

CLOUD COMPUTING AND COMMUNICATION SUCCESS OF RIVERS STATE GOVERNMENT PARASTATALS

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ABSTRACT

The study examined the relationship between cloud computing and communication success of Rivers State Government Parastatals. The objective of the study was to examine how cloud computing relate with measures of communication success of Rivers State Government Parastatals. The cross-sectional explanatory survey research design was adopted for the study. The population of this study consisted of fifteen (15) functional and accessible Rivers State Government Parastatals. By the adoption of census sampling technique, the entire population of fifteen (15) Rivers State Government Parastatals was used as the sample. Structured questionnaire was used as instrument for data collection after face-validation. Cronbach alpha was used to test the internal consistency of the instrument. Out of 244 copies of the questionnaire administered, a total of 221 copies (91%) were retrieved. Arithmetic mean was used for the univariate analysis while the test of hypotheses was done using Correlational Statistical tool such as Spearman Rank Order Correlation and Partial Correlation. The findings revealed that cloud computing has significant positive relationship with communication success of Rivers State Government Parastatals. The study concluded that cloud computing bring about improvement in communication success in Government Parastatals. Among other things, the study recommended that Rivers State government parastatals should set up technological systems that will support the adoption of cloud computing in order to enhance their notification, feedback, and information access processes.

Keywords: Cloud Computing, Communication Success, Timely Information, Effective Coordination, Information Security

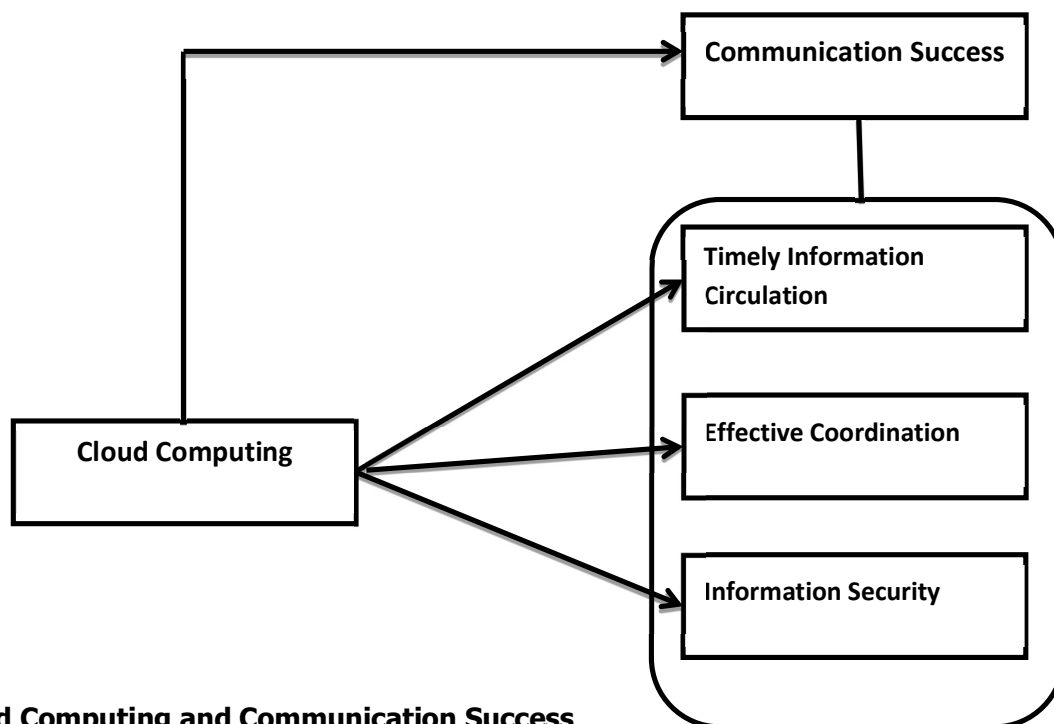
INTRODUCTION

One of the issues that necessitated this study is the seeming communication failure or communication problems permeating some of the Rivers State Government Parastatals. The researcher's experience with some of the Rivers State Government Parastatals suggests that their administrative system is fraught with slow information circulation, poor coordination and incessant cases of misplaced files. As opined by Amadike (2019), in most cases, letters, memos and other information contents do not get to the right persons on time. Sometimes, people get to know about a scheduled meeting on the day of the meeting. The feedback culture equally appears to be very poor. Linked to slow information circulation is the issue of poor coordination and slow administrative process. A study done by Dike (2018) revealed that there is a growing level of slow workflow in the Rivers State Civil Service due to poor coordination. Little or no attention is given to supervision and tasks management and this seems to result to general inefficiency in the system. The misplacement of active files and loss of relevant information also appears to be prominent in most of the Rivers State Government Parastatals. The researcher has also observed that in spite of the proliferation of computer systems in some of the Rivers State Government Parastatals, the administrative system is mostly run manually with little traces of virtualization.

Admittedly, the Covid-19 lockdown forced in some level of administrative virtualization in some of the Rivers State Government Parastatals as the period witnessed an upsurge in the use of

e-mailing, zoom meeting application, office WhatsApp, and a host of other online activities. However, a lot about these virtual administrative practices have died down with very minimal traces. Most offices today, rely more on the traditional paper-based administrative practices rather than using database management system, OneDrive and online meeting technologies. The researcher's interactions with some of the Rivers State Government Parastatals suggest administrative files are mostly stored in local storage devices. Meetings are mostly face-to-face meetings with little or no online meeting arrangements. This traditional administrative system is capable of impeding communication success.

Operational Frame Work



Cloud Computing and Communication Success

Digitally conscious administrative systems today, leverage on online computing infrastructure in managing their records rather than keeping them in file cabinets or location-based data storage facilities such as hard disk, flash drive, memory card, memory stick, CD ROM, etc. This makes it easy and pretty fast to be reached by any authorized administrator or worker. This means that an administrator can easily and speedily reach for a file or document stored in OneDrive, Google Drive, E-mail, etc. and as well relay it electronically to anyone he/she wishes to. The use of file cabinets or location-based data storage facilities such as hard disk, flash drive, memory card, memory stick, CD ROM, etc. implies that anyone who needs any of the data or information stored in those facilities will have to physically get to the location before they can utilize such data or information. This makes information usage and circulation difficult and dull. Also, virtual storage services as enabled by cloud computing, also enables businesses to access and conveniently use virtual packages such as Google Doc, Google Sheet, Google Slide, etc. (Graham, 2019). By expansive subscription, organizations or units of an organization can enjoy additional office data processing and storage packages. This means that an administrator in a government parastatal can edit documents online and the work gets saved automatically as they are working on it. This takes away the hassle of downloading and editing documents on Microsoft Word or any other offline word editing application, and saving back to the cloud facility such as Google Drive, OneDrive, etc.

With cloud computing, employees can now work remotely. Virtual desktops can access files from anywhere and at any time. Organizations can even provide secure remote access to all of its remote employees. With this, there is a reduced risk of virus outbreaks and other security threats. Remote employee productivity can also be monitored in real-time so that businesses no longer have to worry about whether their employees are actually working. This means that in spite of their diverse locations, they still share files speedily. As a matter of fact, administrative heads at different locations can work on the same file at the same time via Google Doc, Google Sheet etc., which indicates fast circulation of information. If not for cloud computing, this may not have been possible.

Meskerem and Abrehet (2014) asserted that cloud computing has brought the idea of storing and managing data on virtualized servers so that, applications, individuals and organizations around the world can have the ability to connect to data and computing resources anywhere and anytime. This idea of storing data or running applications on clouds has been proved effective in improving the reliability since the data and application are stored and backed up on a number of computers which reduces the chance of data and application loss. Cloud technology or computing offers a number of benefits which include but not limited to time and cost saving, flexibility, reduction in loss of information, technological innovation, provision of a real competitive advantage and improved business performance (Fatuma et al., 2014).

With all of the benefits cloud computing offers employees and businesses, you can also hire talent from anywhere around the world. There are no geographical barriers stopping you from finding the best person for the job. Collaboration and communication tools are also available so that teams can work together no matter where each individual employee is. This means that an administrative head who is not in the country can still work alongside his colleagues in real time, making information circulation a fast move in a highly secure way. There is no delay in information circulation amongst them. Office and information managers today, subscribe to Google drive and other services in order to upload, save, retrieve and share administrative files stored online for easy access anytime. This makes it possible for office workers and committee members to access and even upload documents to a platform that can be accessed by designated members anywhere and anytime. Files created and edited through the office suite are saved in the online storage platform. Cloud storage houses any kind of file such as photos, videos, PDFs, Microsoft Office files, etc.

There can be proper task assignment, operational supervision, and targets attainment through the adoption of cloud computing in an organization. A daily or weekly job assignment can be well-spelt out using Spreadsheet or Google Sheet and sent via email or Google Drive to the target recipient. The administrator on the other end can swiftly view the document with clarity, making their job much more easier to carry out. An office administrator who is working in a different location can as well be monitored through the help of cloud computing. The administrative head can monitor such worker from the office or any other location he is, making it easy for the office to have everyone in check. With this on ground, no worker or office administrator would joke with their job just because they are working from a different location. This is much more needed in this Covid-19 era, where some office administrators are required to work from home. These administrators can still be monitored from the office, in spite of their geographical dispersion. As a way of effective coordination of workers, office administrators and administrative heads can attain daily targets swiftly, by reason of the use of OneDrive, database management system, e-mailing, etc. They can send and receive documents and files with ease and speed by utilizing these cloud computing facilities, regardless of time and location.

Information security is another benefit that the use of cloud computing renders to individuals, businesses and organizations generally. The use of OneDrive and Google Drive has helped organizations to check more on unauthorized file access, as cloud computing platforms only allow authorized individuals to assess files and documents in them (Whaly, 2017). Security breach in

information security can completely bring down an organization (parastatal in this case). This is so because an enemy can launch a virus into the parastatal's system and all stored gets messed up. The enemy could delete or steal the information to later use it against the organization or parastatal. But the beauty of Google Drive, OneDrive, and other cloud facilities is that files and documents stored there are highly secure, making it very difficult for file corruption, loss or destruction to happen. This is one of the attributes of cloud computing that catches the interest of users across the globe. However, the hypotheses for this are stated below:

Ho₁: There is no significant correlation between cloud computing and timely information circulation in Rivers State Government Parastatals.

Ho₂: There is no significant correlation between cloud computing and effective coordination in Rivers State Government Parastatals.

Ho₃: There is no significant correlation between cloud computing and information security in Rivers State Government Parastatals.

Dynamic Capabilities Theory

This is theoretical base of this study. The Dynamic Capabilities Theory was propounded by David Teece, Gary Pisano and Amy Shuen, in their 1997 paper Dynamic Capabilities and Strategic Management. Dynamic capabilities theory concerns the development of strategies for senior managers of successful companies to adapt to radical discontinuous change, while maintaining minimum capability standards to ensure competitive survival. Dynamic Capabilities are the firm's ability to integrate, build, and reconfigure internal and external resources/competences to address and shape rapidly changing business environments (Teece et al. cited in Kenneth, 2021). The goal is to generate abnormal returns. The main assumption of this theory is stated below:

- i. An organization's basic competencies should be used to create short-term competitive positions that can be developed into longer-term competitive advantage.

Dynamic capabilities may sometimes be rooted in certain change routines (e.g., product development along a known trajectory) and analysis (e.g., of investment choices). However, they are more commonly rooted in creative managerial and entrepreneurial acts (e.g., pioneering new markets). The capabilities reflect the speed and degree to which the firm's idiosyncratic resources/competences can be aligned and realigned to match the opportunities and requirements of the business environment. An organization with strong dynamic capabilities can achieve abnormal returns because markets do not price them at their value to the buyer if the buyer possesses complementary and, in particular, co-specialized assets.

The essence of resources/competences as well as dynamic capabilities is that they cannot generally be bought; they must be built. As noted above, dynamic capabilities measure the capacity to align and realign, and resources/competences are integrated and reintegrated so that they are tuned to the business environment. Sensing, seizing, and transforming are particular attributes of firms that enable them to evolve and co-evolve with the business environment. Such capabilities are critical to long-term profitability (Teece, 2007b).

Implication of the Theory to this Study

The implication of the Dynamic Capabilities Theory to this work is that a parastatal's ability (through their administrative heads) to install and competently utilize cloud computing, virtual meeting platforms, and office social media should be used to create longer-term competitive advantage for themselves through their success in communication that is evidenced in timely information circulation, effective coordination and information security, amongst others. Administrative heads across Rivers State Government Parastatals who accept and implement a virtualized administrative environment by competently utilizing database management systems, OneDrive, e-mailing, Zoom meeting Duo meeting, Google meet, office WhatsApp, office Facebook, office Telegram, and other administrative virtualization components, will in no time do better than

other parastatals in other States who are yet to follow suit. This starts as a short-term competitive advantage and proceeds into a longer-term.

The Covid-19 era has made it a necessity and even compulsory in some climes for workplaces to go virtual, because overcrowding is now highly prohibited. This necessity or compulsory situation is forcing workplaces to adopt cloud computing, virtual meeting and office social media, amongst others to enable them work seamlessly in spite of geographical dispersion amongst workers. Rivers State Government Parastatals can welcome this development in its full package and turn it into an instrument for longer-term competitive advantage. Administrative heads across these parastatals can utilize these digital resources, as well as competencies in them to enhance communication success through timely information circulation, effective coordination and information security.

Adopting this theory as the major theoretical framework for this study is based on the fact that the theory is related to administrative virtualization, which is the independent variable here. Another point that made this theory appropriate to be adopted as the theoretical foundation of this study is the fact that it explains and predicts that administrative heads can use the digital resources around their work environment and their digital competences to better the lot of the parastatal through improvement in timely information circulation, effective coordination and information security.

Empirical Review

Okechukwu and Okoronkwo (2018) carried a study on the evaluation of technological environment on organizational performance among selected medium scale enterprise in Enugu State. The aim of this study is to investigate the effect of technological environment on organizational performance. The specific objectives of the study were to examine the role technological environment on organizational customer satisfaction and organizational market share among selected small and medium scale enterprises in Enugu. Descriptive research design was adopted in the study among 217 staff of the selected medium scale enterprises in Enugu. Structured questionnaire was used in collecting data which was presented in tables. The result of the study shows that technological environment has no significant role on organizational customer satisfaction among selected small and medium scale enterprises in Enugu; and technological environment has a significant effect on organizational market share among selected small and medium scale enterprises in Enugu.

Balogun (2016) studied the effects of information technology on organizational performance in Nigerian banking industries. The researcher examined customer's and employee's responses to technology innovation, and their effects on the performance of the Nigerian banks. The field survey was adopted for the study. Fifteen (20) major banks were selected for the research. Four hundred and fifty (450) questionnaires were distributed to customers to test the first hypothesis out of which 400 were collected which is 88.88% of the distributed questionnaires, Chi square was used to test the hypothesis. Findings revealed that technological innovation influenced banks employee's performance, customer's satisfaction and improvement in banks profitability.

Ardam (2017) reviewed the impact of social media usage on organizational performance. The aim of this study is to investigate the impact of social media usage (SMU) in Dead Sea products companies in Jordan on organizational performance (OP). The current study surveyed the managers and supervisors working at 20 Dead Sea Products Companies. Practical data were collected from 169 managers and supervisors, by means of a questionnaire which developed and refined through experts' interviews and the panel of judges committee. The results of the study indicated a positive significant impact of social media usage on organizational performance in Dead Sea products companies in Jordan in term of rapid adaptation, time to market, cost reduction, satisfaction, and innovation. The results also clears that most Dead Sea products companies in Jordan are limited liability companies, while the least are public shareholding and most of them

are considered as medium size companies. Also, the study results showed that there is a high social media usage among limited liability companies especially small and relatively new companies. The study concluded that the little application of social media platform enhanced the organizational performance of the firms. It was recommended that organizations should make the use of social media official to enhance information sharing and performance of organizations. While the study was recommended to the independent variable (office social media), the study did not empirically explain how the use of social media platforms such as zoom, email, and WhatsApp impacts on the administrative effectiveness of tertiary institutions in Bayelsa State. The study looked the interaction between office social media and organizational performance of firms in Jordan, while our study was interested to see how office social media interacts with administrative effectiveness in tertiary institutions in Bayelsa State.

Ahmadu (2014) carried a study on the effects of electronic banking on growth of Rivers State Government Parastatals in Nigeria. The Ex-post factor research design was adopted for this study. Using time series data for the period 2006- 2012, this study examined the effects of electronic banking on growth of Rivers State Government Parastatals in Nigeria. Data were collected from secondary sources through annual reports and statistical bulletin of Central Bank of Nigeria. Electronic banking was measured using the total value of internet and mobile banking while growth was measured using the value of total deposits and total assets of Rivers State Government Parastatals in Nigeria. A total deposit was regressed on internet and mobile banking, while a total asset was regressed on internet and mobile banking using multiple regression technique. The study revealed that positive relationships exist between mobile banking and total deposits, and between internet banking and total asset while on the other hand, no significant relationships between internet banking and total deposits, and between mobile banking and total asset.

Saeid (2011) studied the impact of Information Technology in Banking System. The aim of the study was to investigate the effect of information technology in the banking system of Bank Keshavarzi Iran. Both exploratory research and descriptive research designs were used for the study. The data was obtained from customers and the employees (100 bank customers and a sample of 20 clerical and 20 managerial in the bank). The data were then analyzed using the exact percentage and the 5-point Likert scale to determine the impact of Information technology in the banking system affairs. The findings then proved that Information technology contributes to the banking system in three different ways as follows: IT saves the time of the customers and the employees conspicuously, IT cuts down the expenses and IT facilitates the network transactions.

METHODOLOGY

The explanatory cross sectional survey research design was adopted for the study. The population of the study consisted of fifteen (15) functional and accessible Rivers State Government Parastatals. There are about twenty-two (22) Rivers State Government Parastatals. However, the researcher narrowed down to fifteen (15) functional and accessible Government Parastatals because some of them are either moribund or inaccessible to the researcher while some of them declined giving information to the researcher. The study was a census research. In terms of respondents, Administrative Heads such as ICT Directors and Heads of Departments served as respondents on behalf of the Parastatals. These categories of administrative heads were chosen because of their perceived knowledgeability as regards administrative communication in the Parastatals. Thus, a total of two hundred and forty-four (244) administrative heads served as respondents. Questionnaire was used as instrument for data collection. Mean and Standard Deviation were used for the univariate analysis while the bivariate analysis was done using Spearman Rank Order.

Results**Cloud Computing and Communication Success**

Ho₁: There is no significant correlation between cloud computing and timely information circulation in Rivers State Government Parastatals.

Ho₂: There is no significant correlation between cloud computing and effective coordination in Rivers State Government Parastatals.

Ho₃: There is no significant correlation between cloud computing and information security in Rivers State Government Parastatals.

Table 1: Correlations between Cloud Computing and Communication Success

		Cloud Computing	Timely Information	Effective Coordination	Information Security
	Correlation Coefficient	1.000	.755**	.578**	.688**
Cloud Computing	Sig. (2-tailed)	.000	.000	.000	.000
	N	221	221	221	221
	Correlation Coefficient	.755**	1.000	.640**	.710**
Timely Information	Sig. (2-tailed)	.000	.	.000	.000
	N	221	221	221	221
	Correlation Coefficient	.578**	.640**	1.000	.767**
Effective Coordination	Sig. (2-tailed)	.000	.000	.000	.000
	N	300	300	300	300
	Correlation Coefficient	.688**	.710	.489	1.000
Information Security	Sig. (2-tailed)	.000	.000	.000	.000
	N	221	221	221	221

** . Correlation is Significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2022

Column two of table 1 above shows r value of 0.755 at a significant level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating cloud computing and timely information. Since the significant level is less than the alpha level of 0.05, the null hypothesis (Ho₁) which states that there is no significant correlation between cloud computing and timely information circulation in Rivers State Government Parastatals was rejected and the alternate hypothesis (Ha₁) was accepted. This implies that cloud computing has a strong positive correlation with communication success in terms of timely information in Rivers State Government Parastatals.

Column three of table 1 above shows r value of 0.578 at a significant level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating cloud computing and effective coordination. Since the significant level is less than the alpha level of 0.05, the null hypothesis (H_{02}) which states that there is no significant correlation between cloud computing and effective coordination in Rivers State Government Parastatals was rejected and the alternate hypothesis (H_{a2}) was accepted. This implies that there is a moderate positive relationship between cloud computing with communication success in terms of effective coordination in Rivers State Government Parastatals.

Column four of table 1 above shows r value of 0.688 at a significant level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating cloud computing and information security. Since the significant level is less than the alpha level of 0.05, the null hypothesis (H_{03}) which states that there is no significant correlation between cloud computing and information security in Rivers State Government Parastatals was rejected and the alternate hypothesis (H_{a3}) was accepted. This implies that there is a strong positive correlation between cloud computing and with communication success in terms of information security in Rivers State Government Parastatals.

The results above show that there is a significant positive relationship between cloud computing and communication success in Rivers State Government Parastatals in terms of timely information, effective coordination and information security respectively.

Discussion of Findings

Cloud Computing and Communication Success

The tests of hypotheses one and three revealed that there is a strong positive relationship between cloud computing and communication success, while the test of hypothesis two showed that there is a moderate positive relationship between cloud computing and Communication success. This implies that the use of Database Management System, One Drive and e-mailing brings about a positive improvement in the organization in terms of timely information circulation, effective coordination and information security. This finding corroborates with the findings of Meskerem and Abrehet (2014) that cloud computing has brought the idea of storing and managing data on virtualized servers so that, applications, individuals and organizations around the world can have the ability to connect to data and computing resources anywhere and anytime. This idea of storing data or running applications on clouds has been proved effective in terms of timely information circulation, effective coordination and information security since data and application are stored and backed up on a number of computers which reduces the chance of data and application loss. This makes it possible for office workers and committee members to access and even upload documents to a platform that can be accessed by designated members anywhere and anytime. Files created and edited through the office suite are saved in the online storage platform. Cloud storage houses any kind of file such as photos, videos, PDFs, Microsoft Office files, etc. The use of file cabinets or location-based data storage facilities such as hard disk, flash drive, memory card, memory stick, CD ROM, etc. As makes information usage and circulation difficult and dull. Also, virtual storage services as enabled by cloud computing enables businesses to access and conveniently use virtual packages such as Google Doc, Google Sheet, Google Slide, etc. (Graham, 2019). By expansive subscription, organizations or units of an organization can enjoy additional office data processing and storage packages. This means that an administrator in a government parastatal can edit documents online and the work gets saved automatically as they are working on it. This takes away the hassle of downloading and editing documents on Microsoft Word or any other offline word editing application, and saving back to the cloud facility such as Google Drive, OneDrive, etc.

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CONCLUSIONS

Based on the results and discussion of findings, the study concluded that Cloud computing increases communication success in Rivers State Government Parastatals. Managers and administrators in Rivers State Government Parastatals who wish to achieve communication success will need to embrace administrative virtualization. On the flipside, Government Parastatals that refuse to adopt cloud computing may likely suffer untimely information circulation, poor coordination, and poor information insecurity.

RECOMMENDATIONS

Based on the conclusions of this study, the following recommendations were made:

1. Rivers State Government Parastatals should set up technological systems that will support the adoption of cloud computing in order to enhance their notification, feedback, and information access processes.
2. Administrative Heads such as ICT Directors and Heads of Departments across Rivers State Government Parastatals should fully adopt cloud computing through the use of Database management System, OneDrive, and e-mailing, so as to improve on timely information circulation, among others.
3. Administrative Heads should enshrine the use of online meeting technologies like Zoom meeting application to facilitate administrative meetings and information sharing that will in turn improve their communication success.

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