

Implementation Of Cloud Computing In The Sector Of Small And Medium Enterprises The Best Practice In Palembang

Dedi Rianto Rahadi
Bina Darma University,
Palembang, Indonesia
Email : dedi1968@yahoo.com

M. Mifta Farid
STISIPOL CANDRADIMUKA,
Palembang, Indonesia
Email : faridmilik@gmail.com

Abstract - Cloud computing is a set of services that provide infrastructure resources using internet media and data storage on a third party server. Small and medium enterprises (SMEs) are said to be the lifeblood of any vibrant economy. They are known to be the silent drivers of a nation's economy. This paper presents the cost savings and reduction in the level of difficulty in adopting a cloud computing Service (CCS). In the cloud computing environment the SMEs will not have to own the infrastructure so they can abstain from any capital expenditure and instead they can utilize the resources as a service and pay as per their usage. We consider the results of the paper to be supportive to our proposed research concept.

Keyword : Small and medium enterprises (SMEs), Cloud computing

I. INTRODUCTION

World is changing very fast in terms of enterprise systems and industries need very specialized solutions. Industrial problems are very complex and need lot of money and efforts. Availability of expertise and skills causes another problem in the industry.

Cloud computing brings a company benefits such as reducing system operating costs and shortening the system construction and deployment time. However, there is a strong requirement for the value of "trusted (high reliability)" since the control of information becomes difficult in cloud computing. There are good reasons why the Cloud is a big trend. Enterprise IT loves the pay per use, "utility" model of provisioning computing power and storage. The infrastructure and the headache of managing it, both belong to someone else.

In the cloud computing environment the SMEs will not have to own the infrastructure so they can abstain from any capital expenditure and instead they can utilize the resources as a service and pay as per their usage of the resources provided by the cloud (Rittinghouse and Ransome, 2009). SaaS will provide an opportunity for the SMBs to automate their business by reducing their investment in IT infrastructure

(Rao). Cloud based services helps the industries to reduce their cost that are involved in on-premise ERP solutions such as hardware, software, upgradation, training and licensing costs. Moreover long implementation cycles with regular maintenance costs adds to the total cost of traditional ERP (Aggarwal and Barnes, 2010). Cloud computing is providing huge opportunities for the Palembang IT company that is helping them to develop cost effective business models. Such models help the SMEs to uplift their business in an effective and cost efficient manner.

II. THEORETICAL CONCEPT

A. Cloud Computing

Cloud computing has been defined by NIST as a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or cloud provider interaction, Peter Mell, (2009). Cloud computing technologies can be implemented in a wide variety of architectures, under different service and deployment models, and can coexist with other technologies and software design approaches. The security challenges cloud computing presents, however, are formidable, especially for public clouds whose infrastructure and computational resources are owned by an outside party that sells those services to the general public.

B. Enterprise Cloud Computing

Cloud computing is a significant trend with the potential to increase agility and lower costs. Today, however, security risks, immature technology, and other concerns prevent widespread enterprise adoption of external clouds. Some of the advantages of cloud computing, namely :

Ability to standardize and compare economic models for IT/cloud services. Businesses should be able to compare their traditional IT cost structures to the CPU/hour, gigabit/month utility pricing model common

in the cloud computing business. Hidden costs such as management, governance, and transition costs including staff training should be factored into the equation.

Effective prototyping and vendor selection processes. Making a long-term bet with a given cloud computing platform isn't required to start taking advantage of what they have to offer. Smart organizations will temper their adoption with a wait-and-see attitude combined with proactive prototyping and a selection process that will help them select the best set of cloud computing services and tools. Early trials with non-mission critical applications will be a useful way to help everyone in the organization get up to speed on cloud computing technologies and how they integrate with existing IT processes..

Technical ability to adopt and execute with cloud computing services. Once it makes economic sense, the next hurdle will be achieving wider technical fluency in the selected cloud computing platforms, which tend to emphasize open source technologies or newer Web-style programming languages and application models that are often less well known in the enterprise world. Architects, developers, testers, operations, enterprise security, and networking staff will all need to be capable of working effectively with the cloud computing services. They must be given the time and resources to acquire these skills without distracting from their core activities.

Incorporation of cloud computing into strategic IT planning. Important questions arise when cloud computing is brought into the picture: How will it affect service-oriented architecture (SOA) strategy? How are disaster recovery plans impacted? What about backups and legally mandated data archiving policies? What is the risk profile for using cloud computing services and what is the mitigation strategy? What is the potential for platform lock-in and how can it be avoided? All these questions and more must be asked

and addressed, particularly as cloud computing is embraced for more important business applications and IT functions.

III. RESEARCH METHODOLOGY

This paper is a study of the scope of cloud computing for SMEs in Palembang. The Main purpose of this paper is to examine and analyze the Scope of cloud computing for the SMEs in Palembang. So, this research paper aims to develop a research model which would justify this papers affinity towards the use of cloud computing for Palembang SMEs. This research paper adopts a descriptive type of research.

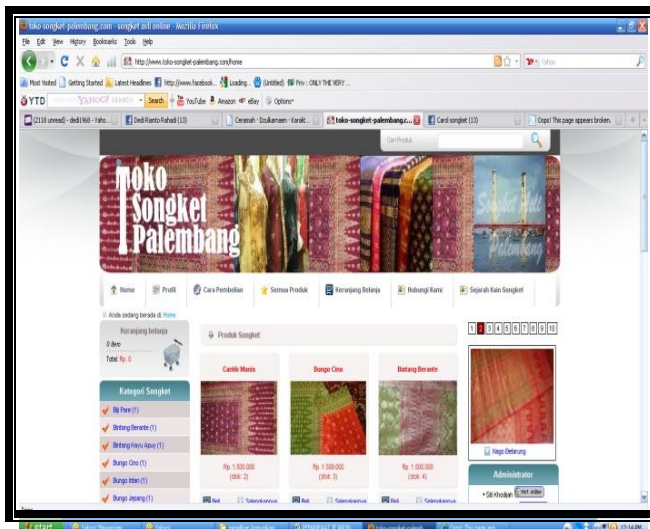
IV. ANALYSIS AND INTERPRETATION

Based on the results of surveys and interviews conducted by researchers, research results can be obtained as follows:

TABLE 1 . USE OF COMPUTERS

No	Use	% SMEs
1	Typing a report	43
2	Perform calculation	15
3	Running information system	0,5
4	Designing products	0,1
5	Accessing the Internet	30
6	presentation	0,6

From table 1. shows the computer is still used as a substitute mesik tick, where computers are still predominantly used for typing reports (43%) and internet access usage by 30%. This condition is quite good because SMEs already use the Internet as a means for the company's operations.



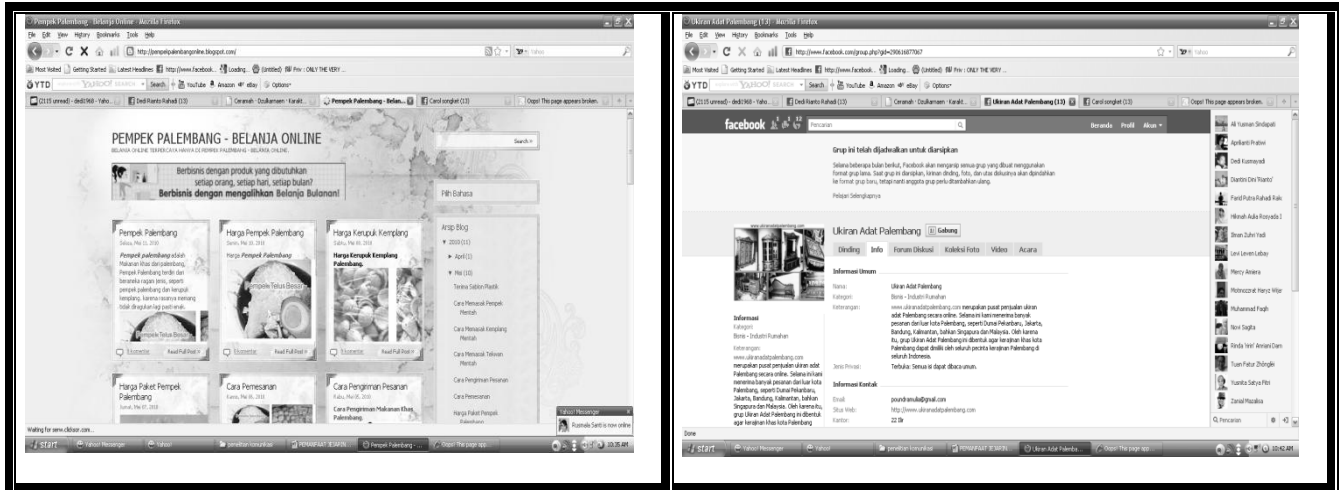


FIGURE 1. EXAMPLES OF SOCIAL MEDIA USED MODELS SMES

Figure 1 shows some of the social media used to support SMEs in their business activities. Cloud computing can be defined as computing using an Internet hosting service as the primary resource. Instead of developing a complex and expensive infrastructure, systems, programs and data are stored on a hosting facility on the Web. There are two major benefits of cloud computing. The first is the elimination of major IT infrastructure investment. The second is that the users of the system can access their data from anywhere in the world. With cloud computing It is no longer necessary to take your notebook with you. Any computer with internet access can achieve the same results.

A. Design Cloud Computing

The organizations can decide the type of the boundaries of cloud computing which deploy their applications according to organization demands and objectives. The type of cloud computing can be categorized into three classes, the public cloud, the private cloud and the hybrid as depicted in figure 2. The idioms public, private, and hybrid do not impose location. Whereas the term public clouds are naturally “out of organization” on public sites on the Internet and private clouds are positioned on premises, a private may be hosted at a collocation facility as well.

Third parties are responsible for running the public clouds outside the organization. Various customers’ applications can be grouped together on the cloud server’s memory and network. Public clouds basically hosted on a remote place which is away from the customer’s location. And they play a major role in reducing the customer’s risk and cost by extending the enterprise infrastructure.

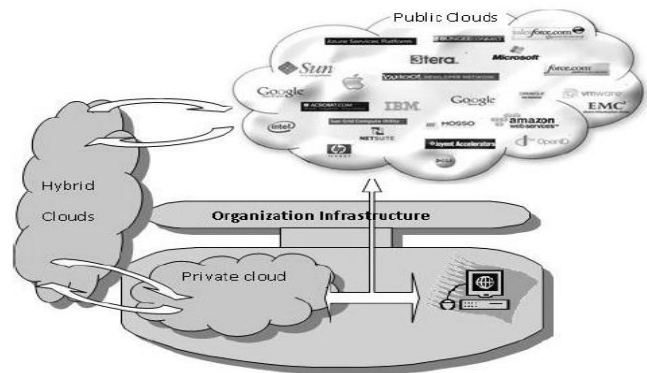


FIGURE 2. DESIGN CLOUD COMPUTING IN SMES

For a small or medium enterprise, cloud computing means that the business does not have to maintain a dedicated server. The main requirements of a network are diminished as the main traffic is to and from the Internet.

One example of cloud computing is Google Docs. Instead of installing dedicated office software on your end-user computer, Google Docs allows you to add, edit, delete and share documents on the Internet. The suite includes a word processor, spreadsheet and presentation software. All the documents that you create are saved on Google’s server and you can rest assured that everything will be backed-up and secure. Google Docs is a free service. Compared to a dedicated office suite such as Microsoft Office, the functionality is limited. But the system works and there are few bugs. A small business could opt to use Google Docs as a repository for its documents. Taken a step further, a business could opt for a Web Hosted application to manage its accounts and business transactions. The small to medium enterprise no longer required a dedicated IT department. The next benefit is that the

computers required by employees don't need to be top of the range or state of the art. The main requirement is a fast Internet connection. Of course the system may be accessed from anywhere in the world.

Private clouds are basically hosted for a single client. They offer better security, quality of service and utmost control over the data. Every organization will have its own infrastructure and the way in which applications are organized. Enterprise's datacenter or a collocation facility can be used to deploy the private clouds.

Hybrid clouds are the result of combination of private and public clouds. They provide on-demand, externally provisioned scale. The resources of a public cloud can even support private clouds to maintain high service levels with respect to rapid work load fluctuations. This clearly shows the use of storage clouds to support Web 2.0 applications. In addition to these, even hybrid clouds also help to maintain planned workload spikes and even public clouds can also be utilized to perform periodic tasks.

To use these services, you login to them with any internet connected computer, and work with that application and your files "in the cloud". What this means is that you can work with your applications and files anywhere there is internet. This is convenient because these days there is internet access just about everywhere . The most successful fully "cloud" based services are at this point, simple software packages. Things like Google Docs & Spreadsheets take aim at replacing their desktop counterparts, Word and Excel.

Cloud computing is a new paradigm in which computing resources such as processing, memory, and storage are not physically present at the user's location. Instead, a service provider owns and manages these resources, and users access them via the Internet. For example, Amazon Web Services lets users store personal data via its Simple Storage Service (S3) and perform computations on stored data using the Elastic Compute Cloud (EC2), Karthik Kumar and Yung-Hsiang Lu," (2010).

The business will be definitely benefitted by making use of this kind of computing platforms. Some of the benefits could be less initial capital investment, a smaller amount of time will be required to start new services, maintenance and operation costs could go lower, effective utilization through virtualization and the most important thing is simpler disaster recovery. All these points make cloud computing a striking option. Reports suggest that there are plenty of advantages of moving computing from desktop to the cloud. Limited energy and bandwidth are the main source of limitations of cloud computing. Cloud computing can be utilized effectively to save the energy which is used in mobiles, though it also poses some unique challenges. Mobile systems, such as smart

phones, have become the primary computing platform for many users, Karthik Kumar and Yung-Hsiang Lu," (2010)

Cloud computing has a profound impact on the entire IT industry as a new business model. Integrated into all sectors of business applications, cloud computing will reflect the value in a deeper level. With the rapid development of cloud computing, it can help enterprises to access high-performance IT services with lower cost, and also conducive to small and medium-sized enterprises to access high-performance IT services like large enterprises. At the same time, the reduction of IT burden can help enterprises to concentrate on its core business. The process optimization which based on cloud computing can achieve throughout a large-scale reconstruction of the industry, and enhance the overall IT standards and competitiveness, KeJing Zhang, PingJun at all, (2010).

Another advantage of cloud computing is it offers good advantages to the communicators. And these advantages are: the availability of large quantity of software applications, access to terrific processing power, abundant storage, and power of easily sharing and processing of information. All this information can be found in the browser anytime, anywhere through accessing the internet. It means computing ability also can be a kind of commodity, as gas, water and electric, easily use and cheap cost. "Cloud Computing" brings such a change—computer storage computing center are set up by professional network companies such as Google and IBM, through one cable user can access easily with browser, make "Cloud" as the center of material storage and application services, IRMA International Conference (2006).

For an SME, cloud computing can provide an ideal platform to host the business system requirements. The system is maintained in a secure environment where the data is backed up daily. The business does not have to invest in an expensive IT infrastructure. Neither is it necessary to employ staff or a company to run the computer system. All that is required is a simple rental agreement and fast Internet access. Cloud computing can eliminate the need for documents and spreadsheets to be saved on a local machine. Instead, these can be saved on the cloud. Notebook computers were developed because of the need to carry data with you. The ever-present risk of theft or damage made this solution less than ideal. Sensitive data carried on a notebook could place strategic projects at risk. On the cloud computing means that everything is stored in a secure environment on the Web. There is no longer a need to copy the documents onto the notebook. All that is required at the destination is fast Internet access. You could even leave the notebook at home, eliminating the risks of physical loss as well as the risk of a security breach. Of course, cloud computing can be extended to

the individual. Keep your personal documents on the cloud and access them from any computer - even from your phone - anywhere, anytime.

V. CONCLUSION

Cloud computing will provide many opportunities for individuals and for businesses and government. With this technology resources will be on delivering computing and shared through the internet. With the computing technology will further encourage the use of ICT technology in society, especially small and medium enterprises (SMEs). Model of pay-as-you go model will change grow from capital expenditure to operational expenditure. This is quite reasonable for SMEs to use it efficiently. They can choose among a variety of business applications in the cloud-computing tersedian. It will also open up opportunities for software developers to create new products innovative. Of course it will be a source of new revenue for the software industry. Cloud computing is a critical enabler for the economy of a State, as well as Indonesia

REFERENCES

- [1] Ammar Khalid, "Cloud Computing: Applying Issues in Small", 2010 IEEE International Conference on Signal Acquisition and Processing, pp 278-281.
- [2] B.B Aggarwal and M. Barnes, "The Case For Cloud CRM In India", White Paper, Springboard Research, 2010.
- [3] Chen Songsheng, Yin Peipei, "Economic Benefits of Enterprise Resources Planning Based on Empirical Evidence from Chinese Listed Companies", IEEE 2010, PP1305-1308
- [4] J.W Rittinghouse and J.F. Ransome, "cloud computing implementation, management and security", CRC press Taylor & Francis Group 2009.
- [5] Karthik Kumar and Yung-Hsiang Lu, "cloud computing for mobile users: can offloading computation save energy?", IEEE 2010 Computer Society, pp 51-55
- [6] KeJing Zhang, PingJun Dong, Biao Ma, BingYong Tang, Hong Cai, "Innovation of IT Service in Textile Industrial Clusters from the Service System Perspective", 2010 IEEE ,pp 1819-1822
- [7] Peter Mell, Tim Grance, The NIST Definition of Cloud Computing, Version 15, October 7, 2009, <URL: <http://csrc.nist.gov/groups/SNS/cloud-computing>>.
- [8] Michael Massoth and Dominik Paulus, "Mobile acquisition of sales operations based on a BlackBerry infrastructure with connection to an inventory and ERP management system", The Second International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies, 2008 IEEE, pp 413-418.
- [6] The Proceedings of 17th Annual IRMA International Conference, Washington DC, USA, May 21-24 (2006)