



An Exploratory Study of the Acceptability of Cloud Computing Services in Nigeria

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ABSTRACT

Cloud computing is a rising technology where data and services reside in massively scalable data centers in the cloud and can be accessed from any connected devices over the internet. The acceptability of a new technology is always being hindered by the lack of positive awareness. This study is to access the level of awareness of cloud computing in order to recommend the proper direction to its acceptability for economic growth of Nigeria. Questionnaires were drafted using relevant parameters of measurements and were subsequently administered to individuals, SMEs and large scale organizations, especially those who work in the technical departments and general computer users. Responses of the respondents were collected and analysed using descriptive tools. It was revealed from the study that cloud computing services have great positive impact on the Nigerian economy. Thus, the utility of the cloud matches the need for today's business because of the dynamic changing environments.

Keywords: *Cloud Computing, Cloud, Cloud computing services, Nigeria, Economic growth*

1. INTRODUCTION

Cloud computing is becoming prominent in the computer industry where the computing is transferred to a cloud of computers. It has become one of the new trendy words of the industry. The main essence of cloud computing is that the very great computing resources that we require will reside in another place or location in the cloud computers and we can make use of them at any time we want to make use of them based on the service level agreement (SLA) with the cloud service provider (Agarwal, 2012). In the past, we used to have data restricted to desktop personal computers and corporate servers. According to Khurana, (2014), he explained that data are now available on remote integrated computers and allied hardware. This ensures un-restricted access thus removing mobility as a factor to restricted access. In the overall sense, there is a change in the study of the physical structure of computation. Cloud computing is combination of many networks which includes everything from cables, routes, servers, data centers and all other similar devices, Susanto et al, (2012).

Zhang and Zhou, (2009) concluded that the final products of the services offered by cloud offerings are services that are provided the Cloud Computing Platform (CCP) has been developed to reduce the overall expenses as it provides the on demand services at any time on pay-per-use pattern. Kaur et al, (2014) provided that Internet is the medium for deploying cloud computing services for users to access the required application and services

, thus there is a need for available of good and quality bandwidth for the cloud to thrive.

The new generation of devices and technologies has brought everything in hand. The work on the go culture is getting involved in day to day activities. The cloud computing plays an important role in bringing the users closer to applications. The Cloud computing is the use of computing resources (hardware and software) that are delivered as a service over a network, Khurana, (2014).

A past review of cloud computing services adoption studied showed that a large measure of the published research was conducted in developed and industrialized countries, Yeboah-Boateng and Essandoh, (2014). They further jointly stated that there has been less work that has been written in developing countries as there are many factors hindering its acceptability, However its innumerable benefits are now currently celebrated

This study is to harness the acceptability of cloud computing in Nigeria if the system has been fully adopted in Nigeria or not, since a new technology is being hindered due to confidentiality reasons, Goel et al, (2012). Apart from the fact that Cloud computing has been in use in Nigeria despite all its pitfall, it is still imperative to identify the opportunities attached to this great technology. Finally, this study expects to make a profound contribution to both literature and practice by providing information on the level of Cloud Computing knowledge usage in Nigeria, as one of the developing country using a technology

adoption mode as used by new knowledge using the methodology of Tan and Lin, (2012)

2. LITERATURE REVIEW

Cloud computing is taking over the world already. This trending technology has greatly impacted everyday of our lives and it is taking Information technology (IT) and communication to a new horizon. Cloud has been able to link different computers and networked systems in order to provide services to users irrespective of their location via internet. The advent of cloud computing has led to so many breakthroughs in Information Technology. The basic idea of cloud computing first began during the 1960's by an American Computer scientist named John McCarthy where he made a proposal that in the future "computers may someday be organized as a public utility". He trusted that with a new way of organizing information or data. Salesforce.com is one of the first to invest in cloud computing, who introduced the concept of delivering enterprise applications through a simple website in 1999. The second was the Amazon in 2002 when they launched the Amazon web Service. Then in 2006, came Google Docs which has spread the word of cloud computing and became the lead of public awareness, Susanto et al, 2012.

Cloud Computing technology has so many technologies and business approached all put together before its final emergence Arockiam et al,(2011).

The figure 1. Below shows the origin of Cloud Computing.

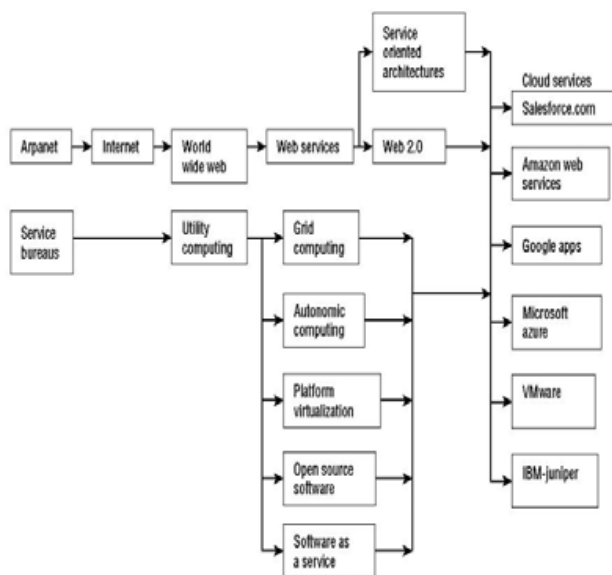


Figure 1: Origin of Cloud Computing [Sharma M. et al(2010)]

As a results, there has been provision of highly scalable infrastructures, IT applications pooled together to provide customer satisfaction, thereby reducing the huge capital of acquiring and setting up.

Thus, there has been provision of highly scalable infrastructures, IT applications pooled together to provide customer

satisfactions, thereby reducing the stress of building and acquiring hardware and software which are to expensive to fund by individual and Small Medium Enterprises (SMEs).Hence, Cloud Computing is simply making hardware, software and bandwidth available to users over the internet under agreed service level agreements. Cloud computing is so famous in the field of providing cheap and easy accessto(InformationTechnology),Sunsanto, (2012) . However it has taken over the way we use, store and retrieve information.

Most developed countries are already enjoying the impact of Cloud Computing Technologies. According to Kshetri(2013) ,he confirmed that China is a great move and development of cloud computing and that "China has a stronger ecosystem developed to support the cloud computing industry than most other emerging economies". Federic Etro(2009) was able to diffuse the business and economic impact of cloud computing and he confirmed so many successes which has left a great turn around in thriving of new SMEs.

2.1 Cloud Computing Services

In Nigeria, Cloud computing is picking up and its impact on the economic growth of Nigerian economy cannot be underrated. The various cloud services which are currently in use are as described below. Each of this service has contributed largely to the growth of Nigerian economy and it is still currently impacting her economy. According to [S. Zhang, X. Chen, and X. Huo,2010], it was stated cloud computing technologies can be categorized in to eleven major patterns. However ,Zhang and others (2010) also explains the three basic business model of cloud computing as explained below:

IaaS((Infrastructure as a Service)

This form of cloud delivers typically a platform virtualization service. It provides each user with facility of individual servers, disk drives, computing resources, private networks, messaging systems etc . Akhileshi Agarwal(2012) stated that the customers do not need to purchase servers, software datacenter space or network equipments but purchase those resources as a fully outsourced services . The users of the service pay for their usage and also have the right to control the operating systems, storage and the application with limited control on some selected components, Arockiam et al,(2011). Examples are Google Cloud Storage, Amazon Web Services etc.

SaaS Software as a Service)

This involves the provision of software over the internet. Here, the customer does not require installation of the software, it is remotely made available for users via the internet. It provides user with a facility to run applications and not to install any kind of software on their device. They can run it on cloud infrastructure. In this also user has to pay only for what he use Akhileshi Agarwal(2012) , Prasad M.R(2012). For example, web-based emails such as YahooMail, Hotmail, Gmail etc , Googledoc, Microsoft Office365, Microsoft's Live, Google Apps, ZOHO CRM and Apple's iCloud. etc ,Jiaqi Duan et al,(2013).

PaaS(Platform as a Service)

This provides a platform through a computational resources on which applications and services can be hosted. In this case, customers pay for access to the platforms so as to be able to deploy their own software and application using the acquired applications and tools provided by the Cloud Service provider with no permission access to underlying cloud infrastructure including network, servers, operating systems, or storage, Winker J.R (2011), Jiaqi Duan et al,(2013).

Examples are Microsoft Azure, salesforce.com, Long jump, Rollbase etc.

3. RESEARCH METHODOLOGY

In Nigeria, cloud computing is already taken shape and many users ranging from individuals (Is),SMEs and Large Scale Organizations (LSOs).Since Nigeria is a developing country there are lots of benefits and downfall of this services. Research of this type can be meaningfully carried out by a careful planning process. The design of this research follows Kellingers (1996), in which research design is explained as the plan, structure and strategy of investigation conceived as to obtain answers to research questions. An attempt is made in this study to sequentially treat the problem by selecting information from which collected data were obtained and the characteristics of the population were carefully put in mind.

3.1 Research Population

The population used for the purpose of this study consists of individuals, SMEs(Small Medium Enterprises) and large scale organizations who work in Information Technology Departments and those who make use of computer systems.

3.2 Research Problems and Hypothesis

In this research, many problems are intrinsic in the assessment of the cloud computing usage in Nigeria?

- (i) Has it been totally accepted?
- (ii) What is the current level of awareness in Nigeria?
- (iii) What advantages does it have on Nigerian economy?
- (iv) What are the problems usually associated with the access and use of cloud computing?

3.3 Data Acquisition

In this study, parameters to determine the level of awareness and use of cloud computing was harnessed so as to generate relevant data. Questionnaires was drafted using relevant parameters of measurements. The questionnaires was subsequently administered to individuals, SMEs and large scale organization especially those who work in the technical departments and general computer users. Responses of the respondents will be collected and analysed.

3.4 Data Analysis

Acquired data will be subjected to both descriptive and inferential statistical tools. The descriptive tools such as percentages and relevant charts. This will give the summary of the data acquired

3.5 Limitations to the Methodology

The limitations refer to those extraneous circumstances that could create imperfections in the study. In other word those uncontrollable factors which are capable of affecting the reliability of the variables. Those identified are:

- (i) The population size was small because of the sensitivity of the topic and security reasons. Therefore, only few respondents share their views, suggestions, information and their experience.
- (ii) Being a pilot study not funded by any grant, limited fund thus brought about constraints in the sample size.

3.6 Data Collection

The questionnaires administered were a total of one hundred and twenty, cutting across individuals, SMEs and large scales organizations in ICT, Telecommunications, Manufacturing, Trade, Government and others. Sixty-seven of the questionnaires were returned, representing 55.8% of the questionnaires were administered. The results were pulled together from all sources listed above. There are various responses from various organizations ranging from local to international. The percentages of the responses stated in table 4.1.

The numbers of users who claimed to have used cloud computing services and are still using cloud computing services are 67(sixty-seven)., which is the total number of the responses from the questionnaires. This graph is shown in the figure 4.2 below:

Table 4.1 Results from various location of companies

Location of Company	Responses	Percentages
Local company	27	40%
Local company with the foreign affiliates	15	23%
Part of an international corporation	17	25%
International corporation	8	12%
Local company	27	40%

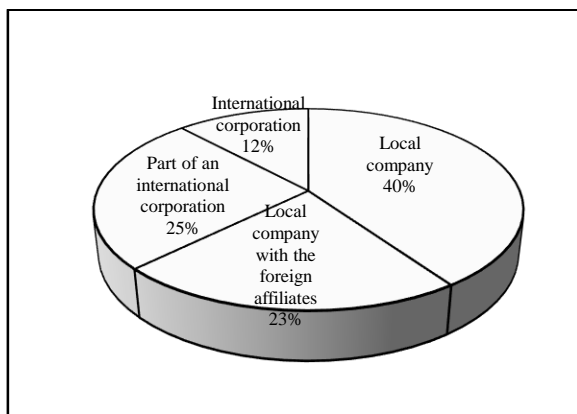


Figure 4.1 Distribution of different location of companies

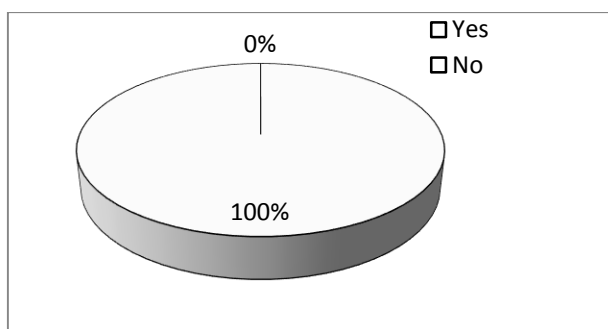


Figure 4.2 Cloud computing services users

4. RESULTS AND DISCUSSIONS

4.2 Results of Cloud Computing Services

The table below represented the responses of cloud computing services usage in a general term

Table 4.2 Responses from the general usage of cloud computing services

Cloud Computing Usage	Responses	Percentages
Cloud Computing used in the past, but projects have been discontinued	2	3%
None at present, and not planning within the next 12 months	0	0%
None at present, and but planning within the next 12 months	0	0%
Running a pilot project at present	12	17.9%

Running a production system at present	53	78.1%
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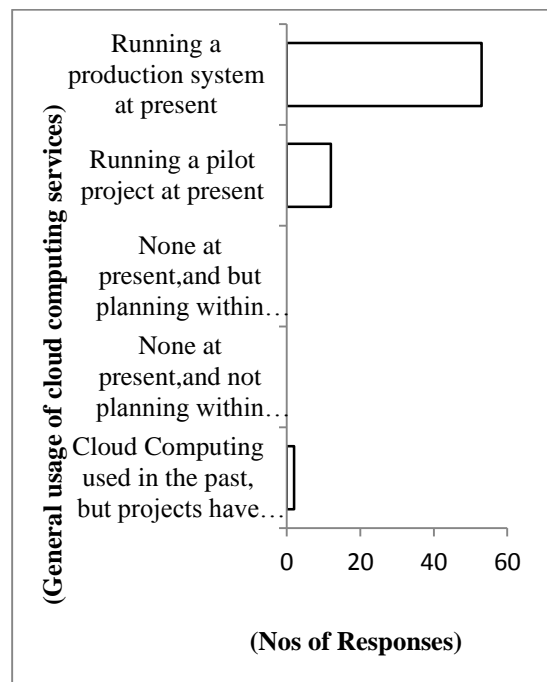


Fig. 4.3 Responses from the general usage of cloud computing services

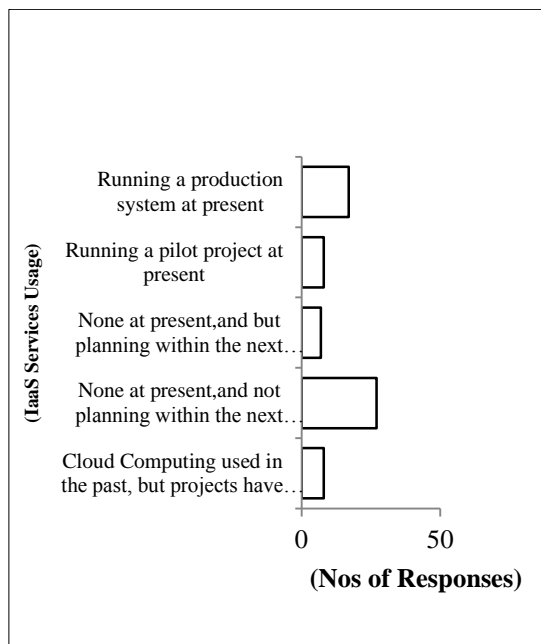
From the figure above, the percentage of those running a production system contributed to the highest number of those using the Cloud computing service of 78.1% while those running a pilot project contributed the 17.9% of the total responses of those who are running any of the cloud computing services and those who has discontinued the service contributed to 3%, which is the least. This indicated that cloud computing services are in use by Nigerians. Now since cloud computing has different types depending on the requirements by different users which have been categorized as IaaS, SaaS and PaaS. It is expedient that each of the services is analysed to know which of the services is mostly in use.

4.3 Results from IaaS (Infrastructure as a Service)

The table below represented those who use IaaS (Infrastructure as a Service), a type of capability given to the customer as a raw storage space, computing or network resources with which the customer can run and execute operating system, applications or any software they choose. The cloud customer is not able to control the distribution of the software to a specific hardware to a specific platform or change the parameters of the underlying infrastructure but the deployed software can be managed from the boot level upwards.

Table 4.3 Responses from various times of IaaS being used

Cloud Computing Usage	Responses	Percentages
Cloud Computing used in the past, but projects have been discontinued	8	12.0%
None at present, and not planning within the next 12 months	27	40.3%
None at present, and but planning within the next 12 months	7	10.4%
Running a pilot project at present	8	11.9%
Running a production system at present	17	25.4%


Figure 4.4 Responses from various times of IaaS being used

The percentage of those who are not making use of the IaaS service and are not planning to acquire it has the highest value of 40.3% followed by those who are already using the service which is 25.4% while those who used the service but discontinued it and that of those testing the service have the same percentage which is 12% as some users are dropping the service, others are in the process of acquiring the same service. The customers who are not using the cloud computing but are planning to use it within 12 months is 11.9% which is one percent lesser than those who dropped the service and who are testing the service.

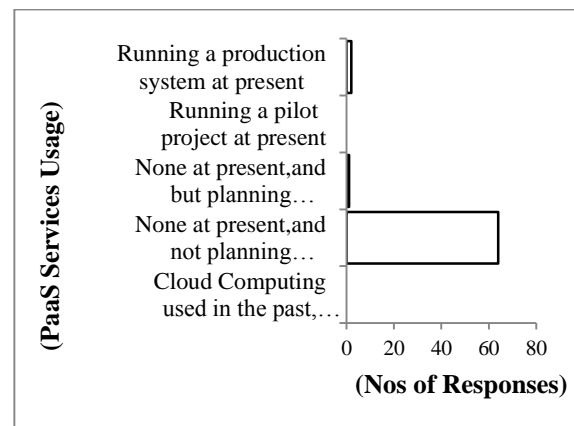
4.4 Results from PaaS (Platform as a Service)

In this case, the cloud provider provides the hardware, toolkit and a number of supported programming languages to build higher

level services (i.e the software application that are made available as a part of a specific platform). The users of PaaS are usually software developers who host their applications on these platform and provide the applications to the end-users. The results are as shown in the table 4.4 and figure 4.5 below respectively.

Table 4.4 Responses from various times of PaaS being used

Cloud Computing Usage	Responses	Percentages
Cloud Computing used in the past, but projects have been discontinued	0	0%
None at present, and not planning within the next 12 months	64	95.5%
None at present, and but planning within the next 12 months	1	1.5%
Running a pilot project at present	0	0%
Running a production system at present	2	3%


Figure 4.5 Responses from various times of PaaS being used

The provider of PaaS services contributed 3% to the whole sample population. This is because the service is not a general service that many organisations venture into. It is meant for dynamic software developers and it is observed that majority of organisations do not provide PaaS service in Nigeria which contributed to 95.5% of the whole sample.

4.5 Results from SaaS (Software as a Service)

The customer of SaaS is an end user of complete applications running on a cloud infrastructure and it is offered on a platform on-demand. The application is usually accessible through a thin client interface such as web browser. The customer or user does not have control on the underlying infrastructure but have control

on the application parameters and user settings. The results of SaaS cloud computing service is shown in the Table 4.5 and Figure 4.6 below.

Table 4.5 Responses from various times of SaaS being used

Cloud Computing Usage	Responses	Percentages
Cloud Computing used in the past, but projects have been discontinued	0	0%
None at present, and not planning within the next 12 months	0	0%
None at present, and but planning within the next 12 months	0	0%
Running a pilot project at present	1	1.5%
Running a production system at present	66	98.5%

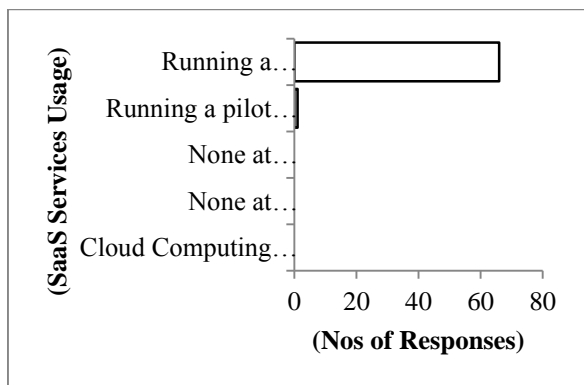


Figure 4.6 Responses from various times of SaaS being used

From the figure 4.6 above, it is clear that customers of SaaS has the highest sample of 98.5% as stated in Table 4.5 and it is therefore a service that is ready available for most companies and computer users.

4.6 RESULTS FROM THE TYPES OF SaaS(Software as a Service) USAGE

- The results from the types of SaaS services are based on three categories so as to as certain the level of it usage. They are as stated below Responses from the type of SaaS services used in the past.
- Responses from the type of SaaS services currently in use

- Responses from the type of SaaS services to be used within the next 12 months.

4.7 Results from the types of SaaS USED IN the past

The table below shown below is the results of the types of SaaS services used the past.

Table 4.6: Responses from the type of SaaS services used in the past

SaaS Services	Responses	Percentages
Analytics	47	70.1%
Collaboration(e.g office applications)	17	25.4%
Communication(e.g E-mail)	67	100.0%
Content Management	67	100.0%
Finance & Administration	38	56.7%
Human Resources	15	22.4%
IT Managements	23	34.3%
Marketing	16	24.0%
Productivity & Resources	17	25.4%
Supply & Logistics	6	9.0%
CRM/Sales	17	25.4%
Services & Support	53	79.1%
Others	7	10.4%

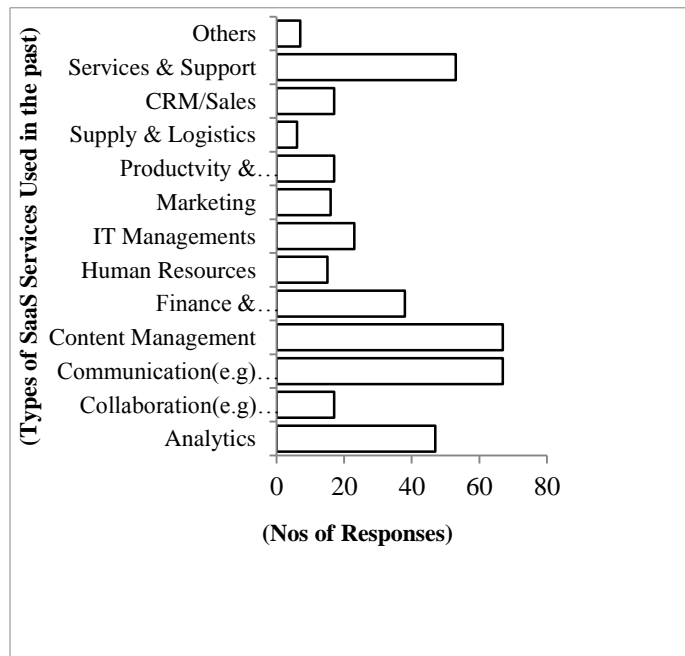


Figure 4.7 Responses from the type of SaaS services used in the past

From the Table 4.6 and Figure 4.7 above, the type of SaaS services with the highest sample are Content Management and

Communications (e.g. e-mail) of 100%, followed by Analytics which is 70%, the results shown that there is a demand for analytics services which because of its extensive usage in analyzing the web contents to determine all the activities that took place on the specified site.

4.8 Results from the types Of SaaS Services Presently in use

Table 4.7 Responses from the type of SaaS services currently in use

SaaS Services	Responses	Percentages
Analytics	55	82.1%
Collaboration(e.g) office applications)	38	56.7%
Communication(e.g) E-mail	67	100%
Content Management	67	100%
Finance & Administration	59	88.1%
Human Resources	48	71.6%
IT Managements	50	74.6%
Marketing	55	82.1%
Productivity & Resources	35	52.2%
Supply & Logistics	18	27%
CRM/Sales	25	37.3%
Services & Support	24	35.8%
Others	9	13.4%

From the table above, the degree of usage of the type of SaaS services have increased from what it was in the past. This implies that cloud computing services are increasing day by day despites all the challenges associated with them.

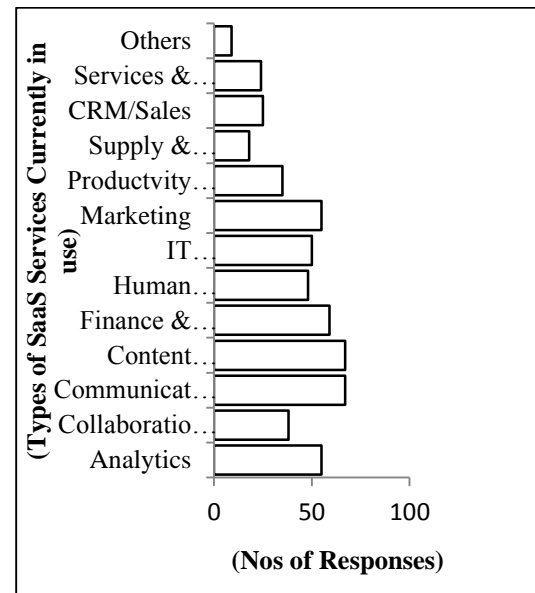


Figure 4.8 Responses from the type of SaaS services currently in use

4.9 Results from the types of SaaS SERVICES to be use within the next 12 months

The results of types of SaaS services to be used within the next 12 months are stated in the table 4.7 and the plotted bar graph in figure 4.8 below depicts some increment in the demand of cloud computing services. The indication is that the various SaaS services to be used within the next 12 months is on the increase side.

Table 4.8 Responses from the type of SaaS services to be used within the next 12 months

SaaS Services	Responses	Percentages
Analytics	67	100%
Collaboration(e.g) office applications)	55	82.1%
Communication(e.g) E-mail	67	100%
Content Management	67	100%
Finance & Administration	67	100%
Human Resources	30	44.8%
IT Managements	67	100%
Marketing	65	97%

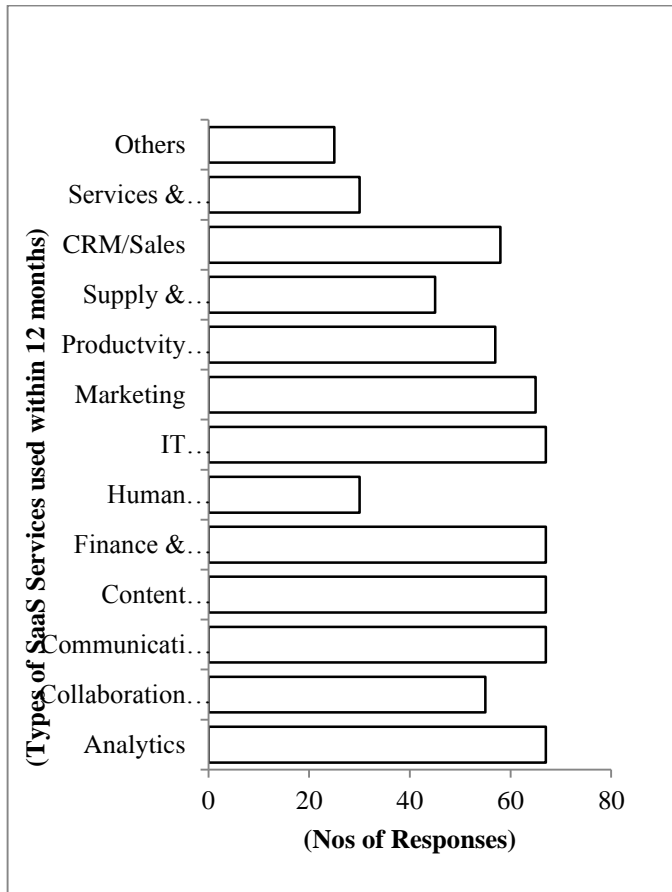
Productivity & Resources	57	25.4%
Supply & Logistics	45	9.0%
CRM/Sales	58	25.4%
Services & Support	30	45%
Others	25	37.3%

- Responses from the type of IaaS services to be used within the next 12 months

4.11 RESULTS FROM THE TYPES OF IaaS SERVICES USED IN THE PAST

Table 4.9 Responses from the type of IaaS services used in the past

IaaS Services	Responses	Percentages
Compute(server instances)e.g AmazonEC2	3	4.5%
Storage(e.g Amazon S3)	7	10.7%
Database(e.g. Amazon SimpleDB)	12	18%



The table above shown the types of IaaS services used in past . From the figure 4.10 shown below, the database has the highest demand of 18% followed by storage which is 10.7% and computer server instances of 4.5% respectively.

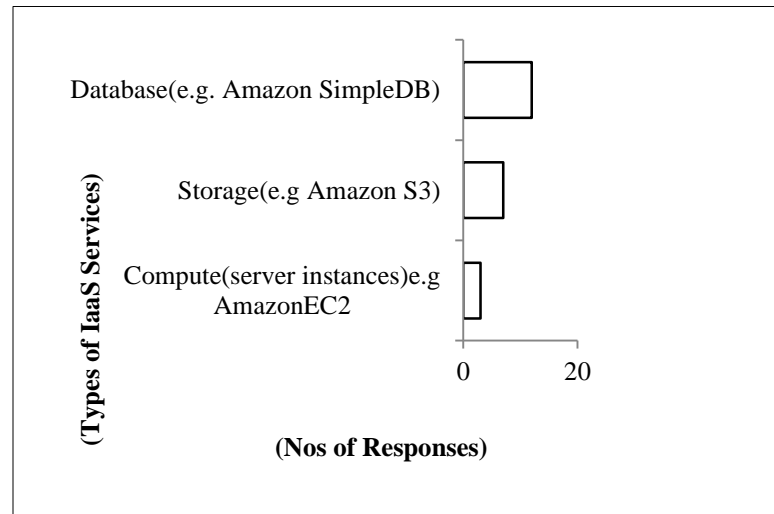


Figure 4.9 Responses from the type of SaaS services to be used within the next 12 months

Figure 4.10 Responses from the type of IaaS services used in the past

4.10 Results from the types of IaaS (Infrastructure as a Service) Usage

The results from the types of IaaS services are based on three categories so as to ascertain the level of its usage. They are as stated below

- Responses from the type of IaaS services used in the past
- Responses from the type of IaaS services currently in use

4.12 Results from the types of (IaaS) Services Presently in use

From the table 4.10 as shown below, there is an increment in the usage of compute(server instances) from 4.5% to 56.7%, storage from 10.7% to 39% and databases from 18% to 31.3% respectively. This depicts that the era of cloud computing of IaaS is also increasing as compared to what it is used to be in the past.

Table 4.10 Responses from the type of IaaS services currently in use

IaaS Services	Responses	Percentages
Compute(server instances)e.g AmazonEC2	25	56.7%
Storage(e.g Amazon S3)	26	39%
Database(e.g. Amazon SimpleDB)	21	31.3%

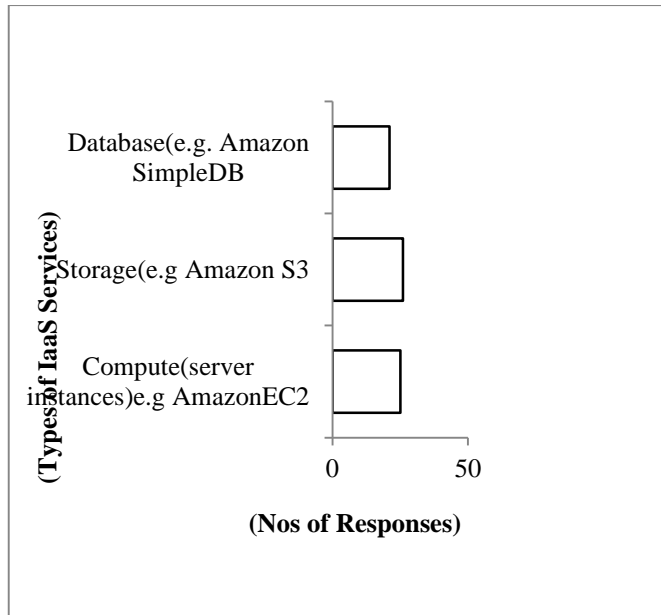


Figure 4.11 Responses from the type of IaaS services currently in use

4.13 Results from the types of (IaaS) services to be used within the next 12 months

From the table 4.11 shown that many organisations will acquire more of IaaS services in the future. The highest bar from Figure 4.12 shows that more companies will adopt more storage services for their information.

Table 4.11 Responses from the type of IaaS services to be used within the next 12 months

IaaS Services	Responses	Percentages
Compute(server instances)e.g AmazonEC2	28	42%

Storage(e.g Amazon S3)	30	45%
Database(e.g. Amazon SimpleDB)	28	42%

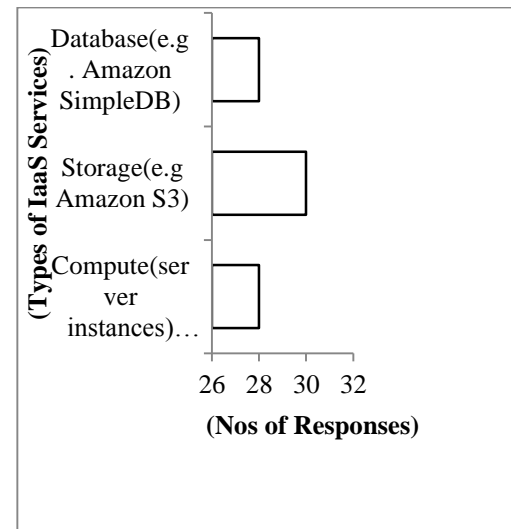


Figure 4.12 Responses from the type of IaaS services to be used within the next 12 months

4.14 Results from the types of PaaS service provider being used

PaaS services are services developed by softwares developers for their customers, this research only based it findings on the platforms already made available by PaaS service providers. They are as shown in the table below. From the table 4.12 as shown below, with its pictorial representation as shown in Figure 4.13, the PaaS service provider that has the highest patronage is Google, 100%, followed by Microsoft Windows Azure which is 82.1%. This means that Google and Microsoft services (PaaS providers) are greatly in use in Nigeria.

Table 4.12 Results From the types of PaaS Service Provider Being Used

PaaS Services	Responses	Percentages
Force.com	12	18%
Microsoft Azure	55	82.1%
Google App Engine	67	100%
gCloud3	3	4.5%
Work Express	5	7.5%
Wolf frameworks	1	1.5%
Appistry	3	4.5%

Ca.technologies	1	1.5%
Engineyard	0	0%
Openstack	0	0%
Long Jump	1	1.5%
Others	2	3%

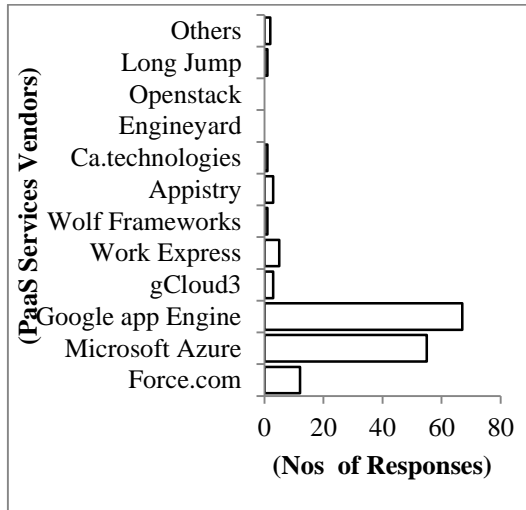


Figure 4.13 Results From the types of PaaS Service Provider Being Used

4.15 Results of IT Operational Expenditure on Cloud Computing Services

The results of information technology operational expenditure constituted by cloud computing services are as stated below in table 4.13. The highest rate of IT operational expenditure that constituted the cloud computing is between 1% to 25% and it is diagrammatically represented in figure 4.14. This indicated that despite the adoption and funds spent on cloud computing services, they are still able to make profits.

Table 4.13 Responses From IT Operational Expenditure on Cloud Computing Services

IT Operational Expenditure	Responses	Percentages
1-25%	67	100%
26-50%	0	0%
51-75%	0	0%
76-100%	0	0%

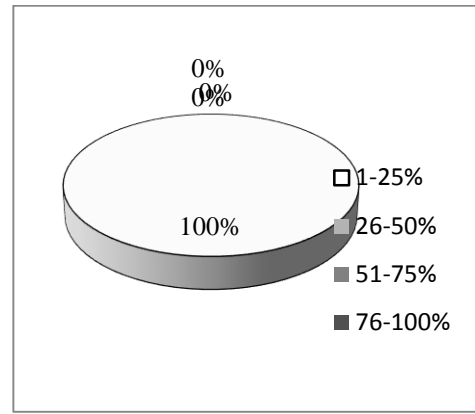


Figure 4.14 Responses From IT Operational Expenditure on Cloud Computing Services

4.16 Results from the Motivations for Cloud Computing Services

There are various reasons for motivations for cloud computing, according to the table 4.14 as shown below. The improved support for business processes ,better responsiveness to requirements,turning APEX to CAPEX and rapid implementation are of the highest rate for many organisations in Nigeria.The other motivations such as Cost Reduction-TCO (Total Cost of Ownership), Improved ROI (Return on Investments) and improved scalability are 45%, 84% and 89.1%.

Table 4.14 Responses from the motivations for cloud computingservices

Motivations for Cloud Computing	Responses	Percentages
Cost Reduction(TCO)	30	45%
Improved ROI	56	84%
Turning CAPEX into OPEX	67	100%
Improved support for business processes	67	100%
Better responsiveness tochanging requirements	67	100%
Rapid implementation	67	100%
Improved scalability(elasticity)	60	89.6%

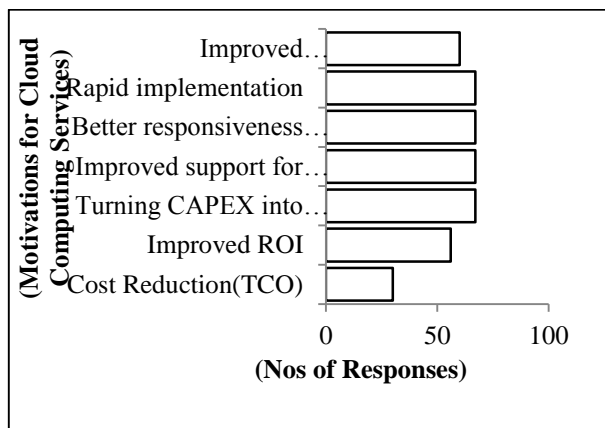


Figure 4.15 Responses from the motivations for cloud computing Services

4.17 Results from the Evaluation of Suitability of Cloud Computing Services

The results from the evaluation of suitability of cloud computing are presented in table 4.15 and figure 4.16 shown below (means how the companies get to know that cloud computing services is suitable for their businesses?), Only 82.1% adopted cloud computing based on the recommendation of service provider/system integrator while 1.5% reported that they got to know that cloud computing is suitable for their organisation after evaluation.

Table 4.15 Responses from the evaluation of suitability of cloud computing services

Evaluation of Cloud Computing	Responses	Percentages
Using your own recommendation	12	1.5%
Based on recommendations of service providers	55	82.1%

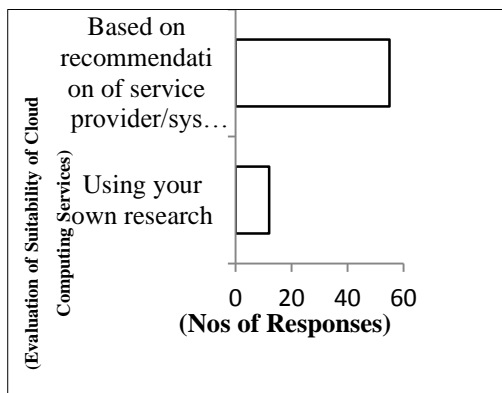


Figure 4.16 Responses from the evaluation of suitability of cloud computing services

4.18 Results from Challenges After Adopting Cloud Computing Services

The results from the concerns after adopting cloud computing system differed from different organisations as shown in table 4.16 below, the concern with the highest percentage is the high cost 74.6%, that is it is costly followed by the network speed which is rated as 71.6%.

Table 4.16 Responses challenges encountered after adopting cloud computing services

Challenges of Cloud Computing	Responses	Percentage
High Cost	50	74.6%
Security concerns	15	22.4%
Lack of control over resources	36	54%
Lack of availability of suitable services	3	4.5%
Concerns about service availability	16	24%
Network speed issues	48	71.6%
Dependence on external service provider	12	17.9%
Others	18	26.9%

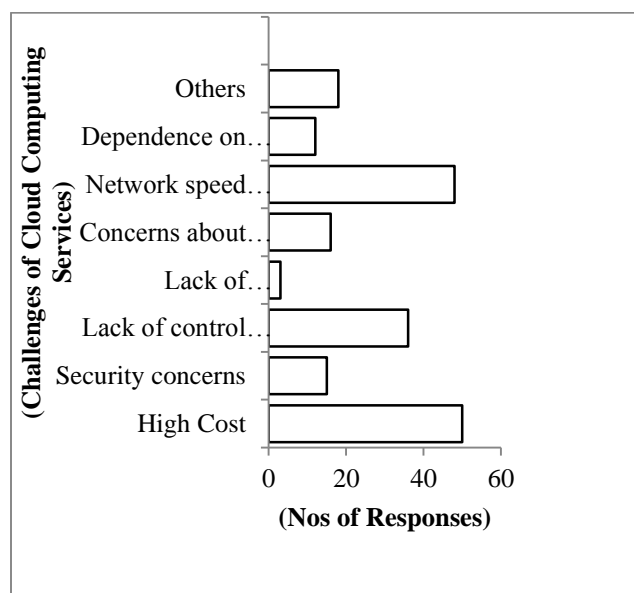


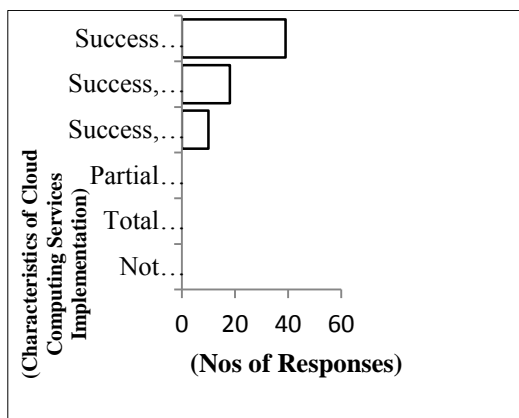
Figure 4.17 Responses from challenges encountered after adopting cloud computing services

4.19 Results from the Implementation of Cloud Computing Services

The following criteria such as “not applicable, total failure, partial failure, success but limited benefits and success, benefits as expected” were used to characterize the implementation of cloud computing from various organizations are shown in the table 4.14 below

Table 4.17 Responses from the implementation of cloud computing services

Implementation of Cloud Computing	Responses	Percentages
Not applicable	0	0%
Total failure	0	0%
Partial failure	0	0%
Success, but limited benefits	10	14.9%
Success, benefits as expected	18	26.9%
Success exceeded expectations	39	58.2%

**Figure 4.18 Responses from the implementation of cloud computing services**

From the figure 4.18 above, the results shown that the implementation of cloud computing with the success exceeded expectations contributed the highest rank of 58.2%, those with success as expected has 26.9% and success with limited benefits has 14.5% which is the least of the total responses (as stated in table 4.17 above). There were no report on the other criteria which are not applicability, total failure and partial failure on the implementation of cloud computing. The overall results implied a success story for most companies.

5. CONCLUSION

An exploratory study was conducted on cloud computing services in Nigeria. A number of cloud problems were identified. In eliminating the cloud problems of traditional application development, cloud computing technology allows companies from all aspects to focus on developing business applications that deliver true value to their businesses and customers. The platform gives room for information technology innovation while avoiding the cost and headaches associated with servers, individual software solutions, middleware or point-to-point connection, upgrades-and the staff needed to manage all. Companies have to be careful in selecting what type of data they share and allow in the cloud since average citizen does not want their personal information to be unprotected and available. Cloud

computing can be a useful resource to help companies save money but can also have downfalls/challenges. With these results, it could be concluded that the utility of the cloud matches the need for today's business because of the dynamic changing environments. The features were used by the technical giants who are not easily affordable by the small enterprises due to heavy pricing can now be made available to them[AGA12]. Finally from this study, it was quite evident that Nigerians are making use of cloud computing services to enhance their various businesses despite all the challenges associated with them.

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