

SaaS AS A BUSINESS DEVELOPMENT TOOL

SaaS as a Business Development Tool for MSMEs

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ABSTRACT

Micro, Small and Medium Enterprises (MSMEs) are considered as the drivers of a country's economy. The main advantage of the sector is that it offers high employment potential at a low capital cost. The MSME sector has shown admirable innovativeness and adaptability to survive the recent economic downturn and recession. Information and Communication Technology (ICT) has proved as a major tool to automate the operations of this sector, which is necessary due to the availability of limited manpower resources. One of the recent and a break through advancements in the field of computing is cloud computing that helps MSME to reduce their capital expenses on IT to a greater extent, with its Pay-as-you-go (PAYG) model of working. This also helps them to leverage the latest technology without any requirement of expertise as the IT infrastructure and services are managed by the third parties and the organizations are free to focus on the business activities. This paper throws light on the financial aspects of involving cloud in the business activity by MSMEs. Financial consideration is important for this sector as they always work on shoestring budget. This gives detail about the different cloud applications available for the MSME along with their Return On Investment (ROI). As most of the MSMEs are focused on the software applications, Software as a Service (SaaS) model of the cloud computing is the main thrust of the paper.

Keywords: Cloud Computing, MSMEs, SaaS, Total Cost Ownership (TCO), Return On Investment (ROI)

INTRODUCTION

Micro, small and medium enterprises (MSMEs) have been globally considered as an engine of economic growth and as key instruments for promoting equitable development. It plays a vital role in the economic and social development of a country. The major advantage of the sector is its high employment potential at low capital cost. The labor intensity of the MSME sector is much higher than that of large enterprises. MSMEs constitute more than 90% of total enterprises in most of the economies. They are credited for employment growth and are also responsible for a major share of industrial production and exports. In India too, they play an essential role in the overall economy. They have a record of consistent higher growth rate when compared with the overall industry sector. The sector has shown admirable innovativeness and adaptability to survive the recent economic downturn and recession (Dun & Bradstreet, 2012). According to MSME Annual report (2012), MSMEs in India account for more than 80% of the total number of industrial enterprises and produce over 6000 value-added products. They have a huge range of products from the traditional to the latest hi-tech items. In terms of the financial value, the sector accounts for 45% of the manufacturing output and 40% of the total export of the country. MSMEs employ different category of the workers and most of them are mainly wage-earning workers or unskilled workers. MSMEs are often classified by their number of employees and/or by the value of their assets. The size classification varies within regions and across countries relative to the size of the economy and its endowments. It is important to note that there is a minimum as well as a maximum size for SMEs (Lukcas, 2004). They often focus on immediate actions to be taken rather than focusing on making strategic plans and this is mainly due to the tighter budget. Small budget, less liquid funds in hand and high sensitivity to market volatility are the constant prevailing characteristics of MSMEs and offer big constraints to their management.

According to the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006 the Micro, Small and Medium Enterprises (MSME) in India are classified in two broad Classes:

- (a) **Manufacturing Enterprises:** This is the category of the enterprises engaged in the manufacturing, processing or preservation of goods pertaining to any industry specified in the first schedule to the industries (Development and regulation) Act, 1951. The Manufacturing Enterprises are usually classified in terms of the investment in Plant & Machinery.
- (b) **Service Enterprises:** These are the enterprises engaged in providing or rendering of services and repair activities. They are also classified in terms of the initial investment.

These two groups are further divided into micro, small and medium enterprises based on their investment amount as given in table 1. The figure 1 shows the percentage of contribution of three major categories of MSMEs in financial year 2011-2012 (www.dcmsme.gov.in).

Table 1. MSME Classification

Manufacturing Enterprises	
Enterprise Type	Investment Limit
Micro	<25 Lakh rupees
Small	> 25 lakh rupees and < 5 Crore rupees
Medium	> 5 Crore rupees and < 10 Crore rupees
Service Enterprises	
Enterprise Type	Investment Limit
Micro	< 10 Lakh rupees
Small	> 10 lakh rupees and < 2 Crore rupees
Medium	> 2 Crore rupees and < 5 Crore rupees

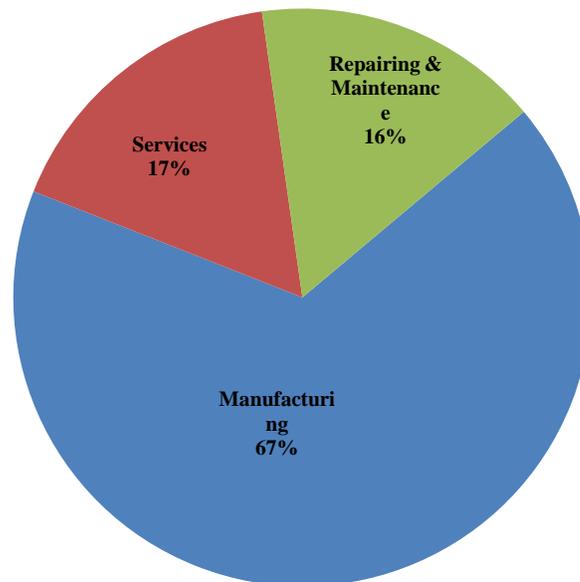


Fig 1 : Category wise contribution of MSME activities

The definition for MSME varies from country to country. The Department of Trade and Industry in the UK and European Union member countries usually go with the following categorisation of MSME (Lukcas, 2004):

- Micro firm: 0 - 9 employees
- Small firm: 0 - 49 employees (includes micro)
- Medium firm: 50 - 249 employees
- Large firm: over 250 employees

A survey was conducted by ASSOCHAM, India in 2009 concerning the contribution of Small and Medium Enterprises (SMEs) to the Gross Domestic Product (GDP) of India. It was revealed that the contribution towards the GDP is expected to rise to 22% by 2012 from a figure of 17% in 2009. The reason for this would be the technological upgradation and further increase in production (Curtis, 2012). It was also revealed that more than 60% of the SMEs had been using advanced technology. This would help in increase in production with low input costs. The estimates of the study reported that the growth rate of SMEs was 35% in 2007. It was expected to grow at the rate of 40% in the next five years. According to Dun & Bradstreet Report (2012), MSMEs have outperformed GDP growth rates in the past five years. The total production of MSMEs for Financial Year 2011 was 10,957.6 billion (at 2001-02 prices). Between FY07 and FY11, the sector's total production grew at a compounded annual growth forecast (CAGR) of 11.5% - a clear indication of the substantial contribution of MSMEs to the Indian economy. During FY12, total production of MSMEs was projected to grow at 11.48%, compared to industrial and GDP growth of 8.2% and 8.4% respectively. Based on Indian planning commission report, 2012, it is the MSME sector which can help to realize the target of proposed National Manufacturing Policy of raising the share of manufacturing sector in GDP from 16% at present to 25% by the end of 2022. Similarly, the small businesses are the lifeblood of Europe's economic engine. Recent estimates put the number of European SMEs at more than 23million, a number that represents two-thirds of Europe's private sector jobs, and they have sparked 80% of job creation over the past five years.

MSMEs and ICT Needs

Information and Communication Technology (ICT) is a powerful tool for the MSME to achieve competitive advantage in business. Small scale industries face limited needs for ICT given their organization and structure, however, the medium scale industries have started restructuring themselves to accommodate these changes. Possibility of international trade has forced many to build an online presence and focus upon E-commerce and enterprise management solutions (Grant Thornton report, 2011). Due to the restricted finance and human power, ICT

investments are vital to ensure the efficient running of core business processes for this sector. Automation of the tasks increases the efficiency of the individuals also (Webel, 2012). ICT is creating new opportunities by enabling design and delivery of digital goods, allowing firms to increase margin and revenue by accessing foreign markets directly. It enables production of goods in shorter span of time with assistance of computerized systems (Manochehri, Al-Esmail & Ashrafi, 2012). ICT platforms (such as PCs, mobiles, internet, etc.) have four main contributions to organizations. Firstly, they give more visibility to business enterprises. Secondly, they provide more information to small firms. Thirdly, they allow enterprises to overcome traditional trade barriers. Finally, they facilitate financial transactions (Piatkowski, M, 2003). The web presence allows the spreading of business activities globally. After sales service and customer feedbacks are the most important advantages of ICT. Targeted advertising through social networking and blogging sites has provided the right platform for number of companies to reach out their customer base in cost effective way (Grant Thornton report, 2011). Based on Economic Times report 2011, Google India has targeted to bring 500,000 SME businesses online by next three years in India. A program named "India Get Your Business online" aims to offer free website, domain and hosting services to MSMEs. The MSMEs should login and register at www.getonline.in using their PAN or TAN and get free domain. Free web hosting is done for a year.

Based on Federation of Indian Chamber of Commerce and Industry (FICCI) report of 150 companies in India , 74% of MSMEs have their own websites, 79% of them use ICT in their day-to-day activities. HR, sales and marketing, finance, supply chain and market research are some of the verticals under which MSMEs use ICT and among these the maximum use are in promoting sales and marketing (79%) followed by finance (67%). The figure 2 shows the major advantages felt by MSME such as time saving (67%), partnership development (60%), cost reduction (53%) and increase in sales (51%) (based on FICCI report, May 2012). According to the Information Weekly report (2012), Adoption of technology by MSME is directly related to the reduced cost of ownership and ease of use. Cisco has come up with BE2000, a unified communication tool that can be used by the organization to connect with employees anytime and anywhere.

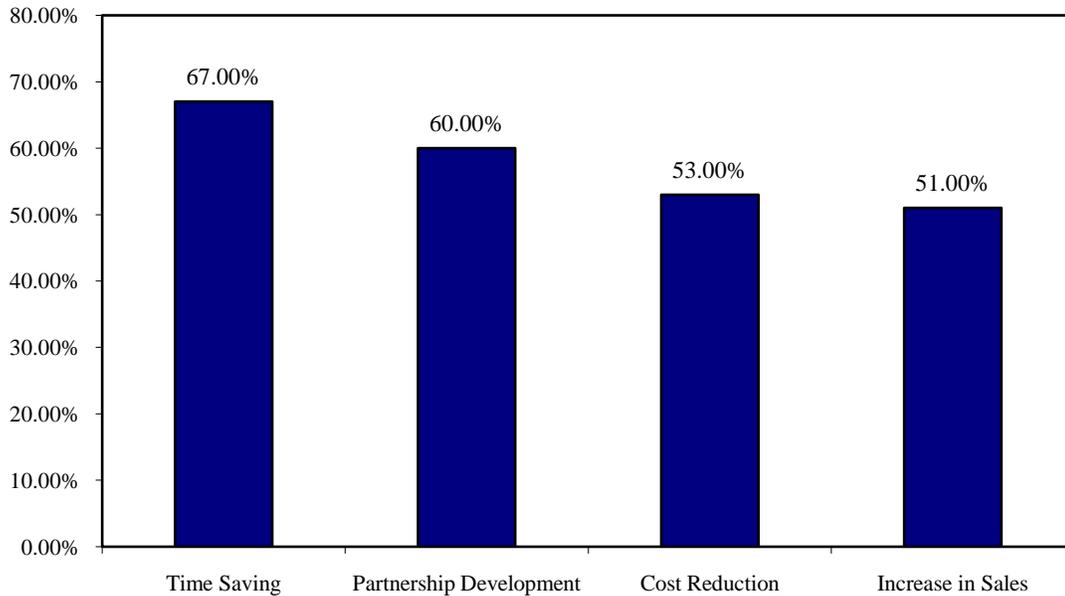


Figure 2 Advantages of ICT for MSMEs

The Ministry of MSME, Govt of India is implementing the National Manufacturing Competitiveness Program to encourage and assist the potential MSME clusters to adopt ICT tools. The activity under this scheme includes identifying the potential MSME manufacturing clusters for ICT intervention, setting up of e-readiness centre, developing web portals for cluster, skill development of MSME unit staff, preparation of local software solutions for MSME to enhance their competitiveness, etc. and networking MSME cluster portals on the National Level Portals in order to outreach MSMEs into global markets. The scheme is being implemented in 100 clusters. Currently this scheme is under modification as “Modified ICT scheme” for inclusion of Cloud Computing approach in the scheme (MSME annual report, 2012).

Cost For ICT Involvement

To achieve the full benefits of the ICT, the requirement is a proper infrastructure and mindset to accept the change. Due to the restricted finance and human power, ICT investments are vital to ensure the efficient running of core business processes. The largest portion of IT budgets (40%) is allocated to hardware purchases, followed by software (34%) and IT services (26%). (Spiceworks, 2012). The cost factors involved in ICT solutions include the initial investments in software licenses, database licenses, hardware and external implementation consultancy. In addition to up-front costs, there are ongoing costs, including license renewals, software and hardware maintenance, and the salaries of on-staff database administrators (DBAs). After a cycle of 4-5 years, upgradation and maintenance cost also gets added. Total Cost Ownership

(TCO) and Return On Investment (ROI) are the two important methods that can be used to evaluate the IT investments. Computers require constant configuring and maintenance. Ongoing costs related to security measures, software updates, computer repair and general support are unavoidable. However, simplifying IT infrastructure and management processes will increase efficiency, expand productivity and significantly reduce TCO (Network Alliance, 2012).

TCO can be calculated as the summation of upfront cost and annual disinvestment and operational cost (Bibi, Katsaros & Bozani, 2012).

$$TCO = C_u + \sum_{i=2}^n (C_{ad} + C_o) \quad (1)$$

where C_u is the upfront cost,
 C_{ad} is the annual disinvestment cost,
 C_o is the operational cost.

$$C_u = C_h + C_d + C_t + C_{ps} + C_o + C_{cust} \quad (2)$$

where C_h is the hardware cost,
 C_d is the development cost,
 C_t is the training cost,
 C_{ps} is the professional consultancy cost,
 C_o is the operational cost and C_{cust} is the customization cost.

$$C_{ad} = C_{smaint} + C_{hmaint} + C_{pspt} + C_{cust} \quad (3)$$

where C_{smaint} is the software maintenance cost,
 C_{hmaint} is the hardware maintenance cost,
 C_{pspt} is the professional support cost
 C_{cust} is the customization cost for business changes.

$$C_o = C_{inet} + C_{pow} + C_{infra} + C_{adm} \quad (4)$$

where C_{inet} is the Internet cost,
 C_{pow} the cost of power used,
 C_{infra} refers to the infrastructure cost (i.e) floor space,
 C_{adm} refers to the administration cost.

Return on Investment (ROI) is a prime tool for measuring the efficiency of any investment. For calculating ROI, the components required are the initial cost of project, the investment made and the cost savings done owing to the new investment (Misra & Mondal, 2011).

$$ROI = \frac{(\text{Initial cost} - \text{Final cost}) - \text{Investment}}{\text{Investment}} = \frac{\text{Costs saved} - \text{Investment}}{\text{Investment}} \quad (5)$$

According to AMR research a SMB spends 6.4% of annual revenue on IT expenses. According to Gartner report (2012), 80% of the total IT cost occur after initial purchase and an unmanaged PC costs \$5000 per year. On an average, a company spends \$700 per user per month when all IT expenses are factored. The details of unmanaged PC annual cost are shown in figure 3. A well-managed computer is 37% less expensive saving several thousand dollars per PC, per year (Network Alliance, 2012).

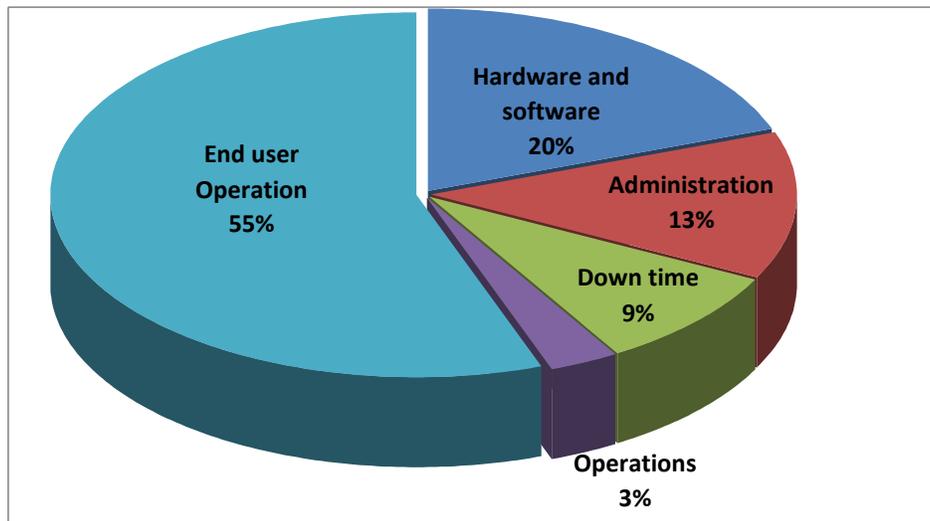


Fig 3: Unmanaged PC Annual TCO

Cloud Computing and MSMEs

Business and market pressures are common among MSMEs. The uncertain economic climate is very difficult for them to handle. They have to handle sudden requirement spikes of IT resources and they have to update their business processes in a fast pace to keep up with the growing market changes. If the updation takes time, then they may lose to their competitors. Investment in new IT resources to satisfy the spikes is not an optimal solution as the resources mostly will remain idle for the larger part of time, thus reducing the resource utilization to a greater extent.

Cloud Computing (CC) brings in a lot of easy to use options for them. The cloud is a completely new model with a new pricing structure of PAYG (pay as you go), new operations management, and new use cases (Butler, 2012). It is a collection of various services accessible using multiple devices like: laptops, desktops or mobile with an internet connection. This is backed by virtualized computers interconnected and delivered to the end users as a unified resource. The Service Level Agreement (SLA) acts as an agreement between the cloud user and the cloud service provider (Misra & Mondal, 2011).

MSMEs have already started feeling the advantage of cloud through the implementation of server virtualization. They can access up to date enterprise technology at the cost of normal IT infrastructure. Cloud services are now used by 48% of SMBs, up from 46% in the second half of 2011 and 28% for the first half of 2011. The top five cloud services by usage are web hosting (49%), e-mail hosting (32%), data backup (25%), content filtering (24%) and application hosting (23%), according to Spiceworks(2012). There are different cloud delivery models such as IaaS (Infrastructure as a Service), PaaS (Platform as a Service) and SaaS (Software as a Service). Whatever be the service model the services are rendered in pay-per-use fashion. SaaS has always been a sought after service from cloud by the MSMEs as the whole application is delivered on pay-per-use basis. Development, testing and maintenance of the software is done by the provider and the customer, relieved from the overhead of software maintenance can involve themselves in bringing up innovations in their business activities.

Server virtualization is the necessary and the very first step to start using cloud in business. This consolidates multiple application workload on a fewer physical machines that reduces cost and increases efficiency. Currently 64% of the MSMEs use virtualization (Spiceworks, 2012). This is an important feature that attracts companies to adopt cloud. This also eliminates the overhead of server upgradation, maintenance, backup operation and manual server administration processes (Bowker, 2012).

All such advantages and promises has led to lofty expectations:Gartner Research expects cloud computing to be a \$150 billion business by 2014, and according to AMI partners, small and medium businesses are expected to spend over \$100 billion on cloud computing by 2014 (Marston, Li, Bandyopadhyay, Zhang & Ghalsasi, 2011). According to IDC, 64% of SMEs use at least one cloud-based service and this is expected to skyrocket, as additional 25% of small businesses have a concrete plan to use the cloud, or are at least thinking about it. IDC also predicts that this increased efficiency will translate into global revenue increase that may total to \$1.1 trillion a year by 2015. Reasons frequently cited by companies that have chosen Cloud solutions include (Eriksson, Berggren & Fröschl, 2011):

- Supporting strategic agility
- Access to features not available on-premise
- Lower cost of ownership
- Absence of cumbersome re-implementations and updates
- Faster time to value
- Better user interfaces
- Higher security
- Lower risk associated with subscribing to rather than buying software.

The major cloud providers such as Amazon, Google, IBM, Microsoft, HP and Salesforce.com have come up with bundle of cloud applications that can be used readily by MSMEs.

- Google Apps - Offers highly acclaimed products and storage such as Google Docs (desktop applications), Google Drive (storage, backup and collaboration), Gmail and Google Calendar.
- Yahoo!Small Business – Offers web hosting services starting at \$ 9.95/ year. They also provide web design tools and online store building tools. They are coming up with Marketing Dashboard.
- Amazon – Offers cloud service that gives small businesses the ability to add and remove processing power and storage in real time and provides access to multiple levels of security to ensure data safety. New customers can sign up and receive a free Amazon EC2 Micro Instance for a year, while also leveraging a free usage tier of Amazon S3, Amazon Elastic Block Store, Amazon Elastic Load Balancing, and AWS data transfer.
- Office 365 – the only web based service fully compatible with MS-Office. It consists of Office Professional Plus, Sharepoint online, Exchange online and Lync online (Lipsitz, June 2011). They provide trial period of 30 days and have tools to calculate the cost of the plan based on the user's requirements. The average cost for 25 user enterprise with basic office 365 features works out to \$6 per user/month. (www.microsoft.com)
- Apple iCloud will allow small business owner to store music, apps, photos, documents and any other data online and pushes it out wirelessly to all of a small businesses' devices whether it's a laptop, smartphone or iPad. iCloud also keeps e-mail, contacts and calendars up to date on chosen devices, no syncing required.

SaaS Applications for MSME

The worldwide market for SaaS applications is estimated to be around \$40 billion out of which customer relationship management (CRM)-based applications market size is about \$11 billion. The major advantage of SaaS is accessibility as applications are offered on the web as a service. According to Gartner (2012), SaaS based delivery will experience healthy growth through 2015, when worldwide revenue is projected to reach \$22.1 billion. The table 2 given below lists some of the SaaS application used by MSMEs and its area of usage (NASSCOM Emerge Forum, May 2011).

Table 2 SaaS Applications for Business

Name of SaaS application	Use	Area of usage
Help Desk 2.0	CRM and Automation Solution developed for MSMEs to deliver product support services.	Computer & IT product services, Consumer Electronic Service, Govt. Grievance management.
Recruiterbox	Helps small companies to automate the complete process of hiring from resume receiving to posting.	In all MSME business verticals
KineticGlue	It is a social business platform built to connect employees and make their work more efficient. Main use is organization collaboration	Banking, Telecom, Healthcare, Technology, Retail
Money Maker	Intelligent financial analytical tool to help Mutual fund managers, financial planners and wealth managers	Financial markets
GrexIt	Helps Google Apps users create a knowledge base out of their email by adding discussions from their inboxes to a shared repository.	Knowledge management, Collaboration, Productivity
iPublishCentral	Helps publishers to market, deliver and distribute digital contents on-line.	Publishing
MyCareWeb	Enables patients and their healthcare providers to stay in constant contact leading to collaboration and coordinated delivery of care.	Healthcare
Syscon Cronus - ERP for SME	Targeted for manufacturing industries for inventory control, sales and purchase, finance, payroll, quality control and plant maintenance.	Manufacturing Industries Like Engineering, Chemical, Pharma, Plastic and Electrical
Cybrarian	Asia's First SaaS based Integrated Library Automation Solution allows Librarians to manage their library online.	Education, Public Libraries, Private Libraries
HumaNET	IT is an enterprise-class HRMS with payroll. It provides systemized approach to people management and workflow.	HR of any industry vertical
TravelCarma	Provides complete software infrastructure for any travel business to become a full-fledged Online Travel Business. It is a multilingual solution and customers can deploy their online portal in any language they want.	Travel Industry
Zoho CRM	Provides a wide, integrated portfolio of rich online applications for businesses such as collaboration application, business application and productivity application.	Mainly targeted at SMBs Industry

Despite of the advantages and availability of lot of SaaS applications, the takers of cloud services remains low due to the risk factors involved in it, such as: security, reliability of the service and cost effectiveness. So before going into the cloud the economic aspects of the cloud usage also have to be analyzed. According to Verio and Think Strategies Inc. (2012), the basic criteria for the enterprise to adopt the cloud is:

- Limited internal IT or software development skills.
- Fluctuating or unpredictable business computing demands
- Need of increased resources for part of the year or on a cyclical basis.
- Expect to grow quickly in the near term.
- Use custom applications that require more resources.

Cost Model for SaaS

The economic aspects of cloud computing has to be examined before moving on to cloud. Capital expenses (Capex), operational expenses (Opex) and Return on Investment (ROI) should be analyzed in detail. About half of the capital expenditure of modern business is on ICT and this will either be eliminated or reduced to operative expenditure when cloud model is used. Elimination or reduction of capex is an attractive feature for the MSMEs to migrate their business to cloud as they operate on tight budget.

The enterprises willing to adopt cloud could be the one starting for the first time or it could be the one with previous IT infrastructure. Adopting cloud is the optimal solution for the former case as they can start off the business with small upfront cost. In the latter case detailed analysis is needed as they have already invested in IT infrastructure and complete cloud adoption may double their investment, which will directly affect the ROI from cloud. The four main characteristics to be considered before adopting CC are (Misra & Mondal, 2011):

1. Size of the IT resources
2. Utilization of IT resources
3. Confidentiality of data
4. Criticality of application

TCO is for cloud SaaS application is calculated as the summation of upfront cost and annual disinvestment cost and operational cost (Bibi et al., 2012).

$$TCO = C_{u-saas} + \sum_{i=2}^n (C_{ad} + C_o) \quad (6)$$

where C_{u-saas} is the upfront cost,
 C_{ad} is the annual disinvestment cost,
 C_o is the operational cost.

$$C_{u-saas} = N * C_{saas-sub} + C_t + C_o + C_{cust} \quad (7)$$

where N is the number of users,
 $C_{saas-sub}$ is the subscription cost,
 C_t is the training cost,
 C_o is the operational cost,
 C_{cust} is the customization cost.

$$C_{ad} = N * C_{saas-sub} + C_{ps} + C_{cust} \quad (8)$$

where N is the number of users,
 $C_{saas-sub}$ is the subscription cost,
 C_{ps} is the professional consultancy cost,
 C_{cust} is the customization cost.

$$C_o = C_{inet} \quad (9)$$

where C_{inet} is the Internet cost

ROI for cloud is calculated as [2]

$$ROI = \frac{\text{Increase in Profit} + \text{reduction in cost} - \text{Cloud costs}}{\text{Cloud Costs}} \quad (10)$$

Usage of cloud guarantees better ROI in a span of time. Office 365 delivered an ROI of 321% with a payback period of 2 months for the composite midsize organization. Office 365 improves productivity, provides IT peace of mind, and reduces TCO compared to a similar on premises implementation. The time to deploy the solution and the payback period, measured from the go-live date, were both substantially shorter than if a comparable solution had been built on premises. Use of Office 365 largely eliminates the need for on premises hardware, physical servers and 1.5 terabytes of storage. This, along with maintenance and hosting costs, results in a savings of nearly \$64,000 over three years (Lipsitz, June 2011). The cost also keeps reducing from the provider side when their customer base increases. AWS has reduced their pricing on 20 different occasions (Varia, August 2012).

FUTURE IMPLICATIONS

Most of the leading research organizations (like Gartner, IDC etc.) have predicted a high growth in the cloud computing paradigm, The growth is supposed to be in terms of total investments, total number of users, deployments and service providers, innovative services and the reach. Certainly, a number of targets have already been reached and the progress is good. However, there are still a number of questions, which have not been answered fully. These include the security risks to the customers, migration issues, inter-operability of the clouds, data privacy issues. Most of the small organizations are always concerned about these issues, when going for the cloud based solutions. Lack of standards and the Govt regulations are the other grey areas, which need extensive research to be Globally accepted. In this scenario, the Industry, Academia, Research Organizations and the Govt agencies need to come together to find a win-win situation for all.

CONCLUSION

If a cloud service provider can deliver a business-ready alternative more securely, more efficiently, and at a comparable or lower total cost of ownership, business owners and their IT staff should be investigating those alternatives and redeploying IT resources, staff and funds to more business-critical projects. Even though, there are higher short-term costs for implementing cloud initiatives, but long term cost savings are the big advantage for most of the organisations. Security is perhaps the biggest concern towards the large scale cloud implementations, however the cloud providers have a strong focus to improve the security and privacy. Hopefully, the cloud will be much more secure than the traditional computing methods in near future. MSMEs should analyze their job nature carefully before moving it to cloud. The classification of basic and regular IT needs and seasonal IT needs should be done well ahead of moving on to cloud. The cloud alternative should be chosen for seasonal IT requirements so as to keep their IT expenses in control. The cloud providers also should increase reliability of their services to win the confidence of the huge MSME market.

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