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An Analysis upon Various Challenges Occupied In Implementation of Cloud ERP System

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Abstract – ERP provides businesses flow management and includes manufacturing, accounting, sales and customer relationship management. The new ICT technology, cloud computing, offers an alternative for businesses to conduct ERP. The traditional ERP implementation methodology involves various processes and procedures, which constitute the conditions or means for formulating the actual implementation of ERP projects. It is a time-consuming project. Cloud ERP is then a very good proposition for a start-up, and is simple to deploy, organization need not to bear additional server and other dependent costs. It is also easy and quick to implement an ERP to a business organization. However, on cloud ERP, the challenge of data security, business profit, Internet accessibility, and the total cost become initial issues for businesses to choose a fit one. This study provides a framework for businesses to adopt the cloud ERP.

With the advent of Cloud ERP systems, a question of determining the state of such systems regarding customization and configuration ability arises. As there are only a few literature sources partially covering this topic, a more comprehensive and systematic literature review is needed.

Cloud computing is a set of services that provide infrastructure resources using internet media and data storage on a third party server (i.e. Datacenters). SMEs are said to be the lifeblood of any vibrant economy. They are known to be the silent drivers of a nation's economy. SMEs of India are one of the most aggressive adopters of ERP Packages. Most of the SMEs have adopted the traditional ERP Systems and have incurred a heavy cost while implementing these systems. This paper presents what are the challenges while implementing the ERP cloud on demand solution in an organization.

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INTRODUCTION

Every organization is in a global world where all the businesses are very much familiar to use information communication technology (ICT) for processing daily work . Cloud computing now is a virtualized ICT resource and dynamically reconfigurable to meet the specific needs of the adopting organization. The Cloud computing enables enterprises to unleash their potential for innovation through greater intelligence, creativity, flexibility and efficiency, all at reduced cost. Some cloud software are widely accepted and implemented by organizations. They include customer relationship management (CRM), such as Salesforce.com, Microsoft CRM, and Human Resources, such as ADP, Ultimate Software Group, PDS. Now the next generation of ERP (Enterprise resource planning) has been seeing a high level of interest for organizations.

Cloud ERP offers businesses speed of implementation and lower costs of entry. It is the shortest possible route to a new ERP system. One of the main advantages of cloud ERP is the low cost of entry. No need to purchase expensive equipment or make sure that you have sufficient infrastructure to handle the system. Simply downloading a software application onto computers and allow a hosting company to provide the service. Despite widespread interest in adopting cloud ERP, many organizations are "flying blind" with respect to making them secure, potentially putting their operations, intellectual property and customer information at risk . In this study, an approach is recommended by taking advantage of both the outsourcing process and the implementation process of traditional ERP, firms might have a conceptual approach to apply cloud ERP.

Traditional ERP implementation methodology, one hand, involves various processes and procedures, which constitute the conditions or means for formulating the actual implementation of ERP projects. The top management of the company must participate as a control factor in each phase of an implementation and provide appropriate conditions for the ERP implementation. Balanced interactions between a consulting company and the top management of a company lead to the optimizing of the ERP implementation. Apart from the implementation process, the fully control management on data and functionality are the discrepancy between traditional ERP and cloud ERP. Cloud ERP provides non-control for adopting organization on the

version of the system. It is kind of easier for business but limits the specific/ customized function.

There is one more issue, on the other hand, in terms of data security. Security is a vast issue for ERP. Cloud ERP vendors will provide security to their cloud, application and database separately. Security and encryption may be provided by the different vendor to make a reliable system . Companies still have been concerned that putting financial and operational information in the cloud increases the possibility of exposing sensitive data to hackers and outside entities.

Cloud computing gives businesses more control and flexibility over the technology they deploy and the way they deploy it. It helps organizations reduce costs and focus resources on gaining strategic advantage. While deployment strategies differ, it is critical that an organization‟s infrastructure is managed as a utility made up of secure, scalable and standards-based building blocks of integrated IT resources from storage to servers and network management tools . In this study, an approach to implement cloud ERP for organizations is proposed and discussed.

Enterprise Resource Planning System (ERP) is integrated information system with centralized database, which supports main business processes across organization. These systems are among most complex software solutions ever built, and are equally expensive. Traditional SaaP (Software as a Product) on-premise ERP systems imply significant investment in hardware infrastructure and purchasing software licenses. In addition, implementing ERP system in enterprise is costly, time-consuming, high risk process that extends over several years, and it often requires business process reengineering. This is supported by as they summarize key reasons not to implement ERP: high cost, high capital investment, long implementation, limited IT resources, concerns over integration with legacy application, inflexible licensing model, upgrading issues, long ROI time, and success is never assured. These are some of the reasons why during years such systems were accessible only for large companies, and even they treated ERP acquiring as a top priority capital investment. Small and medium enterprises (SMEs) simply didn't have such vast financial, time or human resources to take advantage of ERP benefits.

However, with the advent of Cloud computing technology and accompanying service business models, chances are finally shifting towards SMEs. Although ERP systems in cloud environment solve or mitigate a number of previously mentioned ERP issues, some issues still remain. One of these issues is customization issue. Preliminary research on Cloud ERP systems topic showed that customization in cloud potentially presents even a greater challenge than in on-premise ERP systems, and that it makes sense to conduct further research.

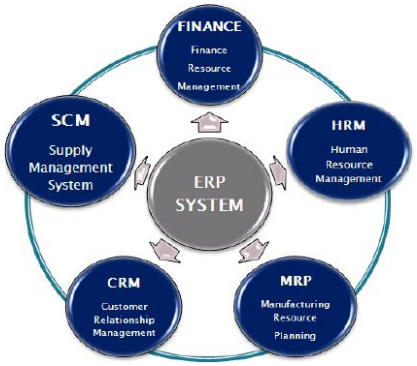
ERP software is intended to provide enterprise wide solution for all business activities with single application and single data repository, but today ERP is headed towards another direction.

The change which ERP software seems to adopt in near future is the Cloud ERP. ERP solutions like HRM, CRM, SCM, Financial management etc with complete and easy integration facilities and the future form of ERP is cloud. ERP solutions inclined and equipped with more and more ecommerce facilities and tools. The availability of this ERP has opened up gates for the large companies to the global markets and in order to attract more and more user‟s future.

ERP cloud computing, on demand and SaaS were all introduced in order to capture mid-size and small sector companies by providing economical and easy to use solutions. The time and money involved with on-premise ERP software scared SME for opting for ERP solutions despite of its huge benefits, with these solutions minimum IT infrastructure is required and very less time is needed for implementation, this gives SME companies an ideal solution to utilize ERP benefits for growing and expanding their business. Such offers with more eased out licensing models and facilities are expected in future to attract more and more small and midsize buyers.

Strong data security features and advanced ways of keeping back up of the user's data will also come up to increase trust and credibility of such solutions even in the organizations. To deploy the ERP system has three ways that is onpremise, on-demand (SaaS) and hosted. Purchasing and implementing traditional ERP system (on-premise) is always costly and difficult job for any organization and involves a great risk and consume more time. Implementing traditional ERP means deploying new infrastructure, purchasing servers, hardware and software thus it is always a costly affair for any organization.

The typical ERP system framework is shown below:



There are many IT companies who are in the Cloud ERP and few known IT companies are Salesforce, Microsoft, TCS, Ramco Systems, etc. TCS Cloud ERP is for the Manufacturing, Retail, Education and Wellness. Changing business dynamic, increasing competition, and globalization constantly shape the manufacturing space. Enterprise needs to produce quality products at optimal prices, for which you need to enhance product development. Integrating Information Communication and Technology (ICT) initiatives with business helps in achieving through seamless operations. Giving new opportunities by connecting extended supply chains and extracting more value from the product lifecycle, they help them to achieve the cost-efficiency.

ERP SYSTEMS IN CLOUD

Offering various services at different layers is a major determinant of Cloud systems. This paradigm has gained such a momentum in a past few years, a term "anything as a service" or "everything as a service" (also known as XaaS) is coined. However, there are three types of services that are dominant in offerings of Cloud providers: Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) . Since Cloud providers offer ERP systems as ready software solutions to their clients, this falls into SaaS category of Cloud services.

Cloud and SaaS technology brought new possibilities which began to be utilized to overcome some of traditional ERP system drawbacks. Enhanced business model ("pay-per-use", "pay-as-you-go") with significant cost reductions, technical breakthroughs (virtualization, XaaS, responsive Web applications…) that are improving performance, availability, user experience, are some of these possibilities. According to , reasons for adopting cloud technology in enterprise are: reduction of hardware and license costs, lower TCO (Total Cost of Ownership), transforming capital expenses (CapEx) to operating expenses (OpEx), no entry barrier, easier upgrading, easier implementation, increased scalability and maintainability, reduced requirement for IT department and IT personnel.

McCrea also states several reasons for going with a SaaS solution: leaner operation, greater utilization of resources, scalability, improved communication with customers and vendors, and cost structure. Saeed et al. state several motives for Cloud ERP adoption: flexibility for business innovation, faster time to market, allows users to concentrate on core business, scalability, low capital expenditure, better support, reduced IT costs, automatic updates etc.

Beside obvious advantages of Cloud ERP systems, there are also several potential drawbacks and challenges. According to Salleh et al. these are: security issues, flexibility, customization, ownership of data, provider "lock In", etc. McCrea also states several drawbacks to a cloud-based ERP: security concerns, system reliability, and system performance. Hofman reports several trade-offs to which customers should be prepared: security, interoperability and lock-in, Absence of Service-Level Agreements, Performance Instability, Latency and Network Limits, No Scalable Storage, Innovation impairment.

Among other issues, the issue of customizing Cloud ERP system to meet client's specific needs arises. Cloud ERP providers offer systems that are based on standard workflow, business best practices or most common way of doing business. Although this standardization has its own benefits, these are primary the means by which providers are increasing the number of potential customers. However we must face the fact that every enterprise is unique, and so are the requirements they have for software that supports their business processes. Johnson supports this claiming that many companies customize their business processes trying to achieve better performance and efficiency. Attempting to roll back these processes to conform to standards can result in loss of competitive advantage. Although most Cloud ERP providers claim better innovation as one of benefits of Cloud ERP systems, Hoffman argues that cloud can actually impair the ability of enterprises to innovate. He claims that in order to innovate, enterprises must tailor ERP systems according to their unique needs. In the end, you achieve a competitive advantage by being different and better than your competitors, and not by conforming to same workflow.

CLOUD ERP

One of the main advantages of cloud ERP is the low cost of entry. Businesses don"t have to purchase expensive equipment or make sure that they have sufficient infrastructure to handle the system. They simply download a software application onto your computers and allow a hosting company to provide the service. Cloud ERP also has very low IT support requirements. The physical hardware is kept at the

hosting company, so businesses don't have to worry about testing the system on a regular basis and making sure that all of the equipment is in working order.

The ERP hosting company performs this service for its customers. On the negative side, on-demand ERP may not necessarily integrate with legacy systems. This can be a significant problem if your office uses a lot of old computers. If businesses have obtained a dedicated cloud service then you should be all right, but a shared system probably won"t have that capability.

Another drawback about on-demand ERP is that it is fully reliant on the internet to function. If your wireless router should malfunction or internet provider be unable to offer service for some reason, you will lose access to all of your ERP data until the system is restored. Many organizations today are turning to the cloud ERP systems in increasing numbers. There are many reasons why they are choosing the cloud. These are the reasons we hear most often :

- Do not want to buy the servers and hire the IT resources.
- Becoming more complex, and challenging to manage.
- Organizations have complex ERP system need something easier and more economical.
- Top management doesn"t want to spend it on an ERP system.

Above reasons might lead organization adopt cloud ERP, some other reasons keep them away from ERP. Some problems have need to notice for adopt cloud ERP.

PROBLEMS ON DEPLOYING CLOUD ERP

To better understand how organizations are securing their information assets in a cloud computing environment, Ponemon Institute sponsored by Symantec, conducted a national survey named „Flying Blind in the Cloud: the State of Information Governance" in 2010 . The survey was completed by 637 U.S. IT security practitioners and focused on the following issues:

- Organizations" use of cloud computing services.
- The importance of cloud computing in IT, and data processing objectives.
- Policies and procedures to protect sensitive information in the cloud.

The major findings of this study include:

- Few organizations take proactive steps to protect their own sensitive business information with cloud computing vendors.
- Organizations are adopting cloud technologies without the usual vetting procedures
- Employees are making decisions without their IT department involved.
- In most organizations, large gaps exist between which people are most responsible for vetting or evaluating cloud computing vendors, and which people should be most responsible.
- Moreover, only 20 percent of organizations reported that their IT security teams are regularly involved in the decision-making process for allowing the use of cloud services.

METHODOLOGY

The research methodology will consist of the critical comparative analysis of the existing ERP solutions available with SaaS Model, and counter the challenges faced by the IT Companies as well as User organization during implementation and deployment/Roll Out of ERP Solution on SaaS Model. This would include collection of actual facts/figures and case analysis of IT companies and user organizations that have taken initiative of implementation and using of ERP on SaaS Model.

Secondary data: The Secondary data was collected using:

a. Internet: Websites of most of the ERP providing software's using SaaS technology and related website were visited and most of essential data and information were collected via this method.

b. Journals: White papers from emerald Journal were used to collect data.

c. News Papers: Business Standard daily business newspaper was also used as a source for secondary data collection.

d. Magazines: The CTO Forum magazine, Business Week

CHALLENGES FOR ERP CLOUD

One of the most important challenges ahead is that clouds will always be compared to local machine in the time of usage. It is important for the user to know what are the gains of shifting to the cloud. Here is a list of issues that ERP cloud computing is currently

facing: Customization of Cloud ERP is the big challenge.

Following are the current challenges in the implementing the ERP clouds based in an organization are:

- Difficulty of extracting data from the cloud
- Data security issues and lack of confidence
- Legal issues and liability
- Issues related to the Elasticity Complexity.
- Issues related to Technological aspects as of installing, testing etc.
- Issues as the consistency and performance of the ERP cloud based
- Overall Monitoring, Analysis and Building Trust in the implementation of the ERP cloud based.
- Issues related to Mobility and provisioning
- Issues of the budget
- Customization issues

Challenges in the context of SME‟s in implementing the

ERP cloud based they faced:

- Awareness – there is a low awareness among the SMEs till now, this is the big challenge and issue for the vendors to give the services of the ERP cloud based to the SMEs.
- Perception – there perception is that the ERP is only meant for large companies, industries that owe the large capital, profits and the main problem is the complexity of the ERP cloud based.
- Approach to implementation
- Cost
- Limited resource

CONCLUSION

Cloud computing technologies may seem like a relatively new concept because of the rapid-fire adoption of late, but they are actually an improvement on existing concepts that have been present in business for some time. ERP is among the more logical choices to maintain in a hosted environment because of the added levels of control and security that business will be able to implement.

Is the cloud ERP right for any organization? There's no one-size-fits-all scenario. To answer it, some factors should be evaluated. They are resource availability, functional requirements, The main goal of this paper was to determine a current research state on Cloud ERP customization topic, and to reveal potential challenges and issues.

The cloud services market in India will see significant growth during the next five years. However, this is highly dependent on cloud services providers meeting enterprise user concerns on issues ranging from pricing, to availability guarantees, to security. We could, therefore, see future forecasts revised significantly up or down. SaaS heralds an alternative approach to empower organizations with the provision of business impacting IT solutions through a web based delivery model and it can be deployed rapidly and eliminates the need to invest in infrastructure and ongoing software maintenance costs that traditional applications require.

REFERENCES

D. Johnson (2009). "Customizing ERP on SaaS and Cloud Platforms," ERP Cloud News, 27-Oct-2009.

Jaiswal M.P, Vanapalli. G. (2005). Enterprise Resource Planning Textbook, Publisher Macmillan Publishers India.

M. B. Motalab and S. A. M. Shohag (2011). "Cloud computing and the business consequences of ERP use," International Journal of Computer Applications, pp. 28-31.

Mather T., Kumaraswamy S., Latif S. (2009). Cloud security and Privacy an Enterprise Perspective Textbook, publisher O. Reilly Media Inc.

Ponemon institute (April 7, 2010). Flying blind in the cloud: the state of information governance.

S. Jia (2009). "Integrating Conventional ERP System with Cloud Services," Master Degree, Stockholm University, Stockholm.

S. L. Saini, D. K. Saini, J. H. Yousif, and S. V. Khandage (2011). "Cloud Computing and Enterprise Resource Planning Systems," presented at the World Congress on Engineering 2011, London, UK, vol. 1.

S. Shukla, S. Agarwal, and A. Shukla (2012). "Trends in Cloud-ERP for SMB's : A Review," IJNIET, vol. 1, no. 1, Jul.