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Cloud Computing Technology in Development E-Business (Literature Review)

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Abstract

The use of good technology will be able to help various kinds of work activities including in the business world. High mobility requires a person or group to use information technology. One of the topics of technological development today is cloud computing. Cloud computing is a technology that uses the internet network to access resources in the process of managing data, processing data to its application. Cloud computing is widely used by people to start a business because it has many advantages in starting a business. One of the new concepts offered is e-business or electronic business. E-business is an extended form of e-Commerce, where e-business is accompanied by customer service, collaboration with business partners with electronic support as a means of transaction or organization, but not only purchases, payments for goods, and services, but also services Cloud computing allows companies to determine the capacity to meet demand and move according to the speed of growth of the company's business but not at the pace determined by enterprise infrastructure. This allows companies to generate better time to market, speed up application delivery and ensure capital management or operational costs. The implementation of cloud computing in business requires consideration of business and IT needs as well as the selection of available cloud computing to formulate the right cloud strategy. The goal after implementing cloud computing is for users to expand cloud computing capabilities more efficiently. In addition to having the advantages of cloud computing, it also has risks, namely only the provider knows physically what is happening with user data, when a disaster occurs sometimes the provider's ability to recover data is still a concern for users, and the provider's compliance with regulations and when it goes bankrupt is still uncertain.

Keywords : *Cloud Computing, E-Business, Information Technology*

1. Introduction

With the development of business, the use of storage media and security are factors that require companies to develop it further. The costs involved in developing storage and security media are enormous, especially for large-scale companies. Cloud computing is one alternative for companies to reduce costs related to these things. The use of good technology will be able to help various kinds of work activities including in the business world. High mobility requires a person or group to use information technology. One of the hottest topics of Information and Communication Technology today is cloud computing. Cloud computing technology is presented as an effort to allow access to resources and applications from anywhere through the internet network, The need for cloud computing technology is mostly only on the cost of connection and data processing as needed. In some companies or institutions that already have good network infrastructure and technology, the application of cloud computing technology can be more optimal and efficient. The application of cloud computing has now been carried out by a number of well-known IT companies in the world, one of which is StartUp.Cloud computing is widely used by people to start a business because it has many advantages in starting a business. Currently, businesses are moving / migrating to cloud computing because by using cloud computing companies convert CAPEX into OPEX, so companies do not need to invest and only pay OPEX, in the form of usage, transactions and others. So by using cloud computing, companies do not need to make purchases at the beginning and can be used as needed. With cloud computing, e-business development can develop in a structured manner and produce e-business as expected. Actually, there are quite a lot of problems faced in building e-business, so one way that can be done to overcome some of these problems is to apply cloud computing in e-business development. Based on the explanation above, it can be concluded that cloud computing is not a new technology but a combination of grid computing, distributed systems and coupled with several new ideas so that cloud computing can produce a high level of operation and service to users. Hardware, infrastructure, platforms are some of the services provided by cloud computing. Computing costs can be reduced if you use cloud computing services.

2. Research Methods

The method used in this study is the literature method, where all data collected is based on several learning videos and several scientific journals about cloud computing and e-business. Discussion about cloud computing related to e-business.

2.1. Understanding Cloud Computing

Cloud computing can be interpreted as cloud computing, why it is referred to as cloud computing, the cloud symbol is used to describe the internet network while the term computing / computing is used because the process is in the form of processing and calculating data. Cloud computing is a technology that uses the internet network to access resources in the process of managing data, processing data to its application. Cloud computing is also referred to as a combination of the use of computer technology with internet-based development. Cloud computing can be in the form of file storage or data where the file or data can only be accessed if the user is connected to the internet, it can also be in the form of reading processing applications, presentations and video editing applications.these applications can be accessed from anywhere and anytime as long as they are connected to the internet.

A. Advantages of Cloud Computing
   1. Cloud systems are flexible and can be accessed anywhere as long as they are connected or connected to the internet as a connecting medium. Users can use smartphones, PCs or laptops as a medium to access data or work.
   2. Disaster recovery data backup, companies that still store data on the server do not need to worry if a problem occurs because the data has been backed up in cloud computing.
   3. Automatic software updates. All data resides and is stored on the internet server as well as applications / software that are generally needed by users to be on the server computer so there is no need to install a server
   4. Improve document collaboration and control, when it comes to working simultaneously Cloud computing is the right service because the system can be used simultaneously.
   5. Very helpful ease and efficiency of the process of working on everything related to managing files or data.

B. Disadvantages of Cloud Computing
   1. Because cloud computing can only be accessed using the internet network and an internet connection is an obligation in cloud computing, adequate and stable bandwidth is needed.
   2. Cloud computing service rental does not have direct access to resources and also about confidentiality and data security which is a big consideration in cloud computing services.
   3. There must be good server troubleshooting and system backup (recovery) if at any time server access or programs become down or problems occur. If the server goes down and is not handled properly, users can incur huge losses.

C. Types of cloud computing
   1. Software As A Service (SAAS) One of the cloud computing services is SAAS where we live using software (software) that has been provided. Users only know that the software can run and can be used properly. For example email, twitter, skype, and gsuit
   2. Platform As A Service (PAAS) PAAS is a service from cloud computing if we analogize where we rent a "house" and its environment in the form of operating systems, networks, database engines, application frameworks and others to run the applications we make. Examples of these services are Microsoft AzureInvestment, Amazon Webb Service.
   3. Infrastructure As A Service (IAAS) IAAS is a service where we "rent" IT infrastructure such as Compute, Storage, memory, network. We can determine how many compute units, storage, memory, bandwidth, and other configurations we will rent. Examples are Simple Storage Service, Rakspace Cloud and Amazon Elastic Compute Cloud

2.2. Definition of E-Business

The application of information systems and internet technology by business organizations has given birth to e-business. According to Mohan Sawhney (in Indrajit, 2002), e-business is: "the use of electronic networks and related technologies to enable, improve, improve, transform, or create business processes or business systems to create superior value for today's potential customers." In principle, this definition clearly shows how electronic and digital technologies function as a medium to achieve business processes and systems (exchange of goods and services) that are much better than conventional methods, especially in terms of the benefits that can be felt by those interested (stakeholders). E-business is the practice of implementing and managing key business processes such as product design, raw material supply management, manufacturing, sales, order fulfillment, and service provision through the use of communication technology, computers, and computerized data. Ebusiness is an expansion of e-Commerce, where not only purchases, payments for goods, and services, but also accompanied by customer service, cooperation with business partners with electronic support as a means of transaction or organization, in its application e-business will use the entire chain in its business processes, such as electronic purchasing processes &; supply chain management, Electronic Order Processing, Managing Customer Service to cooperate with partners. E-business uses information technology in the form of the internet and other computer networks to carry out the main business process, namely buying and selling. The prefix "e" in the word e-business means "electronic", which means activities or transactions that are used without physical exchange or contact, transactions are held electronically or digitally, this is becoming possible with the support of the rapid development of digital communication. One technology that many people use to start a business is cloud computing because it has many advantages in starting a business. The application of cloud computing has now been carried out by a number of well-known IT companies in the world. In Indonesia, one of them that has implemented cloud computing is the Telkom company.

The benefits of cloud computing technology for the company's business are divided into 2 categories, namely:

1. From the side of the Cross. For start-ups, like StartUp. Can use cloud computing technology for power processing and storage capabilities, so there is no need to buy storage in advance as needed. Cross is the biggest thing companies need, especially StrartUp, but cross can be suppressed using cloud computing

2. In terms of Speed. Can get technology capabilities instantly without having to wait for processes such as the ordering process, installation process, configuration process and others. So this speed is needed once the company for digital transfortation reports

3. Research Methods

The implementation of cloud computing in business requires consideration of business and IT needs as well as the selection of available cloud computing to formulate the right cloud strategy. The goal after implementing cloud computing is for users to expand cloud computing capabilities more efficiently.

3.1. Setting Goals and Objectives

Things to note include:

1. whether cloud computing will be used for part or all of the business process
2. Which cloud computing services are most appropriate for business processes
3. Determine the available funds as there may be insufficient budget to move the business to the cloud at once
4. Create scheduling if business processes will be moved to the cloud incrementally and
5. Create performance measurements to evaluate the needs of cloud service offerings.

3.2. Stages of cloud computing adoption strategy

The main stages in determining the goals and objectives of implementing cloud computing are:

1. Cloud project concept / pilot stage aimed at planning and implementation of the use of cloud computing for business. At this stage, try to apply, study and evaluate the cloud as well as input for cloud computing strategies and determine the decision of the cloud program to continue or not. Which cloud computing services are most appropriate for business processes
2. Cloud strategy and mapping phase where activities are carried out are cloud discovery and assessment, cloud strategy and mapping, mobility and cloud transition planning.
3. Cloud model stage. Activities in this stage are cloud modeling, cloud computing model reference, cloud model implementation, cloud model governance and operation (quality of service, security, and planning), cloud reference architecture.
4. Cloud planning implementation stage. This is the planning stage to select the appropriate cloud technology as needed. Activities in this stage are cloud service provider analysis and selection, cloud procurement implementation and planning, cloud governance and lifecycle planning, cloud program decision determination whether to continue or not
5. Cloud implementation stage. Is the stage of implementing cloud computing. Activities in stages begin with a cloud implementation reference consisting of a cloud computing reference model, cloud computing reference architecture, and cloud computing reference implementation. Further activities include cloud governance and security planning, and cloud management, oversight, operations, and support activities, as well as evaluating feedback and strategies applied to the cloud

3.3. Stages of cloud computing adoption strategy

The cost set by the cloud service provider can be per user or as per usage. Money alone is not a major factor for immigrating to cloud computing. Cloud computing services allow companies to determine the capacity to meet demand and move according to the speed of growth of the company's business but not at the pace determined by the company's infrastructure. This allows companies to generate better time to market, speed up application delivery and ensure cost management over capital or operational costs.

3.4. Implementation Phase

The stages of the right cloud deployment strategy according to business needs are as follows:

1. Learning stage. At this stage business people need to learn and understand the advantages of implementing cloud computing, as well as the impact obtained after implementing cloud computing and its effects on their organizations and businesses.
2. Analysis stage. There are several other sub-stages of analysis:
    a. Needs analysis. Identify and analyze the needs of business organizations, especially those related to information technology needs in an effort to develop business.
    b. Analyze the capabilities and readiness of business organizations. Adjusting between IT for business organization development and the ability of business organizations to meet these needs, especially in adopting cloud-based IT computing needs.
    c. Analyze the benefits and impact of implementing cloud computing. Knowing the benefits obtained when business organizations after using cloud computing and at the same time anticipating the impact of losses in the application of cloud computing.
3. Planning and Modeling Stage. Planning the type of cloud computing services in accordance with the analysis of the needs, capabilities, and readiness of business organizations and according to the results of the analysis of the benefits and impacts of cloud implementation which is then designed models and architectures for the use of cloud services in information technology to be used by business organizations.
4. Adoption and implementation stage. At this stage, choose the right vendor according to the needs of cloud computing services. After choosing the right vendor, the next step is to prepare for the cloud computing adoption process by preparing data and other configurations into cloud services to be adopted. Once all data and other configurations are ready for migration to cloud computing, implementation is done by registering with the selected vendors and integrating the data, applications, and infrastructure into the cloud system.

5. Management Stage. Management is carried out to control the implementation and use of cloud computing in the IT structure, and to ensure the use of cloud services as planned. In addition, the management stage is useful for evaluating performance results and benefits after cloud computing implementation.
6. Development stage. The development stage is carried out to develop cloud systems along with the development of business needs.

3.5. Benefits of using cloud computing

Some of the benefits of using cloud computing are as follows:

1. Reduce Costs. Users of cloud technology, do not need to build cloud infrastructure, both software, hardware, servers, networks and bandwidth, because all are provided by cloud service provider companies. Users only need to pay rent according to their operational needs. Thus, users will save costs.
2. Data loss prevention. The best thing to do is to backup data through cloud computing, even if the company only uses data storage services and does not use other services. In the event of an internal computing disruption or disaster, the recovery process can be done quickly from any location.
3. Access to the latest software. Renting software through a cloud service will be cheaper than buying it and allow businesses to access the latest version faster.
4. Flexible. The flexibility that cloud computing offers is more than conventional computing methods. This is because cloud computing has more flexibility than other networked computing systems, and saves time and cost for busy users and those who don't have the resources available.
5. Cloud computing technology has the ability to share resources (memory, storage, bandwidth, etc.), thus allowing all employees to access resources through cloud computing. Save more time and money by placing resources in one location that is easily accessible to employees.
6. One Back-up and Disaster Recovery Package Cloud computing provides convenience for users in terms of backup and post-disaster breeding. Where, the backup and recovery process is borne by the provider so that it can save in terms of maintenance costs.
7. Business Agility. Enabling companies to become more active, where the speed of capacity reservation and the services provided by providers are critical elements of cloud computing. Many cloud computing providers use software infrastructure to facilitate adding, moving and changing applications according to user needs. The great advantage obtained by users is because cloud computing is very dynamic and elastic.

Table 1: Comparison of cloud computing utilization
(conventional vs. cloud computing)

NOT	BENEFIT	CONVERSION	*CLOUD COMPUTING*
1	Access to customers	Slow	Fast
2	Sales and revenue	Relative increase takes more time Old	Experience rapid increase at the same time fast
3	Access to international markets	Slow and complicated	Quick and easy
4	Access to international markets	Slow and complicated	Easy
5	Advertising/marketing	Relatively expensive	Cheap
6	Operating costs	Relatively expensive	Cheap
7	Internal collaboration	Less efficient	Efficient
8	Products/services	Slow	Fast
9	Product innovation	Slow	Fast
10	IT Management	Complex and complicated	Simple

3.6. Cloud computing risks

In addition to having the advantages of cloud computing, it also has risks, namely:

1. The provider is solely responsible for what happens with the user's data because only the provider knows physically about the user's data
2. When a disaster strikes, sometimes the provider's ability to recover data is still a concern for users.
3. The provider's compliance with regulations and when it goes bankrupt remains uncertain.

4. Conclusion

The positive impact of utilizing IT is for small companies to compete with large companies (enterprises) by using cloud computing technology because it is a solution to save IT infrastructure costs in developing business. Cloud usage is divided into private cloud, public cloud, community cloud, and hybrid cloud. While the services offered consist of IaaS, PaaS, and SaaS. Cloud computing technology is currently still relatively new for many people, but over time it will grow because basically this technology has been present along with the presence of the internet. Cloud computing is a virtual data center storage service whose use can be tailored to the needs of the company. The implementation of cloud computing in the development of business continuity can be done by adopting the cloud life cycle. With the increasingly widespread use of smartphones and online businesses, cloud computing technology will be increasingly used. The right way to implement cloud computing is at the cloud implementation stage, an analysis of company needs is carried out which is then adjusted to the type of service and type of cloud use in accordance with the company's needs in business development. The application of cloud

computing in business development can be done by adopting the cloud life cycle. The cost of early adoption may be substantial, but once it goes well, the business will benefit more and cost less than if the site is hosted locally.

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