ABSTRACT

The sky is the limit for the small and medium enterprises today. But climbing up the tree is no easy task. Besides skill, diligence and vision, it requires state-of-the-art Information Technology tools to survive and thrive. There has been a tremendous change in the business environment in the last one decade, and the pace of change still continues to accelerate and corporations around the world seek to revitalize, for success in the 21st century. This paper explores ERP as a mode of strategic development for SMEs. It may tighten management control by bringing a new level of panoptic visibility to SMEs' activities. There is need for finding better alternative to provide full-fledged information solutions without sacrificing facilities, at suitable costs to SMEs. The paper also proposes collaborative ERP on the idea of sharing ERP package by a group of SMEs.

Key Words: Information Systems, Enterprises, Economic Development

Small and Medium Enterprises (SMEs) are the backbone of economic development in many developing countries. But the productivity and financial condition of many of SMEs are very poor. This situation may be due to poor management of the three important resources; viz; Man, Material and Machine. Managing these resources is very important for the development and survival of the organization.

SMEs are increasingly going in for state-of-the-art IT solutions to align their IT backbone with the new business models that are coming in the vogue. But then, to be a world beater world-class software is required. After all if SMEs want to do business with global leaders, who are necessarily technologically sound, they need to be technologically sound as well.

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A benevolent tax regime, fast-shrinking and a world that is increasing begin to get smaller and smaller are factors that such companies, represented by small and medium enterprises need to take advantage of.

The advent of technology that allows companies that don't have base outside India, to conduct business seamlessly with partners and customers outside the country has meant that the horizon of business for SMEs has increased spectacularly. News of Indian companies going global, either by establishing bases abroad, or through acquisition, has become a regular event now. This increasing scope has given rise to a new, burning desire. The desire to grow, beyond what one had dreamt of; but to do that, the same technology that has given access to the world has to be leveraged fully to be able to take complete advantage of the opportunity. And SMEs appear to be aware of opportunity, and the imperative for investing in IT to fuel that growth. “Small and Medium Business don't want to invest in IT to manage their current business. They want to invest in IT to manage their growth.” Quoted A. Srinivas Rao director of SAP India.

Information systems to support the functional units of an enterprise are referred to as Enterprise Resources Planning (ERP) system. ERP is the Kernel that automates and standardizes processes that enable growth. It aims to help the management by setting better business practice and equipping them with the right information to take timely decisions.

While ERP and its earlier versions MRP and MRPII have been in vogue since the 1970's, they were essentially designed in the context of large enterprises and were, thus, a misfit for SMEs. A new breed of mid market ERP applications are addressing precisely their needs and hence there is a clear ground for SMEs to invest in mid market ERP solution.

**SMEs in India**

Though there is no clear distinction between the various segments of industries, they are generally classified into micro, small, medium, and heavy industries. SMEs, both in size and shape are not uniform across the globe. Their definition varies from one country to another depending on economic development and government policies. The commonly used to definitions relate to either the size of employment and quantum of capital invested or fixed assets. Following tables indicates the differentiation of micro, small and medium sectors in India based on capital invested or fixed assets. They also highlight some facts about SMEs in India.

<table>
<thead>
<tr>
<th>Types of Industry</th>
<th>Investment or assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro - Plant And Machinery</td>
<td>&lt; Rupees 2.5 Million</td>
</tr>
<tr>
<td>Small - Plant And Machinery</td>
<td>&lt; Rupees 10 Million</td>
</tr>
<tr>
<td>Selected Sectors</td>
<td>&lt; Rupees 50 Million</td>
</tr>
<tr>
<td>Services - Fixed Assets including Land and Building</td>
<td>&lt; Rupees 1 Million</td>
</tr>
</tbody>
</table>
### Profit of SMEs in India (2001 - 2002)

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated number of small units (Million)</td>
<td>3.46</td>
</tr>
<tr>
<td>Employment provided (Million)</td>
<td>19.30</td>
</tr>
<tr>
<td>Exports (2000-01) (% Billion)</td>
<td>14.8</td>
</tr>
<tr>
<td>Contribution to GDP (%)</td>
<td>6.4</td>
</tr>
<tr>
<td>Share in industrial production (%)</td>
<td>39</td>
</tr>
<tr>
<td>Share in exports (%)</td>
<td>34</td>
</tr>
<tr>
<td>Total No of items produced</td>
<td>Over 8000</td>
</tr>
<tr>
<td>Number of reserved items</td>
<td>749</td>
</tr>
</tbody>
</table>

**Source:** Small Industries Development Organization (SIDO) (2002)

Industry is the lifeline of the economic growth of both the developed and developing countries. In developing countries, the micro, small and medium enterprises are the source of employment, broad-based economic growth and poverty alleviation. The growth and development of SMEs in developing countries can increase poor people's opportunities, security and empowerment.

In India SMEs are consistently contributing to the GDP growth (6.4 per cent), which is about one-fourth of the contribution of the total industry. The growth rate of SMEs at 6.08 per cent per year is ahead of the total industry's growth rate of 2.7 per cent. Every year 130,000 new businesses are introduced in the SMEs sector, creating about 660,000 new jobs.

### Problems Necessitating the Use of ERP

The interdependencies of various functions in an enterprise which are required in order to improve profits and stay competitive are presented in the profit structure diagram below:

**The Profit Structure Diagram (PSD)**

- **Improve Profit and Stay Competitive**
  - Reduce Time from Sale of Delivery
  - Reduce Inventory Cost
  - Reduce Cost of Money
  - Improve Design or Modification Management
  - Improve Sales and Distribution
  - Improve Supply Chain Management
  - Reduce Work in Progress (WIP)
  - Reduce Bills Receivable
  - Improve Cash Flow Management

**Source:** ERP - A Managerial Perspective, Making ERP effective (2002) p. 51
Need For ERP in SMEs

Initially, the developers of ERP focused on the large-scale industries which resulted in a product of very high cost that could not be afforded by small and medium enterprises. But as outsourcing is the order of the day, large industries need to be fully integrated with outsourcing units, which are generally small and medium enterprises. Hence the only automation of information and decision-making activities of only large enterprises cannot serve the requirement of these information system. Supply Chain Management, which is gaining popularity throughout the world, demands complete integration of all the players along the Supply Chain. These issues, along with the tangible and intangible benefits of information system, have forced SMEs to opt for some or the other form of information system. ERP software provides a solution to the strategic development of SMEs as it aims at eliminating the supply chain bottlenecks.

ROLE OF ERP IN SMEs

ERP implementation in SMEs offers the following advantages.

F Elimination of human errors: - errors can be eliminated in data handling i.e., Data transfer and processing in different departments.

F Assisting management in decision making, production planning and can control activities to improve the overall productivity.

F ERP may facilitate obtaining the current market information, e-transactions in order placing, order booking etc. as it is integrated with internet.

F Can help in preparing the rating and ranking charts quickly to analyse the performance of vendors. This lowers cost of production.

Despite the above mentioned advantages, following major constraints are realized during the implementation of ERP in SMEs. They include: - financial constraints, resistance to change, fear of computer jargon and lack of awareness.

Advantages of SMEs over Large Industries in ERP Implementation

The basic characteristics of SMEs, give them following advantages over the large industries;

• Important contribution to nation's GDP growth.
• Job-creators.
• Simple and flexible internal organizational structure.
• Implementation of innovation and new technology is easy and fast.
• A favourable place to develop entrepreneurship skills and fast business culture
• Closer to markets of ultimate customers.
• Quick response to customer needs in an efficient manner.
• Provide jobs to poorly skilled and semi-skilled workers.
• Provide jobs to rural labours.
• Improvements can be implemented quickly since most managers are also owners of the enterprises.
• Managers often work in the factory and therefore understand technical problems and also maintain a cordial relationship with workers which results in cooperation between them.

Market of SMEs Today

SMEs are the real growth segment today, every study done, shows that there is potential for higher growth in SMEs among other businesses. “In India for example, in the pharmacy sector, a patent regime has come up. This provides an opportunity for small pharmacy companies. The small auto component manufacturers have an opportunity to supply to global auto players. In textiles sectors, the removal of quotas has given companies the opportunity to expand their market share globally.” Business Today (August 14, 2005) P. 94

Key Challenges of SMEs

There is need to create business infrastructure to utilize the available opportunities. If a business wants to grow it needs systems to tap that. Among the challenges that SMEs face, include having processes that do not grow as fast as their business.

If you want to adopt best practices through ERP, you need to have your best people on the project. For a small company, that is a major challenge. Other challenges include; efficient financial and capital management, increased business transparency and operational efficiency, and better customer responsiveness. Needless to say, technology can help small companies achieve all these and transform them into world-beaters.

How IT Can Help SMEs to Script A Success Story

The fast growing SMEs segment is the destination of choice for any IT and technology companies. Given a direct co-relation between IT and growth or strategic development, SMEs too are eager to invest in IT systems.

The overall SMEs market size in India for IT products and service is estimated at Rs. 20,000 Crores, according to an IDC study. As SMEs are growing, they are getting more orders and needs intricate IT tools to serve their customers. IT has brought in more transparency in data and information management.

The IT players are targeting small enterprises that expect to double their business over the next few years by offering them customized software solutions that are developed keeping in mind the requirements of SMEs. It is becoming increasingly simple to adopt IT solutions to streamline business, with a whole host to IT services and products being launched by companies specifically for SMEs.
"In January, 2005, SAP launched an ERP solution for SMEs that handles finance, inventory, purchasing and also looks at manufacturing and HR. On February, HP India launched a software for backup and data recovery that would provide the full suite of servers to a small business. Hyderabad based Syscon Solutions came out with a web model to facilitate the use of ERP for SMEs”. The Economic Times (14 February, 2006).

A. Srinivas Rao, Director (SMB), SAP India, on 14th August, 2005, announced the delivery of two solutions for SMEs. "For every small enterprise, we have a solution called SAP Business One. It is a complete solution for companies with revenues less that Rs. 25 crore and includes production, CRM, accounts etc. the solution costs less than Rs. 10 Lakh, means all the core requirements of the company can be implemented in three-to-four weeks." The other solution is a specific industry solution for micro-vertical companies called SAP All-In-One.

Most ERP solutions for SMEs would necessarily be able to scale up along with the business as SMEs don't invest to manage their current business, but to manage growth.

**Importance of Using ERP System**

ERP systems will be opted by the SMEs to achieve the same job but faster, with less duplication and less manual effort, by replacing the current computer and manual system with a more efficient system. The system will help in accurate record keeping, more up-to-date information and integration of the business process and transactions of various departments.

The ERP applications may include easier-to-use order entry, more flexible invoicing, mult_curriency financials, improved inventory control, material requirements planning, basic shop floor control and costing. SMEs can also benefit from web-based ordering and information provision, customer relationship management, advanced planning and scheduling, scheduling to finite capacity, product configuration and balanced scorecard for performance and measurement. ERP facilitates a disciplined execution of the business process, thereby leaving footprint of all details relating to every transaction.

**Issues to Be Considered In ERP Implementation in SMEs**

- ERP vendors looking towards SMEs: - "The IT players are targeting small enterprises that expect to double their business over the next two years by offering them customized software solutions that are developed keeping in mind the requirements of SMEs". The Economic Times (14 February 2006) p.17b

- Identifying the suitable ERP system to fit the organization: - Most ERP solutions for small businesses would necessarily be able to scale up along with the business.

- Focus initially on the top management to acquire complete knowledge of the benefits of ERP: -Dissemination of ERP prospects and consequences. Conducting short-term training programs and also one to two days conference(s) with the main theme of ERP makes managers and owners of SMEs knowledgeable in the field.
• Module by module implementation: - Vendors started selling model by model to reduce the cost and risk for the customers.

Sharable ERP Package for Group of SMEs

As mentioned earlier, due to the exorbitant cost of the present full-fledged ERP, the trimmed versions of these packages are appearing as an alternative solution of SMEs. Hence, there is need for finding better alternative to provide full-fledged information solution without sacrificing facility, and at suitable cost.

Despite the fact that the ERP systems are expensive, same time if ERP vendors want to survive in the market, the cost should be cut down to the level of SMEs. The following two solutions are proposed to solve this problem. First SMEs may choose ERP systems with necessary and important models and secondly, procuring ERP package by a group of SMEs closely associated in their activities and location and shares it like multi users.

Implementation of collaborative ERP needs sharable hardware and software. Sharing of resource with sufficient security has an important role in achieving the dependable collaborative ERP.

COLLABORATIVE ERP

After the procurement of ERP package solution collaboratively, it can be loaded at a central facility from where the required models can be accessed by different companies as shown below;
Client many not require all the modules of the ERP. Hence, the client can be provided with permission to use chosen modules. Access to the main serve and ERP package can be restricted with the help of a user authentication. On accessing the required model of ERP package, the client can work on it separately and create its own database. The data can be protected from external aggression.

Session bean concept of JAVA 2 Enterprise Edition can be established to access the client from the server. The client can access an instance which will be created for that particular request after the connection has been removed. Doing this, the server can permit various clients to participate and use the resource at the same time.

Connection between Client and External Agencies

Client connection to the external agencies can be done through either access of client by external agencies through main server or the direct access of clients by external agencies.

Advantages of Collaborative ERP

The major advantages of collaborative ERP are; Less initial investment on procuring ERP as the group of SMEs shares the investment, User can access the full ERP system, Collaborative package can be a complete solution for all the problems faced by the SMEs currently and It reduces the per user investment.

CONCLUSION

Sense, Respond, Collaborate... these operative words must guide the choices SMEs make today to survive and thrive. In such a dynamically changing environment, speed and adaptability can be potent weapons in the hands of the enterprise.

In-fact surviving in the harsh business environment of today can be likened to surviving in the cruel and unforgiving nature of life in the jungle or more specifically in the Amazonian Rain Forest. Companies that are winning today collect, analyse and respond to information as living being do, in real-time. What is driving enterprises are still real-life issues of costs, profitability and customer retention - issues about surviving in an extremely turbulent and fast-changing environment.

Adaptive SMEs have the smarts to foresee that gearing up for ever-shrinking response time and ever-changing competitive landscape needs more than tweaking their own internal systems. It requires a complete reorientation in the way the organization's information systems are wired. The air is thick with excitement right from the all the way through blue collar to white collar i.e., top to bottom, everyone is awaiting the arrival of the "black magic" i.e., ERP system (latest buzzword in the IT scenario).

If SMEs of today have a penchant to complete, thrive and stay ahead, they have to identify various issues to be dealt with, in order to acquire and implement ERP systems

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successfully. The present work has identified that, choosing ERP systems with necessary and important models or Procuring ERP package by a group of SMEs that are closely associated in their activities and location and shares it like multi users are the two important ways to procure the ERP package at a cost and time effective manner by the SMEs.

Despite the fact that full-fledged ERP are very expensive for SMEs to implement, this paper suggests the trimmed version of ERP packages which are appearing as an alternative solution for SMEs.

Being the backbone of economic development in many developing countries, SMEs should opt for ERP to survive in the current turbulent global market, to receive and react to market needs promptly and perfectly.

Finally, due to globalization the issue of implementation of single global ERP systems should be addressed to encourage the development of collaborative ERP packages.

REFERENCES


