Shu-Te University
College of Informatics
Graduate School of Information Management
Master

E-business Maturity in Public Sector and Businesses in Nam Dinh, Viet Nam

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A Thesis
Submitted to the Graduate School of Information Management
College of Informatics
Shu-Te University
In Partial Fulfillment of the Requirements For the Degree of Master of Science in Information Management

February 2011
Shu-Te University Authorization Document of Thesis

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E-Business Maturity in Public Sector and Businesses in Nam Dinh, Viet Nam

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ABSTRACT

E-Commerce has been penetrating Vietnam’s economy aggressively these days as the country experiences sustainable growth in the past decade. Along this line, multiple efforts have been made to reform the public sector so that it can cope with the heat of a growing economy and grow in line with the booming business sector. For the past decade, much has been done to reform the public sector, in which, E-commerce is a must have initiative. A questions most scholar would raise is what is the return on investment for these reform efforts and what stage are the public sector in Vietnam at now, considering those investments. In this research I will use the Stage of Growth Model to evaluate the level of maturity in E-business in both Public sector and businesses. This effort seeks to: 1) Understand the comparative position that the Public Sector in Nam Dinh are at now. 2) Compare the status of maturity of businesses and Public Sector in Nam Dinh.

Keywords: E-commerce, public sector, business sector, Nam dinh province
ACKNOWLEDGEMENTS

First, I would like to express my deep and sincere gratitude to my advisor Dr. Hsing-Ya Chang – Director - Department of Information Management, Institute of Informatics, Shu-Te University. His wide knowledge and his logical way of thinking have been of great value to me. His understanding, encouragement and personal guidance have provided a good basis for my thesis.

Second, I am grateful and wish to express my warm and sincere thanks to Dr. Nguyen Thi Ngoc Bich, Vietnam National University. Her guidance and support was invaluable for me during the time I work on this thesis.

Third, I also wish to express my most sincere thanks to Dr. Pi-Yun Chen, Overseas Vice President of Shu-te University, who was directly in charge of MIS 3. She has always been a reliable source of support to us, especially during the time we were in Taiwan.

Next, I would also like to thank all other professors who have participated in this program. Thank you for providing us with the much needed knowledge in technology and methodology to do an academic research

During this work I have received many helps from my friends in MIS3. I really want to take this chance to say thanks to them: especially Tran Thanh Minh, Vu Quang Hung, Tran Minh Tien …who have always been by my side through all difficulties and share with me the best moments in class

Finally, I owed my loving thanks to all members of my family who helped me, and encouraged me during my studying time. They have always been a great source of moral support for me to rely on.
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Chapter 1 Introduction

1.1. Research Background

As the Internet created increasingly integrated marketplaces, organizations and businesses face the need to reform and innovate operations practice to improve their competitiveness. In response to the increasing pressure to change, much attention has been paid to the applications of E-business concepts to restructure and re-engineer processes within firms and organizations.

Why is the emphasis on processes? The focus on optimizing corporate workflows takes root from recent realization that Information is also an important corporate resource (Adi Prananto, Judy McKay and Peter Marshall, 2004). It has been noticed that visibility across supply and value chains and the velocity of processes are key to success (Crawford, J., 2001). The benefits of the Internet and E-business in improving operations are undeniable. In their study in 2007, Hooshang and Esmail proved that firms who adopt E-business have improved both their operational and performance areas in their organizations (George Xirogiannis and Michael Glykas, 2007).

The benefits of E-business to firms and organizations are straightforward. Another question is, at which stage of growth would firms and organizations adopt E-business? Various studies have been conducted on what factors decide how ready companies are to adopt this tool. Nonetheless, few researches have sought to explore this question in the context of government and administrative units.
In Vietnam, because of the close relationship between government agencies and businesses, it is even clearer that bureaucratic institutions could not be left out of the process – reform trend. Since 2001, Vietnam’s government has initiated a long haul effort to reform its administrative system. Aware of the benefits of e-Business, the government encouraged its all ministries, and bureaucratic agencies to adopt technology in optimizing their processes. From 2001 to 2005, the government implemented Project No. 30, which aggressively promotes e-Government. With this momentum, multiple actions have been done; however, the achievements have not been highly visible.

The World Bank estimated that “among the e-Government projects in developing countries, 35% totally failed, and 50% partially failed. Only 15 % can be considered completely successful (Hu et al., 2005). It is therefore an interesting question to ask what could bring about success for such implementation and what hindered it in developing countries like Vietnam. It is also crucial to know which stage they are at as part of their efficiency enhancement efforts.

1.2 Statement of Problem

To identify the e-Business maturity stages of organizations, most researchers apply maturity models. The best known maturity model was proposed by Nolan in 1973 to explain the evolution of Information System within organizations. Recently with the emergence of the Internet and E-business, various other models have been built by institutions and scholars such as KPMG (1997), Grant (1999), Chan and Swatman (2004).
In this paper, to decide which stage Vietnam’s government agency at in its adoption of E-government, I would attempt to find out the E-readiness level of bureaucratic units in the province of Nam Dinh. I would use the SOG-e model. This model assumes 6 stages of growth in terms of how E-ready an agency is:

- **Stage 1**: There is no clear direction for the organization’s e-business initiatives.
- **Stage 2**: More importance is placed on E-Business as a management tool of the organization. However, there is yet to be good planning and development direction for IS and IT within the organization.
- **Stage 3**: There is a clear awareness of the importance of E-Business in the organization. There is also a clear direction and planning for E-Business development. However, E-Business is still embraced more for technology benefits rather than business benefits.
- **Stage 4**: E-business development is becoming more business focused. There is a close relationship between E-business components (IS, IT and the Internet) and the organization’s process.
- **Stage 5**: The Integration between traditional organizational processes and E-business processes happens smoothly and creates a flow within the organization. E-business can provide strategic benefits to the organization.
- **Stage 6**: E-business is deeply embedded in every process of the organization. The integration even moves beyond intra-business to inter-businesses, where there is also close interaction with suppliers and business partners.
Considering the framework above, in this paper I would seek to answer the following research questions in the context of administrative units in Nam Dinh.

**RQ1:** Which stage are government agencies and administrative unit in Nam Dinh at in their adoption of E-business in the framework of the SOGe model?

**RQ2:** Which stage are businesses in Nam Dinh at in their adoption of E-business in the framework of the SOGe model?

**RQ3:** What are the enablers and the obstacles for government agencies in Nam Dinh in its adoption of E-business?

### 1.3 Research purpose

As mentioned above, administrative activities and business activities are highly inter-dependent in Vietnam. As such, to make sure smooth sailing in economic development, it is imperative that process – renovations across two sectors are on the same page.

It is therefore important to understand where government agencies are in its process - reform efforts as compared to businesses. Locating government agencies in the reform roadmap would definitely give a strong insight in terms of what should be done next to facilitate the transition to the E-age.
**Research (Procedure) Method:**

Like others studies, the research procedure has 6 steps as shown in Figure 1:

To answer the research question, I would conduct a survey on 100 respondents in Nam Dinh Province. The segmentation of this sample would be: 50 government units and 50 businesses. The targeted respondents should be directors or head of these agencies since they would hold a better perspective of the big picture than
administrative staff; therefore, would be able to provide more insightful answers.

The questionnaire would include qualitative questions to decide where these organizations are at considering the 6 stages proposed in the SOGe model. In conducting these interviews, I would also ask respondents to identify the stage they are at considering the discussed model. This would so help to increase the level of objectivity and help us understand their perceived view of their E-readiness.
Chapter 2 Literature Review

2.1. Administration reform in Vietnam and the platform for E-government

PAR as the driving force for E-business adoption

As Vietnam took a swift transition from planned economy to market economy, the country’s administrative bodies felt the need to mature to match with market’s blistering growth. As a result, the Public Administration Reform (PAR) Program was initiated in 1999. PAR is an ambitious program that attempts to bring about reforms within four aspects: institutions, organization structure, human resources and public finance (Ministry of Home Affairs, 2009). In each of these areas, multiple literatures have been created to study the mechanism of the reform process. In this paper, I would focus on how PAR’s efforts in institutional reform through the adoption of ICT as a means to optimize its processes.

A deeper look at the institution reform reveals its focus on two objectives. First, it sought to simplify and differentiate processes between administrative units and government institutions. Second, it attempts to improve the quality of human resources across Party and State organs. Since human capital is an important factor in process efficiency and transparency, it is arguable that the second purpose is also an approach in upgrading the speed of processes, to a certain extent. The institution reform is, therefore, a process-centric reform in this regard.

On the execution side, the reform process, which focused mainly on reducing
procedures via supervision methods, was slow, ineffective and yielded little progress. To raise the momentum again, on December 17th, 2001, the government released Decision No.136/2001/QD-TTg on promulgating the PAR Master Programme for 2001-2010 (Martin Painter, 2002). This effort looks to further empower local government, which essentially accelerate the process of decentralization. At this point, the arrival of Internet in Vietnam and the soaring online population has made E-government a new yet indispensable approach to implant the reform more effectively.

The corresponding action is Sub-Programme 7, which speculated to modernize the administration apparatus by various means. At this point, the fact that more than 21 million Vietnamese are now online (Martin Painter, 2002) has created a favorable condition for a citizen-centric E-government to materialize. For the modernization process to speed up, the government has opted for a series of actions, which aimed to computerize and manage its process electronically. This move showed the government's awareness that electronic government is the most effective way to create a more transparent and streamlined system.

A landmark evidence of the government’s commitment to conducting institution reform by modernizing its administrative apparatus is Project 112, launched in 2001, which sought to computerize all administrative units. This project was a milestone for E-government, with ten times more investment funds compared to similar projects (Hu et al., 2005). Following this momentum, the government has introduced a number of Decisions and Laws to build the legal and technological framework for smooth
installation of E-business platform in both public sector and the entire economy as a whole.

Important legal documents for E-government adoption includes:

- Decision No 235 issued on March 2\textsuperscript{nd}, 2004 by Prime Minister, approving a comprehensive project on “Application and development of open source in Vietnam from 2004 to 2008”
- Information and Technology Law (National Assembly’s Law No. 67 passed on June 29\textsuperscript{th}, 2006
- Decision No. 222, issued on September 15\textsuperscript{th}, 2005 by Prime Minister, approving a comprehensive project on “Development of E-Commerce in Vietnam from 2006 to 2010”
- Total Plan for Government’s E-Commerce Development from 2006 to 2010 proposed by Ministry of Trade
- Decision No. 169, issued in 2006 by Prime Minister, stipulating “Regulations on procurement of IT and electronic products for administrative units and organization using government fund”
- Decree No. 57, issued on September 9\textsuperscript{th}, 2006 by the Government, on E-commerce
- Decree No. 26, issued on February 15\textsuperscript{th}, 2007, by Prime Minister, stipulating “Regulations on the exercise of E-transaction Law, electronic signature and certification of electronic signatures.”
Decree No. 64, issued on April 10th, 2007, by Prime Minister, stipulating “Instructions on IT Law and IT application in State agencies”

These are key policies that reflect the government’s strategic focus on developing a legal framework and technical platform for E-business to grow swiftly in Vietnam. It can be seen that in the past decade, policy-wise, Vietnam’s government has been making structured and methodological steps in embracing E-business as a growth enabler. However, whether these efforts have been fruitful in practice is ambiguous.

Shaky first steps to the E-age

Despite continued attempts to embrace E-business, early results were not satisfying. Project 112 was committed to building state management computerization system with a special focus on integrated database system between 2001 and 2005. Yet, researches by the United Nations in 2003 showed that little improvements have been made in public sector with regard to E-readiness (Nguyen Tuyen Thanh and Nguyen Thi Hai Thanh, 2006). Graph 2 showed Vietnam’s average e-Readiness index for E-government compared to seven other countries in ASEAN region. While compared to other counterparts in the region, Vietnam’s level of e-Readiness is understandable; a further breakdown analysis would give better insight on why the country did not grow faster in this regard.

Graph 3 summarizes the three sub-indexes that constitute the United Nations’ e-Government Readiness Index. They are: Web measure index, which measures the sophistication of web service availability; Telecom Infrastructure Index which’s
measures the availability of ICT and telecom infrastructure; and Human Capital Index, which is basically traditional literacy and computer literacy rates.

Figure 2. e-Government Readiness Index in ASEAN countries

Surprisingly enough, despite high human capital index and a comparable level of Telecom infrastructure readiness, Vietnam’s web measure index is relatively low compared to other countries in the same range. This implies inefficiency because investments in human and infrastructure have returned less than expected number of e-products and sophisticated Web services.
This insight is further proved through Vietnam’s remarkably low e-Participation index compared to other ASEAN countries as illustrated in graph 4. E-Readiness is the willingness of the government to use ICT measures to provide quality communications with the public to enhance decision making power. In graph 5, the almost invisibility of e-decision making and e-consultation are apparently the main attributes for such low e-Participation rate of Vietnam. These considerably modest results possibly explain well the reason for the relatively not so high e-Readiness level in Vietnam in early stage of implementation.
Figure 4. e-Participation Index in ASEAN Countries

Figure 5. Breakdown analysis of e-Participation rate across ASEAN countries
A further proof for this insight is Project 112’s failure. In 2007, though received ample attention and donor support, Project 112 was halted. Project 112 focused on the computerization of State administration and building an integrated, centrally managed database for public management. Several studies have been done to investigate the underlying reason for such a failure. In her in-depth research of this incident, Toshio Obi and Nguyen Thi Thanh Hai concluded that aside from organizational problem, the lack of e-readiness in both personnel and procedures aspect were the main obstacles in realizing this project (Hu et al., 2005). The termination of Project 112 was considerably a blow to the government’s efforts to create the necessary structure for E-government to grow.

Promising signals

After the first few faltering steps, as can be seen from Chart 1, the government has made further commitment to E-Government through legislative actions, plans and projects. At present, almost all ministries, bureaucratic offices and government offices in 63 provinces have their own websites to provide services.

The penetration rate of e-management approach among state organs and administrative units is on the rise. In 2005, in a survey made by Pham Thi Bich Hoa, “only 2 out of 49 websites provided on-line services such as licensing, registration, custom procedure and Q&A”. Most websites remained static, which simply acted as portals for information, application forms. The main functions of these websites revolved around internal management. While E-government has planted its foothold in
central administration and administrative units, cities and big provinces, lower level agencies including 1,843 districts and 9,595 communes have yet to be connected to the system (Ministry of Home Affairs, 2009)

However, in 2007, a survey by Brown University showed that 89% of government websites are public and 100% of them provide databases. The level of interactive of government websites has also significantly improved. 22% of government agencies’ websites provides online services compared to the world’s average 28%. 56% of government websites have comment columns, 11% allows public information update as opposed to the world’s average of 42% and 21% respectively (Ramiro Moreira Goncalves et al. 2010)

While earlier outcomes were not particularly promising, later achievements proved that the Vietnamese government has been strictly following its trajectory to e-Government and speeding up the process of adoption. These results, though subtle, have signaled positive steps on the government’s path to adopt E-business as a means to promote its institution reforms.

2.2. Nam Dinh’s premise for E-business adoption

*Estimation of ICT growth among public sector*

In line with the government policy, Nam Dinh province has also been building the ICT premise and making efforts to embrace E-business. Since Nam Dinh has yet to develop an IT market, its ICT aptitude therefore depends largely on the government’s commitment and local government’s initiative. Table 6 below illustrates the forecasts of
ICT adoption among Nam Dinh’s administrative units between 2010 and 2015

Table 1. Estimation of ICT growth among enterprises in Nam Dinh

<table>
<thead>
<tr>
<th>No</th>
<th>Criteria</th>
<th>2010</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Internet Connection</td>
<td>70%</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>Online work process and communications</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>3</td>
<td>A centrally managed cyber data base of documents</td>
<td>50%</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>The number of services provided online is at level 2 and above</td>
<td>8</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Nam Dinh’s Department of Information and Communications

In the face of fierce competition, many enterprises in Nam Dinh have already chosen to go improve their ICT aptitude to sharpen their competitiveness. In 2010, the province would benefit from widespread Internet coverage in almost all communes and wards and a declining subscription cost. Based on this fact, Nam Dinh’s Department of Information and Communications have forecasted that:

- In 2010, 70 to 80 percent of small and medium enterprises (SME) in Nam Dinh will have access to Internet and email. This figure will rise to 100 percent in 2015.

- In 2010, 10 to 20 percent of SMEs in Nam Dinh will have their own websites for product introduction, branding and simple interactions with customers. This figure will be around 40 percent by 2015.
2.3. Maturity Models

The increasingly widespread application of technology in various walks of life has inspired robust development of maturity and stage of growth models. It is obvious that the need for a quantifiable instrument to assess current technology status quo and predict future development is on the rise.

Before the concept of E-business emerged, many attempts were made to develop maturity models in the field of Information Systems and Software Engineering. Presumably, the idea of maturity model was first and foremost an evaluation tool of the software industry. The first and most well-known maturity model in software industry was the Capability Maturity Model (CMM) developed by Carnegie Mellon University (Prananto, A., McKay, J. and Marshall, P., 2001). The model concentrated on contractor’s performance as an indicator of contracts possibility with the U.S. Department of Defense. CMM was then considered a set of standardized criteria for contractors to improve on their processes and (Prananto, A., McKay, J. and Marshall, P., 2001)

The birth of CMM has set a benchmark for the conception of a series of maturity models in Information System and software later on. Most maturity models developed on the basis of CMM consisted of five stages, which assumes a linear progress from one stage to another in terms of technology aptitude and corporate performance. There is, however, a likely pitfall here. Even though the CMM assumes positive relationship between stages of growth and technology aptitude, it does not imply the same
association between maturity level and corporate performance. (United Nations, 2004).
In his study on Project Management Maturity Model in 2001, Crawford pointed out that it is impossible to decide whether an organization is more mature than the other only with a maturity model assessment. Targets for improving their maturity level should therefore be in line with corporate situation and strategies rather than just for the sake of improving their status in a maturity model. (United Nations, 2004)

The emergence of Internet and E-transactions has fueled the boom of various models that measure the progression of E-business. For instance, the E-Commerce Maturity Model developed by KPMG, the E-commerce Lifecycle Model and the Internet Maturity Model (VietnamNet, 2007). The most widely used maturity model in recent research is the Stage of Growth of E-business model (SOGe), built by Adi Prananto, Judy McKay and Peter Marshall in the study of the E-maturity of Australian SME’s (Rudberg, M., Klingberg, N. & Kronhamn, K., 2002). This model provides a verbal description of six stages of growth, which informs organizations on their current level of maturity and provides them with goals and planning to reach the next level. Aside from ICT aptitude, the SOGe model stresses the importance of other factors in supporting successful E-business adoption such as strategy, staff and skills.

Overall, most current E-business maturity model, focus more on the strategic and management impact of E-adoption rather than the maturity of ICT as before. An example is the SOGe Model by Parananto, McKay and Marshall, which provides a qualitative framework for assessment of E-maturity among organizations. Another
example is George Xirogiannis and Michael Glykas’s quantitative approach in using Fuzzy Cognitive Maps (FCM) in building maturity model. This approach allows them to quantify the impact of E-business maturity changes to business efficiency (Zumpe, Sabine and Ihme, Diana).

To a certain extent, the shift of focus from ICT to more managerial aspects of maturity models has overcome prior weaknesses of the Information System Maturity models. This holistic approach has taken into considerations the “softer aspects” of E-readiness, which was arguably neglected in prior models. It has also captured the evolving trends of relationship-centric business as opposed to prior internal management-centric perspectives.

On the other hand, technology believers would still argue that the current e-Business maturity model lacked quantifiable measures to set a clear distinction between stages. Consequently, this has neglected the importance of ICT advances in propelling organizational growth. This notion has led Zumpe and Ihme, to develop their eBIS model. The eBIS model is more IS centric, which would quantitatively assess “processes for engineering support, configuration and technology management or software requirements.”

The evolvement of maturity models reflects the growing need for organizations to look within objectively to understand their current E-status as opposed to existing E-business trend. While certain limitations in these models still existed as mentioned above, it is arguable that these models have been providing resourceful tools for
organizations’ decision making in adopting new E-strategies
Chapter 3 Research Methodology

3.1. Methodology

Qualitative vs. Quantitative approach

As discussed in literature review, to gain an insight into the relative E-business maturity level of the discussed sector, we need to understand both quantitative and qualitative sides. It can be said that quantitative and qualitative researches are complementary processes to help us see a topic from a different angle.

Qualitative method leans more on the side of exploring and defining the scope of the subject. Its basic tools include in-depth interviews and focus group discussions, which would help to gather generic information and narrow down the most likely research domains. To complete the process, the quantitative research would follow, which quantifies the discussed issues through quantifiable questionnaires.

It is therefore not surprising that quantitative researches usually focuses on one or two main questions that usually deal with causal relationships between independent and dependent variables. At the same time, qualitative researches focus on a broader range of aspects of the discussed subject. It could therefore be understood that a big picture of the issue is called for, we usually utilize the qualitative approach. On the other hand, should we want to clarify specific detail of the big picture in a quantifiable manner, we should take the quantitative method. Qualitative researches help us understand trends, mechanism, and nuances, whereas quantitative researches provide
accuracy and metrics - an indispensable factor in decision-making.

With regards to maturity models, it could be said that prior to the birth of the Stage of Growth model, quantitative approach appeared to be more abundant compared to qualitative ones. After the introduction of the popular Stage of Growth model, the qualitative literature enjoyed more descriptive criteria of each stage. With the burgeoning of qualitative approach, the concept of E-business maturity has started to develop a more intuitive side. Also, as organizational growth became more sophisticated, the concept of “maturity” has grown into an increasingly relative judgment. For example, it would be hard to judge how an organization is more strategic in their adoption of E-business in a numerical way without being biased at some point. It is therefore understandable why qualitative approach is today a more popular tool in researching E-maturity of organizations.

3.2. Research Model

In this paper, I choose to apply the qualitative method which is a more appropriate approach regarding the questions in focus. Given the context of E-business early emergence in Nam Dinh, qualitative is also a more feasible way to conduct research. The reason is that E-business has not penetrated Nam Dinh’s market deeply enough to make a quantitative research representative. Therefore in this paper I would focus on studying more deeply the overall picture of Nam Dinh’s E-business mature level through in-depth interviews.

The research process entails designing a questionnaire, data collection, data
analysis and data interpretation. The in-depth interview questionnaire would be designed based on the SOGe model’s 6 stages’ criteria (Appendix 1). The questionnaire includes 4 main dimensions, which are: Organization Strategy aligned with E-business adoption, ICT system, Staff skills, and business process. I would divide questions into groups under each dimension. The six maturity stages and four dimensions are described in Table 7 below.

Before being used on the real sample, the questionnaire would be tested for several times to control possible expression and logical mistakes. An in-depth interview would be about 30 minutes long, with both closed and open questions. The closed questions would be used as standard criteria to determine where the organization is at in terms of e-business readiness. On the other hand, the open questions would leave room for the researcher to gain valuable insights about the dynamics of E-readiness within that organization and possible explanations for the organization’s current stage of growth.

Table 2. Description of Stage of Growth Model

<table>
<thead>
<tr>
<th>Stage / Dimension</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
<th>Stage 5</th>
<th>Stage 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td>There is no clear direction for the organization’s e-business initiatives.</td>
<td>More importance is placed on E-Business as a management tool of the</td>
<td>There is a clear awareness of the importance of E-Business in the organization.</td>
<td>E-business development is becoming more business focused.</td>
<td>The Integration between traditional organizational processes and E-business processes.</td>
<td>E-business is deeply embedded in every process of the organizational integration.</td>
</tr>
</tbody>
</table>

23
organizational. However, there is yet to be good planning and development direction for IS and IT within the organization.

E-business is also a clear direction and planning for E-business development. However, E-business is still embraced more for technology benefits rather than business benefits. The p between E-business components (IS, IT and the Internet) and the organization’s process happens smoothly and creates a flow within the organization. E-business can provide strategic benefits to the organization.

### ICT System

<table>
<thead>
<tr>
<th></th>
<th>Unconnected system with little applications (No Internet)</th>
<th>Starting to use IT applications in many aspect of operation but this usage is not properly aligned with organization strategy</th>
<th>Wider IT applications with more alignment with organization strategy</th>
<th>Further input from organization’s strategy into IT applications, but there are still some investment for the sake of IT advancement</th>
<th>A highly integrated system where IT offers added value to all internal processes</th>
<th>ICT adopts a more interactive nature with special focus on inter-organization activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staff Skills</strong></td>
<td>No formal IT staff in charge of e-business activities</td>
<td>IT staff take charge of e-business activities as a</td>
<td>IT staff dedicated to e-business activities but lack business</td>
<td>Dedicated staff for e-business activities who are closely aligned</td>
<td>A dedicated team in charge of e-business activities, which being closely aligned with the organization’s strategy</td>
<td>Management is also involved in e-business policies. The entire team is closely aligned with the organization.</td>
</tr>
</tbody>
</table>

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3.3. Data collection

In this research, I will attempt to reach 100 organizations in Nam Dinh, with 50 of them in the public sector and 50 in business sector. The data collection method would involve direct interviews with chosen respondents. During the interview session I would also use questionnaires and show cards to make the interview go more smoothly. By using show card I would be able to instantly collect answers to Yes/No and multiple-choice questions. With open-ended questions I would use tape recorder for further reference.

Table 3. Sample Segementation

<table>
<thead>
<tr>
<th>No</th>
<th>Business</th>
<th>Public sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Location</td>
<td>Nam Dinh</td>
</tr>
<tr>
<td></td>
<td>Number of interviews</td>
<td>50</td>
</tr>
<tr>
<td>---</td>
<td>----------------------</td>
<td>----</td>
</tr>
<tr>
<td>3</td>
<td>Expected interview time</td>
<td>30 minute</td>
</tr>
<tr>
<td>4</td>
<td>Expected response rate</td>
<td>40%</td>
</tr>
</tbody>
</table>

Since the targeted respondents are mostly high-ranking officers, the expected response rate would be 40 percent. In other words, I expect roughly 40 respondents would accept to be interviewed and give answers to my questionnaires. It should also be noted that visiting and directly interviewing the targeted respondents would increase the quality of data collection significantly compared to online survey or sending questionnaires for respondents to fill in themselves. Statistical information revealed that such passive data collection method only yield less than 10 percent response rate, which adversely affects the quality of the survey.

The results would be inserted in a spreadsheet to run demographic outcomes. Answers to open questions would be used to further understand what is lying behind these outcomes.

3.4. Sample Selection

To obtain a good sample, I would use the list of businesses and administrative units in Nam Dinh province provided by Vietnam Chamber of Commerce and Industry(VCCI). Based on this database, I would randomly choose 50 enterprises and 50 administrative units. As the data set has already been categorized into different industries by VCCI, I would conduct this simple random sampling procedure within each industry. Random simple sampling is known for its high level of objectivity but it
would also suffer from sampling error because randomness may make the selected population not representative. In doing simple sampling among businesses within each industry only, I would make sure all industries in Nam Dinh are covered to maintain a comprehensive outlook.

As discussed in earlier sections, the targeted group of respondents would be high-ranking officials in organizations. Specifically, I would target Administrative Manager or Deputy Administrative Manager of bureaucratic organizations and Operation Manager or Deputy Operation Manager in businesses. Logically these targeted groups would best capture any E-business activities going on within their organizations, if any. Moreover, since they are closely engaged in and manage all the processes within the organization, they would be in a good position to judge its own level of E-readiness and the impact of E-business.

3.5. Possible Limitations

It is open to awareness that researches have limitations due to all possible errors at each research step. The most mistake-prone process is data collection because sometimes, important points may be missed during interviews and data entry. This gap between research design and data collection would reduce the accuracy of the research. To control this mistake, I would directly supervise the interviewers, and also take part in interviews myself. This quality control would to some extent improve consistency between research idea and data collection.

Another possible limitation is low response rate. Since the targeted group are
high profile staff, approaching them is much more difficult compared to an average staff.
The fact that data is collected in a random manner makes the situation even more challenging. Low response rate would reduce the research accuracy and increase the likelihood of biasness. This sampling error is common across all researches.

Finally, the shortcoming that has been frequently mentioned throughout this paper is the generic nature of the Stage of Growth model. Since the Stage of Growth Model focuses more on descriptive side of the matter, it may not be able to give sharp and accurate metrics about the stages of e-maturity among the surveyed population. The comparisons are therefore only relatively reflective of the real situation. Also, inability to track correlations between e-maturity and different dimensions would prevent us from realizing which factor is the main determinant of e-business growth in Nam Dinh.
Chapter 4 Research Results

4.1. Sample Description

Following the research plan, I approached 50 businesses and 50 government agencies in Nam Dinh with a 30-minute questionnaire. The field work took place within 2 weeks. Among 100 targeted respondents, I was able to reach 76 of them. 25 of them refused to answer interviews; 5 people could not be reached and 4 of them were away on business.

Table 9 summarizes the response rate across segment. As can be seen, the response rate among Public sector is 84% as opposed to that of 68% for business sector. While I have pre-scheduled all interviews, such difference in response rate could be due to the fact that business people are more mobile than government officials, which makes them harder to reach.

Nonetheless, the overall response rate of 76 percent was much higher than expected. This positive result could be explained by careful planning and arrangement, as well as a good database of reachable respondents.

Table 4. Sample selection

<table>
<thead>
<tr>
<th>No</th>
<th>Business</th>
<th>Public sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Location</td>
<td>Nam Dinh</td>
</tr>
<tr>
<td>2</td>
<td>Number of interviews</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>Actual interview time</td>
<td>35 minute</td>
</tr>
</tbody>
</table>
Table 5 below illustrates the demographics of the interviewed sample. It can be seen that the majority of interviewed respondents are highly educated and hold high-ranking positions in their offices. More than 59% of interviewed respondents held bachelor degrees; 11.8 percent of them have Master Degrees and 2.6% are Ph.D. 39.5% of them are government officials and 21% are in executive positions. In terms of age, most of the respondents are in late twenties and mid thirties (42% are from 22 to 30; 36.8% are from 30 to 40).

Table 5. Demographics of Interviewed respondents

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>Business</td>
<td>34</td>
<td>44.7%</td>
</tr>
<tr>
<td></td>
<td>Public</td>
<td>42</td>
<td>55.3%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>52</td>
<td>68.4%</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>24</td>
<td>31.6%</td>
</tr>
<tr>
<td></td>
<td>IT</td>
<td>12</td>
<td>15.8%</td>
</tr>
<tr>
<td>Title</td>
<td>Government Official</td>
<td>30</td>
<td>39.5%</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>16</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>Administrative</td>
<td>18</td>
<td>23.7%</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>45</td>
<td>59.2%</td>
</tr>
<tr>
<td>Education</td>
<td>Master</td>
<td>9</td>
<td>11.8%</td>
</tr>
<tr>
<td></td>
<td>Ph.D.</td>
<td>2</td>
<td>2.6%</td>
</tr>
</tbody>
</table>
With such features, it can be said that the interviewed respondents are in good position to give informed judgment about the state of E-business maturity in their organization. The fact that most of them are well-educated, hold important positions and young would make it much easier for them to absorb this knowledge, catch up with the trend and, as a results, gave more sound opinions of the status-quo. The demographics of the sample has therefore increased the credibility of the interviews input; thus, promises more accurate results than otherwise.

4.2. Data analysis

4.2.1. Data analysis methodology

As proposed in Chapter 3, I will use the Stage of Growth Model, developed by Parananto, McKay and Marshall, to investigate the level of E-business maturity among the interviewed sample. The questionnaire attached in Appendix 1 seeks to examine organization’s E-business maturity in four dimensions: Strategy, ICT system, Staff skills, and Business process. It can be seen from the questionnaire that each question would have 6 corresponding answer choices, associated with 6 separate stages of maturity. When I interviewed respondents, I tried to explain to them the features of each stage
without disclosing the corresponding stage of growth.

Such interview approach was used because I want to maintain the neutrality in respondents’ answers. If respondents notice the association between the description of stage and the stage ranking, their answers may be skewed. This is the reason why I chose the approach to show respondents only the descriptions of the stages and ask for their opinions.

Respondents’ ranking of their organization’s E-business maturity will be calculated by taking average ranking of the four dimensions. Finally, I will calculate the stage of maturity of each sector (public vs. business) by taking average ranking of all respondents within that sector.

4.2.2. Public sector in Nam Dinh to be more mature in E-business compared to businesses

Following the approach described in 4.2.1., I have been able to derive the stage of E-businesses that 76 organizations in Nam Dinh are at. Table 11 below has summarized the general E-business status that an average organization in Nam Dinh is at. Statistics shows that an average respondent in Nam Dinh assesses that his or her organization is between stage 2 and stage 3 in terms of E-business growth.

Graph 5 below has demonstrated the perceived stages that most respondents assumed their organizations are at. It is obvious that most respondents speculate that their organizations are at Stage 2 or 3 in E-business maturity. No respondent find that their organization are at stage 6.
A deeper look at segment difference shows that most respondents from Public sector are more likely to see their organizations as being progressive and updated in terms of E-business. Graph 6 gives a clear insight into the differences in Public and Business’ view on their current stage of E-business growth.

It is evident that Public sector respondents hold a much more positive look at the growth stage of E-business in their organizations. Their perceived stage of growth ranges from stage 1 to stage 5, with the majority viewing themselves at being somewhere around stage 3. Whereas, for businesses in Nam Dinh, the perceived stage of growth ranges from Stage 1 to Stage 3. On average, it could be said that public sector respondents evaluate their organization’s E-business growth at Stage 3 and above, while Businesses evaluate themselves at early Stage 3.
4.2.3. Stage of Growth in terms of Strategy

The first dimension I used to measure E-business maturity is Strategy. Strategy in this context means how much importance these organizations place on E-business or E-commerce as they build their long term Strategy for growth. By analyzing responses to 3 questions used to measure Strategy stage of growth, I finally arrived at the conclusion that most Government agencies see themselves at either stage 3 or 4 in terms of E-business strategy; while businesses see themselves at stage 2 or 3 despite their strong awareness of E-business benefits.

Figure 7. Perceived Stage of E-business Maturity by sector

![Bar chart showing perceived stage of E-business maturity by sector]
Figure 8. Perceived Stage of Growth in Strategy by sector

Specifically, for government agencies, they speculated that E-business’ importance have been fully aware of. There is also an agenda on how E-business should be implanted at their places. However, these activities were slow to pick up and mostly internal. Government officials shows a stronger awareness of E-business role in the long term perspective of their organization, possibly due to various training programs they were introduced to as part of government policy.

On the other hand, people from businesses fully understood the concept of E-business but quite a few did not see much relevance to their businesses. Most businesses in Nam Dinh are small and medium sized, which essentially limited their ability to build a long term growth strategy that takes E-business in to account. However, it should be noted that the majority of them understand the concept of E-business and its positive impact on the economy thoroughly. The shortcoming is their lack of capacity and
financial means to follow these demanding agenda.

“...Yes, the Government has made a plan that we should move on to E-business in the next five years. I believe that as the country modernize, we also need to be more advanced in terms of technology...”

Le Duc Ngan – Director – Nam Dinh Department Science and Technology

“...I follow the news quite often so I know that E-business is a good tool to cut costs. I don’t think my business need it though, we are a family business and currently we are functioning quite well...”

Tran Anh Duc – Anh Duc JSC.

One possible reasons why businesses place less importance on businesses is the fact that their small and medium size already means that most processes are streamlined, therefore E-business would not add much marginal benefits in optimizing their internal processes. What these businesses are expecting from E-business is that it would enhance their cross-business transactions such as online trading. However, due to limited IT capacity and financial means, they are still unable to invest thoroughly in this aspect.

“...We only have 50 people in my company so I do not need an electronic process to make it more effective. But I really think if we can do something like online store, that would be a great long term strategy...”
Le Ngoc Anh – Business owner
4.2.4. Stage of Growth in terms of ICT infrastructure

Graph 7 has fully reflected the perceived stage of growth in terms of infrastructure across two sectors. Generally speaking, public sectors still perceive themselves as investing more in ICT infrastructure than businesses; however, compared to other dimensions, in terms of ICT investment, it seems that businesses and the public sector are somewhat more on an even keel with the majority of them crowding in Stage 2 and 3.

Most respondents stated that they had access to the Internet and several upgraded ICT applications. However, most respondents acknowledged that ICT investments at their organizations were not designed in line with long term strategies. This notion is especially true for respondents coming from businesses. Government officials are more likely to assume strong correlation between ICT investments and strategical plans. This
difference is understandable because most businesses in Nam Dinh are small and medium enterprises with limited access to resources, which significantly hinders their ability to pursue comprehensive and long term ICT investment aligned with their business plans.

“...I know that E-business is good for my business, but right now I do not have the resources and time to invest in it. Still so many areas I have to cover.”

Le Ngoc Anh – Business owner

4.2.5. Stage of Growth in terms of Staff’s IT skills

In terms of Staff's IT skills, government agencies are more likely to have dedicated IT staff than businesses. It is also more likely for public sectors to send their staff on IT-training courses to improve their capacity. However, it is a common scenario that IT responsibilities are taken care of by a non-specialized staff, for example, an administrative staff. The majority of IT staff in these organizations did not receive official training. Some businesses chose to outsource their IT responsibilities to other specialized companies to reduce costs.

“...In our company, we usually outsource IT work to a different company. This is because we do not have regular need for it, so it is a good way of reducing costs while we still have IT support.”

Dang Hong Ha – Nam Dinh Company of Import and Export
Unsurprisingly, Public sector in Nam Dinh still holds the competitive advantage in terms of IT staffs’ capacity.

**Figure 10.** Perceived Stage of Growth in Staff skills by sector

### 4.2.6. Stage of Growth in terms of Business Processes

In terms of business process, it is also apparent that government agencies are more likely to have their processes redesigned to intertwine with E-business processes. The underlying reason is that government offices receive various support from the PAR program which seeks to enhance human resources capacity and re-design processes. 100 percent of interviewed respondents from public sector acknowledged that their organizations were going through some reforms in processes, which essentially took E-business into account. For example, some organizations stated they were running some ISO-online that seeks to standardizes processes through some electronic formats.
For businesses, however, integrating E-businesses into their processes would take more initiatives. As stated above, businesses in Nam Dinh are small and medium sized with flexible processes. It would therefore take more efforts and funding to customize to their very specific natures. Businesses are also less likely to have available funds for such purposes.

Most importantly, quite a few businesses are satisfied with their simple internal processes and did not see much room for E-business to come in. Nonetheless, when it comes to cross-business trading, most business expressed a need to go electronic but also revealed a mistrust in the incumbent online-payment systems. This explains their reluctance to go further in these efforts.

![Figure 11. Perceived Stage of Growth in E-business process by Sector](image)
Chapter 5 Research Conclusion

5.1. Findings and Contribution

In this study, I have sought to investigate the perceived stage of growth in E-business among public sector and businesses in Nam Dinh. In so doing, I made an attempt to see if there is a difference across these two sectors and the possible underlying reasons. This finding would be of great importance in public policy where the government can adjust their tools to create a more favorable condition for sectors in need.

The research yielded interesting findings. Contrary to our expectations that businesses are usually more technologically savvy and invested more heavily in technology upgrade, the findings realized that the public sector in Nam Dinh are actually in a more mature stage in E-business compared to enterprises. Most public sector agencies are somewhere around stage 3; whereas business see themselves at stage 2. When looking more incisively into 4 specific dimensions in the SGOe models, I still come up with the same results that government agencies are more future-forward compared to businesses in terms of strategy, ICT investment, Human capacity and Business Processes.

Why do we have this contradictory result? The answer may very well come down to the supportive programs that the public sector is receiving across the country and the specific nature of businesses in Nam Dinh. It should be noted that in the past few years the government has been making concerted efforts to reform their processes
and enhance their human resource powers. This investment may well explain the public sector superiority in terms of E-business growth compared to business.

Another aspect we need to consider is that business and industries in Nam Dinh are not very developed, with the majority of business being small and medium-sized. The nature of small and medium enterprises is flexibility and cost-optimization. Businesses in such circumstance are also less likely to invest long term in ICT because of the heavy sunk costs and ambiguous returns on investment. Many enterprises considered themselves too small to need processes standardization. Because of the infancy stages of businesses in Nam Dinh, E-business remains a somewhat infeasible next step.

5.2. Implications

The findings held immensely meaningful message to policy makers and software developers. Such discrepancy in E-business growth between two sectors implies that tangible actions needs to be done to bridge this gap and opens up more opportunities for the less advantaged businesses in Nam Dinh.

Policy implications

The past decade have seen considerable investments in public reforms, which have apparently yielded good results. Such achievements could be seen in the superiority of the Public Sector in Nam Dinh in terms of E-business maturity compared to enterprises.

However, such findings waged a warning that perhaps small businesses in
provinces like Nam Dinh needed further support from the government to be on a more even keel with other sectors. Interviews revealed that most businesses in the targeted group want to go electronic but do not have the means and the fund to do so. There is also a pervasive lack of trust in online payment, which is the core of E-commerce. It is therefore critical that policies should pay more attention to this group of the economy by implementing supportive programs that can empower them in this aspect.

Software Developer Implication

This finding also holds an implication for software’s developers who are looking for new markets. While there is a need to go electronic and to improve cross-organizational processes among these businesses, there is also high reluctance because of the high cost and limited human resources to take care of such projects.

This fact points to an opportunity for developers to create cheap and cost-effective software’s that cater to this group needs. It is also an opportunities for outsourcing programs to leverage on because outsourcing is the optimal solutions to the limited human resources in IT that most of these businesses have resorted to and would like to do so in the future.

5.3. Limitation

Within the framework of a qualitative research, it could be said that the response rate was relatively high and the sample size was acceptable. However, the study would be more meaningful should the sample size be widened further to derive a more accurate conclusion.
Because this is a qualitative study, it would be hard to be insusceptible to the researcher’s subjectivity because final judgment based largely on the interviewer’s point of view. However, I have tried to minimize this risk by utilizing the SOGe model, which, to a certain extent, has sought to express these measures in a numerical way. Nonetheless, it would be hard for this study to not suffer from some loopholes that the SOGe model usually run into such as a not so detailed description of ICT structure or an overemphasis on management point of view.

Also, although the study shows us where the public sector and businesses are at in terms of business maturity, it fails to effectively explain the underlying reasons. While I have sought to seek answers to these questions from respondents, most of these answers are still assumptive and lack evidence.

5.4. Future Studies

To overcome such shortcomings, the first thing we can do is to expand the sample size and the geographical areas to increase the level of accuracy.

Second, to address the underlying reasons to the discrepancy in E-business growth across sectors, the only way we can proceed is to conduct a corresponding quantitative research which would sought to find out the reasons behind the difference across sectors.

Finally, it might be more helpful to have more interviewers to reduce the level of subjectivity in interpreting qualitative interviews.
REFERENCE

1. Adi Prananto, Judy McKay and Peter Marshall, (2004), Lesson learned from analyzing e-business progression using stage model in small and medium enterprises.


4. Martin Painter, Department of Public and Social Administration, City University of Hong Kong, Kowloon, Hong Kong SAR, China (2002) - Public administration reform in Vietnam: problems and prospects


Organizations.
APPENDIX 1

QUESTIONNAIRE ON EBUSINESS – MATURITY AT NAM DINH’S PUBLIC AND PRIVATE SECTOR

A. GENERAL INFORMATION (GI)

1. Organization:______________________________________________________________

2. Respondent’s Name:________________________________________________________

3. Respondent’s job title
   □ IT manager
   □ Official
   □ Management
   □ Administrative staff

4. Gender: □ Male □ Female

5. Education:
   □ High School Degree
   □ Bachelor Degree
   □ Master Degree
   □ Ph.D. Degree
   □ Other________________________(Specify)

6. Age: □ 22-30 □ 30 – 40 □ 40 – 50 □ Above 50
B. STRATEGY

B1. On a scale from 1-6, how important E-business is to the growth of your business?

1. Don’t know
2. Not important at all
4. Fairly important
5. Important
6. Very important
5. Extremely important

B2. On a scale from 1-6, how do you rate clarity in E-business adoption plan in your organization?

1. Don’t know
2. Not clear at all with no attached plan
3. Fairly clear with basic plan
4. Clear with a plan and execution team
5. Very clear, with a plan, execution team and budget
6. Very clear, with a plan, execution team and budget and every member of my organization is aware of this plan

B3. How would you define the E-business adoption into your corporate strategy?

1. There is no clear direction for the organization’s e-business initiatives.
2. More importance is placed on E-Business as a management tool of the organization. However, there is yet to be good planning and development direction for IS and IT within the organization
3. There is a clear awareness of the importance of E-Business in the organization. There is also a clear direction and planning for E-Business development. However, E-Business is still embraced more for technology benefits rather than business benefits.
4. E-business development is becoming more business focused. There is a close relationship between E-business components (IS, IT and the Internet) and the organization’s process.
5. The Integration between traditional organizational processes and E-business
processes happens smoothly and creates a flow within the organization. E-business can provide strategic benefits to the organization.

6 E-business is deeply embedded in every process of the organization. The integration even moves beyond intra-business to inter-businesses, where there is also close interaction with suppliers and business partners.

C. ICT SYSTEM

C1. On a scale from 1-6, how do you rate the consistency between IT adoption and business policy in your organization?

1 Don’t know
2 No consistency, IT adoption is purely for technical purpose
3 Fairly consistent, IT adoption somewhat supports business
4 Consistent, there is a clear alignment between IT adoption and business
5 Very consistent, IT adoption was created for the purpose of business expansion and the execution team follow the plan strictly
6 Very consistent, IT adoption was created for the purpose of business expansion

C2. How relevant are these description to the status of your company/organization’s ICT system?

1 Unconnected system with little applications (No Internet)
2 Starting to use IT applications in many aspect of operations but this usage is not properly aligned with organization strategy
3 Wider IT applications with more alignment with organization strategy
4 Further input from organization’s strategy into IT applications, but there are still some investments for the sake of IT advancement
5 A highly integrated system where IT offers added value to all internal processes
6 ICT adopts a more interactive nature with special focus on inter-organization activities

D. STAFF SKILLS

D1 Does your company/organization have a formal IT staff?

1 Yes
2 No

D2 How big is the IT department in your company, if any?

1 No IT staff

2 1 person in charge, not a clear department but integrated with administration

3 1 – 3 staff, an independent department

4 More than 3 staff, an independent department that have staff in other branches of the organization

D3 What is the skill level of your company/organization’s IT staff?

1 No formal training, a staff in another field is taking IT responsibility

2 A formal IT staff but did not receive formal training from university

3 IT staff received formal training from university

4 IT staff received formal training from university and highly experienced in the field

5 IT staff not only received formal training from university and highly experienced in the field but also understand corporate strategies very well and seek to integrate this into their work.

6 IT staff not only received formal training from university and highly experienced in the field but also understand corporate strategies very well and seek to integrate this into their work. IT staff also have management training

D4. How would you describe the overall IT capacity in your company/organization?

1 No formal IT staff in charge of e-business activities

2 IT staff take charge of e-business activities as a secondary task

51
3 IT staff dedicated to e-business activities but lack business knowledge

4 Dedicated staff for e-business activities who are closely aligned with business team

5 A dedicated team in charge of e-business activities, which includes both IT and business staff

6 Management is also involved in e-business policies. The entire organization is aware of e-business

E. BUSINESS PROCESS

E1. How would you describe the relationship between E-business adoption and business processes within your company/organization?

1 E-business initiatives have no impact on organization’s process

2 E-business initiatives have little impact on organization process

3 E-business initiatives start to have significant impact on organization process and may lead to process re-design

4 E-business is the catalyst for process change. The change immerse IT, strategic and business elements.

5 E-business is instrumental in re-designing and simplifying organization’s internal processes

6 E-business is instrumental in re-designing inter-organizational processes