A FRAMEWORK FOR ICT ADOPTION IN INDIAN SMES: ISSUES AND CHALLENGES

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ABSTRACT

This paper presents a framework for ICT adoption in Indian SMEs; Globalization has made huge impact in today’s scenario of business organizations SMEs are the most needed sector to be aware about the development and changing trends of the technology. Information and Communication Technology (ICT) plays critical role in growth of SMEs. Various aspects of ICT adoption issues and challenges are highlighted in context with government, Managers and ISPs role in it.

Keywords: ICT, SMEs, Challenges.

I. INTRODUCTION

Today, India’s small sector consists of (i) Micro Enterprises (village and cottage industrial units) (ii) Small Enterprises and (iii) Medium Enterprises. Government of India officially defines these enterprises in terms of investment in plant and machinery which is up to Rs.25 lakh in case of Micro enterprise, for Small enterprise it is above Rs.25 lakh and up to Rs.5 crore, and for medium enterprise the investment ranges above Rs. 5 crore and up to Rs. 10 crore. Apparently, defined in this way, India’s small businesses are tiny both in terms of investment and total number of employees which in majority of tiny and small enterprises happen to be 9 or less and in growth oriented small and medium enterprises on an average the employee strength ranges between 10 and 40. Small and medium enterprises play an important role in the growth of a nation by contributing to its GDP and generating employment. In India, the contribution of SMEs towards GDP is expected to reach 22% in 2014. In addition they create over 1.3 million jobs every year, contributing 45% to industrial output and 40% to exports, and are the fountainhead of several innovations in manufacturing and service sectors. However despite the growth in size and significance, the level of IT penetration and adoption of enterprise mobility in this sector still remains dismally low even though the need for the adoption of mobility is well recognized. Today's SMEs are taking...
steps towards the creation of a more mobile workforce but several hurdles need to be overcome before they can catch up with the large organizations in this respect. Addressing Challenges The key problems faced by SMEs while looking for suitable technology solutions are lack of customized solutions to suit specific needs of the business, limited capability to invest in high-end IT infrastructure as well as inadequate in-house management capacities. SMEs also raise concerns around role of IT investments as benefits cannot be identified immediately making it difficult to justify the expenses incurred. Security challenges are another area of concern where SMBs tend to let their guard down owing to resource constraints. While trying out new technologies, SMEs are also apprehensive about a lock-in risk with the vendor which would result in higher expenditure on frequent technology upgrades or the vendor escalating service fees. Moreover, a relatively low SME focus from service providers owing to the fragmented nature of the SME sector has been another stumbling block in the way of these companies being able to proactively adopt enterprise mobility. Benefits of Deploying Mobility Solutions With the growing importance of the SME sector, several service providers have woken up to the huge opportunity awaiting them. Solutions tailor made for the sector have found their way into the market and promises to address the issues that have held them back so far from going mobile. Also, the introduction of cloud computing has opened up a world of enterprise mobility opportunities for SMBs by reducing the cost burden of using IT and offering scalability and flexibility-while providing on-demand services which are highly attractive for this segment. For many SMEs, one of the key advantages of enterprise mobility is the ability to deliver this enhanced flexibility to their sales teams using the mobile cloud. Among other key benefits is the ability to enhance communication across the organization and also enable key people to stay in touch with all the latest developments-a measurable impact that enables workforce flexibility, increases employee responsiveness, and helps in sharing knowledge and data with others. The combination of the cloud and enterprise mobility allows SME staff, wherever they may be, to collaborate in real-time. Product and solutions development can also be made simpler with the mobile cloud. These developments have resulted in an increase in IT spends by SMEs where 40% of mid-sized organizations in India have already deployed enterprise mobility solutions and another 25% are planning to embrace at least one mobility device in the near future.

From the beginning of time, technology has been a key element in the growth and development of societies. It is a combination of knowledge, techniques and concepts; it is tools and machines, farms and factories. It is organization, processes and people. The cultural, historical and organizational context in which technology is developed and applied is the key to its success or failure. In short, technology is the science and the art of getting things done through the application of skills and knowledge. SMEs, Small business entity is widely known and recognized in India next only to agriculture. In terms of its overall contribution to the Indian economy, Small and Medium Enterprises or Small sector, in fact, is better placed than India’s agricultural sector. SME often have limited IT/IS resources as well as they are lacking in expertise, these limitations often culminate in SMEs being incapable of exploiting their use of IT to its full potential or developing the information system (IS) [1].

II. THEORETICAL FRAMEWORK FOR ICT ADOPTION

Technological innovation is a key factor in a firm’s competitiveness. Technological innovation is unavoidable for firms which want to develop and maintain a competitive advantage and/or gain entry in to new markets [2]. SMEs find it difficult to make the
upgrades as they need to stay competitive in both domestic and international markets[3]. Among organisations different organisations of different sizes are more agile towards the changing situation and are ready to adopt new ideas for the development. The flexibility of SMEs, their simple organizational structure, their low risk and receptivity are the essential features facilitating them to be innovative. Therefore, SMEs across industries have the unrealized innovation potential [4]. In this globalised environment the government of India has felt that, there is a need to enhance the global competitiveness of the SMEs by simplifying systems and procedures, easy access to capital and taking the SMEs in the global value chain by increasing their productivity. To promote and develop the SMEs, the government has implemented several schemes/programs to cater to the needs of the sector [5].

Technological progress has been the key driving force in industrialized countries, accounting for a lion’s share of productivity growth. Technological advancement has enabled newly industrializing economies such as Korea, Taiwan, Singapore and Hong Kong to effectively compete against firms based in industrially advanced countries [6].

**Fig1:** Framework for ICT adoption in Indian SMEs

The economic environment in which Indian SMEs are functioning today, global changes do affect them as much as local developments. Attaching due significance to technology development is absolutely essential to enhance their competitiveness. Technology development in SMEs is not an easy task. To achieve the objective, concerted efforts have to
be made by governments and SMEs. The first and foremost issue is the spread of awareness among SME entrepreneurs about the importance of technology development and upgradation in the current economic environment. Governments should take the lead, as is being done, involving industry associations, to spread this awareness across states. Industry associations at the district level should carry the message further. The need and urgency for technology development must be emphasized. One important characteristic of SMEs in developing countries as compared with those in developed countries is that they are strong in employment creation but weak in output contribution. In other words, in contrast to LEs, SMEs’ contribution to GDP formation is always lower than their employment generation. SMEs need to be vitalized for competitiveness and sustainable growth under new world trade rules and faster technological changes, including wider use of ICT, besides new business models. Several initiatives have been taken by the government from time to time to promote and support MSMEs, a framework for ICT adoption in Indian SMEs is shown in fig1.

**Government Support:** The limited incentives provided by the government to acquire technology place SMEs at a disadvantage. Further, governmental support in the technology transfer process is inadequate government approvals and certifications are impeded by long delays, and excessive interference by the government often adds to the existing problems. Some SMEs are also unaware of the regulatory norms. Governments could assist in creating awareness and reducing the psychological barriers to ICT acquisition by showcasing SME success stories, best practices, and benefits gained through ICT adoption. Ministry of Small Scale Industries is primarily responsible for promotion and development of SMEs in India, and has evolved several policies, institutional and support measures, spread all over the country, in order to enable SMEs to meet their changing needs. Small Industries Development Bank of India (SIDBI) has developed various financing schemes. Ministry of Science and Technology (DST, DBT and DSIR) has evolved several measures and programs for technological assistance and development and transfer of technologies for SMEs. Some of the economic ministries such as Ministry of Textiles, Department of Food Processing and Department of Handicrafts etc. have also recently announced initiatives for technical assistance in various firms.

**ISP’s Support:** An important decisive factor for SMEs is the level of support provided by ISPs. Businesses however change ISP infrequently. When they do, it's mainly when there are issues with reliability, quality of service, cost or for higher speeds. SMEs have very different needs from consumers. If a business has Internet reliability issues, it costs them business, revenue and reputation. According to the requirement of SMEs, ISPs should provide cost effective services to the organizations.

**Owners/Managers Support:** One of the key problems facing the Indian region has been the fact that many SMEs are not aware of the benefits and the direct financial gains to be attained by adopting ICT. A weak understanding of the potential integration of ICT solutions within business models also leads to a great degree of inefficiency. This scenario is compounded by the fact that there are a large number of competitive ICT products and services available on the market, which causes a great deal of confusion to companies with limited ICT literacy and capacities. In addition, the high cost of acquiring and maintaining ICT solutions further creates barriers to their adoption. IT personnel are in high demand and are often attracted to bigger companies and MNCs. It is very difficult for SMEs to attract good IT personnel. It is
even more difficult to retain them. Moreover, good IT personnel are expensive and may not be affordable by most SMEs. As company grows, new managers are often introduced into the company. There will also be old managers who are promoted from the rank and file. Some of these managers may not have been trained in the leadership and management skill. These uneven skill among the managers often caused conflicts during the implementation. For the ICT adoption owners support is amply necessary.

III. ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN SMEs

Researchers in the past decade have shown immense deviation towards the ICT adoption and its usefulness for the SMEs as it is the basic need for the organization to remain in the cutthroat competition of this era of globalization, communication media is the only way to remain in touch with the business partners and with the others. In addition, ICTs are mediums that utilize both telecommunications and computer technologies to transmit information. ICT environment helps in fast and accurate decision-making by the SMEs due to increased mobility. The critical components before SMEs are speed of services, access to information, empowering employees in terms of skill and delivering highest valued services at competitive cost. SMEs need ICT-based solutions in terms of multi-tasking, expanding customer base, raising productivity, controlling cost, working remotely, fast and accurate decision-making and facilitating collaboration. SMEs have various needs in order to function in an aggregative manner to reach out for value addition by keeping in mind the variable cost model. ICT usage by the SMEs raises productivity of the sector in particular and the economy in general. Product leadership, operational excellence and customer relationship, which SMEs look at while using ICT-based solutions is essential. SMEs have to be good decision-makers, planners and strategy-makers regarding the type of technology, which they are adopting. There is the need for best manufacturing practices in the SME sector. Innovation, design development and validation by the SMEs in the face of globalization and rapid technological advancement, to stay afloat during competition are the essentials. Technology plays a key role in providing cutting edge for development with acquisition and technology adaptation to suit the local conditions [7, 8].

IV. ISSUES AND CHALLENGES IN ICT ADOPTION

ICT has such noble characteristics like capability to generate rapid growth in computing power, communication capacity improvement and innovativeness that persuades every business to adopt these technologies [9, 10, 11, 12, 13]. Most of SMEs do not periodically recognize what actually is achieved from IT adoption [14, 15, 16, 17]. However, SMEs are regularly making use of it to pave the way for reaping benefits while various issues and challenges await them when it comes to adopt ICT. From the other perspective and apart from perceived benefits of IT persuading SMEs to adopt it, many studies have acknowledged that there are other many factors that contribute to the adoption process and have forced SMEs to adopt IT as necessity for the survival of most companies [18, 19, 20]. There are numerous exogenous characteristics in the business environment and endogenous organizational factors triggering SMEs to adopt ICT [21]. However, these features impelling SMEs to use ICT may be idiosyncratic to any specific organization [22], below are issues faced by today's SMEs.
a. Limited ICT literacy of SME owners hinders their ability to choose the appropriate technology  
b. Limited ICT literacy of employees in SMEs hinders ICT adoption  
c. Adopting ICT is an adaptive challenge, not a technical challenge  
d. Lack of financing options limits SME ability to purchase ICT  
e. Lack of financial and legal infrastructure.

V. CONCLUSION

This paper attempt to highlight some of important aspects of ICT adoption in Indian SMEs by theoretical framework, and the benefits that SMEs can have by its adoption In India and other economies, SMEs play a vital role, often acting as the primary drivers of job and economic growth But at the same time, the research revealed a risk, because SMEs' adoption of IT is decidedly uneven. Across the world, many SMEs, and their customers, don't have access to modern broadband networks, and many lack the skills to get the most out of IT. Many SMEs are also still using large amounts of old and less efficient hardware and software. The risk of a growing technology gulf is relevant to governments looking to maximize economic growth, and it is an opportunity for policymakers and the IT industry to implement strategies to remove barriers to IT adoption by addressing small businesses' top concerns about using more technology.

REFERENCES


