



## **IMPACT OF INFORMATION COMMUNICATION TECHNOLOGY (ICT) ON COMMUNICATION NETWORK IN SMALL AND MEDIUM ENTERPRISES, DELTA STATE**

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### **Abstract**

*This study is conducted to access the impact of Information Communication Technology on communication network in small and medium enterprises in Delta State. Consequently, three (3) research objectives, three (3) research questions and three (3) testable hypotheses were used in the study. The sample for the study comprised managers of registered Small and Medium scale industries with the State Ministry of Commerce. The questionnaire is the main instrument of data collection for the study. Data collected is analyzed using mean, z-test and one-way analysis of variance (ANOVA). Findings include that the utilisation of electronic mail (e-mail) by managers of SMEs is fairly adequate, the usage of voice is low while on-line discussion in communication network is barely applicable. It is recommended that the use of e-mail should be increased, while on-line discussion and video conferencing be applied to a higher degree as this helps to increase customer reach, enhance sales and break new market grounds*

*Keywords: Information Communication Technology, Network, Small and Medium Enterprises, Managers.*

### **Introduction**

Man's ability to subdue his environment is partly a function of his ability to communicate with one another. This is one of the uniqueness of the human person being his ability in objectify his thoughts in language (Udegbe, Udegbe, Ogundife, Akintola and kareem, 2012). No individual, group or organization can exist without sharing meaning, purpose and focus among its member. Kotler (2006) stated that communication has been the lifeblood of an organization because communication is needed for enhancing information, exchanging opinions and proposals, reaching agreements, executing decision, sending and fulfilling orders and conducting sales. No ideas no matter how great are useful until transmitted and understood by others and impact effected. Communications serves four major functions within a group or organization: control, motivation, emotional expression, and information (Scoth and Michell, 2006). If individuals pull together, they must understand their mutual goals and have a solid sense of efforts towards achievement related to those of others. Thus the responsibility of keeping one self and others informed is a basic part of any manager's job (Weihrich, Cannice & Koontz, 2008). The difficulty of fulfilling this responsibility cannot be underestimated. It is therefore very important for managers and leaders to find ways of effective communication. In most companies, it is not too difficult to communicate the top executive view throughout the system. However it is quite another thing to get reliable and honest feedback from the bottom to the top.

According to Weihrich et al, (2008) numerous techniques - attitude, surveys grapevine and suggestion systems - exist to improve communication. Moreover, poor communication is probably the most frequently cited source of interpersonal conflict



(Thomas and Schmidt in Robbins, Judge and Vohra, 2012). Adewoye and Akanbi (2012) maintained that in order to succeed (or even to survive) in this dynamic world, companies must take note of not only traditional actions such as lowering cost but also keep pace with ever changing capabilities of communication network in advancing the growth of business organization through enhanced efficiency, profitability and expanded market reach. Adequate and strategic attention is placed so that these opportunities provided by communication network are not only limited and assessable only to larger companies in Nigeria but also to small and medium enterprises.

Communication network differs in their capacity to convey information. According Kock (2004) a model of media richness helps explain channel selection among managers and people choose one channel of communication over others.

This study was necessitated by the fact that in Nigeria, large scale companies have continued to invest sums of money in the acquisition of ICT for information richness while most small and medium-enterprises find it difficult to access the same richness provided by ICT. In view of this the present study examined the impact of Information Communication Technology (ICT) on communication network in small and medium-scale enterprises in Delta State.

### **Statement of problem**

Developments in Information and Communications Technology (ICT) have had the greatest influence on society and businesses in recent times. Beyond the Global System for Mobile Communications (GSM), the advent of the Internet and its related infrastructures in the last two decades has driven significant shifts and restructuring in the way business is done across the globe - where a sizeable percentage of commercial activities are now being conducted electronically. Thus, the increase in electronic commerce (e-commerce) presents a challenge to SMEs. Unlike in traditional commercial activities where such details of transaction as the amount involved, parties to the transaction and the place in which the transaction was carried out can easily be established, E-commerce, in contrast, mainly occurs in the virtual and borderless world of the Internet. New information and communication technology enables and empowers people in many ways. Automation speeds up processes and lowers cost however small and medium enterprises have not fully adopted same in the area of electronic mail (e-mail), on-line discussion groups, voice mail, video conferences, etc.

Onukwuli and Akam (2014) in their study identified significant extent in the use of ICT resources by Small and Medium Enterprises in Anambra state. A similar earlier study by Adewoye and Akanbi (2012) found out that ICT affects communication network in sachet water businesses in Oyo State. In addition large scale businesses have been identified to invest in ICT in order to be technologically relevant and remain competitive, while information pertaining to SMEs in this sphere is limited.

The essence of this study therefore, is to determine the extent of the impact of adoption and application of Information Communication Technology (ICT) in communication network in small and medium scale enterprises in Delta state.



### **Objectives of the study**

The main objective of the study is to assess the impact of Information Communication Technology (ICT) on Communication Network in Small and Medium-scale Enterprises (SMEs) in Delta State

Specifically, the research seeks to:

1. Determine the adequacy or otherwise of utilization of Electronic mail in communication network by Small and Medium-scale Enterprises (SMEs) in Delta state.
2. Establish the extent of usage of Voice mail in Communication network by Small and Medium-scale Enterprises (SMEs) in Delta State.
3. Ascertain the extent of application of Online Discussion in Communication network by Small and Medium-scale Enterprises (SMEs) in Delta State.

### **Research questions**

The following research questions were raised to guide the study:

- i. How adequate is the utilisation of Electronic mail in Communication network by Managers of Small and Medium-scale Enterprises (SMEs) in Delta State?
- ii. To what extent is the usage of Voice mail in Communication network by Managers of Small and Medium-scale Enterprises (SMEs) in Delta State?
- iii. What is the extent of the application of Online Discussion in Communication network by Managers of Small and Medium-scale Enterprises (SMEs) in Delta State?

### **Hypotheses**

The following null hypotheses were tested at 0.05 level of significance:

**Ho 1:** There is no significant difference in the mean responses of managers of Small and Medium-scale Enterprises (SMEs) on the adequacy of utilisation of Electronic Mail in communication network based on size of enterprise.

**Ho 2:** There is no significant difference in the mean responses of managers of Small and Medium-scale Enterprises (SMEs) on the extent of usage of Voice Mail in communication network based on years of experience.

**Ho 3:** There is no significant difference in the mean responses of managers of Small and Medium-scale Enterprises (SMEs) on the extent of application of Online Discussion in communication network based on size of business.

### **Method**

The research design is based on survey. This choice is supported by Eboh (1998) who described this approach as an appropriate technique for audience research, material testing and programme monitoring. The population of the study consists of all Small and Medium Scale Enterprises (SMEs) operators in the state. Information gathered from the State Ministry of Commerce and Industry showed that there are Four thousand, nine hundred and seventy (4,974) registered Small and Medium Scale Enterprises (SMEs) in Delta state as at December 2016. The sample for the study was determined using Taro Yamani formular and the sample size obtained for the study is 369. The instrument used for data collection was a 15-item structured researchers-developed four point scale questionnaire. The weight ranged from 1 to 4. The options



are Very High Extent/ Highly Adequate; High Extent/Adequate; Low Extent/Fairly Adequate and Very Low Extent/Inadequate.

The research instrument was tested for both construct, face and content validity by two experts in Business education and measurement and evaluation from Nnamdi Azikiwe University, Awka and Anambra State University, Igbariam campus respectively and found to be valid. In order to establish the reliability of the instrument the validated data collection instrument was administered on thirty (30) managers of Small and Medium scale enterprises (SMEs) in Edo State. The Cronbach Alpha method was used to measure the internal consistency items of the questionnaire. The value of 0.82 was obtained, which is considered adequate for the study. A total of 370 copies of questionnaire were distributed. However, 316 copies were collected and used for data analysis. This represented 85.6% of the questionnaire distributed. The data collected were analysed in line with the objectives of the study using Mean statistics and standard deviations for the research questions and the z-test and ANOVA for the null hypotheses. For the research questions, a mean value of 2.50 and above indicated respondents' agreement while a mean value of 2.49 and below indicated respondents' disagreement. Therefore, any research question with a mean of 2.50 and above is accepted while any one with 2.49 and below is rejected. In addition, the rule is to reject the null hypothesis if the calculated value is greater than or equal to the critical value (1.96) and to accept the null hypothesis when the reverse is the case.

**Data presentation and analysis**

**Research Question 1**

How adequate is the utilisation of Electronic mail in Communication network by Managers of Small and Medium-scale Enterprises (SMEs) in Delta State?

**Table 1:** Mean response of SMEs operators on the adequacy of the utilisation of Electronic mail in Communication network

S/N	Item	Mean	SD	Decision
<b>How adequate is the use of electronic mail in</b>				
1	Ordering of goods and services	2.58	0.77	Adequate
2	Advertising	2.20	1.00	Fairly Adequate
3	Debt management	1.31	0.65	Inadequate
4	Recovery of debt	2.00	0.92	Fairly Adequate
5	Payment of suppliers	2.01	0.96	Fairly Adequate
<b>Grand Mean</b>		<b>2.020.86 Fairly Adequate</b>		

Source: Field work, 2017

Table 1 revealed that the mean assessment of the items by SMEs operators ranged from 1.31 to 2.58 with a Grand Mean of 2.02 and Standard Deviation of 0.86. Only item No. 3 is assessed as 'Inadequate'. Therefore, the grand mean of 2.02 depicts that the adequacy of the use of electronic mail by SMEs operators in Delta state is 'Fairly Adequate' in the identified business operation areas.

**Research Question 2**



To what extent is the usage of Voice mail in Communication network by Managers of Small and Medium-scale Enterprises (SMEs) in Delta State?

**Table 2:** Mean response of SMEs operators on the extent of the use of voice mail in Communication network

S/N	Item	Mean	SD	Decision
<b>The extent of usage of voice mail in</b>				
6	Business inquiry	1.63	0.60	Low Extent
7	Ordering of goods and services	2.01	0.65	Low Extent
8	Advertising	1.00	0.66	Very Low Extent
9	Debt management	1.20	0.99	Very Low Extent
10	Recovery of debt	1.12	0.85	Very Low Extent
<b>Grand Mean</b>		<b>1.390.77</b>		<b>Very Low Extent</b>

Source: Field work, 2017

Table 2 revealed that the mean assessment of the items by SMEs operators ranged from 1.00 to 1.63 with a Grand Mean of 1.39 and Standard Deviation of 0.77. Therefore, the grand mean of 1.39 shows that the extent of usage of voice mail in the identified business operation areas by SMEs is to a 'Very Low Extent'. Moreover the Standard Deviation of 0.77 shows homogeneity in the response of the small-scale and medium scale operators respectively.

### Research Question 3

What is the extent of the application of Online Discussion in Communication network by Managers of Small and Medium-scale Enterprises (SMEs) in Delta State?

**Table 3:** Mean response of SMEs operators on the extent of application of the use of Online Discussion in Communication network

S/N	Item	Mean	SD	Decision
<b>The extent of application of Online Discussion in</b>				
11	Business inquiry	2.58	0.70	Low Extent
12	Ordering of goods and services	1.76	0.61	Low Extent
13	Debt management	1.23	0.49	Very Low Extent
14	Recovery of debt	1.89	0.53	Low Extent
15	Meetings	2.34	0.48	Low Extent
<b>Grand Mean</b>		<b>1.96</b>	<b>0.52</b>	<b>Low Extent</b>

Source: Field work, 2017

Table 3 revealed that the mean assessment of the items by SMEs operators ranged from 1.23 to 2.58 with a Grand Mean of 1.96 and Standard Deviation of 0.52. This result reveals that SMEs operators apply Online Discussion in the listed business operations to a 'Low Extent'.

### Testing of Hypotheses

#### Hypothesis 1:

There is no significant difference in the mean responses of managers of Small Scale enterprises (SSEs) and Medium-scale Enterprises (MSEs) on the adequacy of utilisation of Electronic Mail in communication network based on size of enterprise.



**Table 4: Summary of z-test analysis of null hypothesis**

Location	Mean	SD	N	df	Z-cal	Z-crit	Decision
SSEs	3.51	0.47	184	314	0.26	1.96	Accept
MSEs	3.49	0.86	132				

From the table above, the calculated z-value of 0.26 is less than the z-critical table value of 1.96, at 0.05 level of significance, therefore the null hypothesis is accepted. Thus there is no significant difference in the mean responses of managers of Small Scale enterprises (SSEs) and Medium-scale Enterprises (MSEs) on the adequacy of utilisation of Electronic Mail in communication network in Delta state.

**Hypothesis 2:**

There is no significant difference in the mean responses of managers of Small Scale enterprises (SSEs) and Medium-scale Enterprises (MSEs) on the extent of usage of Voice Mail in communication network based on years of experience.

**Table 5:** ANOVA of the mean responses of managers of Small Scale enterprises (SSEs) and Medium-scale Enterprises (MSEs) on the extent of usage of Voice Mail in communication network based on years of experience.

Source of Variation	SS	Df	MS	F-Cal	P-Value	F-Crit	Decision
Between Groups	0.015453	2	0.007727	0.036601	0.964168	3.885294	Uphold
Within Groups	2.53328	12	0.211107				
Total	2.548733	14					

Table 5 above presents the ANOVA of the responses of the assessment of managers of Small Scale enterprises (SSEs) and Medium-scale Enterprises (MSEs) on the extent of usage of Voice Mail in communication network based on years of experience, i.e, 1-5, 6-10 and above 10 years. Consequently, the null hypothesis of no significant difference in the mean assessment is upheld.

**Hypothesis 3:**

There is no significant difference in the mean responses of managers of Small Scale enterprises (SSEs) and Medium-scale Enterprises (MSEs) on the extent of application of Online Discussion in communication network based on size of business.

**Table 6: Summary of z-test analysis of null hypothesis**

Respondents	Mean	SD	N	df	z-cal	z-crit	Level of sign	Decision
SSEs	2.63	0.91	184	314	1.47	1.96	0.05	Accept
MSEs	2.46	0.93	132					

From the table above, the calculated z-value of 1.47 is less than the z-critical table value of 1.96, at 0.05 level of significance; therefore the null hypothesis is accepted.



Thus there is no significant difference in the mean responses of managers of Small Scale enterprises (SSEs) and Medium-scale Enterprises (MSEs) on the extent of application of Online Discussion in communication network based on size of business in Delta state.

### **Discussion of results**

Based on the results obtained from the presentation and analysis of data, discussion of the major findings of the study were made thus.

The finding from research question 1 shows the adequacy of utilisation of electronic mail in communication network by managers to be fairly adequate. This is not discovered by Onukwuli and Akam (2014) who investigated the extent of the use of ICT resources by Small and Medium Enterprises in Anambra state.

The analysis of research question 2 in table 2 reveals that the extent of the usage of voice mail in communication network by managers of Small and Medium scale Enterprises as very low extent. This finding is not unconnected with the level of education and ICT capacity of the respondents to use this facility in the communication network.

Results from research question 3 as shown in table 3 discloses that Online Discussion in communication network is adopted to a 'Low Extent'. This is in line with the work of Adewoye and Akanbi (2012) in a similar study on the application of ICT in communication network among sachet water producers in Oyo State.

Tables 4, 5, and 6 show the result of the Z-test and ANOVA respectively for hypotheses 1 - 3. The Z-test result for hypothesis 1 revealed that respondents did not differ significantly in their appraisal of the adequacy of utilisation of electronic mail in communication network based on size of enterprise; they did not differ significantly in their responses of the extent of the usage of Voice mail in communication network based on years of experience in hypothesis 2; also they did not differ significantly in their appraisal of the extent of application of Online Discussion in communication network based on size of business in hypothesis 3.



### **Conclusion**

In the light of the findings of this study, the following conclusions are made:

1. Managers of Small Scale Enterprises and Medium Scale Enterprises fairly use e-mail in communication network even in this IT age.
2. There is low usage of voice mail in communication network by managers of Small Scale Enterprises and Medium Scale Enterprises in Delta State for business operations
3. Managers of Small Scale Enterprises and Medium Scale Enterprises do not use Online Discussion facilities in their business operations.

### **Recommendations**

The following recommendations are hereby made:

1. There is need for Small Scale Enterprises and Medium Scale Enterprises managers to use in greater dimension the e-mail as this has proved to be a good means of reaching customers.
2. The use of voice mail has to be enhanced especially due to the poor nature of network provided by telecom companies.
3. Operators of Small Scale Enterprises need to learn how to utilize Online Discussion and thus increase customer reach, enhance sales and break new market grounds.

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