The Adoption of E-Business Among Small and Medium Enterprises in Northern Thailand

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ABSTRACT
The study focused on Thai Small and Medium Enterprises (SMEs) in the North Region of Thailand. In particular, the need to adopt Electronic Business (E-Business) by Thai SMEs is motivated by the intent to remain competitive. The aims of this study are: (1) to provide a current status of Thai SMEs and E-Business; (2) to identify inhibitors; and (3) to report drivers for Thai SMEs in E-Business adoption. This study is a non-experimental, quantitative research using a survey approach. The interview technique was selected to collect data. The interviews were conducted during February to March 2014. The target population for this study was SMEs within the seventeen provinces in the Northern Thailand. Following the “Central Limit Theorem” (CLT), a sample size of thirty SMEs was employed. SMEs were selected using a random sampling method with replacement. The findings indicated that Thai SMEs in this region were positive about E-Business. E-Business and Social Media (SM) were seen by Thai SMEs as an opportunity rather than a threat. With the right type of supports, SMEs in this region are ready to move forward with E-Business.

Keywords: E-Business, E-Commerce, OTOP, Social Commerce, SME.

1 INTRODUCTION
Small and Medium Enterprises (SMEs) play an extremely important role in the economic development of Thailand and are a prime determinant of employment. Most companies in Thailand are SMEs and the workforce they employ accounts for the majority of the Thai workforce. This is illustrated in the 2012 report by the Office of SMEs Promotion (OSMEP) which noted that within Thailand, there are approximately 2.65 million SMEs providing employment for 11 million people (OSMEP, 2012). The importance of SMEs as a prime generator of economic activity and employment is also confirmed in the statistics provided by the study of Wrycza, Auksztol, & Gazda (2007). According to Wrycza et al. (2007), SMEs within the European Union (EU) account for 99% of all businesses and provide 70% of the total number of jobs.

In addition to this, Thailand has officially recognized the importance of SME promotion. The Thai parliament passed the Small and Medium Enterprises Promotion Act of B.E. 2543 in 2000. In this Act, SMEs promotion in Thailand would be implemented in an integrated effort and in accordance with the national development direction, the national economic and social development plan, and the Thai governmental policies (Ngammaneeudom, 2012). An example of government effort includes the “One Tambon, One Product” (OTOP) scheme. The OTOP policy was initiated in 2002 (Pasaribu, 2007). This objective is to strengthen small business units all over Thailand for the benefit of the country’s sustainable economy. The OTOP policy focuses on developing the local community’s ability to be self-reliant. It encourages the use of rural people’s wisdom and local resources for job creation and income generation. The Thai government holds the view that once people within each community are united to utilize the local resources, these communities can then be linked through electronic means. This electronic link will allow SMEs to have fast access to information for their business operations and will assist them with corrective actions to address problems related to supply, manufacture and distribution (Jantavongso, 2007).

The specific area of interest focuses on the North Region of Thailand. This occurs for two reasons. The first is the economic reason. SMEs in this region, like in many other regions of Thailand, play an important role in the national economy. There are almost 0.4 million SMEs in the 17 provinces of the region (OSMEP, 2005). The North Region is also the gateway for Thailand’s trade and service with neighboring countries to the upper Mekong basin subregion and South Asia. The North Region has areas that connect the Greater Mekong Subregion (GMS) Economic Cooperation Program which connects South Asian countries (Tsuneishi, 2007). The second is the OTOP reason. The impact of the OTOP implementation can be examined from four different aspects including: social, environmental, development, and economic aspects. For this reason, many Thai SMEs in this region are required to connect people in the community by employing, generating income, creating social relationships, and creating economic community.

Clearly, the role of Thai SMEs is crucial to the economic development and performance of Thailand. In this regard, numbers of organizations have added
electronic forms of business (E-Business) to their traditional business model in an attempt to increase their competitiveness and chances of survival. A review of the literature indicated that E-Business has been adopted by Thai SMEs (Chanvarasuth, 2010; Chooprayoon, Fung, & Depickere, 2007; Limthongchai & Speece, 2003; Sutanonpaiboon & Pearson, 2006). E-Business can provide SMEs with a gateway to participate and contribute to a global business. Most significantly, from a developing country’s point of view, such as that of Thailand, the adoption of E-Business for SMEs offers the potential of advancing directly to being world competitive (Blashki & Jantavongso, 2006). E-Business technologies offer potential opportunities to strengthen these businesses.

A. Purpose

There are three foci of the study presented in this paper. The first (A), is to provide a current status of Thai SMEs and E-Business in the North Region of Thailand. The second (B), is to identify inhibitors for Thai SMEs in the North Region of Thailand to engage in E-Business. The third (C), is to report a finding on factors which drive Thai SMEs in the North Region of Thailand from engaging in E-Business.

II LITERATURE REVIEW

As a starting point, lack of both financial and Human Resources (HRs) is a major impediment for Thai SMEs (Jonsson, 2007). However, Thai SMEs are keen to adopt E-Business technologies to remain competitive in this digital economy. E-Business would enable Thai SMEs to overcome the lack of resources (Jantavongso, 2007). E-Business is not something new to Thai businesses, as it has existed prior to the year 2000. Earlier forms of E-Business were conducted through closed networks, for example, Intranet, in the form of Electronic Data Interchange (EDI) and Electronic Fund Transfer (EFT) (Koanantakool, 1999). Despite this, numbers of Thai SMEs still favor conducting businesses manually rather than electronically (Chanvarasuth, 2010). This implies that E-Business in Thailand for SMEs is still in the initial stage of growth.

A. Defining Thai SMEs

SME stands for Small to Medium Enterprise. As defined in the Small and Medium Enterprises Promotion Act B.E. 2543, SME employs no more than 200 people, have Fixed Capital (FC) of not more than THB 200 million, are less than 25 percent owned by one or more enterprises, and are less than 50 percent foreign owned (Kosaiyakanont, 2011). See Table 1. Thai SMEs can be grouped into (1) manufacturing, (2) wholesale, (3) retail, and (4) service sectors (OSMEP, 2005). This study also includes OTOP associated SMEs. These SMEs are closely associated with the Thai government’s proactive policies in the area of E-Business.

B. Defining E-Business

E-Business stands for Electronic Business. There are numbers of definitions of E-Business and one of the first uses was by IBM in 1997. Prior to this, the term E-Commerce was more often used (Blashki & Jantavongso, 2006). E-Business is described as a form of commercial transaction involving goods and services which is conducted over a digital medium. E-Business is taken in the broadest sense of E-Commerce. E-Business covers the use of Internet technologies to facilitate buying and selling of products and services over intranets, extranets, and the Internet, see Figure 1.
C. Thai SMEs and E-Business

While there are numbers of literature reporting E-Business adoption models, there are not many literature reporting E-Business adoption models for Thai SMEs, with the exception of Lertwongsatien and Wongpinunwatana (2003), Limthongchai and Speece (2003), Chooprayoon et al. (2007), Chanvarasuth (2010), and Jantavongso, Sugianto, and Syau (2007).

Lertwongsatien and Wongpinunwatana (2003) cited in Jantavongso (2007) have attempted to evaluate the Western E-Business adoption model to the context of Thailand. The study uses the Innovation adoption theory into the Thai context. It studies the factors influencing E-Business adoption in Thailand. These consist of organizational, technology, and environmental factors. The study classifies Thai SMEs into adopters, prospectors, and laggards. Nevertheless, the study contains a number of limitations. One limitation reported by Lertwongsatien et al. is that the study examines only one aspect of E-Business adoption. The variables are not intended to be comprehensive. The included variables are selected as representing key theoretical factors potentially affecting organizations’ adoption decision. Lertwongsatien et al. have suggested that their studies should further incorporate more variables to cover a more comprehensive aspect of the phenomenon, such as variables reflecting key aspects of E-Business, SMEs context, and variables representing a gap between Thai and Western cultures. Another limitation is that the data used in the study was collected in 1999. There is a question regarding the validity of Thai SMEs’ profile, if the survey were conducted nowadays.

The study by Limthongchai and Speece (2003) examines five main factors associated with E-Business adoption rate by Thai SMEs based on Innovation Diffusion theoretical framework. These factors used are consisting of: (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability. Amongst these factors, relative advantage, compatibility, and observability were found to be useful predictors of E-Business adoption rate by Thai SMEs. Limthongchai et al. have suggested that other factors such as organizational characteristics, individual characteristics, and environmental characteristics should be also investigated for future research.

This study by Chooprayoon et al. (2007) proposes a model based on Technology Acceptance Model (TAM) to investigate E-Business technology acceptance and adoption by Thai SMEs and related stakeholders. Thai E-Commerce Technology Acceptance Model (TECTAM) is a research tool and model to study E-Business acceptance among the Thai SMEs. The study is based on TAM Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). The project by Chooprayoon et al is in a preliminary stage.

The study by Chanvarasuth (2010) aims to provide a conceptual framework for E-Business adoption by Thai SMEs. The framework is based on knowledge transfer model. The study has explored factors that influence the adoption of E-Business by Thai SMEs. Despite this, Chanvarasuth is unclear whether the problems of E-Business adoption can be solved. Given that Thai SMEs do not have budget and resources to conduct E-Business. Chanvarasuth has stated that his study is not rigorous; there is a plan to conduct a more rigorous study to develop theory as a framework for the E-Business adoption by Thai SMEs.

In contrast to Chanvarasuth (2010), while lack of resources is still a major impediment for Thai SMEs to deploy E-Business. To cope with this, Thai SMEs can distribute costs by sharing resources. Jantavongso, Sugianto, and Syau (2007) have proposed a deployment framework for Thai SMEs to implement E-Business aka E-Business Deployment Framework (EBDF) as part of SMEs’ day-to-day operations, see Figure 2. The framework has five major components: (1) the Application Service Provider (ASP), (2) Professional Service Provider (PSP), (3) SME Enterprise Software (SEMES), (4) Government Involvement (GI), and (5) Trust Facilitation (TC). The framework is shown to have a statistically significant level of potential acceptance of 77 percent, which does not vary significantly between different business sectors and within various regions of Thailand. The framework is shown to be suitable for Thai SMEs, acceptable to Thai SMEs and generic in nature. Thus, overcome the lack of resource problem identified by Chanvarasuth (2010). The EBDF provided the foundation for this research.

III RESEARCH METHODOLOGY

This section describes the research methodology employed in this study.

Figure 2. EBDF for Thai SMEs by Jantavongso et al (2007)
D. Research Approach
This study can be classified as non-experimental, quantitative research using a survey approach. The interview technique is selected amongst all other survey methods to collect data in this study for the following reasons: (1) using an interview approach allows the interviewer to collect feedback during the question time, additional information can be provided when a response seems incomplete or inappropriate; (2) the response rates of interviews are much higher in comparison with other survey methods. Furthermore, a survey approach is the most frequently used empirical research method in Information Technology (IT) research (Shanks, Arnott, & Rouse, 1993).

E. Sampling Framework
The sampling frame used in this study was developed based on a white paper, “Small and Medium Enterprises of Thailand in 2004 and Trends 2005”, published by the Office of SMEs Promotion (OSMEP, 2005). The paper publishes the Thai data on the number of SMEs, their percentage within each business sector and their regional distributions. The Office of SMEs Promotion provides the names of SMEs, their addresses, telephone numbers, persons to contact, and their products information.

F. Sampling Method
A random sampling method was employed in this study. Participants were selected by a simple random sample method using a random numbers table. From an analysis standpoint, the selection methods were random in nature and contain no identifiable source of systematic bias.

G. Sampling Size
In this study, the “Central Limit Theorem” (CLT) is of vital importance for statistical inference. The CLT states that the samples should be “sufficiently large” and of “equal size” and sampling is with replacement. According to Deakin, Martin, & White (2002), the general rule of thumb for “sufficiently large” is that the number of observations should be equal to or greater than 30. In this study, 30 SMEs were interviewed thus clearly addressing the criteria for a “sufficiently large” sample. In addition, given the random nature of the selection process, the process is expected to mirror the requirement for equally likely selection.

H. Data Collection
In this study, thirty SMEs in the North Region of Thailand were selected using the random sampling method described earlier. Prospective participants were then contacted by e-mail, a letter, a facsimile or a telephone call to arrange an appointment for an interview at a time that suited them. The interviews were conducted during February to March 2014.

Prior to this, the questions used in the interviews were first developed in English. However, as English is not the official language in Thailand, some participants may not be able to fully understand questions. The questions were translated into the Thai to avoid miscommunication and misinterpretation.

The interview instrument was evaluated by three experts using the Index of Item Objective Congruence (IOC) to rate individual items on the degree to which they do or do not measure specific objectives. Each expert evaluates each item by giving the item a rating of 1 (for clearly measuring), -1 (clearly not measuring), or 0 (degree to which it measures the content area is unclear) for each objectives (Turner, Mulvenon, Thomas, & Balkin, 2002). Item rates below 0.5 were not included.

I. Data Analysis
Descriptive statistics was used to analyze data in this study. Following Mutua, Oteyo, & Njeru (2013), the descriptive statistics were chosen because they describe the state of affairs as it exists. The descriptive statistics include measurement, classification, analysis, comparison, and interpretation of data.

IV RESEARCH RESULTS
This section presents the details of the participating Thai SMEs in terms of their characteristics, usage of the computer, experience with E-Business, and issues associated with E-Business.

A. General Characteristics of the Sample
Thirty SMEs participated in this survey. These participants were selected from four business sectors and from the North Region in Thailand. A random sampling approach was employed and the actual distribution of SMEs in the survey over the four business sectors (retail, service, manufacturing, and wholesale) was 11:9:8:2.

As reported in the “White Paper on Small and Medium Enterprises of Thailand in 2004 and trends 2005” (OSMEP, 2005), 38 percent or 0.15 million SMEs in the North Region were located in just three of seventeen provinces: Chiang Mai, Chiang Rai and Nakhorn Sawan. In the survey, the numbers of SMEs within the sample between these three provinces was at 66 percent.

In the sample of the 30 SMEs, 22 were small sized organizations and 8 were medium sized organizations. The ratio between all the employees in the small size organizations and those in the medium sized organizations was 74:26 and within the sampled group 17 percent of participants were members of the OTOP group.

Based on the year of establishment information collected in the survey, 70 percent of the participants were less than 10 years old, 20 percent were aged
between 11 and 20 years, and, 10 percent had been established for 20 years or more.

In terms of the current markets of the participants, 87 percent of the participants targeted domestic markets. On average, they sold 73 percent of their products and services to a local market (that is, within the same region). The majority of the participants (63 percent) had more than one thousand customers over the previous year.

Finally, in terms of characterizing the survey group, almost 97 percent of the participants sourced their supplies from companies in Thailand with the majority of the suppliers (83 percent) being located in the same province. In terms of the number of suppliers, 56 percent of the participants had between 1 and 5 regular suppliers in the previous year.

B. Usage of Computer

Computer usage lies at the heart of E-Business adoption by Thai SMEs and nearly all of the participants (90 percent) used computers on daily basis. Of the participants, 96 percent had used computers for over a year and 73 percent have computerized systems to assist them in running their businesses. For those who have computerized systems, only 13 percent had internal IT support, and 5 percent of them outsource their technical support.

Of those participants who use computers on a daily basis, 96 percent have access to the Internet. The primary use of the Internet was for e-mail, providing information, receiving orders, communication with customers and suppliers, and Social Networking. In addition, of those who had Internet access, 41 percent of the participants had their own websites or Facebook. All participants with websites reported that they use their websites as an information point. Some websites also provided other services, with 32 percent of participants providing online ordering services on the websites, and 9 percent of participants having online transactions and online process tracking facilities respectively. The remainder of participant who do not use computers on a daily basis indicated that they are not considering using computers in their business.

C. Experience with E-Business

Common answers given as reasons for not taking up E-Business were that “E-Business does not fit with our way of working”, “E-Business is not relevant to our products and services” and “Lack of knowledge and expertise in E-Business”. However, in the survey, three forces encouraging the adoption of E-Business were identified. They were “provide a competitive advantage” “everybody else is using E-Business, so they have to keep up”, and “relevance to their business”.

When asked about their perception of the impact of the Internet and E-Business, over 60 percent of the participants responded that the Internet and E-Business will not change the way they conduct business within the next few years. In addition, 54 percent of the participants expressed the view that the Internet will bring impact to the business landscape in Thailand.

Over 93 percent of the participants believe that their use of Internet and E-Business activities within their organizations will increase over the next few years, while the remainders (7 percent) think that the usage will remain the same.

D. Driving Factors for E-Business Adoption

The driving factors for the adoption of E-Business by Thai SMEs in Northern Thailand were identified based on the EBDF and from the extensive interviews with SMEs in the region.

The findings indicated that, Financial Motivation (FM) has been identified as the most critical factor in E-Business adoption. This was followed by Standard of Operations (SO), Human Resource Support (HR), Technological Support (TS), and Confidence and Trust (CT) respectively.

Within the FM factor, “improve competitiveness”, “increase volume of sale”, and “increase business demand” elements are found to be the top elements that motivate Thai SME’s decisions to adopt E-Business.

Following this, under the SO factor, “reduce lead time”, “improve relationships with business partner” are ranked number one and two followed by “improve customer satisfaction”.

Moreover, the participants have identified “provide low cost but high quality professional services”, “provide staff development”, and “provides quality of IT staff on hand” to be the important elements under the HR factor.

In relation to the TS factor, “provide quality of enterprise systems and web services”, “provide database driven Web system”, and “provide the latest and reliable hardware” are believed by Thai SMEs to be significant in adopting E-Business.

The last factor is the CT, the participants rate “confidence in service providers” as the most important element under this factor. This is followed by “confidence in law related to E-Business” and “confidence in privacy and confidentiality of information” respectively.

Five key factors identified through this process provided the insight for this research, see Figure 3.
V RESEARCH DISCUSSION

While Thai SMEs in the North Region of Thailand are connected to the Internet and using computers on daily basis; limited IT knowledge and skills are barriers to their adoption of E-Business. Better external support and infrastructure are required. However, Thai SMEs believe that the national infrastructure, technical, financial, and regulatory bodies within Thailand are not up to their expectation.

Despite this assertion, Thai SMEs in this region are positive about E-Business. Thai SMEs viewed E-Business including the use of Social Media as an opportunity rather than a threat. The authors interpret the results of positive attitudes toward E-Business as an indication that Thai SMEs in the North Region with the right type of supports are ready to move forward with E-Business.

VI CONCLUSION

The findings indicated that E-Business is a significant tool for Thai SMEs in the North Region of Thailand. E-Business can assist Thai SMEs in running their business in at least five areas: financial, operations, human resource, technology, and trust respectively. Added to this, Social Media has become an important part for business activities within Thai SMEs in this region. Therefore, E-Business must encompass Social Commerce as its components. While a review of the literature indicated that Thai SMEs do not have budget and resources to conduct E-Business. To cope with this issue, Thai SMEs can distribute costs by sharing resources. As indicated, a deployment framework for Thai SMEs by Jantavongsong et al (2007) is able to overcome these inhibitors. The findings from this study is support this assertion in that the FM and HR factors were ranked by Thai SMEs as the main driving factors for E-Business adoption.

REFERENCES


