Ministry of Information and Communication Technology (ICT) is a new organisation that was established in 2000, during the first term of Thaksin's administration. Its objective was to encourage technology use in Thailand. The Smart ID Card required advanced technology, which was beyond the experience of any Thai organisation. Therefore, the Ministry of ICT was asked to create a state-of-the-art technology, especially one for a card that contained a memory chip filled with personal data. More importantly, this technology had to be compatible with current technologies in Thai public agencies.

D) Regarding citizens, the full population of approximately 64 million people in Thailand was expected to have a Smart ID Card. From a positive point of view, the government seemed strongly determined to enlighten citizens of public services. In the project planning stage, minutes from every meeting showed that all kinds of citizens were involved. It can surely be said that no one was left out of this project (The committee for the integration and reform registration system 2003). However, Thailand does not have an openly democratic system, and most policies would likely adopt a top down approach, from the government down to public agencies and then citizens (Kitiyadisai 2000).

E) The Smart ID Card technology

It was realised that the Smart ID Card technology could comprise a card containing a microchip; card issuing machines connected online with a central database; and citizen databases owned by different agencies, e.g. personal data owned by the Ministry of Interior, healthcare data owned by the Ministry of Healthcare, educational data owned by the Ministry of Education, etc. The more the Smart ID Card substituted other cards, the more other agencies would be involved (Department of Provincial Administration 2004).

1.2 The obligatory passage points (OPP)

The OPP in this project was to revolutionise public services by using Smart ID Card technology. The focal actor, government, intended to resolve various public management problems, possibly those of the whole bureaucratic system, in one swoop. In setting up project objectives from the OPP in the interests of the actors, and overcoming obstacles, the aims revolved around the following. The government aimed to issue a total of 64 million smart cards to include all Thai citizens within 3 years (2004 – 2006). The Smart ID Card would have substituted more than ten other cards for each and every Thai citizen, such as the identity card, free medical treatment card, social security card, tax card, debit card, credit card, ATM card, passport, etc., and Thailand would have been the first country in the world to achieve this system.

From the project objectives and actor characteristics described earlier, there are a series of obstacles or problems that actors have to overcome before achieving the OPP. However, each actor will produce benefits if the OPP is successful. Different actors have to tackle various problems to produce a variety of benefits. A benefit in achieving OPP is its use as a tool to hold the actors together as allies in the actor–network of the project (Callon 1986). The Ministry of Interior could be a hub of public services, as it is the centre of the main process of the project, such as issuing data, database management, and software and hardware standard identification. It has been suggested that the Ministry of Interior would gain a large short term budget from the government for implementing

the project and maintaining it in the long term. It may not be difficult for the Ministry to manage this project alone, but unfortunately, it is demanding work for other public agencies.

The Ministry of ICT was given the purpose of technology development, and it could not deny that constructing the Smart ID Card created unfamiliar methods. However, this disadvantage could be turned into advantage. To produce and make ready 64 million blank Smart ID Cards with microchips containing personal data and linking database could be claimed, both nationally and internationally, as a pioneer project, which is expected in new technology. However, the government did not mention that the card must be produced by themselves, as a corporation with a private company or subcontracted to a private company under supervision of the Ministry.

At that time, citizens knew little about the project. They had heard only that the government planned to launch it to improve public services, and as news of the launch was spoken by the Prime Minister, the citizens believed it to be a good idea. However, details of the project were not given, and so no objections were raised from the people or media.

According to ID card technology, the Smart ID Card, when combined with others, would be a powerful tool for citizens using public services. However, it faced difficulty in integrating because separate organisations are responsible for different parts of the system.

Figure 1. The system of association among actors, which illustrates the problems encountered and overcome by achieving the OPP, as well as the benefits awarded.

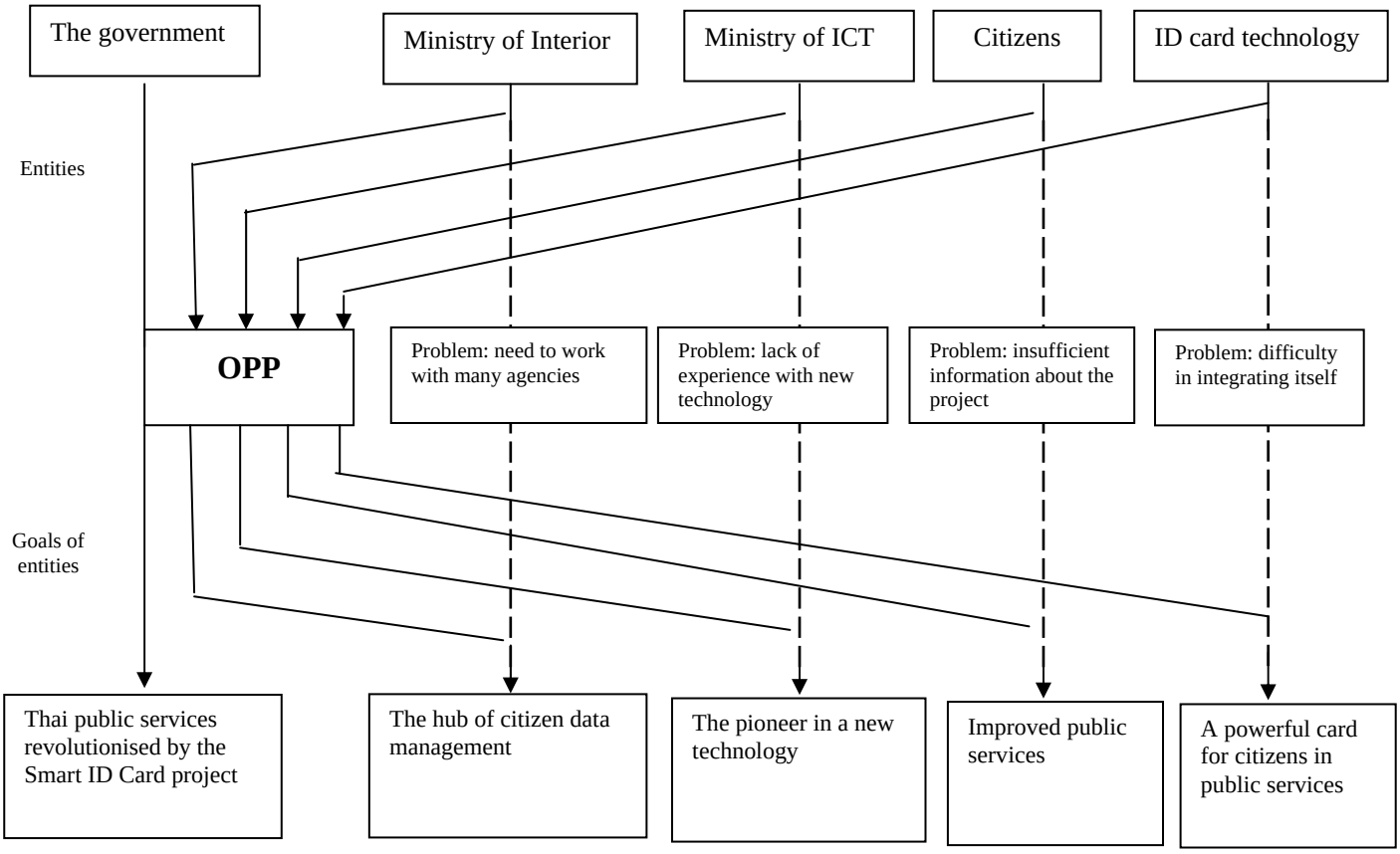


Figure 1. (Adapted from Colon 1986)

## 2. Interessement

In the problematization process, the actors involved can agree to being incorporated into the primary plan. However, this process could not guarantee that all actors want to continue in the actor-network system. Some may think that it is not worth joining because of their identity, motivation or goal, or they have interests in other projects or assignments. Therefore, the problematization phase is never that clear cut (Callon, 1986).

The following details show how the government created a device ensuring and confirming that all actors agreed to be incorporated into the primary plan in the actor-network of the Smart ID Card project. To explain clearly, each actor was separated into individual sections as follows.

### 2.1 Negotiation with the Ministry of ICT

The government had locked the Ministry of ICT to the obligatory passage point (OPP) by using the following tools. Firstly, the Ministry of ICT was required to join this project to design and produce the blank card as the main part of its responsibility for technology development. However, as a public agency, it was difficult to set up a new factory to produce the card. Therefore, it had to negotiate with government as to whether an IT vender was needed to tender for card production. However, the company to be awarded a contract had to work under supervision of the Ministry of ICT and also accept the TOR (Term of reference). The Ministry of ICT was asked by the government to set the TOR up with the Ministry of Interior. The reason for this was to make sure that the card technology was compatible with present databases and the current technology used in the Ministry of Interior.

### 2.2 Negotiation with the Ministry of Interior

The Ministry of Interior took charge of citizen databases, issued the card and, as a duty, accepted the obligatory passage point (OPP) in problematization without question: the OPP moved directly into the heart of organisational vision to enhance the citizen database to a higher level. The Ministry felt confident about the project procedure, due to its successful record in demographic citizen databases by winning the Smithsonian award in 1990.

The government approved a large budget for the Ministry of Interior to buy software and hardware for online connection with central citizen databases, and expand the number of issuing ID card stations from 904 to 1,044 nationwide. In addition, the TOR for the ID card technology was set up with the Ministry of ICT and other corporate public agencies, who needed to integrate their services with the Smart ID Card system (The committee for the integration and reform registration system 2003).

### 2.3 The communication with citizens

The government did not negotiate with citizens, but only communicated with them. It could be said that there was no bargaining between them. The way that government lured citizens into the actor-network was interesting. There were many channels, starting with the Prime Minister, Thaksin Shinawatra, who announced by broadcasting nationwide that Thailand would have this project. He said that it would be good for all Thai citizens, and the country would become the world leader in this technological field (Lorsuwannnarat 2006). Also, the government declared that 2004 was the year of electronic service for Thai citizens (The committee for the integration and reform registration system 2003). Furthermore, the Ministry of Interior instructed all ID card issuing stations to stop distributing magnetic ID cards to citizens, and it told citizens to wait for the new Smart ID Card, which was more attractive, had more utilities and was free of charge.

Government and public agencies communicated more with citizens via newspapers, television and radio on how wonderful and useful the Smart ID Card was. There was no negative response from citizens or even the media. Just a few articles in the newspapers suggested that the government be more concerned about card security. A representative of the public agency responded by stating that plans had been already made regarding security.

### 2.4 Negotiation with Smart ID Card technology

In the beginning, the smart card technology was successful in convincing the focal actor; government, that it could help initially to integrate many public services by using its full capacity. Public services might then be changed radically and dramatically in a positive way. After that, all Thai citizens might have gained the full benefit of public services, with more satisfaction, which would have become very meaningful for government in the long term. Definitely, the smart card technology (if successful) would have been very good as a campaign supporter for the next general election, with many voters feeling guaranteed and secure. It should be noted; however, that implementation of this technology was later seen as a tool for government corruption.

The government offered a large budget to separate and lock each part of the smart card technology into organisations. How the network of Smart ID Card technology could blend together might have been difficult to imagine at a later stage.

# 3. Enrolment

Two moments, problematization and interessement, could not guarantee success, but they did achieve enrolment. Enrolment is the third moment of translation, which refers to a set of strategies in which a focal actor attempts to define and interrelate the various roles that allow other actors to enrol. The process of enrolment involves "group multilateral negotiations, trials of strength and tricks that accompany the interessement and enable them to succeed" (Callon 1986 p.211). When the negotiation between actors has been achieved, the inscription appears. The inscription is a process of artifact creation that ensures the protection of some interests (Sarker , Sarker and Sidorova 2006). In brief, an enrolment relates to the other actors' acceptance of the interests defined by a focal actor through the process of bargaining and making concessions (Madon, Sahay and Sahay 2004 ; Sarker, Sarker and Sidorova 2006).

In this case, many strategies and tricks were created by negotiating with the Smart ID Card technology and other actors as well. All details are laid down as follows.

3.1 Ministry of ICT movement in producing the Smart ID Card

In June 2004, the CST Company was awarded production of the first batch of 12 million cards at the price of 888 million baht, which was lower than the average 1,300 million baht set by the government. CST planned to send 3 million cards to the Ministry of ICT in October, 2004 and after that all cards would be sent to the Ministry of Interior for putting into the security system. By January 2005, 1,077 issuing stations were ready to distribute the card nationwide (Manager online 2004).

Interestingly, the Deputy Minister of the Ministry of ICT said that there was no officially signed contract between the Ministry of ICT and CST Company before producing the card, because only one official process was needed initially to hurry production and keep within the timeframe. Therefore, production of the card came before signing the contract. At this moment, swift translation occurred (Mahring, Holmstrom, Keil, and Montealegre 2004). The Ministry of ICT translated the CST Company as producers of the card, but with no guarantee of how the Ministry translated what the Smart ID Card wanted in the way of production from the CST Company. There was definitely no officially signed contract; only a draft TOR of just 18 pages at this moment, and CST may not have understood fully how to produce the cards. However, no space for negotiation was offered; and things just kept going (Boonruang 2004).

3.2 Stuck in the middle because of the swift translation effect

Two months later (August 2004), after the CST Company was allowed to start producing the card without a signed contract, the finished document was signed officially by the Ministry of ICT and sent to the company. However, the CST Company could not accept certain issues in the contract and needed the Ministry to revise it; e.g. they wanted the final process of producing the 12 million cards to be approved by the Ministry of ICT alone, and not the Ministry of ICT and Ministry of Interior together, and the card operating system patent must belong to the CST Company, not the Ministry of ICT. In an interview, the Minister of the Ministry of ICT said that some issues could be reviewed, but inspection of the card and summit meetings must be carried out by the Ministry of ICT and Ministry of Interior (Matichon online, 2004).

The story above shows that because of the swift translation between the CST Company and Ministry of ICT, all details were not covered. In addition, insufficient understanding of the smart card technology caused the Ministry of ICT to lose translation with the CST Company. Swift translation creates vagueness or misconceptions in the project. (Mahring, Holmstrom, and Montealegre, 2004)

3.3 A repeated mess in the second batch of e-Auction

After the three years had passed, the second tender bids to make another 13 million cards started. Unfortunately, and interestingly, the auction was chaotic again. When referring to the process of project design in making the Smart ID Card, the government secured it with large budgets. This hinted that the Smart ID Card was not only a card, but also a card with financial connotations; a combination of card and money working together. This gave more power to actors that looked at this combination in various ways. Additionally, the Smart ID Card could induce actor interest by attempts to use big money as a tool. Having the best actor to make the Smart ID Card was logical, and in line with the wishes of the focal actor (government). This moment showed that the Smart ID Card was a good actor in the actor-network, but unfortunately, the process needed other actors, which involved human ones.

Surprisingly, the e-auction produced the same story as in the previous year. The vote from the e-auction committee resulted in a split decision of 3 to 2. An external academic, the committee Chair and his direct subordinate wanted to buy the more expensive Franco-Japanese cards, while the treasurer and senior director of the Affairs Bureau said that they should buy the cheaper Sino-Korean ones. This split decision prevented a formal announcement or letter about who had won the bidding. The newspapers reported that the committee had rejected at least two direct tenders from the highest bidders to formally conclude the e-auction

process and name the winner. Franco-Japanese complained to the police that inclusion of IRC–HST in the final bidding was unfair, as this company was eliminated in the first round. Sino-Korean prepared to sue the Ministry of ICT in the administrative court to force them to honour their contract, and the Ministry of ICT reported that they had less than one month's supply of the cards left (Sambandaraksa 2006).

3.4 The actor-network malfunctioned

In August, 2006, the Ministry of Interior sent a formal letter to all 1,044 issuing stations to stop issuance of the Smart ID Card. The letter stated that cause of the stoppage was due to a shortage of Smart ID Cards and the Ministry of ICT could not supply more of them at the time. It was also suggested that issuing station officers inform the people that the old fashioned magnetic card was still valid until its expiry date, and new ones would be issued for those lost or invalid. (Wancharoen 2006).

In the meantime, there was no sign of the focal actor: the government that should solve the problem. This situation was exacerbated by mass demonstrations against the Prime Minister, Thaksin Shinawatra, for his alleged involvement in corruption and abuse of authority in order to serve his self-interests. Such were the protests that on September 16, 2006, a military coup overthrew the government while Thaksin was out of the country. The country found itself in disarray and so too did the Smart ID Card project.

## 4. Mobilization

Mobilization includes a set of methods used by the focal actor to ensure that all actors have their representatives or spokespersons act according to the agreement and not betray the interest of the initiator. In the actor-network, the focal actor is needed to secure continued support for underlying ideas from the other actors enrolled. With allies mobilized, an actor-network achieves stability. This stability enables the actor-network to institutionalise underlying ideas so they are no longer seen as controversial (Callon 1986).

According to the term, mobilization, it could be said that there is no completed mobilization because if the actor-network is mobilized, it may have stability as an actor-network, but not in the project, as in this one. The Smart ID Card project seems to have failed partly because the OPP could not be achieved in the time line, and the project's future became unpredictable.

# 6. Conclusion

Heeks and Bialur (2007), and Gronlound (2005) state that the theory used in the area of e-government, as a field of study, is a weak point. Therefore, this study attempts to apply the actor-network theory to extend the usage of theory in the e-government context, and especially focus on the case of a developing country. This study shows that when the actor-network theory is applied in a wider context, it explains, for example, e-government at not only the organisational, but also national level; and it is still a powerful theory that can explain the interaction between human and nonhuman actors, and also the social construction of technology.

In terms of failure analysis, the sociology of translation can be an excellent framework for investigating the root of failure stage by stage. This study exposes that the case of failure could have occurred in every moment of translation. It can confirm the statement of Latour (1987) that we are sitting on leaky black boxes, which refers to the association of an unstable actor-network across time and space and its possible collapse at anytime.

Regarding lessons learned for the practitioner, it can be said that a skillful focal actor, who can determine the success or failure of an e-government project, is very important. Furthermore, the balance of interests, equality among human and nonhuman actors and the actors' exclusion from and/or inclusion into the actor-network are also crucially important in maintaining and balancing the actor-network in order to achieve its goal.

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