

A Study on Implementation of IT Tools in SME'S in India

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Abstract

This research investigates the factors that influence the IT adoption in Small and Medium-sized Enterprises (SME), lists the benefits that SMEs see by adopting commonly used business applications, arrives at a potential framework/method for SMEs to enhance IT adoption and also suggests on ways of using analytics for business growth. Though SMEs in India is main focus of this work, the literature study included and takes cognizant of the facts that helped or helping SMEs in other countries to adopt IT to remain competitive and enhance efficiency that are also applicable in Indian context

Keywords: Information System; Information Technology; Adoption process; small and medium sized enterprises

Introduction

As per Indian Ministry of Micro, Small & Medium Enterprises, Micro, Small and Medium Enterprises (MSME) contribute nearly 8 percent of the country's GDP, 45 percent of the manufacturing output and 40 percent of the exports. They provide the largest share of employment after agriculture. (Published on the homepage of Ministry of Micro, Small & Medium as of May 17 2014). Particularly Small and Medium-sized enterprises (SME) are the nurseries for entrepreneurship and innovation. They are widely dispersed across the country and produce a diverse range of products and services to meet the needs of the local markets, the global market and the national and international value chains.

There is a steady growth in the number of SMEs in India and the 2013 estimated number is 48.8 million of them. This steady growth is because there are many firms that prefer to remain in this sector, away from stifling regulations and taxes. Notwithstanding the fact that they do not move up to become large sector, given their role in economic growth, there is necessity that SMEs need to be competitive and need to play beyond their local markets and potential compete in global sector.

Information technology

Information Technology (IT) is the application of computers and telecommunications equipment to store, retrieve, transmit and manipulate data, often in the context of business or other enterprise.

In a business context, the Information Technology Association of America has defined information technology as "the study, design, development, application, implementation, support or management of computer-based information systems".

Small and medium enterprises

Small and medium-sized enterprises (SMEs) or small and medium-sized businesses (SMBs) are companies whose personnel numbers fall below certain limits. Small enterprises outnumber large companies by a wide margin and also employ many more people. SMEs are also said to be responsible for driving innovation and competition in many economic sectors.

The Government of India has enacted the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 in terms of which the definition of Small and Medium Enterprises is as under:

Enterprises engaged in the manufacture or production, processing or preservation of goods as specified below:

- i. 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.
- ii. 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.

Information technology in SMEs

The use of information systems and ERP makes the organizations agile and helps in responding rapidly to the changes in market dynamics. According to [1] by adopting appropriate technology, a business organization can reach greater heights of competency, see improvements in its performance and ensure that its competitive advantage is retained.

If India is to attain its aspiration of double-digit growth rates and a reduced poverty ratio, greater focus on the well-being of the small and medium enterprises (SME) sector becomes a necessity. The challenge is that small and medium businesses in India are still struggling to understand the benefits of information systems due to lack of infrastructure, initial funding and education [2].

At the same time, SMEs are often more agile and closer to their customers than their larger counterparts, which gives them a business intelligence advantage, says BI expert Howard Dresner in their report released in 2013.

SMEs have not given due attention for developing their effective strategies in the past. They are localized in functioning. On export fronts SMEs face many constraints due to lack of resources and poor capabilities in exploiting the IT enabled international market. For

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sustaining their competitiveness, they have to benchmark their assets, processes and performance with respect to the best in industry [3].

Literature Review

IT has several advantages for SMEs but due to some issues and factors, the IT adoption is very low in SMEs. Some are discussed here.

Competitive advantage of using IT

IT can be defined as an infrastructure that is capable of electronically converting, storing, retrieving and managing data and information, in the form of user interface graphics, text, voice and video. There are several purposes for which IT can be used: amongst others, for value creation, problem solving as well as for the purposes of communicating [4].

Porter and Miller [5], highlighted that there are three ways in which IT can impact competition among business organizations, whereby the adoption establishes new business, develops competitive advantage and finally, it totally changes the industry structure. Competitive advantage flows from organizational capabilities and resources that are rare, valuable, non-substitutable and imperfectly imitable.

Some sources of competitive advantage which can gain from IT implementation include having the best-made product on the market, delivering superior customer service, achieving lower cost than rivals, having a proprietary manufacturing technology, having shorter lead times in developing and testing new products [1].

IT has a positive effect on a business organization's performance in the area of profitability, market share and value in reducing cost of operation, increasing speed of delivery by suppliers, better coordination of organizations within the value chain, closer and personalized relationship among employees and trading partners, communication with customers, as well as large market share and new business opportunities, access to knowledge and market information. It is a tool to facilitate new ways towards management and organization of business [4,6].

Several studies have revealed that SMEs are able to provide customers with more personalized service in comparison to the larger business organizations, giving the SMEs a competitive advantage. Hence, SMEs are able to compete globally, given the closer relationship between the supplier and customer as well as improved efficiency with the help of IT [7].

An Intuit study in collaboration with the Government of India's Ministry of Micro, Small and Medium Enterprises (MSME), the National Institute of Entrepreneurship and Small Business Development and the National Small Industries Corporation listed following benefits as part of survey questionnaire.

- Increased Efficiency
- Speed: Faster Than Manual
- Better Control of Finances
- Increased Accuracy
- Increased Professionalism
- Increased Competitiveness
- More Financial Savings
- Improved Internal Communications

- Improved Quality of Deliverables
- Better Tracking of Business Performance
- Improved Customer Service
- Easier Customer Acquisition
- More Informed Decision-making
- Efficient Human Resource Management
- Easier Remote Access

Influencing factors

Within this study and as suggested by Table 1, influencing factors are categorized into two major categories: internal and external factors.

Literature review classification

- IT reduces cost and gives multiple benefits (as shown in the above topics).
- IT helps gain a competitive advantage.
- SME's have poor IT knowledge and infrastructure that causes hindrance in adoption process.
- Less interest of top management causes poor adoption of IT.
- SME's do not prefer going to IT consultants due to time, cost, security and security.
- Poor knowledge of end users causes problem, and SMEs cannot provide training programs due to costs and time unavailability.
- Policies of government and legal factors also cause hindrance in adoption process, specifically on SMEs part, due to lack of their knowledge about policies and reasons behind those

Literature gap

The research is differentiated from literature survey in following ways:

- A sample of IT tools list for SMEs is mentioned.
- Subsequently this list can be used to prescribe the road map based on their current investment in IT.
- All the references used in this project concentrates on a particular area of research for example influencing factors, decision making process, benefits of IT etc. This paper binds all the information together as SMEs prefer overview. They do not want complicated or incomplete information.
- The vital few causes which results in poor IT adoption is identified and suggestions for next step is given based on this for the growth of the organization.
- Views from market study and survey results from professional advisory firms considered.

SL NO	INTERNAL FACTORS	EXTERNAL FACTORS
1	Top management (CEO)	Competitors
2	Resources	Government
3	End users (Employees etc.)	Customers and suppliers
4	Computer applications (IT solutions)	External IT consultants and vendors
5	Organizational behavior and characteristics	

Table 1: Influencing factors.

CATEGORY	APAC	EMEA	NORTH AMERICA
Small Sector			
No. of Employees	1 to 99	1 to 99	1 to 99
Revenue	USD 1 to 10 m	USD 1 to 15 m	USD 1 to 50 m
Medium Sector			
No. of Employees	100 to 999	100 to 999	100 to 999
Revenue	USD 10 to 500 m	USD 15 to 500 m	USD 50 m to 1 b

APAC: Asia-Pacific. EMEA: Europe, Middle East and Africa.

Table 2: SME sector across the globe.

SDS	OFFICE TOOLS	ERP and CRM	HRM	ABS	CMS
BMC Remedy	MS Word	SAP	HumaNET	Blesta	CMS Matrix
ServiceNo	MS Outlook	PeopleSoft	Orange HRM	DHCart	Drupal
Zendesk	MS Excel	Oracle	HRStop.com	E-Gold	Concrete5
Get satisfaction	MS Power point	Salesforce.com	Web Human Resource	Hosters panel	Do Net Nuke editions
Assistly	MS Access	Uthera ERP	Oracle Human Resource	WHSuite	Designer CMS
FreshDesk	LSS word pro	Sugar CRM	-	CRM Bill	Direct News
NanoRep	LSS 1-2-3	Amdoes	-	BluePay	Pligg CMS
Help juice	Autocad	Tally	-	2 Check out	Cyn.CMS
User Voice	LSS Approach	Optify	-	Fresh Books	Current CMS

Table 3: Different types of IT tools.

- Forecasts benefits and presents advances in technology as a business case for SME to benefit from IT
- To propose an IT adoption framework based on maturity level of SME to attain growth.

Problem Definition

Although IT is beneficial for SMEs as it provides competitive advantage, reduces cost, increases customer satisfaction etc., IT adoption in SMEs is very poor. SME's have limited resources (managerial resources, financial resources etc.) which stop them from implementing new technologies. The adoption rate is low also because the SME's are unaware of the IT software and solutions available in the market in addition to negative attitude of employees towards adopting new working culture. SME's believe going to IT consultants is a waste of time and money. Moreover, they feel insecure to go to IT consultants.

Research objectives

The aim of this research is to

- To achieve a better understanding of current level of IT adoption in SMEs through explicitly exploring and identifying factors influencing IT adoption process within SMEs in India.
- To identify internal and external issues pressuring and persuading SMEs to adopt IT solutions.
- To discover a conceptual framework that demonstrates the determinants of IT adoption process in SMEs through review of prior literature including concepts, methodologies, theories, empirical research and case studies related to IT adoption among SMEs.
- To categorize and elucidate the key factors that directly or indirectly, as well as positively or negatively impact the process of IT adoption in SMEs.
- To conduct a sample survey of IT tools that are used by SMEs where tools are listed from business survey and literature review.
- To show the percentage of companies that are satisfied by benefits of these IT tools and the reasons behind not adopting or partially adopting IT.

Approach or Methodology

This work was carried out through following activities:

- Current scenario and real need identification is made.
- Study existing relevant research.
- Identify the influencing factors that affect IT adoption process.
- List the sample IT systems and ERPs available that are near fit to SME sector.
- Questionnaire was developed to gauge the current level of knowledge, preparedness or adoption of IT based on the responses or questions for measuring the level of IT adopted by the SMEs, IT softwares used by them, knowledge of employees and attitude of SMEs towards adoption of IT.
- Using this information a generalized but progressive IT adoption framework and paths have been recommended.
- Make Suggestions on related activities in making IT adoption easier for SMEs.

The flow chart shown below shows the approach used in this research.

Current scenario

SME sector in India: The SME is the second biggest employment providing sector (after agriculture). Over 75,000 enterprises are part of India's SME community. These contribute over 10% of GDP makes it a significant contributor sector for India. The definition of SME sector varies slightly across the globe Table 2.

Composition and characteristics of SMEs: Many SMEs in India are family run businesses. There are also first generation entrepreneurs typically start as SME. SME's generally have limited access to the market information and suffer from globalisation constraint. Management

technique like- financial analysis, forecasting and project management are rarely used by SME's [8].

SME's characteristics:

- Tendency to employ generalists than specialists.
- Reliance on short term planning.
- Informal and dynamic strategies and decision making process.
- Lack of standardisation of operating procedures.

IT tools available for SMEs: There are different types of IT tools available in market for any industries. Cloud computing services also provides tools on internet which can be used as ay and use basis. It is also known as on demand software or software -as-a-service (SAAS) Table 3. Different types of IT tools available are:

- a) Customer Support or Service Desk Systems (SDS)
- b) Office production tools
- c) Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM)
- d) Human Resource Management Systems (HRM)
- e) Automated Billing Systems (ABS)
- f) Content Management Systems (CMS)

Data Collection and Analysis

Benefits of using IT

The benefits are taken into account from literature survey and are asked to SMEs through business survey and all SMEs were satisfied with these benefits. They agreed that the data is correct and IT has following benefits:

- iii. Making storage of data easier.
- iv. Increase in market share
- v. Improve capturing of customer needs
- vi. Increase efficiency of process
- vii. Reduce cost
- viii. Reduce inventory
- ix. Get information about employees
- x. Make competitive strategies

With respect to data analysis, averages of these benefits (ratings) are calculated, if the average rating is greater than or equal to 3 (standard rating), then the benefit is said to be satisfactory or SMEs has agreed that they found this beneficial for their business.

The average of ratings for the benefit "Making storage of data easier" is 4.4 and percentage of satisfaction is 93.33%. Similarly, graph for other benefits shown is prepared and percentage of satisfaction is calculated and it was found that all the benefits are satisfactory.

IT tools

Based on the data collected from SMEs, the graph shows the types of tools used by these SMEs in percentage. This will identify the next step for IT adoption based on the level which they have adopted till now.

As per the survey study , the level of IT adoption by SMEs is poor. As IT is beneficial for all organizations but due to limited resources and other reasons shown in next topic they are restricted to low level.

For next step, those who do not use IT can start with office production tools. As shown in the graph, Office Production Tools are the most beneficial and most efficient tools in IT followed by ERP and CRM.

Reasons for not/ partially adopting IT

Although IT is very beneficial for any organization, the level of IT adoption is very less by SMEs in India. The reasons or factors for low level of IT adoption can be categorized under two categories, internal factors (which can be controlled by or which is a part of organization) and external factors (which cannot be controlled by organizations)

Influencing factors: Within this study and as suggested by Figure 1, influencing factors are categorized into two major categories: internal and external factors.

• **Internal factors:**

Top management:

SME's mainly have simple and highly centralised structures with the chief executive officers (CEOs) in which, in most cases, owner and chief manager are one and the same person. The factors influencing are:

- i) CEO innovativeness, both in general and IT-specific terms [9].
- ii) Perception of and attitude toward IT adoption such as urgency and costs [10].
- iii) Top management support and commitment towards IT adoption [11,12].

Resources:

SMEs have always been differentiated by and are suffering from their restricted access to particular resources as compared with large organizations [13]. Factors influencing are:

- i) Financial resources which are known as key SMEs performance requirements [14].
- ii) Implementation of IT and its components requires long term investment.
- iii) In-house IT experts [11].

End users:

For most of organizations, employees are considered as significant assets, and along with the role of owner/manager, seriously affect the firm's survival and success depends on them Figure 2. The factors influencing are:

- i) User's knowledge of IT.

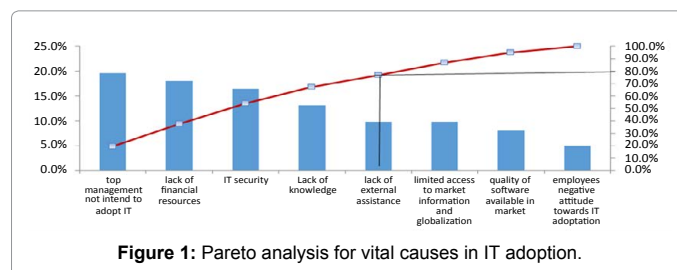


Figure 1: Pareto analysis for vital causes in IT adoption.



- ii) Training among users.
- iii) Employees (as the users of IT) satisfaction with IT.
- iv) User's participation and involvement [11,15-17].

Computer applications (IT solutions):

Process of IT adoption within SMEs depends upon type of IT, process compatibility, popularity of IT which is being used, and cost of IT. The factors influencing are:

- i) Age of implemented IT and their types.
- ii) Quality of software in the market.
- iii) Cost of IT [11].
- iv) IT risks [16].
 - Implementation cost higher than expected.
 - Technical systems performance is significantly below the estimate.
 - Incompatibility of the system with selected hardware and software.

Organisational behaviour and characteristics: Lack of definition or strategy of the purposes of IT adoption will lead to project failure. The factors influencing are:

- i) The organization type [18].
- ii) Size of the business (for eg. Turnover and number of employees), [12].
- iii) Culture of the organization [11].
 - **EXTERNAL FACTORS :**

Customers and supplier: For the growth of organization it is

important to maintain good relationship with customers and suppliers (Southern and Tilley, 2000). The factors influencing are:

- i) Pressure for IT adoption [19].
- ii) Customer demand to adopt IT [20].

External IT consultants and vendors: There is a body of research that show that the assistance of external IT expertise, consultants and vendors and their respective quality is one of the most important aspects of the IT adoption process within SMEs. The factors influencing are:

- i) Services availability and support.
- ii) Consultant effectiveness and competence [11,15].

- To find the vital few reasons and trivial many reasons, Pareto analysis is used which is based on 80-20 principle. As shown in the graph below:

According to Pareto chart, the vital causes or reasons for low IT adoption are:

- Top management does not intend to adopt IT.
- Lack of financial resources.
- IT security.
- Lack of knowledge about IT.
- Lack of external assistance.

These are the reasons which hold SEMs at a certain position and do not let them grow as fast as large organizations. These factors do not let SMEs compete globally, which reduces the growth rate

Conclusions and Suggestion

Conclusions

IT is critical for SME growth, and can increase competitive strength, efficiency, effectiveness and cost reduction. IT adoption in SME'S show that approximately most of the failures were the result of one or more of the subsequent reasons:

- 6.25% of SMEs do not use IT.
- Office production tools and ERP and CRM are most effective tools and used by 68.75%.
- Inappropriate connection of adopted IT to the enterprise strategies.
- Inadequate realization of organizational issues.
- Inadequate realization of end users necessities.
- Lack of required resources (knowledge, skills, financial, managerial).
- Particular characteristic of organization, culture and family involvement in business.
- Lack of external assistance.
- SMEs are worried about IT security.
- Negativity towards adopting new technology, saying it is less useful and costly.
- To save time and money SMEs do not prefer external consultants and vendors.
- The vital causes or reasons for low IT adoption are:

- Top management does not intend to adopt IT.
- Lack of financial resources.
- IT security.
- Lack of knowledge about IT.
- Lack of external resources.

Suggestions

Based on the above conclusions the next step suggestion can be given to SMEs as following:

- SME'S must realize their need for IT and proportionate advantage of IT for their business, they ought to judge costs and benefits associated with utilizing IT.
- SME'S need to consider what predictable impacts could be imposed by adopting IT on their business situation, customers, suppliers, competitive position as well as their competitors.
- External assistance is imperative for successful IT implementation in SME's. Since, their businesses are generally suffering from lack of IT knowledge, skills and training resources.
- The identified frameworks from literature on IT adoption and decision making that is included in this paper provide guidance on few key enablers for IT and SMEs can benefit from this information.
- The level of IT adoption should be increased. For example if any SME has already adopted office production tools they can go for next step. I.e. E-Commerce or ERP and CRM as they further enhance growth of SMEs.
- SMEs can seek for elimination of the vital causes which affects IT adoption process. This will help them grow at a faster rate.

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