



## **BARRIERS OF ICT ADOPTION AMONG SMES IN INDIA**

**<sup>1</sup>Dr. DEEPIKA UPADHYAYA**

<sup>1</sup>Professor, Department of Management Studies, M D S University Ajmer (Raj.)

**<sup>2</sup>MOHAMMED IRFAN KHAN**

<sup>2</sup>Associate, Research scholar, Department of Management Studies  
M D S University Ajmer (Raj.)

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### **Abstract**

The successful operation of companies in most industries is becoming increasingly dependent on their ability to adopt and utilize ICT and the acceptance of such technologies by large organizations, the same level of adoption is not evident among SMEs. ICT adoption has been considered to be a complex problem by SMEs. Although Government of India is taking initiative to promote ICT adoption in SMEs. Still lots of issues need to address for successful adoption of ICT in SMEs. This study tries to identify the internal and external barriers existing in adoption of ICT by SMEs with the help of review of literature and secondary data study.

**Keywords:-** ICT, SMEs, barriers

### **1. Introduction**

*In developing countries, SMEs are the major source of income, a breeding*

*Ground for entrepreneurs and a provider of employment.*

#### **UNIDO, WSIS Report, February 2003**

Globalization, heightened the level of competition, high level of uncertainty and inability to predict the future characterizes the present day business world. The common factors of production land, labor and capital can no longer guarantee sustainable competitive advantage. The ability to

adapt to changes and to grow in this competitive environment requires the firms to adapt to technology which facilitate faster, reliable, cheaper and safer communication. Proliferation of Evidence and Communications Technology (ICT) nurtures the business world to endless extent.

Small and medium enterprises (SMEs) consist almost 95 percent of enterprises within the region and directly serve as both the strength and driver of national economies. As the global economy becomes increasingly relying on information and communications technology (ICT), the small businesses within the developing economies are yet to gain the benefits of ICT adoption.

The purpose of this paper is to explore the extent of adoption of Information and communication technologies by small and medium enterprises (SMEs) in the manufacturing sector.

## 2. Literature Review

### SMEs

The Government of India has passed the Micro, Small and Medium Enterprises Expansion (MSMED) Act, 2006 in terms of which the meaning of micro, small and medium enterprises is as under:

1. A **micro enterprise** is an enterprise where investment in plant and machinery **does not exceed Rs. 25 lakh;**
2. A **small enterprise** is an enterprise where the investment in plant and machinery is **more than Rs. 25 lakh but does not exceed Rs. 5 crore;** and
3. A **medium enterprise** is an enterprise where the investment in plant and machinery is **more than Rs.5 crore but does not exceed Rs.10 crore.** (<http://www.rbi.org.in>.)

Notwithstanding its commendable involvement to the Nation's economy, in fetching more inexpensive in the National and International Markets, SME Sector faces a number of snags - absenteeism of suitable and appropriate banking finance, imperfect capital and knowledge, non-availability of apposite technology, low construction volume, unproductive marketing approach, documents of new markets, constrictions on transformation & developments, non-availability of extremely skill full a bor at reasonable cost, shadow up with various administration agencies to resolve problems etc. With slowing down of economy in India and abroad, particularly USA and European Union and enhanced competition from China and a few low cost centers of production from abroad many units have been facing a tough time. In order to continue SMEs need to resolve to competitive strategies like strong technological

base, innovation, international business outlook and develop capacity to restructure.

### ICT

The beginning of information and communication technologies across the world demands not only the business world but also every field to embrace these tools. Mobile telephones offer market relations for agriculturalists and entrepreneurs. The Internet delivers vital knowledge to schools and hospitals. Computers develop public and private services, and increase yield and involvement. By connecting people and places, ICT has played a vital role in national, regional, and global development, and holds massive promise for the future.(world bank report, 2006). ICT acceptance is associated with the lowest streak of enterprise balance sheets. Firms using e-mail for customer communication, for example, can grow 3.4% faster in terms of sales than those which do not (Qiang, Clarke, &Hale wood, 2006). Productivity and reinvestment were found to be similarly higher for more intensive users of ICT. In another study of manufacturing SMEs the introduction of e-business methods was found to explain 4% of sales growth and 5% of export performance (Raymond, Bergeron, & Blili, 1-6-2005). ICT facilitates product innovation in SMEs (MARIANO CORSO, 2001), internationalization (Sharon Loane, 2006).

### ICT and SMEs

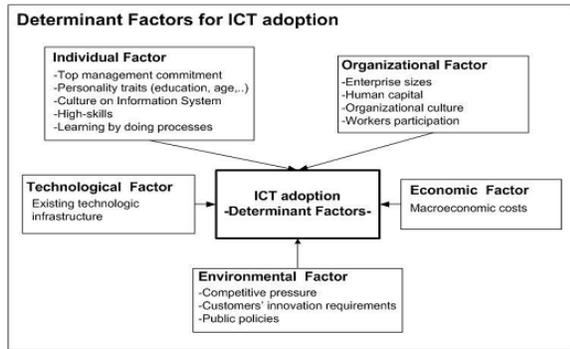
Nowadays the use of EvidenceKnowledge in enterprises is preciseimperative, mainly in SMEs that are the conventional of companies functioning in the world. The implementation and use of ICT can bring benefits in terms of competence, effectiveness, innovation, growth and competitive advantages.(Domenico Consoli,2012). The determinants factors are as given in figure 1.

Similarly, the inhibitors are around four factors viz.

- financial: high primary investment and trouble in the access to credit

- Infrastructural: power, bandwidth and responsible Internet connection
- organisational: lack of expert staff and clear strategy
- technological: development of technology without adequate training

(Dr Charles Akomea- Bonsu (2012), DomenicoConsoli (2012))



(Fig.1) Source: Determinant factors for ICT adoption, DomenicoConsoli

Other major factors that affect the ICT adoption by SMEs are relative advantage, compatibility, observability, security and cost. Other substantial reasons that hinder the ICT adoption are complexity and trainability (availability of trial software's) ( Khong Sin Tan, 2012).

As the worldwide bargain becomes gradually dependent on evidence and communications technology (ICT) to obtain, procedure, and refer out evidence, the small businesses ought to attempt the assistances of implementing ICT. But the ability of SMEs to engage and reap benefits of globalization depends on the extent of use of ICT. Otherwise, these SMEs are set to lose out on opportunities to integrate into the global supply chain, bid for outsourcing businesses, and increase their internal productivity and efficiency.(Vadim Kotelnikov,2007).

Khong Sin Tan (2010) conducted study on "Internet based ICT adoption" in Malaysian SMEs and reported that all but 4.7% of the enterprises have garnered the internet usage. Through the sustenance

of the Government in relations of enticements, grants etc., those SMEs which have espoused internet based ICT, knowledgeable the nearer connection with their exchange partners. Service sector seems to have adopted ICT more compared to the manufacturing sector.

The major source of competitiveness for SMEs is their flexibility and ICT enables flexibility by creating more flexible links with trading partners because of faster and more reliable communication channels. At the same time, we should not repudiate the fact that SMEs are characterized by informal information systems and the decision maker is mostly the entrepreneur himself, whose personal resources are restricted.

Per the usage of ICT operation costs could be dropped and assist the SMEs to enlarge provincially and transnationally. Müller-Falke (2001) finds for Indian manufacturing SMEs that enterprises that use more advanced forms of ICT have on average a higher labour productivity and a higher growth rate(Susanna Wolf,2000).

### Barriers of ICT adoption

**Auxiliary barriers:** -SMEs do not take advantage of ICT vary widely across sectors and nations. In developing countries, mainly in India, SMEs often lack the human technological resources needed for ICT execution. Absence of cognizance, indecision of ICT assistances, set-up charges and assessing matters and sanctuary apprehensions are the utmost noticeable barriers to ICT adoption. SMEs facing economic and political uncertainty and cultural factors are also barriers for ICT adoption in India.

**Mechanical barriers:**-From technical perspective, a firm should have at least someone within it who has a reasonable amount of knowledge for technology in general. Therefore, without internal technological capabilities, utilisation of ICT applications might be difficult and sometimes risky in terms of system maintenance and failures. The opposite is to seek

advice and support from IT professionals, but most SMEs do not simply have enough money to do that because of the relatively high cost.

**Administrative barriers:-** From supervisory perspective, SMEs may also lack the managerial understanding and skills. A small and medium-sized enterprise needs to completely reshape its current systems because ICT adoption projects are complex in nature. For example, the successful implementation of e-business requires reshuffle business process and redefining core competence of the firm. Undertaking such changes cannot be successfully implemented without pertinent skills and a visionary mindset. Further, lack of long-term corporate strategy is another factor. SMEs' strategies are often restricted on survival and on short-term activities.

**Organizational barrier:-** More specifically, very often, managers of SMEs set their decisions on current needs and situation. The decision-making process of the managers is rather instinctive, based on inborn decisions and is less dependent on formal models of decision-making. They tend not to pass on information and do not delegate decision-making powers to their subordinates. They are often the only people in the company who have the authority, responsibility and access to the information necessary for identifying business breaks including utilization of information technologies for strategic and competitive purposes.

### **Significance of ICT in SMEs**

The benefit of ICT cuts across all sectors of the economy and all the fields of human activities, and ICT can improve the standard of living and improve business

Operations as well as organizational efficiency (Udo and Edoho, 2000). It is usually accepted that ICT offers many prospective benefits to organizations so as to make them more efficient, effective and competitive (Fink and Disterer, 2006). ICT increases richness and reach (Evans and Wurster,

1997); companies communicate, collaborate, conduct transactions internally with their customers, suppliers and distributors via the internet and local SMEs are able to participate in the digital economy (Golding et al., 2008). The use of ICT allows companies to obtain, process, accumulate and exchange information (Ion and Andreea, 2008). According to Erumban and de Jong (2006), ICT has created a revolution by making the world seemingly smaller and improving potential economic growth. Pavic et al (2007) argue that SMEs have the opportunity to achieve a competitive advantage from the advances in ICT through innovation, marketing, efficiency gains, better quality and customer responsiveness. Also, Levy et al (2002) found some evidence which shows that SMEs act proactively in relation to the use of ICT. Appropriate use of ICT can assist SMEs to gain competitive advantage by reducing costs and improving core business processes. According to Brynjolfsson and Hitt (2000), the use of ICT can help to cut down the costs of coordination, communication, information processing and also enable efficient service provision at lower cost. ICT is described as a strategic tool that allows users to be efficient and effective (Sewanyana, 2009). The diffusion of ICT in many countries by different sectors of the economy have led to rapid development in these countries and has also been found to have direct positive impact on organization's efficiency (Achimugu et al., 2009). However, in Nigeria there has not been a formal study to ascertain the impact of ICT in these organizations. According to Fullanteli and Allegra (2003), ICT offers enterprises a wide range of possibilities for improving their competitiveness. They provide tools for getting access to new market opportunities and specialized information services such as distance consulting, continuous training, new advisory modes and so on. Organizations can exchange real-time information and build closer relationships with their customers, suppliers and business partners; customers can receive immediate feedback that allow companies to react fast to changing customers' demands and recognizing new market niches. This implies that organizations that are

able to exploit the potentials offered by ICT can handle innovative processes such as Supply Chain Management (SCM), Customer Relationship Management (CRM) and Knowledge

Management (KM) more effectively (Fullanteli and Allegra, 2003). ICT has been described as critical to the competitiveness and growth of SMEs (Apulu and Latham, 2009), it is important for it to be applied in the relevant manner in order to reap the far-reaching payoffs of ICT. Shiels et al., (2003) state that technology would not lead to business growth except when it is aligned with a business strategy. Having the right technology in the right place and at the right time would assist to improve business performance and also aid competitiveness and sustainability (Swift, 2009). Once ICT is integrated into a business process, it becomes a useful tool in many stages of the value chain (Swift, 2009).

**Major causes for non-adoption of IT:-** SMEs are largely dependent on the environmental surroundings of the companies. SMEs are negatively affected by the following factors:

1. Low economic power compared to large companies.
2. Difficulty gaining access to capital with a consequently limited ability to finance development activities.
3. Worse access to specialized training and education compared to larger companies.
4. Lower access to necessary information and consultancy services.
5. Unfair competition from large companies and dumping prices of imported products.
6. Limited sale of finished products in the domestic market and increased cost of export.
7. Competition of retail organisations managed by financially strong companies.
8. Weak position in public tenders.

9. Failure to and delay in receiving payments resulting in secondary financial insolvency.
10. High administrative demands from government bodies and agencies.

### 3. Conclusion

SMEs in the ICT industry play a crucial role in the new economy of India. Most SMEs operate in a fiercely competitive environment, as such, it is important to optimize business practices. This effort has to be significantly supported by ICT. But the implementation of ICT can cause a number of issues for SMEs, such as insufficient financial sources, lack of experience with ICT and insufficient knowledge and skills in the area of computer literacy of employees. That is why the most frequent purpose of implementation of ICT in SMEs is on survival of the organization in its competitive environment. Apart from that, overall policy approaches and adoption of ICT in the organisations are strongly influenced by the management.

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