

## **Drivers and barriers of Information and communication technology (ICT) adoption among Small and medium Enterprises (SMEs)**

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**Abstract:** In spite of exponential growth of Information technology(IT), the rate of adoption of IT by SMEs has remained relatively low. The purpose of this paper is to propose drivers of Information and communication technology (ICT) adoption among Small and medium Enterprises (SMEs) especially in developing countries like India. Further barriers of ICT adoption can be determined. This conceptual study is undertaken to consolidate the available information into a Model that can facilitate further empirical studies. A critical analysis has been performed to conclude. ICT adoption provides a low cost yet effective tool. The findings indicate both External and Internal factors for ICT Adoption like Competitiveness, Industry specific demand, Government policies, Resources, Attitude of top management, staff attitude and readiness and barriers if these factors are not favourable. Future research areas are also specified by the author. The finding will benefit valuable insight to Marketers and policies makers of SMEs to know the benefits and barriers of ICT adoption. This study will benefit the body of knowledge by addressing challenges faced by SMEs on ICT adoption in their business process because SMEs contribute significantly in economy..

**Keywords:** ICT, SME, Drivers of ICT, Barriers of ICT among SMEs.

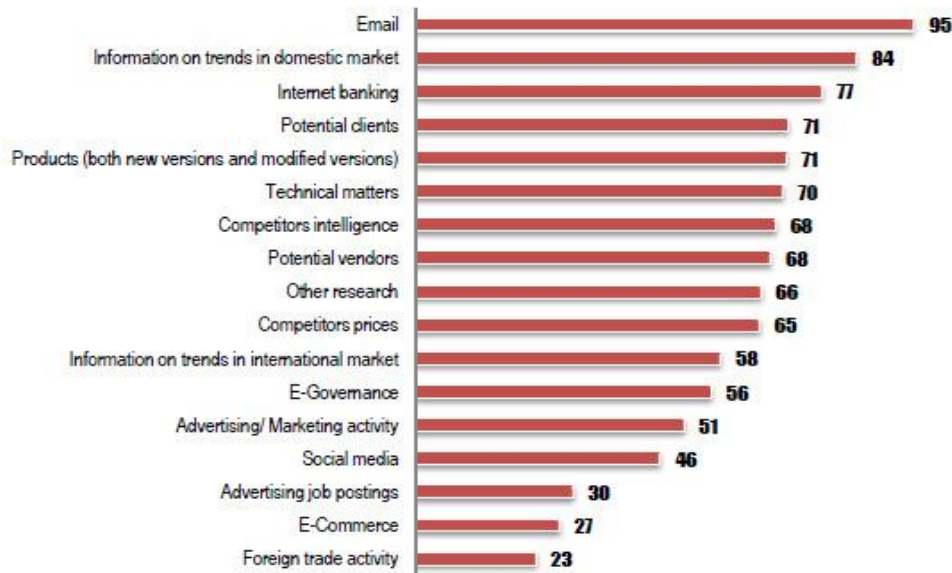
### **Introduction**

The modern economic environment which is highly dominated by globalization, knowledge and information revolution has revolutionized the way business is conducted (Pavic et al., 2007). Internet technology has a direct impact on companies, customers, suppliers, distributors and potential entrants into an industry (Porter, 2001). Although the Internet is a commonly available technology but awareness of its functionality, resources and expertise is required. It is observed that many small and medium enterprises (SMEs) are either not aware of this or do not possess or have ready access to resources needed to make the opportunities potentially available (Alexander 2000). Moreover, it has been found that in spite of exponential growth of IT, the rate of IT adoption by these businesses has remained relatively low (MacGregor and Vrazalic, 2005).

### **Need of research**

Recent survey says that only 5% of Indian SMEs have a Web Presence. 51% of online SMEs use the Web to advertise and only 27% use it for e-commerce. But with 95% of businesses yet to even establish a website, there's a lot of room for growth. The study showed that Internet use was the highest among SMEs in the IT & ITES, tourism/ transportation, chemical products (96%) and pharmaceuticals (95%).

Uses of Internet



Source: <http://www.nextbigwhat.com/web-uses-by-smes-297/> dated 7.10.2015

### Objectives of Study

This research tries to explore internet adoption and use of ICT among SMEs in India. The main objective of this research is to increase academic understanding as well as provide managerial implications.

1. Establish the level of internet and ICT adoption by Indian SMEs
2. Identifying the drivers and barriers of Internet and ICT usages.

### Literature Survey

Emergence of the Internet has allowed Small and Medium sized Enterprises (SMEs) to compete effectively and efficiently in both domestic and international market. Research stated that perceived ease of use and usefulness significantly impact use of the internet for information search TalaiOsmonbekov, et.Al.(2007). Denni (1996) stress every business must bring ICT into their business operation and take advantage of the benefits they offer.

Chong Yee Ling (2001) has identified the factors exerting influence on the adoption of Business-to-Business Electronic Commerce in SMEs. Dedrick et al. (2003), Kohli and Devaraj (2003) and Melville et al. (2004) confirms the positive effect of information and communication technologies (ICT) on firm performance in terms of productivity, profitability, market value and market share. FahriKarakaya, Omar Khalil (2004) found three organisational independent variables – company size, financial condition, and technological readiness – that are believed to influence internet adoption within SMEs. Technological readiness variables were found to influence the overall measure of internet adoption. Manuelli K, Latu S and Koh D (2007) presented a model of IT adoption in SMEs. This research gives the detail model of Factors affecting ICT adoption by SMEs.

Gibbs S. (2007) given, the importance of technology to firm success, it is likely that the business owner's decision to adopt various technologies will be influenced by their networks. A conceptual model presented integrates key adoption attributes (i.e. organisational readiness, compatibility, Perceived Usefulness (PU), Perceived Ease of Use (PEOU) and top management support).

Rafi Ashrafi (2008) investigates ICT infrastructure, software used, driver for ICT investment, perceptions about business benefits of ICT and outsourcing trends of SMEs. The study provides an insight on the barriers for the adoption of ICT. The results of the study show that only a small number of SMEs in Oman are aware of the benefits of ICT adoption. The main driving forces for ICT investment are to provide better and faster customer service and to stay ahead of the competition. Majority of SMEs outsource most of their ICT

activities. Lack of internal capabilities, high cost of ICT and lack of information about suitable ICT solutions and implementation were some of the major barriers in adopting ICT. (Harindranath et al 2008).

Syed Shah Alam, (Feb 2009) examined the relationship between ICT adoption and its five factors which are perceived benefits, perceived cost, ICT knowledge, external pressure and government support. Morteza et al. (2011) by wide literature survey categorized influencing factors of IT adoption in SME's into two main groups which are internal factors and external factors. Internal factors include top management, firm's resources, end users, IT solution itself, and organizational characteristics while external factors comprise external and competitive pressure, external IT consultant and vendors, and government.

KnowledgeChinyanyu (2012) in his Ph.D thesis examined variance model of ICT adoption and suggest internet, websites, fixed-line and mobile phone networks as the most common technologies adopted by SMEs in South Africa to support their e-business operations. Power outage is identified as a major barrier. Government intervention is largely indirect and crucial in areas such as setting up of national ICT policy. Dr.Subrata Das (2012) investigation is an attempt to establish the relationship between SMEs competitiveness and Information Technology Comprehensiveness. This study examines the Information Technology Adoption in North India. The empirical results suggest that Information Technology Adoption is primarily influenced by information exchange with customers, intense competition, Government Incentive Schemes and as well as Enterprises sector, size and age.

### **Research Methodology**

This paper is a conceptual study which will provide results by using universe of studies conducted on small and medium Enterprise. This study is undertaken to consolidate the available information into a Model that can facilitate further empirical studies. A critical analysis has been performed to conclude. ICT adoption provides a low cost yet effective communication tool.

### **Findings**

ICT is defined as 'any technology used to support information gathering, processing, distribution and use' (Beckinsale and Ram, 2006). The definition taken in this paper classifies ICT into information technologies, telecommunications technologies and networking technologies (Nicol, 2003). The reasons, which are encouraging the consumers to shift from traditional to ICT are Speed which ensures a lot of saving of time, wide range of information, followed by Cost reduction opportunity. But still its full potential is not utilized.

Every business must bring ICT into their business operation and take advantage of the benefits they offer. The Factor affecting ICT adoptions among SMEs are following:

SN.	Drivers	factors Affecting ICT adoption Among SMEs	
		Internal Factors	External factors
1.	Increase the speed of business (time saving)	Top management Attitude and commitment	Competitive Environment
2.	Excess to information and knowledge	Financial Resources	Government support & policy
3.	Potential to reduce cost in business correspondence	Staff qualification, training and involvement	Customer
4.	Effective business management	IT solution and application (Complexity)	Supplier
5.	Create business opportunity	Organizational Characteristics	External IT consultant Availability

The major barriers are lack of appropriate Government intervention (national ICT policy, infrastructure, distribution of information, capacity building and power supply), focused on operational matters with few extensions and perceived high cost of Technology in adoption of ICT in SMEs.

### **Conclusion**

The paper has discussed drivers, factors and barriers of ICT adoption among SMEs in India. Future research can be done on different sectors, testing empirical and comparing similar study in other countries. The paper will benefit valuable insight to Marketers and policies makers of SMEs. This study will benefit the body of knowledge by addressing challenges faced by SMEs on ICT adoption in their business process because SMEs contribute significantly in economy.

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