A STUDY ON ADOPTION OF INFORMATION TECHNOLOGY IN SMALL ENTERPRISES

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Abstract

The Small businesses are considered the backbone of industrial development. They represent the economic development model and act as the engine of growth for the same, focusing on high contribution to domestic production, significant export revenues and influential contribution to foreign exchange. Small enterprises have to compete and survive with large enterprises, which is currently one of their biggest problems. One of the reasons for this disadvantage is that small enterprises lack information technology advantages. Mostly, these enterprises fail to use information technology in business operations, severely limiting their performance and survival. Businesses must have the adequate IT infrastructure to give them a competitive advantage. This leads to a mechanism that provides the right information at the right time and place. As the use of IT accelerates in business, rapid implementation of IT enabled services in small businesses is required. Information systems are important applications of information technology in business management. However, there are still problems in the implementation of IT by these small enterprises. This paper attempts to highlight the main factors and advantages in implementing and adopting information technology in small enterprises.

Keywords: *Small enterprises, information systems, information technology factors, IT adoption*.

Background:

The modern economic environment is dominated by globalisation, hyper-competition, and the knowledge and information revolution has changed business management (Pavic et al., 2007). This new era of technology is evident in the increased investment in computer processing and data processing equipment in the manufacturing and service sectors and in the telecommunications infrastructure and is widely used in the business world. Due to this technological progress, the implementation and use of IT is an essential driver of many socioeconomic changes (Dierckx and Stroeken, 1999). As the use and commercialisation of IT expands worldwide, adopting new IT can create new business opportunities and various benefits. Today, large organisations and small businesses are looking for ways to strengthen their competitive position and increase their productivity (Premkumar, 2003). Accordingly, there is a growing awareness among these small businesses of the need to generate returns from IT investments. IT tools help small businesses immensely in providing the necessary infrastructure to deliver the information they need at the right time and place. IT can also offer a competitive advantage to small businesses by providing integration between supply chain partners, organisational functions, and critical information (Bhagwat and Sharma, 2007).

However, it can be seen that only a small number of studies have focused on the adoption and use of IT in small businesses (Grandon and Pearson, 2004). Furthermore, despite the rapid growth of IT in small businesses, the rate of IT adoption by these businesses remains relatively low (MacGregor and Vrazalic, 2005), and large organisations benefit significantly from IT marketing better than small businesses. and cost savings (Riquelme, 2002). The unique characteristics of these businesses can be pointed out to find reasons for such differences in the implementation of IT in small and medium businesses. Small businesses usually have limited access to market information and suffer from the constraints of globalisation. In addition, these businesses rarely use management techniques such as financial analysis, forecasting and project management. Other characteristics of small businesses include hiring specialists rather than specialists, short-term planning, informal and dynamic strategy and decision-making, and lack of standardisation of work procedures (Dibrell et al., 2008; Thong et al., 1996). However, the main difference between small businesses and large organisations is the limited resources that small businesses manage, commonly called poverty (Thong et al., 1997). Therefore, considering the weakness of small businesses at various organisational and managerial levels, technological, personal and environmental, the adoption and use of IT in business is not profitable.

IT Adoption in Small Enterprises

IT adoption is defined as the use of information and communication technology (ICT) tools such as computer hardware, software, and networks needed to connect to the Internet. According to (Attaran, 2003), information technology is the opportunity offered to organisations by computers, software programs and telecommunications to provide information, data and knowledge to individuals and processes. In addition, the term IT includes computer programs and necessary hardware packages, Computer-Aided Design (CAD),

Computer Aided Manufacturing (CAM), EDI, and Enterprise Resource Planning (ERP) that improve business productivity, such as electronic funds transfer (EFT), intranet, extranet, collaborative planning, forecasting, and replenishment (CPFR) applications for electronic commerce (EC), supply chain communication systems, and electronic supply chain management systems. Similarly, IT implementation in small businesses is defined as computer software mechanisms and software solutions that support the organisation's operations, management, and decision-making. They explain that adopting IT (including computer programs such as CAD/CAM, EDI, MRP) aims to improve business productivity.

Various studies focus on IT adoption by companies and postulate different influencing factors of the same. Previous studies have identified several influencing factors. Many of these perspectives and studies focus on influencing factors such as top management, organisational behaviour and characteristics, corporate resources, government, customers, suppliers, and external IT consultants and vendors. In the next section, an attempt has been made to understand the factors mentioned above.

Influencing Factors

The influencing factors are classified into two major categories: internal and external factors. A brief review and categorisations of these factors are explained below:-

The Internal factors: The internal factors are highlighted below:-

Top Management

The process of IT adoption in small businesses directly affects top management, where all decisions are made, from day-to-day operations to future investments (Bruque and Moyano, 2007; Nguyen, 2009). Small businesses usually have a simple and centralised structure with a chief executive officer (CEO), where the owner and CEO are often the same (Ghobakhloo et al., 2011). Some studies have found that when the owner/manager of an SME as a critical decision maker places high importance and value on internal or external liabilities, the organisation will tend to respond accordingly (Lybaert, 1998). Some studies have found that the role of CEOs (top executives or owners/managers) in small businesses is central to business, as their decisions affect the current and future performance of the entire firm (Smith, 2007). According to the literature, some factors such as management attitude and attitude to IT, support and commitment, IT

knowledge and experience, innovativeness, behavioural control towards IT, desire to grow and familiarity with the administration have a direct impact on the IT adoption process. is a small business (Drew, 2003; Premkumar, 2003).
On the other hand, IT adoption literature has proven that high-level management support and commitment to IS/IT adoption is one of the main drivers of high levels of success and satisfaction with IS/IT adoption and use in small businesses (Fink, 1998; Gobakhloo et al. al., 2010; Premkumar, 2003; Thong, 2001). Few studies identified insufficient management attention to human resources as one of small firms' three main accounting problems. They argue that management can directly influence the evolution and improvement of R&D because top management support and commitment are key factors contributing to R&D success in small firms. For the success of IT in small businesses in Malaysia, it was found that the expected benefits of computerisation in small businesses can only be achieved with the presence of five conditions, including solid management support as a critical condition (Foong, 1999). This view is consistent with the findings of other studies that adequate knowledge about IT and its effects on organisations can encourage and support IT adoption in small businesses.

Resources
Small businesses are generally different and suffer from limited access to specific resources compared to large organisations (Igbaria et al., 1997; Nieto and Fernandes, 2005). According to the IT adoption literature, and due to small businesses, the unique characteristics are financial resources, technical and managerial resources, access to information sources, internal and external skills, market access, and internal IT knowledge and experience. or facilitating the adoption of IT in small businesses and positively or negatively influencing this process (Caldeira and Ward, 2003; Cragg and Zinatelli, 1995; Dutta and Evrard, 1999; Fink, 1998) South and Tilley, 2000; Tong, 2001). Most small businesses generally suffer from insufficient financial resources and many owners/managers invest their personal assets (Fuller-Love, 2006). Limited financial resources make small businesses cautious about investment and capital expenditure. The wrong IT investment decision can have serious financial consequences for small businesses and, in extreme cases, can lead to poverty and economic failure (Sarosa and Zowghi, 2003). The implementation of a new IT system and its components require longterm investment (Nguyen, 2009), and the high cost of IT infrastructure means that only small businesses with sufficient financial resources will consider it possible to adopt IT. . project to enable small business owners / managers with the necessary financial resources to become more capable of creating the desired IS. (Lybaert, 1998) However, although some studies have found that the financial constraints associated with the adoption of IT by small businesses are related to the cost of IT equipment and infrastructure.

Premkumar, (2003) suggest; since the cost of computer hardware and software has decreased significantly in recent years, the cost of IT implementation is not the main factor that hinders the adoption of IT in small businesses with limited financial resources. In addition, IT knowledge is an important factor influencing the adoption of IT in small businesses. Developing internal IS / IT knowledge and skills is one of the most important prerequisites for high IS / IT adoption and satisfaction in small enterprises (Caldeira and Ward, 2003). Small businesses' lack of IT knowledge can be seen as a barrier to IT adoption. Small business managers can be overwhelmed by the rapid development of IT tools and various options (Sarosa and Zowghi, 2003)

End users
Employees are critical assets in any organisation on which the survival and success of the company depend (Melville et al., 2004). As IT users in small businesses, these assets are another valuable resource that firms must develop to contribute to business success (Caldeira and Ward, 2003) (Zhou et al., 2009). Previous literature shows that IT users, IT knowledge, training, attitudes and intentions, as well as involvement and involvement in the adoption process, can influence IS / IT acceptance or adoption (Caldeira and Ward, 2003; Fink, 1998). The limited use of IT and the failure of organisations to take advantage of computer hardware and software, these problems negatively affect IS / IT in small businesses due to the lack of training and skills in organisations that use IT successfully. Sharing knowledge, training and high skills by IT users (Ghobakhloo et al., 2010). To facilitate successful IT implementation in small businesses and avoid adoption, these businesses should increase IT awareness among potential IT users by providing company employees computer literacy and training courses . Sarosa and Zowghi (2003) and Ghobakhloo et al. (2010) argue that IT acceptance among IT users as firms' employees will positively affect IT acceptance. According to this author, the level of IT adoption and user usage will be affected by IT courses and training provided, and higher IT knowledge among users will help them implement new technologies. Premkumar and Roberts (1999) argue that increased user awareness of the benefits of information and telecommunications technology will positively impact the adoption of this technology and awareness that can be improved through improved education and training. Accordingly, a study by Kleintop and Blau (1994) on the influence of end users on the adoption of e-mail systems shows that end users will show a high level of acceptance of the IT system before interacting with the new IT system. As a company's most valuable asset, employees significantly impact the adoption and successful implementation of new IT. Therefore, developing these resources seems necessary for business success (Egbu et al., 2005; Ghobakhloo et al., 2011).

Organisational Characteristics
Various studies show some characteristics of small business organisations, including strategy, business size, industry type, information intensity, organisational culture and technological sophistication (Caldeira and Ward, 2003 ; Drew, 2003).

According to previous literature on IT adoption in small businesses, business size, defined as turnover and/or number of employees, is one of the most important determinants of IT adoption (Fink, 1998; Love et al.; 2005). The importance of firm size depends on the firm's role as a source of capabilities. The same goes for the level of use of ICT; This technology will be used more intensively by contractors in many fields. This idea is supported by Ahuja et al. (2009); Determining the size of small businesses in terms of annual turnover, Indian construction small businesses with high turnover are more likely to adopt ICT. Drew (2003) believes that high technology / knowledge-intensive small businesses are more exposed to Internet technology than other firms and are more sophisticated in their use of Internet technology. It was also found that high-tech small businesses highly value the Internet as a driving force for future growth. Therefore, small businesses must assess their IT readiness and IT maturity to determine whether existing IT tools can be implemented satisfactorily with the current organisational and environmental conditions (Sarosa and Zowghi, 2003).

The External Factors

For many companies, staying competitive, improving safety and/or growth, managing change, improving customer service, staying competitive, and/or improving innovation capabilities have led small businesses to adopt IT (Drew, 2003; Mole et al., 2004 ; Premkumar and Roberts, 1999). Previous literature suggests that because small businesses are exposed to customer pressure, these firms adopt IT as a result of customers' desire to improve the efficiency of organisational processes (Levy et al., 2002). Therefore, it has become a necessary strategy for firms to acquire this technology (Premkumar and Roberts, 1999), while others argue that the main driving force to move to IT equipment in small businesses is internal factors such as industry changes and trends, keeping the current market , new markets, growth finds opportunities for and must support competition (Drew, 2003). Nguyen (2009) argues that firms move towards IT adoption for different reasons because they operate in different ways and function differently in different environments. On the other hand, according to previous IT literature, the drivers of IT/IS adoption in small businesses are related to the company's desire to be competitive and innovative as a necessity for survival. In addition, IS/IT improves the quality of life of small businesses operating in a competitive environment with a higher risk of failure (Levy et al., 2001). Few studies answered that the competitiveness and intensity of environmental information did not directly affect the decision of Singaporean SMEs to adopt IT because SMEs that have implemented IT did not assume the environment caused it.

On the other hand, Loukis et al. (2009) argue that IT equipment (hardware, packaged software, and network) cannot offer a sustainable competitive advantage (SCA) because it is also available to competitors. Thus, SCA can be achieved through a combination of IT and other company resources and capabilities. This argument supports the empirical research of Powell and Dent-Micallef (1997) in the retail industry, which found that IT alone cannot provide sustainable performance advantages, but rather that competitive advantages can only be achieved through the use of IT and integration with our firm's infrastructure. human resources and complementary business. Here, small businesses should consider their reluctance to adopt IT if they do not feel an IT advantage compared to their competitors (Sarosa and Zowghi, 2003).

Government

According to the literature, a significant positive relationship can be found between IT adoption and government support (Ahuja et al., 2009; Tan et al., 2009). Due to their size and lack of resources, small businesses are often more dependent than other companies on external resources and support (Sarosa and Zowghi, 2003). According to Fink (1998), there is increasing government support for facilitating the transfer of information to small businesses. Although government assistance is often ineffective, recent studies have shown that IT adoption in small businesses has increased significantly, especially in developing countries, through government policies and initiatives. Similarly, Tan et al. (2009) found that small businesses generally disagreed with this view as an essential determinant of ICT adoption. This author discusses that since most small businesses are aware of the financial support and incentives provided by the government, ICT costs are not considered a major obstacle by small businesses. This view is empirically supported by Alam and Noor (2009) who show that ICT adoption in small businesses does not directly affect ICT expenditure. According to the author of the thesis, the main reason for this is that all kinds of financial support are given to these companies by the government for the adoption of ICT. Therefore, it is clear that the government acts as one of the main external influencers in the adoption of IT by small businesses.

Conclusion and Discussion

IT has become an essential tool for the day-to-day operations of organisations. Small businesses invest significant financial resources in IT to strengthen their competitive position (Premkumar, 2003). Due to the widespread use of IT among small businesses, they have faced several risks related to adopting and developing IT solutions (Kazi, 2007). Previous literature on IT implementation in small businesses suggests that most failures and dissatisfaction are the result of one or more of the following reasons, including:

- Misalignment of IT adopted to business strategy;
- Lack of organisational problems;
- Failure to meet the needs of end-users;
- Lack of necessary resources (knowledge, skills, finance, management);
- professional training and end-user training;
- Work volume and cost constraints for Hiring IT professionals;

- Capable management in a highly centralised CEO structure;
- Inadequate government assistance and supportive regulations;
- Dissatisfaction with IT creates a competitive advantage due to poor relations with competitors, suppliers and customers;
- Special characteristics of the organisation, culture and family involvement

The adoption of IT in small businesses has greatly increased with supportive policies and initiatives from developed and developing governments, especially in recent years, the government must provide comprehensive policies and support to encourage small and mediumsized businesses to develop and use IT; dynamic characteristics of small businesses, IT tools, and global economic dynamics and market conditions must be periodically reassessed. Previous IT literature shows that various studies conducted in the context of IT adoption have aimed to assess the many challenges of IT adoption and the challenges faced by small businesses, as well as the factors that influence successful IT deployment. This author divides the influencing factors into two main groups, internal factors and external factors. Internal factors are top management, company resources, end users, IT solutions and organisational characteristics, external factors are external and competitive pressures, external IT consultants and vendors, and government. According to the author, the categorisation of IT adoption issues and SME-related factors through an integrated framework developed can provide organisations, managers, and IT consultants with a clear understanding of the influencing factors of IT adoption and add additional knowledge to the literature. Similarly, based on the unique characteristics of each organisation and the specific situation of the diffusion of technological innovation, it is not claimed that this framework is applicable to all firms and is capable of solving all problems. Therefore, these findings require empirical testing to determine their relevance and relevance in a practical setting. In addition, further research on IT adoption among small businesses (drivers, enablers, and inhibitors) of IT adoption among small businesses that examines the influencing factors related to SMEs is probably needed.
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