CORPORATE STRUGGLE WITH ICT IN THAILAND: A CASE STUDY

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ABSTRACT

The paper discusses, through a case study, network implementation problems faced by Bangkok Investment Corporation (BIC), a foreign corporation in Thailand, following a proposal to adopt a centralized Customer Relationship Management (CRM) database system to support all offices and their mobile workforce. The case study is presented from an internal perspective and illustrates how a variety of elements within Thailand may contribute to inadequate telecommunications infrastructure and underdeveloped skill-sets. We note that educational reforms, having slowed down in pace, restrict the availability of people with the required knowledge and skill-sets, affecting the time and cost of implementation considerably. Highlighted in particular, is the dominance of teacher-lead education, the lack of critical thinking skills development within the formal education system, and how such systems impose a constraint on the problem-solving skills that are required of people working in the ICT sector. We conclude that it may be difficult to sustain a centralized CRM database accessible over a Wide Area Network in Thailand at this time without ongoing issues.

Keywords: ICT, ISP, Developing Nations, Digital Divide, Technical Education.

1. Introduction

The paper reports on ICT implementation problems faced by BIC, a foreign owned and operated corporation in Thailand, following an evaluation of their current data communication network and its ability to sustain a global centralized CRM system. Initially, the research focused on the adoption of CRM concepts within the context of Thailand. It soon became apparent however, that several major linkages between existing strands of research may not have been adequately made in the literature and that a number of opportunities to unify some of the literature into a more holistic document exist.

A considerable number of studies have been conducted on critical success factors associated with implementing particular types of Enterprise Systems (ES). However, these studies are generally conducted in the context of developed Western societies. Only since 2001 has there been a slight growth in the study of ES implementation projects in developing Asian countries (Huang & Palvia, 2001; Ramaseshan et al., 2006; Hawking, 2007). However, any generalization of Asia as a single entity may be inappropriate as issues vary from country to country (Woof, 2006a; Woof, 2006b; Paluszek, 2006; Hawking, 2007). Studies conducted on ES implementation in Thailand focus on Thai owned and operated corporations' readiness to adopt ES, generally finding culture and education impacting on their readiness (Jirachiefpattana, 1997; Jirachiefpattana et al., 1996; Srivihok & Batanov, 2005; Marchand & Chung, 2005). Some only touch on inadequate infrastructure as an inhibiting factor. In this paper, we focus on the broader perspective of identifying, through exploration and observation, national factors impacting on the success of ES implementation and BIC's ability to fully realize competitive advantage from such a system.

¹ This is a fictitious name used to protect the identity of the case study for commercial in confidence reasons

The case study identifies five contemporary factors affecting the sustainability of a centralized CRM database system, accessible over a Wide Area Network (WAN). These factors include 1) unreliable technology including the telecommunications infrastructure, 2) unreliable businesses services and support, 3) inadequate knowledge and underdeveloped skill-sets of the workforce, 4) communication difficulties between expatriate managers and their Thai employees and contractors, and 5) culture, the underlying influences of all four factors.

The case study also highlights the dominance of teacher-lead education and lack of critical thinking skills development within the Thai formal education system, which imposes a constraint on the problem-solving skills required of people working in the ICT sector. As a consequence, the ICT sector relies on the skills of foreign workers, limiting the potential for skill-sets to be adequately transferred, creating a spiral of perpetual dependence. Additionally, through practical presentation, the research supports the need for Thai education policy makers to address the technical specialist training needs "in the face of globalization" (Witte, 2000). From a practical perspective, the Thai government has recognized these deficiencies and is moving to address certain issues in order for Thailand's ICT industry and its economy to prosper. This premise appears to have a direct bearing on the issues highlighted by the case study; the ICT infrastructure itself and the inadequate level of preventative maintenance that is carried out. These problems also appear to be related to low levels of accountability in relation to Service Level Agreements (SLA's) by ICT firms in Thailand.

Finally the case study also considers the personal experiences of a Thai national closely involved in the administration of all database systems at BIC. The research focuses on the network infrastructure of two office locations in Bangkok, Thailand. For the sake of confidentiality, we will refer to the research sites as Head Office and Customer Service Office (CSO). The remaining offices are branch offices and will be referred to as such.

The case study method (Yin, 1993) was adopted for the research in order to obtain qualitative data that captured the richness of the participant's experiences.

2. RESEARCH METHODOLOGY

As the paper is a result of a study into a CRM implementation project for BIC a corporation in Thailand, the research method adopted uses the exploratory case study method in which data collection has been undertaken prior to defining the research question, making this a pilot case study (Yin, 1993; Yin, 2003a; Yin, 2003b; Stake, 2005). The case study methodology is suitable due to lack of prior research in this area (Lee, 1989; Yin, 2003a) and is exploratory in nature as the purpose is not to produce or develop a hypothesis or proposition (Yin, 2003a) but purely to make the necessary identifications of issues for further research.

A single case is used in this study, the case being a foreign owned financial consulting firm operating in Thailand with a need to establish a customer service center in Bangkok. A single case is considered sufficient in this instance because 1) the case in itself is unique (Yin, 2003a), 2) it is a prelude to further research (Yin, 2003b; Tellis, 1997), and 3) replication and case comparisons are not an objective (Yin, 2003a; Tellis, 1997; Atkins & Sampson, 2002).

The uniqueness of this case is due to a combination of the characteristics of the BIC. BIC is a foreign owned and operated SME consisting of approximately 50 employees Asiawide (in early 2004) with approximately 10% of staff in Thailand offices being Thai nationals occupying administrative positions. The remaining staff are Marketing Personnel, Consultants, Managers, and Directors who are expatriates from developed Western countries.

The Head office was established in the mid 1990's in Bangkok, with the entire client-base made up of local expatriates. BIC's expansion saw branch offices open in Pattaya (Thailand), Vietnam, and China. The expansion and a merger lead to the need for a customer service center to provide full-time customer support. The uniqueness is the combination of being a foreign SME operating throughout Asian countries servicing foreign customers, and therefore employing a limited number of local staff, juxtaposed with branch offices with the same characteristics.

3. CASE BACKGROUND

Observations of BIC began in 2000 when the firm consisted of only one office in Bangkok. At the time, BIC employed approximately 15 people, the majority being telemarketers. The business required nothing more than a 56K connection to the rest of the world. The nature of the business means suppliers are located overseas, while the clients are Western expatriates residing in Thailand. Business with overseas suppliers was typically conducted by phone and fax of client application. The main mode of communication with business clients was via email.

In 2001, a decision was made to upgrade the Internet connection from 56K to a 256/256 Kb ADSL connection to accommodate a shift from faxing client applications to emailing client applications to suppliers. Although BIC kept its attention on increasing sales, management realized a need to provide care to existing customers; therefore a few employees were transferred to a customer service role. This was due to competition, from an increase in similar suppliers within the region, as well as expanding the service provision by adding further products to the services already provided. Additionally, the business began holding meetings to notify staff members of the direction in which the business was heading.

In mid 2001 BIC announced the merger with a competitor United Investment Corporation² (UIC) also operating in Thailand. In preparation for the merger with UIC, BIC took the opportunity to improve inefficient business processes in anticipation of the growing client-base. This included a further increase of Internet usage to liaise with suppliers and clients overseas, due to refining communication processes. Shortly after the merger, BIC began opening branches in Pattaya, Vietnam, and China, which lead to an expansion of the customer service team.

By 2002, the customer service team had out grown its office space within Head Office and was relocated to another building. Additionally the purchase of a client-database from yet another competitor corporation created the need for a unique business identity. This was a catalyst for changing the business relationship from a single corporation to a multi-corporation with a parent-child business relationship. The physical separations lead to the use of disparate systems.

BIC included a Head Office, Branch Offices, and a Customer Service Office (CSO), all of which were highly reliant on the Internet to 1) communicate between staff members and offices, 2) communicate with clients who were generally internationally mobile, and 3) communicate with overseas suppliers in Asia and Europe. All offices were responsible for conducting sales of products and services, however, only the CSO was responsible for new product sales to existing clients. Regardless, all offices relied heavily on the Internet to provide suppliers with customer applications and efficient communication for customer data exchange. Additionally, the CSO was responsible for liaising between existing clients, Banks, and Institutions to resolve any client issues or enquiries. CSO staff were required to remain in contact with clients regarding client portfolio performance. The core CSO service provided

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clients with up-to-date performance of their portfolio via a secure website. An Internet connection was required by the office to extract fund performance data from websites and email, while also being available to customers at all times.

Due to these disparate systems and office locations, nationally and internationally, an initial project was established to explore the adoption of a centralized CRM system to improve business communications, centralizing systems and to create competitive advantage. The areas investigated incorporated telecommunications infrastructure, including telephone line administration and maintenance; service level agreements; staff education, knowledge and skill sets, which also included knowledge and skill sets required in project team recruits and ability/inability of labour markets to satisfy requirements; English language skills, which included communication styles, and culture. These areas were investigated as they would have the highest impact on what type of CRM should be implemented and what skills would be required to use, manage and maintain the CRM. The rest of this paper discusses the results of the investigation into each of these influencing factors for implementing a CRM in this type of business in Thailand.

4. DISCUSSION

This section discusses the five aspects found to directly impact issues faced by the Head Office and CSO in the implementation of the proposed CRM. These were the national telecommunication infrastructure; service level agreements (SLA); level of knowledge and skill-sets of the local employment market; communications; and culture. The following section discusses each of the 5 aspects in turn.

4.1 Telecommunications Infrastructure

Telecommunications infrastructure in Thailand was identified as inadequate since it caused poor Internet reliability. Business failures are foreseeable if the standard of Internet services provision in a developing country, such as Thailand, is below the standard currently available elsewhere. Numerous Internet issues were observed, affecting the Head Office's inability to conduct core business functions efficiently. Without Internet connectivity, the sales function became inefficient as client applications could not be forwarded via email to financial institutions for processing, which lead to increases in lead-time and related costs. In addition, client enquiries could not be managed efficiently by email, leading to an increase in overseas calls.

There were numerous occasions where 1) CSOs were unable to obtain client portfolio information, and 2) complaints were made by customers residing overseas regarding their inability to access their portfolio information. Upon investigation, the general cause was due to the loss of Internet connectivity into Thailand or within Thailand itself. There is currently a lack of qualified data to illustrate this; although it lies outside the scope of this research, it should be examined through further research.

Observations of the case suggest that the reliability of Internet services provided between 2000 and 2003 was low due to inadequate telecommunications infrastructure. During 2001, when BIC upgraded their Internet connection from 56K dial-up to ADSL, they also changed ISPs from Loxinfo to Telecom Asia. Although BIC achieved improved customer services, the Internet reliability did not seem to have improved. It was observed that issues with submarine cables or Internet failures in Vietnam or China, where branch offices were located, were resolved within a couple of hours; however, Telecom Asia (TA) seemed to have take the same amount of time just to locate the problem. Such observations were made through TA's (now known as True Internet) listing of international and domestic Internet links, as illustrated in Figure 1, and through communication with TA's Customer

Support, since the researcher was solely responsible for contacting TA regarding loss of Internet connectivity.

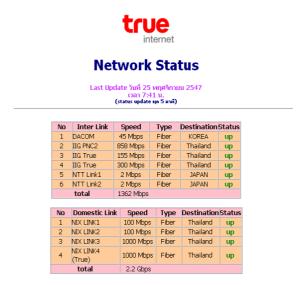


Figure 1: True Internet Network Status

Inadequacies of the infrastructure were originally caused by a variety of issues during the establishment and expansion of the telecommunications infrastructure in Thailand. In 1954, the Department of Post and Telegraph and the Telephone Organization of Thailand (TOT) were separated with TOT made responsible for the physical installation of all telephone lines in Thailand (Cairns & Nikomborirak, 1998; Hossain, 2001). Then in 1976, the Communications Authority of Thailand (CAT) began providing international phone connectivity in addition to all non-voice services (Cairns & Nikomborirak, 1998). However, due to "restrictions", "budget shortages", "lack of sectoral planning" and "no clear policy statement" teledensity fell well short of the targeted 10 lines per 100 people, with only 3.3 telephone lines per 100 people by 1997 (Hossain, 2000). To address this issue, in 1992, TOT gave a concession to Telecom Asia (TA) allowing them to "install, jointly operate, and maintain 2 million fixed telephone lines in the Bangkok Metropolitan Area (BMA)" (Hossain, 2001; TelecomAsia, 2005) within a five year period. The following year, 1993, TOT gave a further concession of "1 million lines in rural areas" to Thai Telephone and Telecom (TT&T) (Hossain, 2001). In 1994, CAT and TOT agreed to "commercialize the Internet" (Koanantakool, 2001), developing the Thailand Internet Exchange (THIX), which consists of the International Internet Gateway (IIG) and the National Internet Exchange (NIX) (CAT, 2007). However, while CAT were expanding Internet services during the period of the Eighth National Economic and Social Development Plan (1997-2001), Cabinet halted the "rural telecommunications infrastructure development proposal" (Hossain, 2000, p276).

While national budget and policy decisions have contributed to the inadequacies of Thailand's telecommunications infrastructure, understanding other contributing aspects, such as procedural details and characteristics of those employed to install and administer the infrastructure will shed additional light on these inadequacies, as well as why these inadequacies remain.

4.1.1 Telephone Line Administration and Maintenance

The administration and maintenance of telephone lines was observed in Bangkok, considered a well developed area of Thailand. TOT installed the main phone lines on power and cable poles (Figure 2) lining the streets. However, the management of all cables, whether

residential or business premises, is the responsibility of the building technicians, and therefore the case with both the Head Office and the CSO. As for residential or business premises located in houses, the responsibility of the telecommunication organization ends at the point where the aerial cable enters the house; an electrician is then responsible for running the cable within the premises. Disconnection of telephone lines, also conducted by TOT, is accomplished by physically disconnecting the house line from the aerial cable (cutting the cable at the overhead street cable by hand); disconnection is not performed through a switch board. Weather conditions, lack of maintenance, and human intervention (Pipattanasomporn & Lueprasert, 2004) of disconnecting and reconnecting aerial cables leads to problems experienced by all residences and businesses alike, and increases the rate of deterioration.



Figure 2: Electrical and Telecommunication Aerial Cables in Bangkok

Thailand is a country where the rainy season (monsoonal rains) lasts three months, during which time the country is also is hit by typhoons, frequently affecting electricity and telephone cables. Pattaya, located on the coast of Thailand, experiences rain more often than Bangkok. Due to weather, environmental conditions and culture, Thailand has a history where maintenance is not carried out. Modern infrastructure such as buildings, roads, phone booths, and crossing bridges generally contain cracks, damages and stains that can benefit from regular maintenance. Infrastructure repairs are made only when absolutely necessary. It has been observed that Thailand uses infrastructure for the duration of its un-maintained life after which, the infrastructure is torn down and replaced. The national telecommunications infrastructure is treated in a similar manner. Infrastructural issues remain, due to the lack of knowledge and skill-sets of TOT technicians responsible for its administration.

In developed nations, such as Australia, telephone lines are installed behind the walls and telephone points are located in the wall. All that is required is to clip the external line from the phone into the telephone socket in the wall (Figure 3). The exiting cable to the phone is a telephone cable with connectors pre-attached. In Thailand however, telephone lines are attached to the external side of the concrete wall, exposed to the environment and human intervention. Equipment is connected to main lines via a surface mount boxes (Figure 4). From experience, both lines from the wall and from the equipment are not connected to the surface mount box through pre-attached connectors; they are connected by twisting the wire of each end onto the screws provided in the surface mount box. Such method of

installation induces interferences on the line and reflects the technician's lack of critical thinking skills or knowledge in understanding the consequences these installation methods have on signal quality.





Figure 3: Telephone Socket

Figure 4: Surface Mount Box

Critical thinking skills are not taught in schools in Thailand (Pitiyamuwat & Sujiva, 2001) and these technicians acquire their skills and knowledge on the job through knowledge transfer. Such method of learning can impart erroneous skills to the learner, particularly when critical thinking skills are not used to filter and question the knowledge being acquired. This results in numerous houses and companies receiving lower service level standards than those offered by higher skilled and educated providers in more developed countries within the Asia Pacific region, such as Australia.

The inability to acquire critical thinking skills can be understood by investigating the cultural aspects of learning and teaching in Thailand (Arthur-Gray & Campbell, 2006; Pitiyanuwat & Sujiva, 2001; Tetiwat & Huff, 2003). TOT technicians are been taught by rote only to replicate the actions of the instructor. This follows Thai Buddhist rituals where attitude toward hierarchical ranking and seniority permeate everyday life (Tetiwat & Huff, 2003). This has had a major contributing factor to the inadequate Internet connection (Tetiwat & Huff, 2003) where technology leapfrogging has been recognized as a viable option to research and development (Hossain, 2000). Although technology leapfrogging requires technical skills from those responsible for implementing and maintaining these new technologies (Hossain, 2000; Sanzogni & Arthur-Gray, 2006), it is not envisaged that technical training and education in the area of critical thinking will change without further policy and cultural changes (Arthur-Gray & Campbell, 2006; Pitiyanuwat & Sujiva, 2001; Tetiwat & Huff, 2003, Witte, 2000).

These education changes do not necessitate removal of cultural heritage (Witte, 2000) but by using Thailand's cultural qualities, recognize and educate those in higher ranking positions or positions of seniority (Tetiwat & Huff, 2003). This would provide them with lifelong education (Witte, 2000) by providing knowledge and skills to support higher service levels across the nation's telecommunications infrastructure.

A number of potential solutions can be explored in further research. For instance, transferring aerial cables underground to decrease the deterioration rate of cables (Rosenberg, 1999) through technological leapfrogging stages in development and implementation that have been recognized as redundant (Arthur-Gray & Campbell, 2006; Hossain, 2000; Gray & Sanzogni, 2004) is one such option. However, there are numerous educational shortfalls (Arthur-Gray & Campbell, 2006; Pitiyanuwat & Sujiva, 2001; Tetiwat & Huff, 2003) that could affect the success of transferring aerial cables underground. The liberalization of

Thailand's telecommunications services, one would believe, can also lead to improvements to the telecommunications infrastructure as seen with Ireland's liberalization of their telecommunications services in 1998. Ireland's liberalization "has resulted in a sharp increase in the amount of construction of new underground telecommunications cable routers, in particular by new entrants to the market" (Department of Public Enterprise). In 1999, Ireland had an HDI value of .916 and ranked 18th in the world (UNDP, 2001).

Thailand has commenced the liberalization of their telecommunications market, in accordance to the World Trade Organization (WTO) requirements, and was "scheduled for completion by Year 2006" (Prud'Homme, 2000). However, the comparison of Ireland's HDI ranking highlights the need for Thailand to undergo further development before such an initiative is viable.

With government policy direction and economic support, liberalization of telecommunications provision will increase competition within the telecommunications market and therefore decrease Internet costs, increase connectivity speeds, and possibly improve services such as technical support. However, increased competition will not improve the existing telecommunications infrastructure in Thailand (Hossain, 2003).

It is speculated that new investors will conduct their business and expand on the existing infrastructure. NECTEC's survey (2003) indicates that out of 21,049 respondents, 20,829 responded disclosed their monthly household income; 72% fall within the income bracket of 10,000-50,000 Baht per month and a further 24.7% indicated receiving only 10,000-20,000 Baht per month. This may explain the large percentage of the population utilizing dial-up to access the Internet.

4.2 Service Level Agreements (SLA's) & Services

Findings from the case study indicate that Internet Service Providers (ISP) do not seem to honor their Service Level Agreements. This appears to be embedded within the culture where false advertising is the norm and consumers are left to fend for themselves.

In forums, established by and for foreigners in Thailand, the various problems regarding the Internet and telecommunications in Thailand can be found (e.g. see Thaivisa.com). The foreign perspective provides a glimpse into discrepancies between the standards of services in developed and developing countries. It has been found that a number of foreigners are dissatisfied with the speed of their Internet connection, its reliability, and the support ISPs provide to them when problems occur. Since they have experienced higher standards of services provided in their own developed country, their expectations are potentially higher than those of their Thai counterparts.

In comparison, Thai people who have never left the country will generally be more satisfied with any Internet connection. This is reflected in the National Electronics and Computer Technology Center's (NECTEC) Internet User Profile of Thailand (2003) where the majority of people utilize dial-up connections (54.3%) to access the Internet although they reside in Bangkok and have access to broadband (NECTEC, 2003). There are a variety of selectable and competitive prices of high-speed Internet connections to choose from. However, the survey suggests that 59% perceive the Internet connection speed to be a major problem. In addition, only 18.6% of the people were concerned with network reliability.

The forum contains several discussions where users claim that Internet speeds do not meet the speed specified in ISP advertisements. The case study found that Thais are not vigilant with ensuring that services they receive meet that of the SLA as they are generally content with any level of service received. This seems to be engrained in the culture, and reflected in the perception that Thais are relaxed in their approach, as identified by a number

of studies (Boyle, 1998; Kamoche, 2000). A way of showing respect is to behave in such a manner that neither party 'loses face' (Boyle, 1998); making a complaint is a method which causes a loss of face. Such a culture, therefore, does not give local companies a need to improve. However, companies competing for the International market have higher benchmarks and are more eager to improve and therefore expand their client base.

The case study revealed that during the time Telecom Asia (TA) was BIC's service provider, the Head Office and CSO experienced numerous issues with the Internet including several disconnections and an inability to reconnect. The signed SLA between BIC and TA required TA to provide 90% uptime. However, within the first three months of becoming their client, 90% uptime was not met. Upon signing with TA, TA provided the Head Office with a 56K dial-up test account at no cost. Invariably, the connection was of great quality where the Internet remained connected and performed at a consistent speed. Signing the contract and obtaining the ADSL modem was when the first problems began. First, the ADSL modem frequently disconnected. It took quite some time (one week) to convince TA that the problem was due to the faulty modem. In addition, it took another week for a technician to provide the Head Office with a new modem of another brand. Secondly, over the first 3 months, calls were made to TA on numerous occasions regarding lose of Internet connection. The majority of the time, it took an average of 2 hours for TA to admit or realize the existence of the problem. There were a couple of occasions when the Internet connection was lost and TA stated that it would take approximately 5 - 8 hours to re-establish connection due to local cable issue. Although numerous issues were experienced in the first three months of signing on with TA, the only viable solution was to remain with the ISP until the contract expired after which BIC could move on and explore the services of other ISPs.

The quality of products and services provided in Thailand is very difficult to determine and for this reason, expatriate consumers tend to become knowledgeable in those products or services available. This cannot be said for the entire population, however, as it seems that Thai nationals easily accept any product or service they can acquire at an affordable price. These cultural differences of "trust and relationships with others", which are the "basis of the Thai culture" (Gray & Sanzogni, 2004), have been observed influencing purchasing behaviour. Therefore, the level of tolerance for or acceptance of poor service would further reduce the level of quality assurance and influence the pace of the country's development while "work-orientated behavior in Thai society and its organizations" (Gray & Sanzogni, 2004) is moving further away from these traditional relationships.

4.3 Education, Knowledge, and Skill-sets

Education and the level of knowledge and skill-sets of the team recruited for the project is of importance in this case. The implementation of the CRM system is a European concept of improving Customer Services. In comparison, a number of Asian countries, such as Thailand, may look to a more conventional and personal approach to improving Customer Services and increasing their client-base. This is reflected in findings made by Srivihok & Batanov (2005) suggesting that Thai SMEs lack the full understanding of the advantages CRMs can provide to organizations. Recruiting staff members with this lack of understanding will prevent BIC from fully realizing the benefits of such a system.

4.3.1 Knowledge and Skill-sets Required in Project Team Recruits

The success of this implementation project relies on adequate knowledge and skills required by the project. The knowledge and skills acquired through education may be considered inadequate in a developing country such as Thailand in comparison to that of a developed country. Contributing factors to a successful project are knowledge and skills in networking,

network installation and configuration, software customization, and knowledge of BIC as well as the ethnic culture of user groups.

Recruitment of human resources is required for the project as there is a lack of knowledge required for the project. Keeping in mind that top management consists of only foreigners signifies that the project team, or at least the project manager, must be a foreigner or a Thai national with excellent English skills if the implementation is to proceed efficiently. Employing a team consisting of all foreigners will incur a cost approximately three times more than employing Thai nationals and therefore may not be feasible. However, there are a variety of characteristics which causes difficulty and inefficiency that accompany employing Thai nationals in foreign organizations.

4.3.2 Ability/Inability of the labor Market to Satisfy Requirements

A lack of policy focus on technical training and skills development permeate Thailand's society (Arthur-Gray & Campbell, 2006). Arthur-Gray and Campbell's (2006) study on education in Thailand highlights the national trend of a population where almost 90% of those over the age of 15 (minimum working age) have received secondary school education. Under the current National Plan of Education Act, this equates to 6 years of primary school and 3 years of secondary school education (Pitiyanuwat & Sujiva, 2001). Approximately 70% of these individuals had only received elementary school education (6 years at primary school level) (Arthur-Gray & Campbell, 2006; NSO, 2003). The policy pertaining to "cognitive skills and basic quality aspects" require educational institutions at both primary and secondary schools levels to impart skills of 1) "knowing, understanding and exhibiting responsibility as a member of society;" 2) "knowing and processing rational thinking skills in making decisions using the scientific process and moral ethics considerations in solving social, economic and technological problems"; and 3) "living on the basis of moral ethics" (Pitiyamuwat & Sujiva, 2001). Moral ethics and responsibility seem to be emphasized over critical thinking skills.

Thai culture does not condone or instill decision making, critical thinking, and problem solving skills into Thai children at a young age as developed countries do. This is reflected in the educational system regardless of whether it is in a Thai public or private school (Kirtikara, 2001; 2007). Their inability to think critically and problem solve results in the requirement to monitor or assist them at task level. In addition, "there is a subtle stigma attached to asking questions" (Martin, 2001) and the inability to answer questions, another contributing factor for the need for staff monitoring.

If a foreign Project Manager was to be employed, there are risks associated with it. One question to be answered is whether BIC will employ a foreigner educated overseas or in Thailand. There are numerous foreigners permanently residing in Thailand and have established their own companies without any relevant qualifications. This is reflected in the following experience by a branch office located in Pattaya, Thailand. The branch was experiencing difficulties with their server and had decided to contract an unqualified foreigner to perform the repair although there is an IT Manager responsible for the maintenance of all hardware and network. The server was then returned and the following issues were identified: 1) although Windows XP is BIC's standard operating system, the contractor had replaced XP with Windows '98, 2) Microsoft Office software installed on the server were not full installations (as was initially the case). As the server was also used by one Administrative staff for word processing as it only supported a very small network, 3) the processing performance deteriorated with numerous freezes and operating systems crashes. BIC would have paid a larger amount of money to contract a foreigner rather than a Thai. Being an SME, there is limited funding for such a project. However, employing or

contracting a foreigner with experience and knowledge of Thailand's telecommunications infrastructure and having adequate qualifications will prove to be beneficial.

The ideal project members, whether Thai or foreign, should possess English skills, critical thinking and problem solving skills, and have no "fear" of managers or foreigners; culturally, there seems to be a very thin line between respect and "fear" and numerous Thais seem unable to distinguish one from the other. In terms of education, they should have knowledge of research methods, which enhances their ability to problem solve, have the fundamental knowledge of IT and networking, and have the skills to increase their knowledge and develop their skill-sets. An essential quality of project managers is the ability to constantly adjust and develop. Lack of such skills can, in part at least, be put down to education practices and class room dynamics in early to mid developmental years. The issues associated with finding staff with these knowledge and skill-sets are investigated separately.

4.4 English Skills

Thais generally consider themselves as possessing good or fair English skills with only 6.6% considered to possess excellent English skills (NECTEC, 2003). Although, Tetiwat and Huff (2003) highlight significant barriers in the use of English in schools for online learning, they suggest educators' and students' ability to read and speak English may be at an acceptable level but find that they have greatest difficultly expressing themselves in English. This trend is also identified in non-agricultural businesses (industries where some English may be required when utilizing technology leapfrogging), where approximately 70% of individuals indicated low or no English language skills (Arthur-Gray & Campbell, 2006). Current evidence about Thai people's ability to listen and understand English suggests their ability to read and write is greater than their ability to listen and speak (Arthur-Gray & Campbell 2006; Tetiwat & Huff, 2003).

Current and accurate statistics representing English skill levels of the Thai population are difficult to locate (Arthur-Gray & Campbell., 2006) as the most recent Thai government statistics, which included language in the census, was collected and published in 2000. The census information gathered included over 56 million Thai nationals, and while English is officially the nation's second language only approximately 48,000 people speak English at home (NSO, 2000). However, it should be noted that the Thailand's householder survey does not collect information on the English skill level of Thai nationals. Other research suggests over 50% of female adults and over 30% of male adults did not speak or read English (Arthur-Gray & Campbell, 2006). The Thai government has embarked on English speaking and reading programs in all schools across the nation. However, it is difficult to determine the success of these programs as there are no national standards.

4.5 Communication Styles

There are differences in communication styles of Europeans and Asians which causes numerous project issues, whether it be a construction or IT related projects. Much of this is culturally based where confrontation is avoided so that there is no loss of face (Boyle, 1998).

4.6 Culture – A Common Element in All Four Previous Subheadings

Thai children are not expected to make decisions until well into young adulthood, therefore critical thinking and problem solving skills are not developed during childhood. Both males and females are required to be obedient and respect their elders, which includes satisfying their parents' or elders' wishes and decisions. Thai parents have a say in what field to study, the institution, and occasionally their children's career choices. The culture disapproves of females leaving home before they are married and therefore the parents are responsible for decision making later on in their daughters' life in comparison to their male counterparts.

Avoidance of decision making is also present in the education system. Generally, class attendance for undergraduate courses is compulsory, eliminating decision making responsibilities from the students. In addition, the teaching methods utilized in schools are that of teacher-centered or content-centered methods. There is no interaction between students and teachers, questions are not asked, and the student's responsibility is to take notes (Prpic & Rachavarn 2004). Seniority is highly embedded in the Thai culture and one way of demonstrating respect is by ensuring there is no 'lose of face' as illustrated by Martin (2001) "...if the question cannot be answered properly, it causes a loss of face for the person being asked". Therefore, students are not taught to think critically and problem solve as these skills are learned through interactions with adults. However, teachers themselves may not have critical thinking skills as they may have also been taught to memorize and take the facts taught as the truth (Prpic & Kanjanapanyakom 2004).

There have been moves to change these teaching processes, with the National Education Act adopted in 1999. This was an attempt to "shift away from teacher-centered towards learner-centered pedagogies" (Ministry of Education, 2004). However, the initiative had not been adopted in its entirety, as reflected by the television broadcasting of Thaksin, the former Prime Minister of Thailand. According to The Nation Newspaper, which constantly followed and reported on the education initiative, "the crisis of the country's education management, which has been highlighted recently by a series of scandals that have brought all talk of reform to a standstill, has become so serious that even the Prime Minister toyed with the idea of establishing a new "mini education ministry to carry out reform" (The Nation, 2004). The initiative to place schools online "seems to be slowing down after an initial burst although there is plan for 10,000 schools to be on line by the end of 2003" (Gray & Sanzogni, 2004). This is one of many attempts that has not been implemented in its entirety but cannot be considered a failure until a negative event occurs, causing the government to initiate another 'burst' of activity.

Reforms seem to be unsuccessful due to inadequate planning (Kirtikara 2001). First, there is no national quality assurance in the teaching standards in terms of methods to be used or content to be taught in each year of school. In addition, "Universities are free to choose their internal quality assurance systems as deemed most appropriate to their conditions and requirements" (Ministry of Education, 2004). The question is how will Thailand assist in the intellectual development of the younger generations to expand their horizons and compete internationally? However, there is a contradiction within the same publication stating that "to ensure improvement of educational standards and quality at all levels and of all types, two major tasks which need to be accomplished are: 1) the development of educational standards; and 2) the development of a quality assurance system" (Ministry of Education, 2004).

Jirachiefpattana (1997) envisioned Thailand increasing its competitive edge internationally by developing and using an Executive Information System, providing a "significant warning to Thai IS professionals to be aware of the impacts of culture in the case of EIS". Since Thailand's culture and education does not instill critical thinking and problem solving skills, it is uncertain how much benefit a Thai organization would be able to acquire from the use of an EIS system. The executives may have the analysis and decision making skills, however, the administrators may not have the skills and knowledge to sieve through the information to provide the executives with quality data without overloading them with information, negatively affecting the efficiency and effectiveness of executive decisions. The top level of BIC will probably not achieve competitive advantage without the bottom level of BIC having the knowledge and skills to contribute to it.

5. CONCLUSION

The project plan for BIC in establishing a centralized CRM system, which supports overseas branch offices and mobile staff, will require skilled team members. The lack of educational standards means that the 45.5% of NECTEC's respondents that are majoring in IT, IS, or business may apply for a position on the project team. However, they may not have the critical thinking and problem solving skills to perform their assigned task effectively. Potential recruits may believe that, due to past experiences on similar projects, they may be able to replicate the solution. This will be insufficient as the probability is that the constraints will not be exactly the same and therefore the solution provided by them will be insufficient. Secondly, due to the lack of educational standards, the ability to choose the best person for the job becomes more difficult. They may all have a bachelor's degree in IT and have taken courses with similar names, such as Internetworking, but one graduate may have worked in a project team and collaborated to produce a solution while the other may have noted the lecturers' overheads all semester. In addition, one may have learned concepts and how to apply those concepts while the other can recite all the concepts but does not have the skills to apply them.

As a result of the Education reform, not being amended or implemented anytime in the near future, an in house simplistic CRM was developed due to inadequate knowledge and skills of available project members and end users. Hence the current state of education and telecommunications infrastructure, time and costs will unnecessarily increase significantly should BIC decide to undertake a large and more complex CRM project maintained over the Internet, in the future.

The paper has identified the need for further research in the ICT industry in Thailand in general but specifically within the context of how well the education system prepares the population for knowledge work. We conclude that it may be difficult to sustain a centralized CRM database accessible over a WAN and or the Internet at this time in Thailand without ongoing issues.

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