

B2C Service Delivery with Cloud Computing

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Abstract

Cloud computing is the major emerging technologies in the information technology sector worldwide. E-commerce is also helping to revolutionize business for small as well as medium enterprises in current times. Cloud Computing uses Internet and remote servers to maintain user's data and applications and is accessible from anywhere. In this paper, we have discussed that how E-commerce combined with cloud computing is beneficial for B2C companies in providing better services to customers. We have also studied responses from companies providing B2C services and explore their point of view on the topic through the survey conducted. Further, the reasons for the companies not using cloud computing has also been analyzed. Finally, recommendations have been drawn based on the analysis showcasing the benefits B2C companies will derive from the use of cloud services for their E-commerce applications.

Keywords: *Cloud computing, E-commerce, B2C, IaaS, PaaS, SaaS, Raas*

Introduction

Today, most of the data and applications reside on multiple clouds spread over infrastructure, platform, software, and storage as a service. Unfortunately, many businesses are still burdened with legacy products that are not compatible on the cloud or point products that do not communicate with each other, while some enterprises depend entirely on cloud vendor-supplied security.

For most organizations, the cloud has become the main, if not the only market for developing and deploying new applications.

This is due to the fact that, cloud environments provide greater agility and scalability combined with higher performance and faster access to innovative technologies. All of these help businesses in maintaining a competitive edge in the industry.

Cloud Computing and E-commerce are now two important parts of our daily lives. Due to being cost effective both are preferred. Cloud computing services saves enterprises the cost of Information Technology infrastructure, on the other hand E-commerce provides traders to do business without having to rent or buy a business entity shop. Many researchers illustrate that cloud computing and E-commerce are the most attractive industries in recent times.

Cloud Services

Infrastructure as a Service (IaaS) – It is a self-service model for accessing, monitoring and managing remote datacenter infrastructures like measuring, storing, networking, and networking services like firewalls. Rather than having to purchase the hardware entirely, users can buy an IaaS depending on their consumption, similar to utility bills like electricity. IaaS Examples: Microsoft Azure, Google Compute Engine (GCE), Amazon Web Services (AWS), Cisco Metapod.

Platform as a Service (PaaS) – It is a category of cloud computing services that provides a platform allowing customers to develop, run and manage applications without the need of building and maintaining the infrastructure explicitly associated with the development and launching of an application. Enterprises benefit from PaaS as it helps in reducing the amount of coding required,

automates business policies and helps migrate apps to hybrid models. For the requirements of enterprises and other organizations, Apprenda is one of the providers of a private cloud PaaS for .NET and Java.

Software as a service (SaaS) – It provides a complete software solution which customers can purchase on a pay-as-you-go basis from a cloud service provider. One can rent the use of an app for the organization and let users connect to it over the Internet, usually with a web browser. All of the underlying infrastructure, middleware, app software and app data are located in the service provider's data center. Common examples are email, calendars and office tools such as Microsoft Office 365.

Storage as a service – It is a business model in which a company leases or rents its storage infrastructure to another company or individual for the purpose of storing data. Small companies and individuals often find this to be a convenient method for managing backups and providing cost savings in personnel, hardware and physical space. A company providing SaaS may be referred to as a storage service provider (SSP). Storage as a service can also be called as hosted storage.

What is E-Commerce?

Electronic commerce is one of the main indicators for revolution of information technology and communication in the field of economy. The current trend for businesses today is E-Commerce, it refers to electronic transactions such as buying, selling, fund transfers and flow of information over the internet. E-commerce broadly encloses all business activities taking place over the internet. E-commerce has the following Models:

- Business-to-Business (B2B): The transactions between business enterprises.
- Consumer-to-Business (C2B): This refers to customers selling products and services to the Business Enterprises.
- Business-to-Consumer (B2C): This means the transactions between Business Enterprises and customers.
- Consumer-to-Consumer (C2C): This means the business transactions among users or consumers.

Why Cloud Computing in E-Commerce is Important?

Scalability: - Cloud Computing enables an e-commerce business to cater to the changing demand and scenarios of the market. It allows the upscaling or downscaling of services according to the demand, traffic and seasonal spikes. Cloud provides the scalable architecture the business needs. The fact that a business will grow in the future, it is vital to scale the business as it grows.

Speed: - For an e-commerce business, speed plays a crucial role in making the customers stay glued. A study by Akamai found that 40% of customers abandoned a web page if it took more than three seconds to load. Even Amazon experienced an increase of 1% in revenue for every 100 milliseconds of improvement to their site speed. While a sudden spike in traffic can slow down a website and make it unresponsive, cloud computing provides businesses with greater bandwidth, computational power and storage.

Cost Reduction: - The facility of paying per use enables the users to consume the services according to their requirements. As the business grows one does not need to invest in hardware or software infrastructure. With cloud computing, the costs of developing and maintaining IT infrastructure gets cut down. In 2016, Snapdeal launched its own private cloud Cirrus, which the firm believed would bring down the costs and improve performance. Cirrus, which was built on open source helped the e-commerce company to visualize big data and give a personalized experience to its customers by understanding the behavior patterns of the customers.

Redundancy in Cloud Services: - Cloud-based architectures are disaster tolerant. A cloud-based platform with built-in redundancy can save the business from data loss. It keeps the data secure, backed-up and easily accessible. An e-commerce business depends hugely on the data of its customers. At the

time of catastrophic data losses or security threats, redundancy (or the built-in duplication of systems, data, equipment, and other components) helps to overcome the disaster and resume the business in a streamlined way.

Methodology

This section discusses the chosen research methodology. For this research paper we have taken a survey of 50 employees working for companies offering B2C services through questionnaires. The questionnaire contained a total of 10 questions for collecting responses related to our research topic.

This approach provided us with the opportunity to record responses for understanding the present state and outlook of companies towards cloud computing and its use for managing e-commerce activities.

Analysis

In this section, we analyze the responses from our survey to understand how companies are making use of cloud for the purpose of their e-commerce needs.

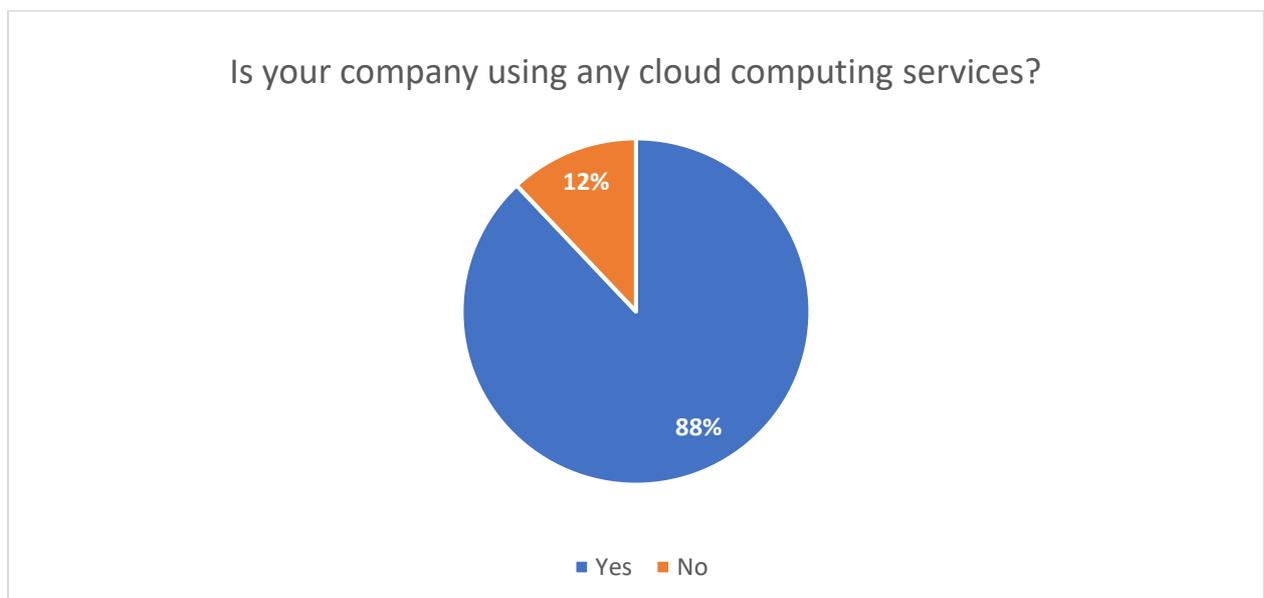


Figure 1: Percentage of Companies using Cloud Computing Services

In the above figure we can see that 88% of companies surveyed i.e. 44 confirmed to be using cloud services while 12% i.e. 6 companies are not using any cloud services at the moment.

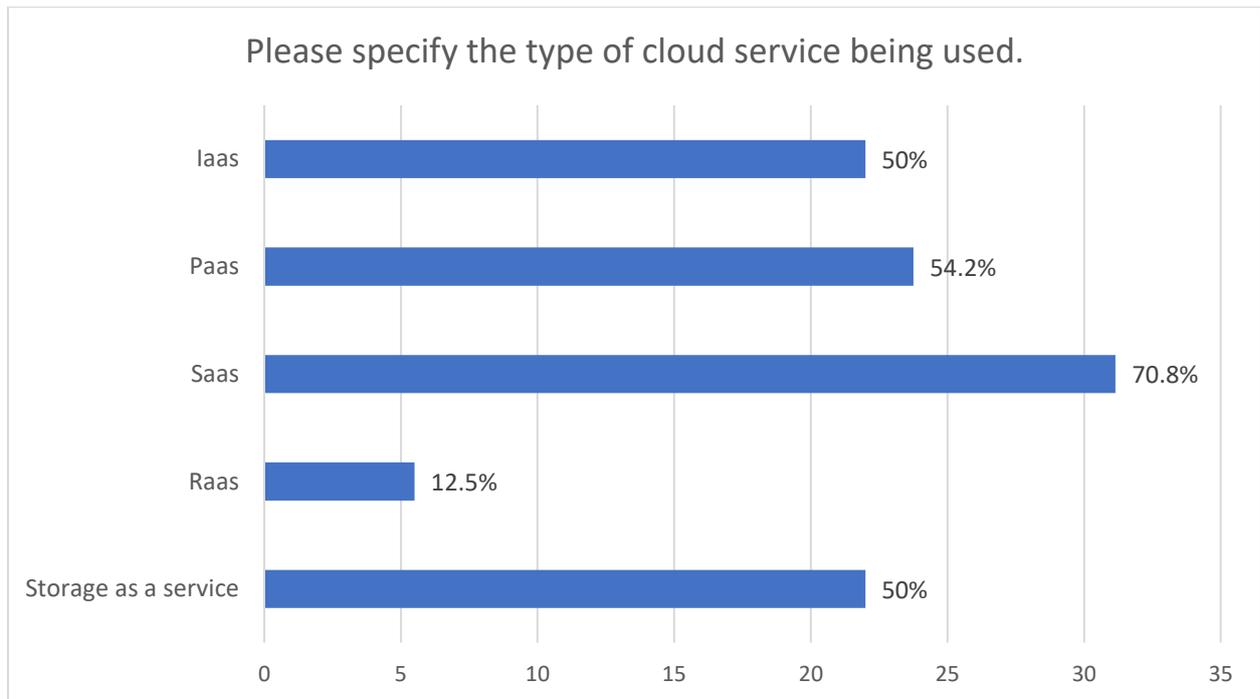


Figure 2: Shows the Type of Cloud Service being used

The above figure shows percentages of the type of cloud services being used by companies. According to the responses, we see that most companies prefer using Software as a service followed by PaaS, IaaS and 50% are also using Storage as a service which is a new trend. RaaS is used by few companies only.

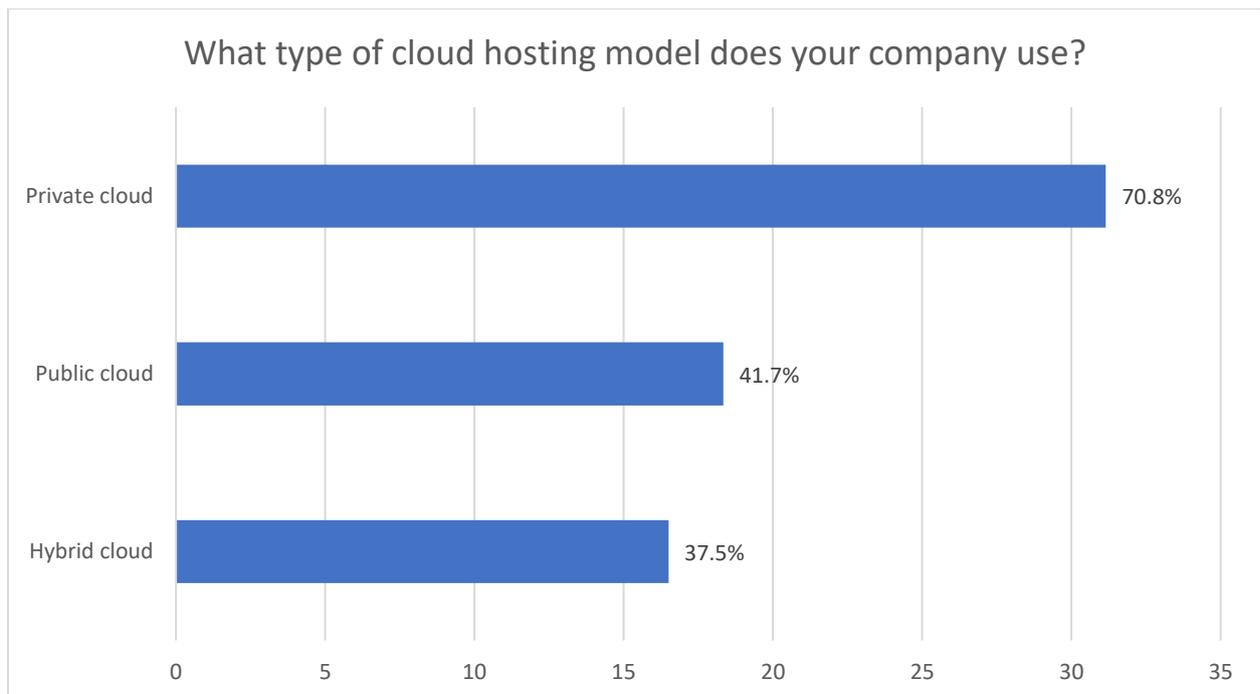


Figure 3: Shows the Type of Cloud Hosting model Companies use

The above figure shows that most companies prefer a private cloud over public or hybrid cloud. This may be for maintaining privacy or for security reasons. Hybrid/federated is relatively new and is gaining popularity slowly.

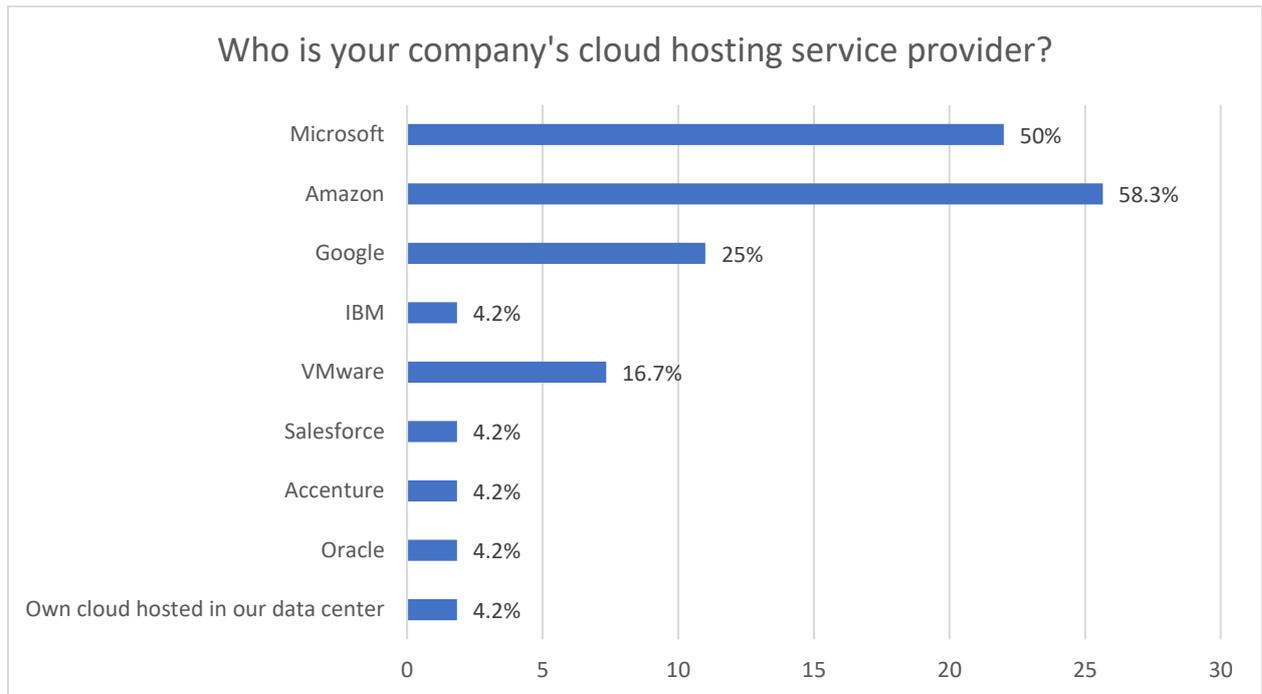


Figure 4: Shows the Cloud hosting Service Providers for Companies

The above figure shows the major cloud hosting providers for companies which are Amazon followed by Microsoft and Google respectively. Some companies even host their own cloud like we see from the last response in the figure.

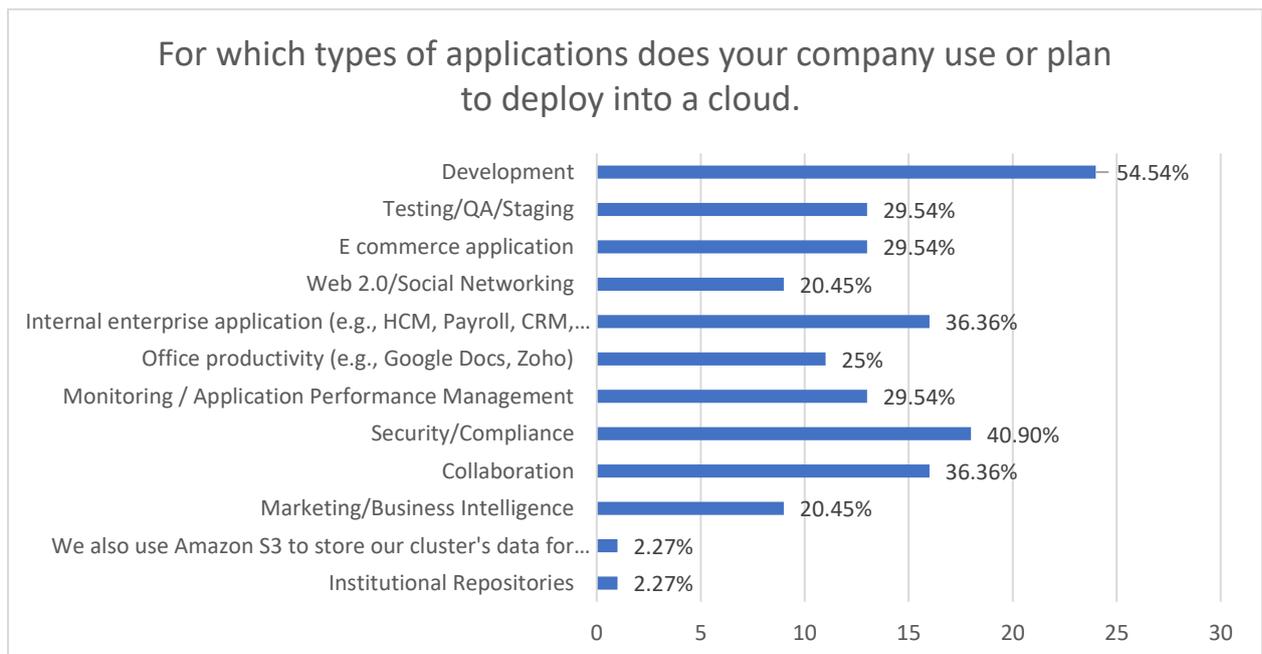


Figure 5: Shows the type of applications used or planned to deploy into a cloud

The above figure shows the applications of cloud services that companies are putting to use for better performance. For a B2C company development, e-commerce, security/compliance and marketing applications take top priorities. One company also mentions to be using Amazon S3 to store their cluster data for backup purposes.

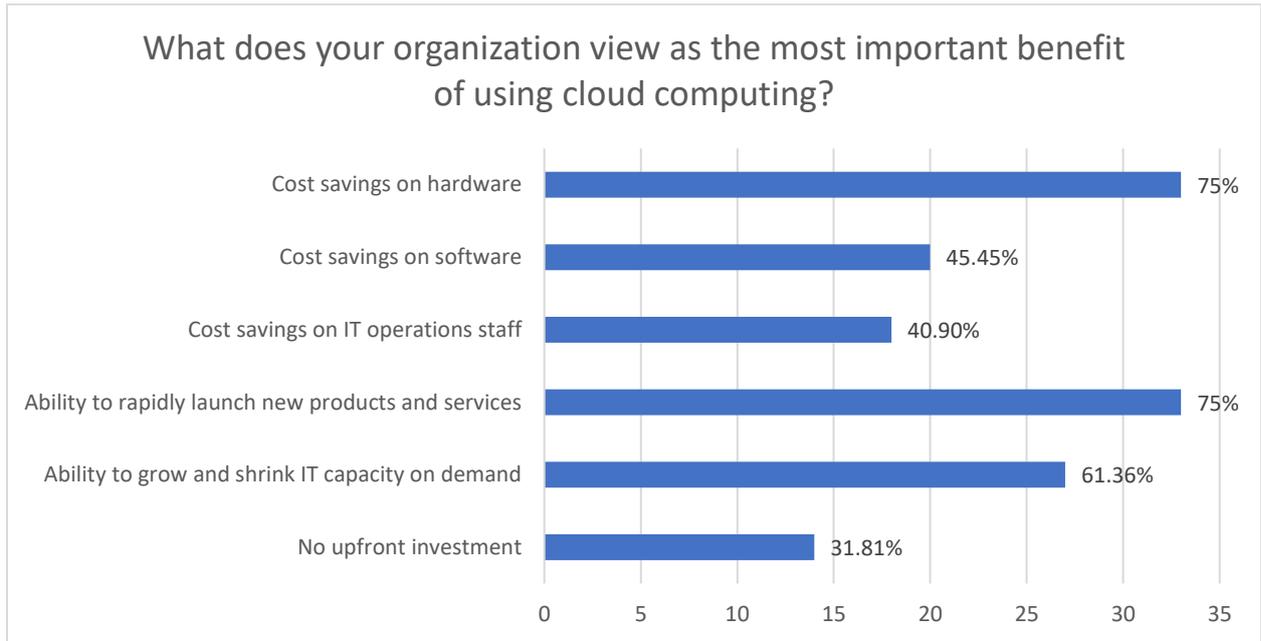


Figure 6: Shows most important benefits of using cloud computing as viewed by companies

The above figure shows the major benefits derived for B2C companies by using cloud computing. Cost savings on hardware and ability to launch new products and services rapidly are the main benefits seen by companies followed by the ability to scale IT capacity on demand and cost savings on software respectively.

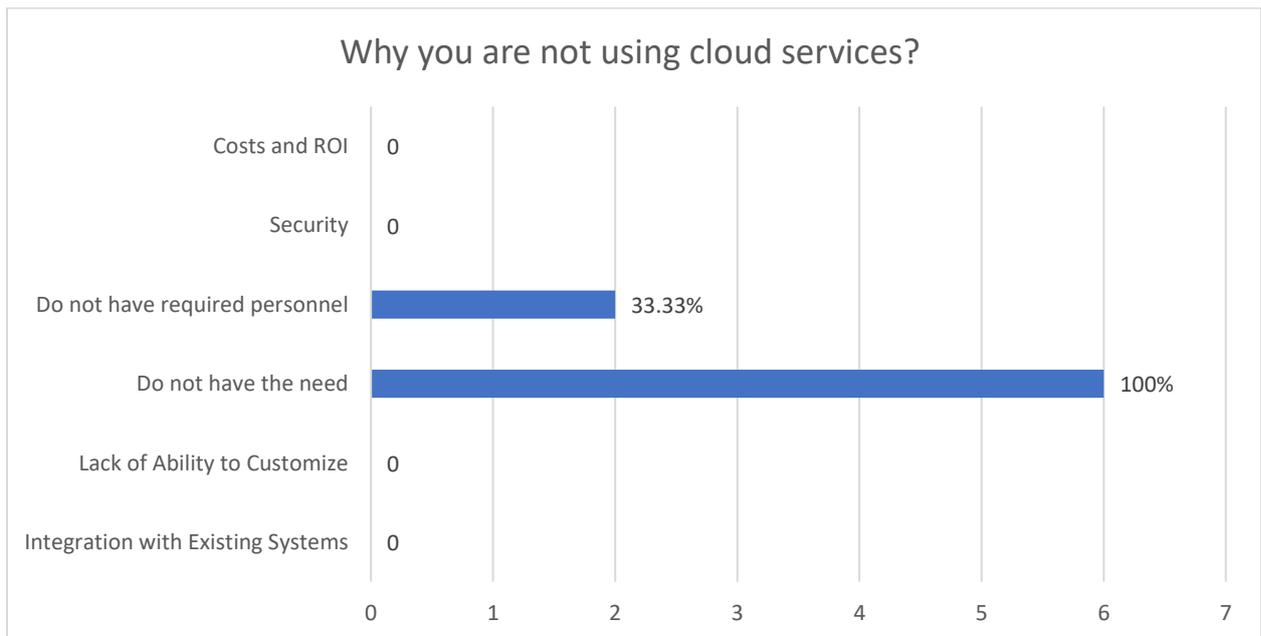


Figure 7: Shows reasons for not using cloud services by companies

The above figure shows us the reasons why 6 companies who had answered the survey were not using cloud services. The main reasons which have surfaced are that the companies either do not have the need or they do not have the required personnel for implementing and maintaining cloud.

Recommendations

- Cloud computing has turned out to be worth full business investment with its effective impact on business.
- It is more cost-effective than an in-house server system.
- Helps to enhance stability in the competitive market.
- One can enhance businesses with social media promotions without having to spend too many resources on upgrading the infrastructure, with the use of cloud computing technology.
- Cloud computing applications impact businesses in a very positive and innovative way.
- Multiple technical and mobile services are providing cloud-based applications along with network frameworks to enable connection with e-commerce operations.
- Choosing the best cloud hosting model taking into consideration the privacy and security policies of a company is very important.

Conclusion

A report by Forrester states that the global market for cloud computing, including cloud platforms, business services and SaaS, will exceed \$200 billion in 2019, expanding at a favorable rate. Cloud computing services are making it possible for the e-commerce companies to reach their goals and provide a customized experience for their customers. The companies which have embraced cloud already have a competitive advantage over the companies who have not adopted it yet. The promptness and innovation which cloud has brought have led to an increase in revenue. A Corporate “No-cloud” policy will be as rare as “no-internet” policy in current times. Hence, there is no doubt that this disruptive technology which is changing the market for the last decade will keep on changing it.

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Biography

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