



ERP System Integrated with Cloud Services for Small and Medium Business in India

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Abstract— *Small and Medium Business(SMB's) have been the backbone of Indian economy. Today, India has a total of 48.8 million SMBs, making it as the second largest number of SMBs in world. But Indian SMBs contribute only 17% to the Indian GDP[1]. SMB in India are facing many issues and challenges to survive in global market. Enterprise Resource Planning(ERP) can be considered as one of the efficient solution for SMBs in India to face challenges. The cloud based ERP solutions help SMB to overcome economic concerns. The reduced cost, flexibility, stability of cloud computing can increase the productivity of any organization while simultaneously bring higher profit margins. This paper attempts to provide a practical cloud based simple and efficient ERP solution for all SMBs in India.*

Keywords— *SMB, ERP, Cloud computing, Cloud service, cost*

I. INTRODUCTION

All organisations has loads of information which needs to be stored, managed and tracked. To manage this information and to use it efficiently for the betterment of organisation there is a need of ERP system to be deployed in organisations. Enterprise Resource Planning is used by the organisation to integrate the information of different units of organisation and manage the business. Unlike large organisations SMBs do not have huge data and complex dashboards to be managed[2]. Hence SMBs in India need a simple efficient Cloud ERP to manage the business.

Cloud computing is a way of storing and retrieving data over the internet instead of our computer's hard drive. Cloud Computing is where the resources of organisations are given with higher availability and easier access. Cloud services are provided through service models such as Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) and deployment models such as Private cloud, Public cloud and Hybrid cloud. The main advantages of cloud computing is cost saving- pay for what is used, easy on installation and maintenance, increased storage, highly automated, flexibility, shared resources, backup and restoration.

For a small and medium size business (SMB), the benefits of cloud computing is forcing adoption. In the SMB sector there is usually a lack of time and financial resources to purchase deploy and maintain an infrastructure (e.g. the software, server and storage). In cloud computing, small businesses can access these resources and expand or shrink services as business needs change. The common pay-as-you-go subscription model is designed to let SMBs easily add or remove services and you typically will only pay for what is used [3]. Most of the SMB in India are not aware or not using ERPs due to various reasons, may be cost or complexity. There is a need of a simple but efficient ERP to SMBs in India.

SMBs Cloud ERP integrates every aspects of an organisation like sales, marketing, manufacturing and development. ERP in SMB is used to describe a management of the business software that is used to fulfill the drawbacks of the SMB. SMBs ERP is a SaaS (software as a service) model and incorporates project management, financials, manufacturing, accounting, sales, marketing, human resource management and business management. This paper tries to provide a simple cloud ERP solution software to SMBs in India. We have shown step by step method of integrating all the details of the organisation at a single unit and using it efficiently for the development of organisation in less cost.

II. LITERATURE REVIEW

Dr Subrata Das and Komal Das [1] noted on factors influencing the Information technology adoption in Micro , Small and Medium Enterprises (MSME). They examined there are different enterprises use different IT infrastructure. They examined the MSMEs Information technology Adoption and the influence considering internal and external factors. Internal factors are enterprise sector, age and size while the external factors are information requirements, competition intensity and government incentive schemes. They proved there is a relationship between environmental factors and adoption of information technology. The Information Technology adoption increases with increasing information requirements[1]. And Indian government can opt for the development of e-MSMEs project. To this issue one of the solution which can be provided is ERP to Indian SMBs.

Dr M.P.Thapliyal and Pooja Vashista[4] examined the critical success factors of ERP implementation failure rate among the SMBs. The study also aimed at identifying the contribution of ERP to the business field of organisation. It provided a suggestion to SMB in India while choosing ERP implementation in the organisation[4].

Cloud approach and traditional approach of ERP systems were compared by two hypotheses method[5]. The study compared the average annual per-user costs of ERP systems in both traditional and cloud ways. The results included the comparison of the average total costs of using cloud based and traditional ERP systems by small scale industries. The study proved that the cloud based ERP systems are of less cost than on-premises ERP systems. It presented qualitative approach towards the cost effectiveness of cloud computing over traditional systems[5].

There are many ERP systems available today. There need to be factor in selecting the best process of implementing the ERP system. Pooja Madkan [6] found the important factors influencing while considering the right ERP system, and also presents various implementation strategies.

There are Big bang, phased or parallel strategies which the organizations can implement. This paper presents the various pros and cons of each strategies. The selection of ERP systems depends on individual requirements of the company and the strategy along with several critical factors like technical and organizational. To consider the best ERP system indicators and metrics needs to be considered while simulating situation of the company [6].

III. PROPOSED SYSTEM

All Indian SMBs are facing many issues and challenges in the global market. Many of the SMBs are trying hard to survive. One of the solution is to implement an efficient ERP in the organisation. An ERP can contain many modules like project management, financials, manufacturing, accounting, sales, marketing, human resource management, supply chain management and business management. But for a Indian SMB such ERP tends to be a complex system.

Starting with the overall view of the model, the proposed ERP model contains units like CRM, HRM, finance, sales, product management, services, emails and Agenda as shown in Fig 1.



Fig. 1. ERP Model

A. Access Levels

Considering the different users who will be using the system we can differentiate into a hierarchy of Super admin, admin and employees. Super admin will have control over the entire ERP. They can approve the admin accounts or their leave requests. Employees will be having access to few modules. Employees will submit the request to admins and admins will submit to super admin as shown in Fig 2. All are given with different login IDs to login into ERP system.

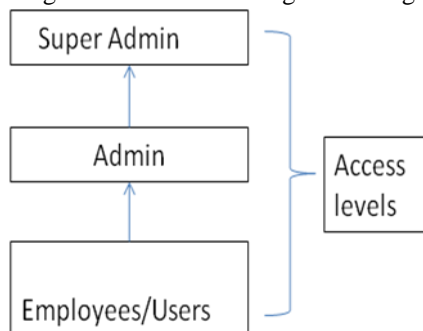


Fig. 2. Access Levels

B. Modules

The entire modules in the ERP are interconnected and of equal importance.

CRM: Customer relationship management supports an integrated and collaborative relationship between a business and its customers. Customer life cycle includes acquiring the customer data enhancing and retaining it. By CRM we can

identify the best customers and can track customer contacts. This will help in customization and personalization of products and services. It includes tracking customer personal details, customer orders and shipment details.

HRM: Human resource management focuses on the people of the organisation. It helps in recruiting; motivating employees for better results. This will include having the leave tracker through which employees can apply leaves, reimbursement through which employees can apply for reimbursement for trips or any industrial visits. HRM focuses on all the personal information of the employees.

Finance: Finance module gathers and maintains financial data.

Product Management: This module tracks the products developed in organisation with all the features of it.

Emails: 89% of marketer's use email marketing as it is simple to execute. Any information that needs to be reach the customers or clients can be mailed out easily.

Agenda: Any event within an organisation needs to be tracked and notified. This module helps to set events and invite employees or the clients for same. Notification can be sent before the scheduled meetings to the invites.

Services and Sales: Growth of an organisation can be measured by its profit. Hence business analysis and statistics of the sales is essential. The services can include the ERP support services which are provide to the clients or the customers by the ERP system.

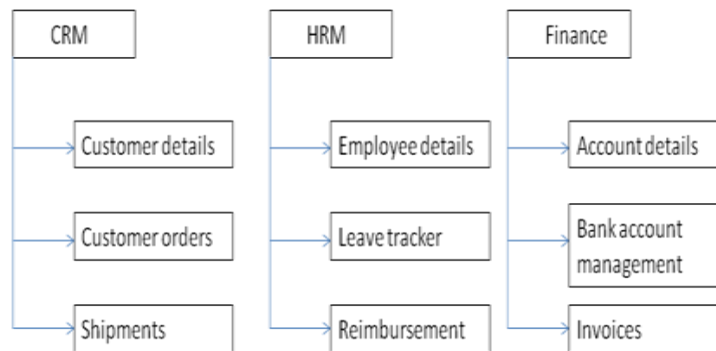


Fig. 1. CRM, HRM, Finance modules

C. Deploying in the cloud

ERP is Software as a Service (SaaS) cloud service model as shown in Fig 4. Cloud computing is an advanced IT outsourcing model, which allows organisations to use a pool of third-party hosting IT resources and applications as services through the web, without physically holding these computing resources internally [8]. The study confirmed that when advanced cloud technologies are used to deploy ERP systems, companies can expect to receive a range of new benefits that they cannot generally obtain from traditional on-premise ERPs. The ERP model can be deployed in any of the deployment models like private, public or hybrid cloud.

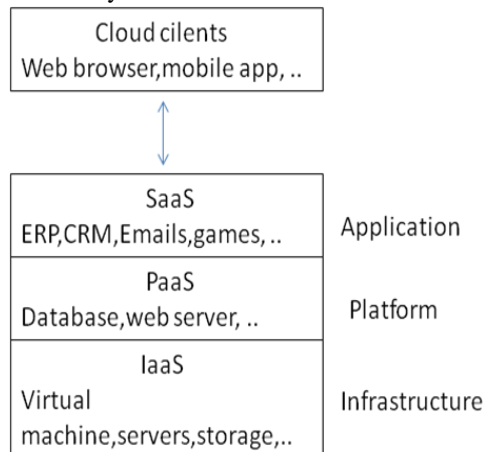


Fig. 4. Cloud Service Model [7]

IV. CONCLUSIONS

Many SMBs in India are either unaware of the ERP systems or they are using traditional ERP system. Cloud computing service based ERP systems provide required IT resources with reasonable cost. The combination of developing a simple and efficient cloud computing service based ERP for SMBs in India is of great use. The study of this research provides a cloud based (Software as a service model) pay per use ERP system to the SMBs in India. Information from all the units of the organisation are collected and used efficiently to provide higher cost margin to organisation.

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