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IDENTIFYING FACILITATORS AND CHALLENGES FOR IT ADOPTION AT A LOCAL MALAYSIAN RETAIL COMPANY: THE IT MANAGEMENT PERSPECTIVE

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Abstract

Substantial research that examines the adoption of IT-enabled initiatives by organisations has been conducted in the context of western countries. Existing research shows that IT systems and their adoption are largely shaped by the characteristics of organisations, organisational culture, and business environment. To address the limited understanding of IT adoption practices in developing countries, this paper investigates facilitators and challenges related to technological, organisational and environmental contexts for IT adoption. For this purpose, a case study was conducted with a local Malaysian retail company which experiences enormous competitive pressure from influential international retail giants operating in Malaysia. The findings of the study offer important lessons for organisations operating in developing countries.

Keywords: Information technology, adoption, facilitators, challenges, developing country, retail, case study, Malaysia

1. INTRODUCTION

Organisations regardless of size and type worldwide are increasingly relying on the adoption and effective use of a range of IT-enabled initiatives to support their businesses (Gunasekaran & Ngai 2004). However, developed western nations pioneer IT innovations and lead the growth in IT industry. As such, design of IT systems are often shaped by the implicit assumptions about the characteristics of organisations, organisational culture, business environment (e.g. legislation, technology infrastructure, competition, financial resources, labour rates) of the western nations which may influence how innovative IT systems are adopted and eventually diffused in organisations. It is thus acknowledged in the broader IS/IT community that a carbon copy adoption of western developed IT systems cannot be just introduced in organisations which operate in cultural settings different in some respects from those of the western nations. Moreover, developing countries face problems and concerns which are different as compared to those of developed countries and, therefore, local organisations operating in developing countries would need a different set of approaches to technology adoption (Gibbs et al. 2003). For example, Hofstede's national culture theory supports the view that developing and developed countries differ greatly in their characteristics which in turn affect organisations' attitude towards technology adoption (Vatanasakdakul et al. 2004; Hofstede 1997). As such, the way IT systems are adopted and diffused, the benefits obtained, and the critical success factors affecting IT adoption may differ from those reported for the western context (Gibbs et al. 2003). It is therefore important to examine IT adoption experiences of organisations for the developing countries context to advance the current global understanding of IT adoption. This particular aspect has largely motivated us to investigate the IT adoption experience of a local retail company from Malaysia as an example of a developing country.

Another motivation for our research comes from our recognition that there still exist relatively limited in-depth studies and understanding regarding the adoption of IT in developing countries, despite a growing number of technology penetrations in these countries in the last decades (Qureshi & Davis 2007; Wahid 2007; Zhu & Kraeme 2005). Many studies concentrate on exploring the diffusion of technologies among Small Medium Enterprises (SMEs) in developing countries as opposed to large organisations primarily using quantitative methods to identify factors affecting adoption (Kurnia et al. 2009; Salleh et al. 2006; Tai et al. 2007; Tan & Teo 2000). In addition, much of the existing studies within the Asia Pacific region, lack depth as they aggregate the whole industry adoption experience within a country (Gibbs et al. 2003; Gibbs & Kramer 2004; Kshetri 2007). Furthermore, a number of studies explore the readiness to adopt particular technologies such as Electronic Commerce or comparing adoption experience of various countries (Molla & Licker 2005; Zhu et al. 2002; Zhu et al. 2006). While those previous studies have provided valuable insights related to some aspects of IT adoption experience in developing countries at a high level, detailed studies regarding IT adoption by local business organisations in developing countries especially in Asia Pacific region are lacking. In fact, learning from the experiences of those early adopters in the region is valuable to complement the current understanding of IT adoption that is dominantly based on the experiences of organisations in developed countries with very different socio, economic, political and cultural backgrounds.

Motivated by these arguments, we conducted a case study on the IT adoption experience of a successful local retailer in Malaysia. In particular, our study aims to identify the facilitators and challenges related to technological, organisational and environmental contexts faced by the case organisation in adopting various IT initiatives. In doing so, we focus on the IT management perspective as the management team is likely to have detailed knowledge about the IT initiatives. Malaysia has been chosen as the study context because it reflects typical characteristics of developing nations particularly within the Asia Pacific region (Seyal et al. 2007). We investigate a large retailer within the grocery industry because the industry has been pioneering the use of technologies in Malaysia and many other countries (Al-Sudairy & Tang 2000; Reardon & Hopkins 2006; Tan & Teo 2000). In particular, the retail industry in Malaysia has evolved steadily over the years to become more sophisticated and modernised. Moreover, local retailers face intense competition from the foreign retail companies (Roslin & Melewar 2008), and hence need to be proactive in IT adoption in order to avoid wiped out from the market. Therefore, selecting a local retailer within the industry provides an excellent case for 2 reasons: a) how local retailers' approach IT adoption is expected to

differ in some interesting ways from that of the international companies which often share similar working characteristics and management views towards technology adoption, and b) we argue that the IT adoption experience of local retailers would be valuable for many other local organisations within Malaysia and other developing countries with similar cultural, social, political, economical and technological backgrounds.

The paper is structured as follows. The next section provides a summary of factors affecting IT adoption by organisations. This would help us to identify possible facilitators and challenges experienced by the case organisation. We then provide a brief overview of the Malaysian retail industry to establish the context of the study. The research methodology is then described, followed by an overview of the case organisation. Finally, the findings are elaborated and discussed and the paper is concluded.

2.   FACTORS AFFECTING IT ADOPTION

A number of factors affecting the adoption of IT by organisations have been identified in the literature. In line with Tornatzky & Fleischer (1990)'s framework (who serves as a de-facto IT adoption paradigm rooted in the factor-based approach), we have categorised these factors into three groups: technology, organisation and external environment. Each group is briefly discussed below.

2.1.   Technology-Related Factors

This group of factors represent those conditions which are associated with the characteristics of information technologies and have influences on organisations' decisions to adopt those technologies. Examples include benefits from IT, risks, costs and standards. Firstly, many studies have identified that an organisation's perception of the benefits arising from the adoption of a particular IT has an important influence on technology adoption decision (Iacovou et al. 1995; Kuan & Chau 2001; Tan & Teo 2000; Wu et al. 2003; Liu and Kurnia 2008). Benefits include direct and indirect benefits obtainable from the technology adoption. If the management of an organisation does not perceive the innovation technology in a positive way and does not understand potential benefits of it, then the organisation is less likely to adopt innovation technology in an active way. Furthermore, the perception of risks of adopting a particular technology has been an important factor that determines the adoption. Without a proper security measures that can minimize the potential risks associated with computer-mediated transactions, IT adoption is not likely to take place (Chen & Ning 2002; Gibbs & Kraemer 2004; Martinsons 2001; Tan et al. 2007). In addition, cost of technology is a factor that significantly affects the adoption. Specifically, a number of studies have indicated that the overall cost of technology in some developing countries is still relatively higher than manual labour cost, which explains the reluctance of some organisations to adopt technologies (Kurnia & Peng 2010; Vatanasakdakul 2004). Finally, the availability of technology standards within a specific industry or across industries plays an important role in determining IT adoption (Stockdale and Standing 2006).

2.2.   Organisation-Related Factors

The second group of factors represent those conditions associated with the characteristics of organisations which may affect their decisions to adopt information technologies. Popular factors belonging to this group include top management support, financial resources, firm size, and organisational readiness (Crook & Kumar 1998; Kuan & Chau 2001; Lin 2006). Top management support has been commonly identified as an important organisational-related factor for any technology adoption by organisations in both developing and developed countries (Karnali & Kurnia 2010; Scupola 2003). With management support, it is relatively easy to increase the level of awareness within the organisation of the importance of the technology and to obtain financial resources to obtain the required infrastructure and skills as well as to train personnel (Crook & Kumar 1998; Iacovou et al. 1995; Rotchanakitumnuai and Speece 2003; Scupola 2003). Thus, financial resource is another organisational factor that plays an important role in IT adoption. Related to the other two organisational factors, firm size has been widely recognized as an important factor determining an organisation's ability to adopt a new innovation as well as capitalizing on its benefits (Andersen et al. 2003; Bertschek & Fryges 2002; Salwani et al. 2009; Stockdale and Standing 2006).

Typically, small firms are slower in adopting innovations due to their limited financial resources. On the other hand, large organisations have the resources and skills to adopt new technologies and have enough business volume to justify the investment. In addition, organisational readiness which can be measured in terms of the availability of competent internal IT expertise, IT resources, IT knowledge, and top management commitment can have a great impact on the capability of organisation to adopt technologies (Lin 2006; Rotchanakitumnuai and Speece 2003).

2.3.   External Environment-Related Factors

This category of factors represents the influences of the conditions which are beyond the boundary of an organisation and is not within the control of senior management of a single organisation. Typical factors describing this group include competitive pressure, consumer expectations, readiness of suppliers, government support, national IT infrastructure, and national culture, among others. No organisations exist in vacuum. Therefore, an organisation's action is influenced by various forces at the industry, national and global levels (Al-Gahtani et al. 2007; Oliveira & Martins 2010). Competitive pressure in the market can strongly influence an organisation to adopt IT enabled initiatives and may affect an organisation's perception towards a technology. When competitors adopt a particular technological initiative, an organisation may try to imitate. In some cases, technology adoption is compulsory if it is mandated by influential and powerful trading partners (Kirby & Turner 1993; Kurnia & Johnston 2001). Consumer attitudes and buying habits in many situations may influence how consumer-facing IT solutions are introduced in organisations. Supplier readiness is another important factor which to a large extent may influence how various supply chain oriented IT solutions are introduced (Ratnasingam 2000). There is evidence in the literature which suggests that organisations may need to entice their suppliers to join sophisticated web-enabled IT enabled supply chain systems. Conversely, in other situations some large suppliers may dictate organisations to introduce certain IT-enabled business systems. Moreover, government support can either directly or indirectly affect the adoption of technological innovations by creating a favourable environment and impetus for adoption (Gibbs & Kraemer 2004; Tan & Tyler 2007). In addition, the availability and the maturity of the national IT infrastructure within the country affects the IT adoption level among organisation, since it has direct impacts on the costs needed by organisations to adopt IT (Wahid 2007). Finally, national culture has been recognised as one of the important factors affecting IT adoption especially in the context of developing countries (Hofstede 1997; Humphrey et al. 2003; Vatanasakdakul 2004). Some exploratory studies of developing countries (Efendioglu & Yip 2004; Vatanasakdakul 2006) have suggested that the unique national culture in some Asian countries is one of the major factors that continue to impede and constrain the adoption of technological innovations. For example, preference in using traditional existing personal networks and face-to-face meetings over technology to share information has hindered technology adoption by many organisations in China and Thailand (Humphrey et al. 2003; Kurnia & Peng 2010; Tan et al. 2007; Vatanasakdakul 2004).

Guided by the synthesis of possible factors affecting IT adoption, this study has identified a number of facilitators and challenges of IT adoption in Malaysia as an example of a developing country, based on our in-depth case study with a large Malaysian retailer. In the next section, we discuss the significance and characteristics of the retail industry in Malaysia including the key characteristics of the Malaysian retail consumers.

3.   THE MALAYSIAN RETAIL INDUSTRY

3.1.   Characteristics of the Industry

The retail industry plays a major role to the advancement of economic progress of Malaysia. In the year 2012, the industry has made 13% to the country's GDP and is expected to contribute RM156 billion (A$50 billion) to Malaysian GDP and create about half million new jobs by 2020 (Bernama News 2013). The economic progress of the retail industry is also reflected in the ranking given by the Global Retail Data Index (GRDI) which ranks the top 30 emerging nations in terms of their retail potential. In the 2012 GRDI report, Malaysia is ranked 11th signifying potential market investment

opportunities (Kearney 2012). In the past, the Malaysian retail sector was traditionally dominated by family owned department stores, mini marts, convenience stores, and wet markets. However, during the last 2 decade or so, the landscape of the Malaysian retail sector has undergone a dramatic change. There are now many new formats of retailing (e.g. hypermarkets, shopping centres) in addition to the traditional shopping outlets. Today, there are 121 hypermarkets, 113 superstores owned by foreign and local companies operating in the Malaysian retail sector (Inside Malaysia 2012). The wide diversity of retailing in Malaysia is observed due to: a) trade liberalisation policy in early 1990s including ASEAN Free Trade Area (AFTA) agreement (Anonymous 2013) and b) growing Malaysian economy which is ranked by the World Bank as a middle-income country with a low 3.4 percent unemployment rate in 2010 (Inside Malaysia 2012) and c) migration of more affluent middle class population to the urban areas. These in turn attracted foreign retail chains giants to enter into the Malaysian retail landscape.

In the current retail climate charged with the influx of international companies, the hypermarket segment is primarily dominated by international players such as Giant, Carrefour, and Tesco, among others (Roslin & Melewar 2008) and is considered as threats to the low-end domestic retailing segment. The international big names have enormous capital, well managed supply chain management, wider global retail experiences, and technological innovations. In contrast, the domestic retailers have inadequate resources and inability to withstand deflationary pressure of the market which has put the domestic retail market in a fix (Anonymous 2013). As a result, the domestic retailers have seen their sales plummet as consumers turned to foreign rivals boasting a modern environment. Recognising this, the Malaysian government is now undertaking efforts to help modernise and upgrade the retail segments of the domestic players (Euro Monitor 2012). However, despite the growing influx and threat arising from the international retailers, a few local retailers (including the company which participated in this study) which aim at the lower-end of the retail segment are reported to have experienced a success.

Due to the high degree of competition in the retail sector, hypermarkets and supermarkets have rigorous promotional campaigns by using advertisements, sales promotions and sales booklets indicating the prices of individual items and the price reductions. Some even include prices of the same items of the retailer's competitors and hence comparisons can be made by consumers on which retailer that would be preferable to the consumer to patronise. These retailers not only face competition from one another but also from smaller grocery and convenience stores due to the convenience stores strategic locations near housing areas and also due to the close personal relationship between the customers and owners of these shops. Furthermore, departmental stores that specialise in certain items also create competition among the retailers as these stores offer more varieties in terms of specialised products such as toys, clothing, baby products and so on. As a result, many Malaysian retailers have adopted various IT applications. Products can now be scanned and monitored for its quality and standards by using simple technological tools. The Point of Sales (POS) system, computerised inventory, payment and account systems have been implemented and used by retailers widely in Malaysia (Euro Monitor 2012). For example, the bar coding of products which has made inventory control more efficient and easy. It also helps decrease time wastage when consumers purchase products from large retailers as payments of the items bought can be calculated and completed more quickly and accurately.

3.2.   Characteristics of the consumers

A major concern of the Malaysian retail industry is to satisfy the expectations of the consumers taking into consideration of some of their unique characteristics. Various studies (Ndubisi & Chiew 2005; Singhapakdi et al. 1999; Inside Malaysia 2012) have identified the following five key behavioural characteristics of the Malaysian consumers: a) Malaysian consumers now-a-days are quite sophisticated and open minded than they were in the past. They are willing to try various types of goods from different countries even though it may cost a little more than local products. Thus, hypermarkets and supermarkets have to provide foreign branded items to its customers; b) Malaysian consumers are well-known for their complaint behaviour. When consumers are dissatisfied with certain goods or services that they have purchased, they usually complain to their friends and family,

write a letter of complaint to the consumer association and stop visiting the hypermarket or supermarket in question. The consumers then choose to patronise another facility which offers better services and products. This will cause a lost in profit and failure in retaining customers; c) Malaysian consumers is that they are not really sensitive to unethical marketing practices and are less idealistic compared to Western consumers. Malaysian consumers often participate in unethical behaviours such as purchasing pirated goods from illegal traders. Consumers in Malaysia are less likely to perceive the moral harm in such activities; d) Malaysian consumers also tend to have less favourable attitudes to business and sales people. Consumers are less friendly and cold when dealing with business and sales people as compared to those of the western nations. As such, companies should provide high quality goods at affordable prices to entice consumers to patronize their hypermarket and supermarket, while discouraging purchase of illegal products (Singhapakdi et al. 1999), and e) Malaysian consumers also respond differently to various sales promotions offered by companies. According to Ndubisi & Chiew (2005), Malaysian consumers respond more favourably to free samples, price discounts, in-store displays and bonus packs than to provision of coupons. This is because consumers often find usage of coupons burdensome since finding the right coupon and matching the coupon with the right items (with the right branding) may be a real nuisance to consumers.

4.   THE RESEARCH METHOD

In this study, a single case study approach was employed to gain an in-depth understanding of IT adoption by a local retailer in Malaysia, MyRetailer (Pseudonym). This retailer aims at consumers at a low-end segment of the retail sector and is successfully facing stiff competition from the hypermarkets operated by the International retailers. Case study approach is appropriate as this study investigates a contemporary phenomenon which requires access to the study context to gain in-depth understanding of the facilitators and challenges faced by the case organisation (Yin 2008). As the case organisation is a leading local retailer in Malaysia that was flourished from a small family business, it can be considered as a role model for many local retailers that are still growing. Lessons learned from the experience of the case organisation examined in this study would therefore be useful for organisations in developing countries particularly those within the Asia Pacific region, with similar socio-cultural, political and economical conditions as Malaysia.

Data collection techniques include interviews with the representatives of the IT team, site visits as well as reviews of published and unpublished business and other relevant documents. The unit of analysis is the retailer organisation under study. An interview protocol was developed based on the literature review regarding possible facilitators and barriers to IT adoption in developing countries. Interviews were recorded and then transcribed for analysis. Correspondence via email was maintained with the study participants to review the transcription and summary of the case study, in order to enhance the validity. Transcribed interview data and organisational documentations were analysed using a qualitative data analysis technique, employing open, axial and selective coding techniques, to identify relevant themes and concepts as well as the relationship between themes (Miles & Huberman 1994; Neuman 2006). Three researchers were involved in the data coding and analysis to enhance the reliability. The results of the analysis in terms of facilitators and challenges are then categorised into three groups: technology, organisation and external environment.

5.   THE CASE ORGANISATION

MyRetailer was a small company established in 1940 as a family business. It started its business in Penang state and migrated to different states of Malaysia over a 3-time period. The motivation of the first migration at the beginning, moving to the city of Kota Bharu in Kelantan in 1957, was to be close to suppliers in Thailand. In 1979, his eldest son went to Kuala Terengganu to mark another milestone in the family business expansion plan. After another 10 years, the third migration was made to Kuala Lumpur (capital of Malaysia) in 1989, also marking the return of the other son with banking experience. The business grew well overtime. MyRetailer has expanded into four different formats of retail: hypermarkets, emporium, 24 hour-convenience stores and mini markets. It is now the most established retail organisation in Malaysia with more than 70 stores across the nation.

Like other retailers which have achieved the economy of scale, MyRetailer has the strategic advantage of being the largest retailer that can purchase in large quantities to enjoy lower prices. Its business philosophy of wholesale pricing is thus fulfilled through further reduction of cost. MyRetailer sources merchandise both locally and abroad, from countries such as Bangladesh, China, France, Hong Kong, India, Indonesia, Korea, Pakistan, Singapore, Taiwan, Thailand, Turkey, United Arab Emirates and United Kingdom.

The business policy as seen in the company's motto "Why Pay More, Buy at Wholesale Price" is well accepted within the society, which explains the fast growth of MyRetailer. The image of the company is well reported in the media as positive features of MyRetailer. The lowest pricing policy is known to the consumer from the word-of-mouth over the years without any specific marketing campaigns to keep the cost low.

6.   THE CASE STUDY FINDINGS

We now discuss the case study findings by focusing on a number of facilitators and challenges identified from qualitative data analysis.

6.1.   Facilitators

Top Management Team is found to be the main driver for various technological initiatives introduced in the case study company. Top Management Team is always aware of the technologies used by foreign competitors and supports the adoption and institutionalisation of the same technologies (whenever relevant) within MyRetailer. There is organisational pressure from the Top Management Team to do better than competitors or at least imitate those foreign initiatives, as revealed by the IT Manager below:

"Definitely not from our suppliers. … A lot of things we do, I do not see it is coming from our suppliers. But I say coming from our top. 'Hey, we should be doing this better. If Carrefour can do that, MyRetailer can do that, why can't we do that? So that is the drive that we have for introducing IT initiatives."

In particular, the case study indicates that that due to the growth of the business, the potential benefits of IT were quickly recognised by the Top Management Team to reduce the escalating operating costs and to control business transactions. At the formative stage of MyRetailer, all business transactions were conducted manually for many years. As the business evolved from a small family business to a medium and now a large scale retailer, the need for IT was realised to reduce operational costs and to support the business growth. The top management was quick to recognise the potential of the IT to gain knowledge and control the business activities and therefore has fully supported the use of IT across organisational functions.

With the support from the Top Management Team, MyRetailer acquired the required IT infrastructure. An IT Manager was then appointed in 2000 to ensure appropriate development and use of IT to more efficiently manage various business activities across the organisation. As the business grew, the IT management team also developed rapidly. In about 10 years, the number of employees working at the IT department reached 50. Thus, the positive perception of IT among the Top Management Team has facilitated a smooth adoption of IT across the entire organisation. This sentiment is expressed by the IT manager as follows:

"When I joined MyRetailer, we only have 7 shops. We had no computer system. We had 1,800 employees only nationwide. That was just 10 years back. Today we are 1.5 billion Ringgits, 70 sized nationwide hypermarkets, mini markets, and a large IT team to support business. So, a very different business format. So, our business has changed tremendously".

IT has been used to support all business transactions and operations at MyRetailer, although in some cases manual data entry processes are still performed, as was explained by the IT Manager below:

"In terms of receiving, although receiving process itself is manual today, we capture transactions in an ERP system. So, we know how much we have bought. When we receive the physical documents we

actually key in the transaction. Almost every aspect of business in terms of operation, the transaction is captured in the computer system."

Technology has assisted business operations even at the early development stage. Inventory control in particular has significantly improved with the use of IT applications. However, it has always been a challenge to set the correct inventory level for each product. MyRetailer is still working towards making effective use of information and business knowledge that can be obtained from their various IT applications in order to maximise the potential benefits of IT. Besides the reliance on IT, MyRetailer also acknowledges that the role of supplier is immense in driving inventory to its optimal level. Planning and discussion of the market situation with suppliers improve understanding of the demand for better control of inventory. Furthermore, MyRetailer also recognises the importance of developing good relationship with suppliers to maximise the potential benefits of IT and acknowledges the importance of IT in enabling them to communicate and maintain good relationship with suppliers.

As the Malaysian consumers are known for their complaint behaviour and generally have low esteem for businesses and sales people, MyRetailer management has sponsored 2 IT-supported marketing initiatives to help create a positive impression of the company in the minds of the consumer community. First, to establish and sustain relationships with customers, in 2004, MyRetailer introduced loyalty cards which enable MyRetailer to initiate marketing programs. This initiative has also influenced the growth of the business. Second, Social technologies such as Web 2.0 technology (e.g. Facebook, YouTube) are now in use for marketing purposes and are considered to have the potential to improve relationships with the customers. This was done because a large proportion of the consumers are educated and regular users of the social media platforms. According to the senior IT executive:

"Connecting with customers, probably getting the message out there. We use Facebook today…. We build better relationship with our customers. We are getting a lot of positive response. That is the way to go, social marketing, social media, social promise, brand ambassadors. We are getting people to become our brand ambassadors."

6.2. Challenges

The development of IT-enabled operations from manual based operations, however, was not easy. The IT Management team needed to adopt a rigorous stepwise approach to enable changes to happen in line with the business culture at MyRetailer. This sentiment is expressed by the senior IT executive as follows:

"The challenge has been putting the technologies in place because we all working in the organisation, we have never used this technology before. We are not familiar, so we are putting it one by one. At the same time, (we are) catering for the growth of business."

One noticeable challenge encountered is in the area of standardisation of product identification which is part of automation facilitated by barcode and other related IT applications. In many cases, the same products need more precise descriptions and standards of packaging to specify what is meant by the definition of product in the market in order to prevent misunderstanding. To facilitate automatic identification, these standardised product information are then converted into barcode symbols. Many countries have adapted standardisation of barcodes by a certain body to prevent mix-up in the market. However, there have been some issues with the barcodes experienced by the company. According to the senior IT executive:

"No barcode, wrongly put barcode, barcode which cannot be scanned. So there are a lot of issues there that we are trying to resolve. Inventory information is not that accurate. That is why once a year, we have to do full inventory check. So, that is something we are trying to overcome."

Some issues related to human resources to support technology were also identified. At the beginning, the IT budget allocated by the Top Management Team was only RM100,000-RM200,000 (A\$1 = RM3). However, now the Top Management is willing to spend more than hundred times the original expenditure which enables the organisation to establish a full IT Team. Moreover, declining costs of

IT has also facilitated top management team to support increased budget for IT. At present, this increased budget allocation for IT is not based on clear performance measures of the overall IT function in the company. However, the IT Manager acknowledged the difficulty in measuring IT performance and quantifying the benefits of IT. He expressed concerns that subjectivity in demonstrating the value of IT to business in future could raise eyebrows of the top management, although this is not a problem at the moment. According to the IT manager:

"So I see, I believe the company is getting benefits from IT. If you ask me to quantify, I would not be able to do so. My boss has not fired me yet, so I guess we are doing a decent job."

Furthermore, the environment in Malaysia with limited technical skilled human resources does not make the use of IT easy. Other companies in Malaysia also face similar problems in developing competent human resources. This phenomenon was revealed below by the IT manager as follows:

"Even from international big company like AWATO, IBM, they say they are but they are not. I have gone down as a partner model. I have actually gone direct and work with the principles direct to do projects because these guys cannot handle it. That is one major challenge."

Pressure from the top management level provides a good motivation for employees to improve their skills by attending special training programs. Popular social networking tools such as Facebook has also been used for training IT personnel. Furthermore, as more people become familiar with mobile technologies coupled with the fact that the cost of accessing mobile services has dropped dramatically, training IT personnel has become an easier job than before. Again, the IT manager commented:

"Now everybody comes in, they know what is a mouse, they know what is the left and the right button, Our education has gone up to a level. Facebook helps everybody. All of them somehow know how to use the website. "

Another challenge faced by MyRetailer is related to employee retention. In particular, a high turnover rate is observed among the sales people and IT staff. The sale executives who are given specific training in IT systems to evaluate the market for the benefit of the company, are not easy to retain. Their skills (sharpened by using IT systems providing marketing analysis) and knowledge about the market situation (gained through personal contacts, observations, and IT systems generated analysis) including how much competitors pay their employees and how they run their businesses increases the mobility of this group of employees. One reason for the high turnover is the difficulty to establish close relationships with the complaint behaviour oriented consumers who have unfavourable attitudes towards sales executives. The high turnover means IT people spend much more of their time and effort to train and retain their sales force. Another reason is the high degree of competition in the retail industry which has encouraged both sales executives and IT staff to explore opportunities to join rival companies. The IT Manager contended:

"In terms of staff using technology, they have accepted. A lot of them are quite willing to change but then again you have to look at our pyramid. We have this whole large chunk of sales and IT people that come in and go out frequently."

Overall, despite many challenges faced, MyRetailer has successfully embraced various IT-enabled initiatives which have in turn contributed to the improvement of the overall business operations and performance. Better connectivity using IT has increased productivity of employees in handling purchase orders. The finance department could now track incorrect invoices from those of errant suppliers, and could save in double-delivery worth of US$ 50,000. IT employees could improve their productivity in updating software patches from previously 120 man-hours to just 15 minutes.

7.   DISCUSSION

Based on the case study findings, Table 1 summarises the facilitators and challenges faced by the case organisation in adopting various IT initiatives. They are grouped into three categories: technology, organisation and external environment. The study shows that while there are noticeable challenges

faced by the case organisation, there are also strong facilitators that lead to the successful adoption of various IT initiatives over time.

From the technological point of view, the case study shows that as a local retailer serving consumers at a low-end of the industry segment, the participating retail organisation's top management has a positive perception of the benefits that IT can bring to the business. These include improving relationships with trading partners and customers, optimising inventory level, controlling business operations as well as increasing efficiency and productivity. IT has an important role to play for the participating retail to achieve and maintain its competitive position in the market, especially with the existence of various international retailers in Malaysia (Roslin & Melewar 2008). In addition, although some studies, see for example (Kurnia & Peng 2010; Vatanasakdakul et al. 2004) still highlight the issue of technology cost in developing countries, this study finds that the declining cost of technology is potentially a good facilitator that can encourage more organisations in developing countries to adopt IT initiatives and help with the cost justification. This cost aspect is particularly appealing for local organisations in developing countries such as the participating retailer in our study, since they generally have less motivation to adopt technologies and have limited IT budget (Karnali & Kurnia 2010; Kartiwi 2006). Thus, the experience of organisations in developed countries in utilising the declining costs of technologies to manage business operations and coordinate activities with trading partners (Clemons et al. 1993) appears to be replicated in developing countries, especially by those local players who mostly started their businesses with very limited IT applications. As their businesses grow, local businesses can learn from the experience of other organisations in developed countries in their effort to better understand the potential benefits of technologies. However, because of the differences in social, legal, economic, political, and technological contexts, there are specific contextual factors that need be considered carefully which may lead to different adoption experience and benefits by organisations in developing countries.

The case study identifies the issue of product standardisation as deterrence to business automation via IT. Although this issue has not hindered the case organisation to adopt the related technologies, it actually creates the need to conduct a manual, labour-intensive inventory check annually. Such an undesirable situation would significantly hinder other local organisations in developing countries to adopt IT since they generally have limited exposure to IT and have little expertise in managing IT and the standards required. Therefore, industry bodies and other third party associations play an important role to help address IT-related issues that may be faced by organisations in managing their business operations across the supply chain. Such associations would also facilitate the discussion among industry players so that can work together easily to solve problems and issues, which in turn, would encourage other organisations within the industry to adopt technologies. Furthermore, although our case organisation did not experience any problem due to their inability to quantify benefits, it will hinder IT adoption especially among local players who have generally been reluctant to embrace IT. Therefore, industry bodies once again have an important role to play in addressing this challenge. They should offer assistance to local organisations with little IT expertise to understand the costs, benefits and risks of any IT adoption to help decision makers make informed decisions regarding the adoption of any IT.

From the organisational point of view, a number of important facilitators have been identified. Specifically, a high level of support and commitment from top management has been identified which confirms previous studies, see for example (Karnali & Kurnia 2010; Rotchanakitumnuai & Speece 2003; Teo et al. 2006). Our study further shows that with the top management commitment, employees are motivated and are persuaded to upgrade their IT skills, which helps overcome the lack of adequate skills, one of the most frequently reported barriers slowing down IT adoption in developing countries (Dada 2006; Kartiwi & MacGregor 2007; Kurnia & Peng 2010; Qureshi & Davis 2007; Wahid 2007). This also facilitates the recruitment of highly capable IT manager and team members, the provision of specialised training and the most suitable IT implementation approach that suits the condition of the organisation, as evidenced in our case study. The top management support apparently reduces the significance of the challenges to IT adoption identified in this study. The high turn-over rate of IT-trained sales and IT staff, however, seems to be a challenging issue faced by the case organisation. This issue is expected to be applicable in many developing countries that still have

a limited number of IT skilled personnel and is related to one of the external environment issues discussed below. Furthermore, our study shows that local businesses with relatively limited IT exposure may have difficulties in establishing clear performance measures to assess the effectiveness of their IT investments. Nevertheless, with confidence and commitment from the senior management, the participating retailer has been increasing the IT budget overtime and has been improving and extending their IT applications.

From the external environment viewpoint, some facilitators have been identified that accelerated the continuous uptake of IT by the case organisation including the influence of foreign retailers, high competition level among industry players, and the growth in the social, technological and economic condition of the country. This observation confirms the findings of other IT adoption scholars (Humphrey et al. 2003; Lo et al. 2001; Molla 2004). Our study however shows that the high level of competition has created a challenge in retaining skilled employees. This is true especially in the current situation which is characterized by a limited availability of skilled personnel within the country and the competing demand from the foreign businesses that generally can offer better salary packages than local businesses. This relatively new observation should raise an awareness of organisations in developing countries and challenge the management to devise appropriate strategies for human resource training and retention purposes. Hence, skilled personnel will have limited intentions to switch to other organisations or have a higher level of loyalty through various incentives. To increase the commitment level of IT staff, organizations in developing countries should consider adopting several initiatives. For example, there is a need to establish effective reward systems and offer compensation that provides staff with additional benefits (e.g. job security, autonomy, and achievement recognition, and flexible work arrangement to improve life/work balance). Such initiatives are regularly pratised by many organizations in developed countries (Dockel et al. 2006; Lockwood & Ansari 1999). To the best of our knowledge, this issue has not been adequately highlighted in previous studies focusing on IT adoption by organisations in developed countries. Thus, our study confirms the importance of local contexts in understanding IT adoption phenomenon. Previous IT adoption experiences of organizations in other countries and lessons learned from these past experiences will help organizations in developing countries to be better prepared for managing IT adoption and its impacts.

Moreover, our study shows that the growing consumer spending power, market knowledge and demand due to advances in the Internet technology, has been one of the important drivers to utilise IT to manage business operations efficiently by our case organisation. This is consistent with what have reported in a number of studies (Al-Gahtani et al. 2007; Heeks 2002; Oliveira & Martins 2010). Particularly, with the rapid development of the internet technology and related applications, there is a greater level of price transparency in the market which increases the level of competition among businesses. Therefore, more organisations including local businesses in developing countries have relied on various technologies to handle increasing business transactions to improve business operation efficiency and the overall competitiveness. However, consumers' complaints can be easily broadcast through the social technology which may harm the reputation of the business. Therefore, organisations need to devise appropriate strategies for the adoption of social technology applications to address consumers' issues.

In addition, similar to the Indonesian context (Karnali & Kurnia 2010), our study finds that in Malaysia, there is generally a good cooperation between trading partners to adopt technologies to support business to business interactions. Many technological initiatives are inter-organisational in nature and hence, a high level of cooperation between trading partners is a useful facilitator for technology adoption. For local businesses, in particular, they may have social and cultural advantages over the foreign competitors when dealing with local suppliers. Finally, due to the increasing popularity of social technologies within the society, the case organisation has also started to adopt various social technologies to interact with the consumers and to offer training program to employees. The emerging popularity of social technologies in developing countries will potentially increase the familiarity with various computer applications that have been generally shifted towards the web applications.

Facilitators	Challenges
Technology	
• Positive perception of the benefits	• Standardisation of product information
• Declining cost of technologies	• Difficulties in quantifying benefits
Organisation	
• Top management support and commit to IT adoption	• Lack of skilled personnel and familiarity with IT applications
• Competent IT team	• High turn-over rate of sales executives and IT staff
• Appropriate IT implementation approach	• Lack of clear performance measures
• Specialised IT training	
• Strong support from top management motivates staff to improve skills	
External Environment	
• High level competition with foreign and local retailers	• Limited skilled personnel to hire
• Growth in consumer spending power, market knowledge and demand	• Salary competition makes it difficult to retain skilled employees
• Cooperation with trading partners to adopt the required technologies	• Consumers' complaint behaviour
• Familiarity with social technologies	

Table 1.   Facilitators and challenges for IT adoption at the case organisation

8.   CONCLUSION

In this paper, we have assessed the IT adoption experience of a successful local Malaysian retailer. In particular, we have identified a number of facilitators and challenges for the adoption of IT initiatives which highlight the influences (positive or negative) of technological, organisational and environmental characteristics. Many of the facilitators and challenges are similar to those reported in the literature of IT adoption in general. However, by focusing on a local retailer within the Malaysian context, we have identified several facilitators and challenges that are less known and less cited in the literature. These less examined facilitators and challenges deserve further research attention from the IS/IT researchers community. This is because they may lead to different adoption experience by local organisations within developing countries, which in turn require a unique set of adoption strategy. In particular, some characteristics of the Malaysian consumers coupled with the limited IT skilled personnel and limited IT budget within the case organisation (as an example of a local business within a developing country), have largely influenced the high turnover rate of skilled employees. This problem needs to be addressed carefully so that organisations particularly local businesses are not deterred to train their employees and to adopt various IT applications to support the growth of their businesses.

We further note the lack of adequate IT skills in developing countries in general and local retailers in particular can be slowly diminishing as social technologies such as Facebook become popular globally. More individuals are now becoming comfortable with computers and are familiar with the internet applications and functionalities. Thus, although IT is not typically introduced at the early stage of education in developing countries many individuals are now becoming familiar with IT especially various mobile technologies. This change in social condition has benefited the case organisation and will also benefit other organisations particularly local organisations with limited IT budget in developing countries in acquiring the required IT skills.

In addition, we have also highlighted the importance of industry associations in developing countries which can provide assistance and advice to local organisations regarding various aspects of IT including quantifying the potential benefits of IT and establishing performance measures. They are particularly needed by local organisations, as local organisations typically have less exposure to IT with limited IT expertise and budget compared to foreign organisations or multi-national companies. Support from government would also be necessary for the establishment of such industry associations.

Our study is limited to a single local retailer in Malaysia. Despite this, we believe the experience of the case organisation offers useful lessons and helps motivate other organisations, particularly local organisations in developing countries to progress in the adoption of IT to manage their business operations. Although, we are not claiming a major theoretical contribution (due to the involvement of a single case), we believe that our study complements other existing studies that do not specifically consider local Malaysian retail context from the perspective of IT management. In terms of the context, lessons learned from our study are particularly crucial for local organisations that are facing increasing level of competition from both foreign competitors and multi-national organisations. Furthermore, since the IT team deals directly with the IT skills and resources, by focusing on the IT management perspective, and our study offers a more complete picture of the actual situation in this respect. This in turn complements other studies that assess the adoption from a more general perspective or other perspectives.

Further studies involving other local organisations of various sizes, exploring their experience from the IT management perspective in Malaysia and other developing countries would be useful to enhance our study findings. Particularly, further investigations into the severity and impact the high turnover of skilled IT personnel experienced by other local businesses in Malaysia and other developing countries would enhance the findings of the this study. Moreover, a longitudinal study is worth undertaking to investigate the impact of emerging social technologies on the issue of IT skill inadequacy in developing countries over the next few years. A better understanding of the contextual factors affecting IT adoption at local organisations within developing countries can help devise appropriate adoption strategies and improve the IT adoption rate over time among them.

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