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Factors That Deter Small and Medium Enterprises from Adopting ERP

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ABSTRACT

Existing literature on Enterprise Resource Planning (ERP) systems reveals that large enterprises across the world have successfully adopted ERP systems to cope with the dynamic market scenario. It also reveals that while Small and Medium Enterprises (SMEs) face challenges similar to their larger counterparts, there are many barriers to its adoption by SMEs. An ERP implementation project is highly resource intensive, requires a long implementation time frame and is costly. SMEs operate with limited resources and have limited expertise in IT. These reasons make acquiring an ERP a very difficult task and therefore SMEs stay away from them.

Traditional ERP studies have focused mainly on large organizations. The gaps in literature indicate the need to understand the SME perspective. The author, via an empirical study, has identified the factors that inhibit SMEs in developing countries like India from adopting an ERP. This paper presents the findings of this study, which would be useful to ERP vendors to better understand the needs of SMEs. SMEs would be benefitted by understanding how to overcome these inhibitions and embrace ERP systems when needed.

Keywords: *ERP, SME, Barriers, non-adoption, developing countries*

1. Introduction

An ERP System is a packaged business software system that lets a company automate and integrate majority of its business processes, share common data and practices across the enterprise and access information in a real-time environment (Deloitte Consulting, 1999). Adopting and implementing an ERP system is a lengthy and costly process requiring investment in software and related services such as consulting, training and system integration. Often, the ERP project is the biggest Information Technology (IT) project in terms of investment worldwide (Gattiker and Goodhue, 2005).

Given the scale of the implementation, ERP systems were first adopted by large enterprises the world over. The large size of the organization along with factors like the ability to experiment with enterprise systems before adoption, greater top management support among others were predicted to be the characteristics of organisations who would become adopters of enterprise systems (Ramdani et al., 2009). This indicates that ERP system adoption is better suited to large enterprises.

SMEs, though smaller in size, are faced with the same challenges that their larger counterparts face. They are a major contributor to the economy of any country. Prior to globalization, the operations of SMEs were restricted to local markets. But today, owing to the Internet, their arena has widened. They are no longer insulated from the effects of globalization. Therefore, it is imperative for SMEs to continuously improve their competitiveness and assert themselves in the global market place (Shehab et al., 2004). IT in general and ERP in particular, is necessary amongst SMEs to remain competitive in the global scenario and collaborate with foreign counterparts in their supply chain (Basu et al., 2012).

While large enterprises are well equipped to handle a project of the scale of an ERP system implementation, SMEs may not be due to the resource poverty that characterizes them (Levy and Powell, 2000). SMEs lack the competence to understand how they can use ERP to support their processes (Juell-Skielse, 2006). While SMEs want to adopt an ERP system to help them cope with the dynamic market scenario, the high cost and implementation complexity creates some resistance (Koh and Simpson, 2007; Haddara, 2011).

There are many SMEs who have not implemented an ERP system, though they may need one. It is necessary to understand the SME perspective in this context. In this empirical study, the author has investigated the reasons for non-adoption of ERP systems by SMEs in a developing country like India. This study is part of a larger study undertaken to understand the opportunities and challenges of implementing an ERP system at SMEs in India.

The rest of this paper is organized as follows. In section 2, the global and domestic context of SMEs is presented. In section 3, the literature review is presented which leads to the objectives of the research. Section 4 describes the research objectives and the methodology used, while section 5 presents the empirical results and analysis. The paper ends with the conclusion and avenues for future research.

2. Global and Domestic Context of SMEs

There is no standard definition for Small and Medium sized Enterprises (SMEs) that is accepted worldwide. In some countries SMEs are defined in terms of the number of employees (Employee strength) while in others they are defined based on annual turnover. Sometimes a combination of employee strength and turnover is used to define an SME and at other times it is based on investment in plant and machinery (excluding land and buildings). Thus, most of these definitions are based on

- Employee size or headcount
- Total Revenue and
- Balance sheet size

Table 1 summarizes the definition of an SME used by different countries across the world.

Table 1

Country	Employee Size	Revenue	Source
Australia	<200	$20 million	Ossai and Lucky, 2012
Canada	<500	$25 million	http://www.pch.gc.ca/progs/ac-ca/index_e.cfm
China	<2000	CNY300 million	Kotelnikov, 2007
European Commission	<250	€50 million	Turnbull, 2006
Germany	Same as the European Commission		
Japan	<300	¥50 million	Kotelnikov, 2007
Singapore	<200	S$100 million	Deloitte, 2015
USA	No standard definition		Ward, 2016

In India, there was no uniform definition of an SME until 2006. In 2006, the Ministry of Micro, Small and Medium Enterprises (MSME), Government of India, enforced the Micro, Small and Medium Enterprises Development Act (MSMED). As per this act, SMEs are defined based on their investment in plant and machinery (source: Ministry of MSMEs) for the manufacturing sector and investment in equipment for the service sector as shown in table 2. This is the definition used to choose the companies for this study.

Table 2

Term	Operational Definition
SME (Definition given by the Ministry of Small and Medium scale Enterprises, 2006)	For the **manufacturing** sector, • A small enterprise: Investment in plant and machinery is more than Rs. 2.5 million but less than Rs. 50 million • A medium enterprise: Investment in plant and machinery is more than Rs. 50 million but less than Rs. 100 million. For the **service** sector, • A small enterprise: Investment in equipment is more than Rs. 1 million, but less than Rs. 20 million. • A medium enterprise: Investment in equipment is more than Rs. 20 million but less than Rs. 50 million.

Though policy makers and researchers consider SMEs as a single group, they are a heterogeneous group with diverse needs and objectives. Some are dynamic and flexible, with the power to innovate and a vast range of diversity, while others are traditional family owned businesses or start-ups who are striving for life. Though they are individually small, collectively the sector has emerged as a dominant player in most economies of the world, be they developing or developed countries.

As per government sources, there are more than 36.1 million SMEs in India. SMEs are a critical engine of growth for India's economy. With the Indian economy likely to become a $5 trillion economy by 2025 (Narayan, 2016), the government is providing a major impetus to the SME sector considering their significance as they foster entrepreneurship and innovation, are a major contributor to the GDP (Gross Domestic Product) and create jobs.

On the export front, SMEs face many constraints due to lack of resources and poor innovative capabilities. For sustaining their competitiveness, they have to benchmark their assets, processes and performance with respect to the best in industry (Rajesh et al., 2008). To meet these challenges, organisations need leaders with vision and determination who can harness the power of Information and Communication Technology (ICT) to survive, thrive and beat competition.

3. Literature Review

It is a well known fact that ERP systems are not simple to implement and hence would pose a huge challenge to any organization, big or small, intending to adopt it. It is for this reason that in the last two decades, researchers across the world have focused on understanding ERP implementations so that it can serve as a guide for future implementations. Majority of the researchers have focused on implementation and the problems and issues surrounding it (Verville, 2000).

Many researchers have worked on determining the critical success factors for implementation of an ERP system (Al-Mashari et al., 2003; Akkermans and Van Helden, 2000, Nah et al., 2001; Kamhawi, 2007). Considering the criticality of the ERP implementation decision, several researchers have studied the evaluation and selection of an ERP system (Baki and Cakar, 2005; Verville and Halingten, 2003; Verville et al., 2005; Ziaee et al., 2006). Majority of these studies have focused on large enterprises.

In the last few years, there has been a spurt in the number of ERP system implementations at SMEs in India and abroad. This has been encouraged by the availability of cheaper hardware and software (Gable and Stewart, 1999) and ERP vendors shifting their attention to SMEs due to the saturation of the ERP market for large enterprises (Everdingen et al., 2000).
The subject of IT adoption amongst SMEs and the associated barriers has been of interest to academicians and researchers worldwide. Welsh and White (1981) opined that due to limited access to resources like skills, time and money, SMEs are ill-equipped to face the turbulence in the market place. This resource poverty, coupled with a lack of knowledge (Laukkanen et al., 2007) has been found to impede IT adoption (Antlova, 2009) and to negatively impact Information System (IS) implementation success and growth (Cragg and King, 1993) in SMEs.

With the spurt in the number of ERP implementations at SMEs, academicians have shifted their attention to ERP adoption by SMEs. Though SMEs have been implementing ERP systems during the last few years, they are not faring as well as their larger counterparts and are unable to achieve their goal of overall improvement (Sun et al., 2005). This has been of interest to industry experts and academicians.

Several studies have been taken up to understand how SMEs implement an ERP system (Buonanno et al., 2005; Everdingen et al., 2000; Gable et al., 1999; Haddara and Zach, 2011). They have paid attention to the critical factors responsible for success and the benefits that an SME can derive from an ERP implementation. Few studies have taken up the case of SMEs in the Indian context (Upadhyay et al., 2009; Ganesh et al., 2010).

There are a few researchers who have worked on understanding the reasons for non-adoption of ERP systems amongst SMEs (Elbertsen et al., 2006; Kamhawi, 2008; Wieder et al., 2006). Some of them highlight the disadvantages of adopting ERP (Elbertsen et al., 2006) while others have focused on the alternatives to adopting ERP systems (Light et al., 2001; Wieder et al., 2006).

Ahmad and Siddiqui (2013) and Buonanno et al. (2005) reported that SMEs find ERP system cost to be a major barrier. Kamhawi (2008) opined that in a study conducted in Bahrain, the large capital investment required for ERP, was a statistically significant reason for ERP system non-adoption by SMEs.

Chan (1999) reported that SMEs are unwilling to allocate their limited resources to an ERP project as it is expensive and takes a lot of time. In addition, SMEs have limited expertise in IT (Levy and Powell, 2000) and lack the skills to implement ERP in-house (Laukkanen et al., 2007; Ashrafi and Murtaza, 2008). Due to this, they need to train existing staff or rely on external consultants to help them (Valkokari and Helander, 2007) with the implementation.

Top management commitment is a critical success factor for ERP projects. Since owner managers play a key role in decision-making in SMEs (Antlova, 2009), their lack of knowledge about IT and its benefits is a major barrier to IT adoption (Arendt, 2008). This coupled with lack of knowledge about ERP systems and inadequate IT infrastructure (Ahmad and Siddiqui, 2013) keeps SMEs away from ERP systems.

In general, researchers have opined that SMEs may be unaware of policies and IT solutions that are designed for them. Harindranath et al. (2008) shared that most SMEs in England are largely unaware of existing policy instruments designed to help them in the adoption and use of IT. In India, awareness about ERP systems amongst SMEs is less than 35% whereas over 80% of large enterprises are aware of it (Tiwari, 2014). Very few SMEs know how they can benefit from an ERP system, or, if it is right for them (Tiwari, 2014).

With the saturation in the large enterprise segment, vendors have been offering solutions for SMEs (Deep et al., 2008). But the multitude of vendors and their ERP offerings confound SMEs and they find it a herculean task to find the right ERP system (Leyh, 2014). These reasons make IT adoption a tough decision and hence many SMEs avoid the associated risks by ignoring IT (Gemino et al., 2006). They are also deterred by the failure stories that they have heard.

4. Research Objectives and Methodology

Based on the literature reviewed, it was understood that studies on the factors that deter SMEs from adopting ERP systems in a developing country like India are very few. Therefore, this study aims to understand the reasons for non-adoption of ERP system by

SMEs in India. With the view that SMEs are heterogeneous and not homogeneous (Laukkanen, 2007) as assumed by most researchers, the researcher also aimed to find out if these factors are different for small and medium enterprises. Thus, the **objectives of this research are to**

1. **Examine the varied reasons that are deterring SMEs in India from adopting ERP systems.**
2. **Investigate if these factors are different for small and medium enterprises.**

Based on these objectives, the **following research questions were raised:**

Research Question 1: What are the barriers to ERP system adoption by SMEs in India?

Research question 2: Are the barriers different for small and medium enterprises?

The survey methodology was adopted for this study. For this study, a previous research by Kamhawi (2008) was considered. Based on the interactions with SMEs who had not implemented an ERP system and the literature reviewed, a questionnaire was designed to address the factors that inhibit ERP system adoption. The questionnaire so designed was pilot tested at six SMEs to see if the instrument provided accurate and consistent information. Experts in the area further validated it. The instrument was improved upon based on the feedback received from experts.

The questionnaire comprised of two parts: general data and questions pertaining to reasons for non-adoption. A 4-point Likert scale (with 4 for strongly disagree, 3-disagree, 2-agree and 1 for strongly agree) was used to measure the responses of the respondents. Ten reasons were provided for non-adoption of an ERP which are explained later. While problems like inadequate IT infrastructure and poor internet penetration did figure in the literature reviewed, since all the SMEs were located in tier-1 and tier-2 cities, they did not face these problems. It was also observed that all the owner managers were tech-savvy and thus, this was not a reason for ERP system non-adoption. Hence, these factors were not considered.

For this study, 304 companies who fitted the definition of an SME as per the Ministry of Micro, Small and Medium Enterprises (MSME) bill of 2006 were chosen from the Confederation of Indian Industry* (CII) member directory for Karnataka (2009), India. From these, 100 SMEs who had not implemented an ERP system agreed to participate in this study. A link to the questionnaire, which was hosted online on www.SurveyMonkey.com, and a covering letter were mailed to the owner managers of all the SMEs.

Majority of the respondents, who were either owner managers or IT managers, chose to answer the questions in an interview as opposed to filling the questionnaire online. At the end of this process 44 responses were received. Out of these, 36 complete responses were available for further use. The remaining 8 responses had to be discarded, as they were incomplete. The data thus collected, was analysed using SPSS and MS-Excel. The Chi-square test was used to test the significance of difference between groups of frequencies concerning reasons for non-adoption of ERP. Contingency Coefficient test was employed to measure the association between small and medium enterprises and their responses to reasons for ERP non-adoption.

It was observed that nearly 66% of the respondents were small enterprises. There was a large representation from the manufacturing sector (80%) and a smaller number from the service sector. Majority of the respondents had a turnover of less than Rs. 100 million and a headcount of less than 250.

5. Results and Discussion

5.1 Barriers to ERP System Adoption by SMEs

Based on the literature reviewed, the pilot study and the survey, the following factors were found to be deterring SMEs from adopting ERP systems:

1. Lack of skilled resources (A1)

SMEs generally do not have people with prior ERP implementation experience. Barring a few, most of the employees may not even be graduates. They find it very difficult to attract and retain talented employees as they are in high demand. Considering that the salary at an SME is not very attractive, people tend to work for a short duration of time before moving on to more lucrative jobs. This scarcity creates a negative impact on SMEs.

An ERP system implementation requires a team of skilled resources with prior ERP implementation experience. A lack of it, can be a deterrent to adopting an ERP system Without the right resources, implementing and using an ERP system will be an uphill task and SMEs do not feel confident to undertake this project.

But as can be seen in table 3, majority of the respondents of this study (23) felt that this was not a barrier for them. They had at least one employee who had prior experience of implementing and using an ERP system. They had a strong IT department comprising of 2-5 members. Thus, they did not lack skilled resources to undertake an ERP system implementation.

2. Fear of losing flexibility (A2)

SMEs operate in a highly dynamic manner. Processes can be changed to suit customer preferences. They are very flexible and can respond quickly to changes due to characteristics like less number of employees, customers and orders. They have unstructured processes which have evolved over several years. This may provide them with an edge over their competitors on account of the knowledge and experience of the employees.

An ERP system will impose rigidity which SMEs fear will cause them to lose their flexibility. This will result in a loss of competitive advantage. They will no longer be able to make changes to processes as per customer requirements. Thus, the business operations of an ERP system may be contrary to SMEs practices causing them to use their flexibility, which they hold very dear.

Almost all the respondents (34) agreed that this was a reason for ERP system non-adoption. SMEs believed that they would lose their flexibility if they implemented an ERP system. They said that they did not need an ERP system as their legacy systems served all their current needs. Bringing in an ERP system would impose its own logic and this would interfere with the freedom that they enjoy now. During the interviews some SMEs also stated that they were afraid of losing their uniqueness if they implemented an ERP system. This they attributed to the fact that with an ERP system, everyone would have access to the same system. This may not enable them to differentiate themselves from others. This was reported earlier by researchers (Elbertsen et al., 2006; Wieder et al., 2006). This serves as a major barrier to ERP adoption.

3. High cost of ERP (A3)

An ERP implementation is very expensive. An ERP system implementation requires a huge capital investment for the software, the hardware and the implementation. In addition, there is additional cost incurred on training, change management and retaining the best. There are also several hidden costs, which are revealed along the way. This serves as a major deterrent to ERP system adoption by SMEs (Venkatraman and Fahd, 2016).

This was evidenced in the responses as 97% of the respondent (35) agreed that the cost of ERP was prohibitive. SMEs felt that the ERP systems were too expensive at present. They indicated that they would like to wait for prices to come down before considering an ERP system. Thus, the cost of an ERP system served as a barrier to its adoption.

4. Lack of top management commitment (A4)

Since an ERP implementation takes a long time and is highly resource intensive, top management commitment is very essential. Right from the start of the project, they must show their support and provide the best people for the project. This is a factor that is critical for the success of the project.

But, if the top management is unaware of the benefits of an ERP system, they may disagree to provide the necessary resources and may consider the project as a waste of time. They may consider it to be just another software project and allocate funds but disagree to spare the best people for the project. Given the length of time an implementation takes, the top management may lose interest and stop supporting the project. This can become a barrier to ERP adoption (Kiarie and Wanyama, 2017).

Most of the respondents (26) disagreed that this factor was a barrier as in all these cases the owner managers were tech savvy. They had prior knowledge of an ERP system and its benefits. Hence, they were very supportive of the idea to implement an ERP system. In some cases, it was the owner who had suggested that they implement an ERP system. Thus, this factor was not a barrier to the adoption of an ERP system.

5. Lack of awareness (A5)

SMEs may not be aware of an ERP system and what it can do for them. They may not be aware of the solutions that exist which can benefit them. Though their current systems may not be meeting their needs, they may still continue to use them for want of an alternative. Most SMEs believe that an ERP system is meant for large enterprises and hence, will not serve their needs. This can be a deterrent to ERP system adoption and use by SMEs.

The respondents were divided in their agreement on this factor. One half (18) agreed that their awareness for ERP systems was low and this served as a reason for not adopting an ERP system. The other half expressed the fact that they were aware of ERP systems and hence it was not a barrier to its adoption.

6. Fear of failure (A6)

Many enterprises who had implemented an ERP system, failed to derive any benefit from it. Some were even driven to bankruptcy. These failure stories have deterred SMEs as they do not have the safety net that their larger counterparts do. They are afraid that their lack of awareness coupled with a lack of resources will lead them to a failed implementation, which will spell doom for them. Thus, they do not want to adopt an ERP system.

Thirty of the respondents agreed that the fear of failure was a big deterrent. They had heard of failures amongst their competitors. They had seen them struggling with their ERP implementation efforts. This did not give them the confidence needed to take the decision to implement an ERP system. Hence, they did not want to take the risk of adopting an ERP system.

7. Lack of IT infrastructure (A7)

Since SMEs may not be tech-savvy, they may lack the IT infrastructure necessary for an ERP implementation. Considering that they do not have the required infrastructure and would therefore need to invest in it, SMEs may decide to put off the ERP adoption decision for later. Thus, this too can be a barrier to ERP system adoption.

Among the respondents, 23 of them disagreed on this factor being a barrier to adoption. They felt that they could definitely upgrade their existing IT infrastructure to accommodate an ERP implementation. It would call for additional investment. But, they were ready for it.

8. Need to change processes and organizational structure (A8)

An ERP system implementation requires business process reengineering. This calls for the current processes to be changed to the way ERP dictates it should be performed. It will also require a change in organizational structure (Raymond and Uwizeyemungu, 2007). SMEs are wary of change of such a high order. They immediately decide to resist any such change and decide to stay away from ERP.

Twenty-nine respondents agreed that the high degree of change required dissuaded them from implementing an ERP system. They believed that an ERP implementation would call for a complete change in their way of working. They were so used to their current processes that they could not think of a different way of working. They were not convinced of the benefits that an ERP system would provide and felt that the changes that it would require were far too risky. Hence, they would rather not adopt and ERP system.

9. Highly complex nature of an ERP system (A9)

SMEs believe that ERP systems come with too many features and this confounds them. They added that most of these features may not be used by them but would have to be paid for. SMEs said that they required only a few features and want a system that is simple and easy to use. Current ERP systems they said were too complex and required a lot of training even to do simple operations. This was a factor for non-adoption.

Majority of the respondents (35) agreed that this factor was a major deterrent. From table 1 below, we can observe that a vast majority of SMEs (97%) quoted the complexity of ERP systems (A9) to be a factor for non-adoption. They said that an ERP system was not easy to use and required a lot of training to master. Further, they would have use only for a few features. Earlier research corroborates the fact that most enterprises use no more than 43% of an ERP system's features (Aberdeen Group, 2006).

10. Time consuming ERP implementation (A10)

An ERP project is the biggest software project that an organization undertakes. Use of resources for such a long time impacts the core business of the organization. SMEs are concerned that they will not be able to spare their best resources for such a long duration. This acts as a barrier to ERP adoption.

Twenty nine of the respondents agreed that this factor acted as a barrier to ERP adoption. They expressed their concern about the duration of the project and wished that the implementation time could be shortened. This they said would allow them to deploy their limited resources on other tasks which required attention. They could then consider adopting an ERP system.

Table 3: Reasons for ERP non-adoption by SMEs (Survey conducted by the author)

Size		A1				A2				A3			
		SD	D	A	SA	SD	D	A	SA	SD	D	A	SA
Small	F	0	13	11	0	0	1	23	0	0	0	24	0
Medium	F	2	8	2	0	1	0	11	0	1	0	10	1
Total	F	2	21	13	0	1	1	34	0	1	0	34	1
		Cc=0.381,p=0.047; X2=15.167, p=.001				Cc=.256, p=.284.; X2=60.500, p=.0001				Cc= .324 , p=.120; X2=60.500, p=.0001			
Size		A4				A5				A6			
		SD	D	A	SA	SD	D	A	SA	SD	D	A	SA
Small	F	0	16	8	0	1	12	11	0	0	3	21	0
Medium	F	1	9	2	0	3	2	7	0	0	3	8	1
Total	F	1	25	10	0	4	14	18	0	0	6	29	1
		Cc=.272, p=.237; X2=24.500, p=.0001				Cc=.369, p=.059; X2=8.667, p=.013				Cc=.285, p=.204; X2=37.167, p=.0001			

Size		A7				A8				A9			
		SD	D	A	SA	SD	D	A	SA	SD	D	A	SA
Small	F	0	13	11	0	1	5	18	0	0	1	23	0
Medium	F	1	10	1	0	1	0	11	0	0	0	12	0
Total	F	1	23	12	0	2	5	29	0	0	1	35	0
		Cc=.390, p=.040; X2=20.167 p=.0001				Cc=.278,p=.220;X2=36.500,p=.0001				Cc=.119,p=.473;X2=32.111,p=.0001			

Size		A10			
		SD	D	A	SA
Small	F	0	5	19	0
Medium	F	1	1	10	0
Total	F	1	6	29	0
		Cc=.267, p=.251; X2=37.167, p=.0001			

5.2 Difference between small and medium enterprises

The result of the investigation on whether small and medium enterprises differ in their reasons for non-adoption is presented here. From table 1, we can observe from the contingency coefficient that small and medium enterprises do not differ significantly in the reasons for not adopting ERP systems.

It was observed that majority of the medium scale enterprises were aware of ERP systems. They had owner managers who were tech-savvy and were knowledgeable about ERP systems and its implementation. These enterprises had had a well-staffed IT department and were well equipped with the IT infrastructure necessary to implement an ERP system. Hence, these reasons were not significant factors for non-adoption.

The small enterprises, in most cases, were not aware of ERP systems. Nearly 36% of companies had just 1 person to meet their IT needs. Of the respondents, 10 SMEs (28%) did not have an IT team. These companies, who either had 1 person or no one in their IT team, were found to be small enterprises who had a major difficulty with hiring and retaining talent. They are the ones who said that lack of skilled resources was a barrier to ERP system adoption and use.

These small enterprises also lacked the IT infrastructure necessary. To add to this, the owner managers were not tech savvy. This meant that most of the time it would be one person, mostly the IT head, who would propose that the company implement an ERP system. This proposal would have very few takers because of fear of the unknown compounded by the lack of knowledge. This would ensure that the small enterprises stayed away from ERP systems.

The fear of failure deterred both the small and medium enterprises. Both of them felt that the implementation time is too long. They would like to consider implementing an ERP system it was simpler to use and could be implemented in a shorter duration of time.

Thus, it can be observed that the barriers to ERP system adoption are slightly different for small and medium enterprises. On account of their size, the reasons for non-adoption may be different. But, there is no significant difference in the barriers to ERP system adoption.

Considering the above factors, software vendors offer solutions that SMEs can afford. Earlier research indicates that affordable cost and short implementation time are among the most important ERP selection criteria used by SMEs (Buonanna and Koch, 2001). To meet these requirements, vendors like SAP, Microsoft Dynamics and others have developed affordable and less complex ERP systems like Business One (SAP), NAV (Microsoft) etc.

Software vendors of ERP systems have recently shifted their focus to cloud based systems for SMEs. While cloud based solutions are a viable option for SMEs as this mode of deployment does not have the overheads associated with traditional on premise ERP system deployment, SMEs are not confident of implementing on the cloud (Purohit et al., 2012).

Vendors will need to understand the reservations that SMEs have and work closely with them to meet their needs. They need to win the confidence of SMEs and convince them of the benefits of adopting an ERP system. SMEs on their part need to discuss their problems with vendors to enable them to come up with viable solutions.

6. Conclusion

It is clear from extant literature that successfully implementing ERP systems will become more important for the survival, growth, and competitiveness of many SMEs. Since a large majority of SMEs have close logistic links with their business partners, they would need to adopt an ERP system to collaborate with the foreign partners in their supply chain. This would make it imperative for them to understand about ERP systems and overcome the barriers to its adoption.

The objective of this study was to understand the factors that deter SMEs from adopting ERP systems. For this purpose, empirical data was gathered using the survey approach. The main factors that inhibit ERP adoption were found to be: complexity, cost, fear of losing flexibility, fear of failure, the need to make major changes in processes and a very lengthy implementation time frame.

The study also attempted to find out if the reasons for non-adoption amongst SMEs are different for small and medium enterprises. As evidenced in the study, there was no significant difference between small and medium enterprises in their reasons for ERP non-adoption. But, from the responses it was evident that majority of the medium scale enterprises were better equipped to manage an ERP system implementation when compared to the small enterprises.

To aid SMEs in adopting an ERP system, vendors have to design simple ERP systems for SMEs and make them available at an affordable cost. They have to work hard to convince SMEs of the benefits of ERP and ensure shorter implementation time frames. Winning the confidence of SMEs with regard to implementing an ERP system on the cloud would be another step in this direction. This would ensure that SMEs find it easier to adopt an ERP system and use it effectively.

This study was restricted to SMEs in Karnataka, India and a vast majority of the respondents were from the manufacturing sector. Hence, the findings cannot be generalized. Future research should consider a larger sample across various sectors. Future studies should also focus on ways to overcome barriers to ERP adoption and facilitate easy adoption and use of an ERP system.

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