

*Full Length Research Paper*

# Workers' perception of intranet efficiency in the Nigerian Customs Service: example for effective organizational management of extension services in Nigeria

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This study examined staff perception of intranet in enhancing organizational communication in Nigeria Custom Service (NCS). Data were collected from 134 randomly selected respondents using a questionnaire. They were management staff (7.5%), senior staff (41.8%) and junior staff (50.7%). Their age was distributed as 44.8% (18 to 35 years) and 55.2% (36 to 58 years). With regards to computer literacy, 91.8% were computer literate, 95.5% use the internet regularly. 92.5% were ignorant of NCS use of intranet facility. Communication challenges were fear (71.6%), speculations (54.5%), wrong information (65.7%) and inadequate information (55.9%). 75% of respondents considered intranet as effective in management and 91.8% felt it can be used to enhance job performance by providing organizational news. 85.1% considered it important for disseminating staff postings, 81.3% for sending circulars and verifying information, and 73.9% for enabling group discussions, publishing monthly orders and serving as a complaint mechanism for aggrieved staff. Logit regression showed that computer literacy, internet usage and awareness have significant effect on respondents' perception of intranet effectiveness at 1% level. Chi square test showed that intranet has the capacity to enhance efficient organizational management ( $X^2$  cal. = 99.34 >  $X^2$  tab = 0.020). It was recommended that Nigeria Customs Service should strengthen the use of intranet for efficient internal communication and for the Nigerian agricultural extension service organization to adopt intranet for effective organizational management.

**Key words:** Workers perception, intranet effectiveness, organization, agricultural communication, Nigeria.

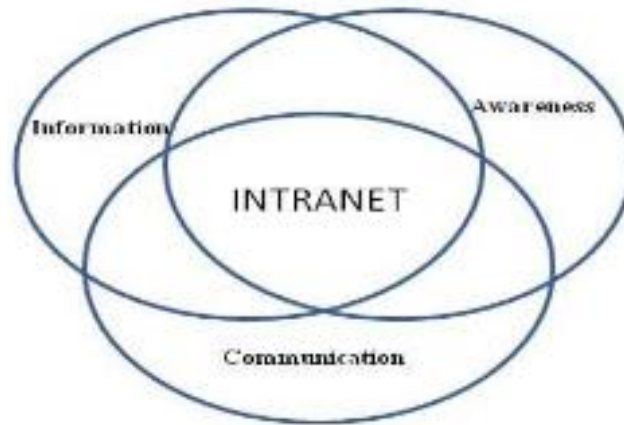
## INTRODUCTION

Availability and use of technology is central to successful agricultural communication and organizational efficiency.

Effective agricultural communication occurs when a desired effect is the result of intentional or unintentional

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**Figure 1.** A theoretical framework adopted from Stenmark, 2002 and Hooff, 2006.

information sharing, which is central to the efficiency of private and public organizations and existence of all human structures. For instance, the use of radio as a communication channel improved the production base of yam farmers by broadcasting relevant and adequate farm messages that were utilized (Odiaka, 2011). Therefore, it is expected that as communication becomes more sophisticated, farmers and workers should be made to adjust to the changing complexities in the industry because, changes in modes of communication shapes human history. The arrival of the World Wide Web has changed the way humans interact and has made communication very attractive, efficient and instantaneous.

This study is anchored on the Technological Determinism theory, which explains that a society's technology drives the development of its social structure and cultural values. This theory, which was first propounded by Thorsten Veblen (1857 to 1929) and modified by Marshal McLuhan was predicated on the belief that changes in the way humans communicate are what shape their existence. In other words, technology, which ultimately determines changes in communication, is seen as the prime mover not only in an organization, but also in human life generally because it changes the way people think and how they interact with each other.

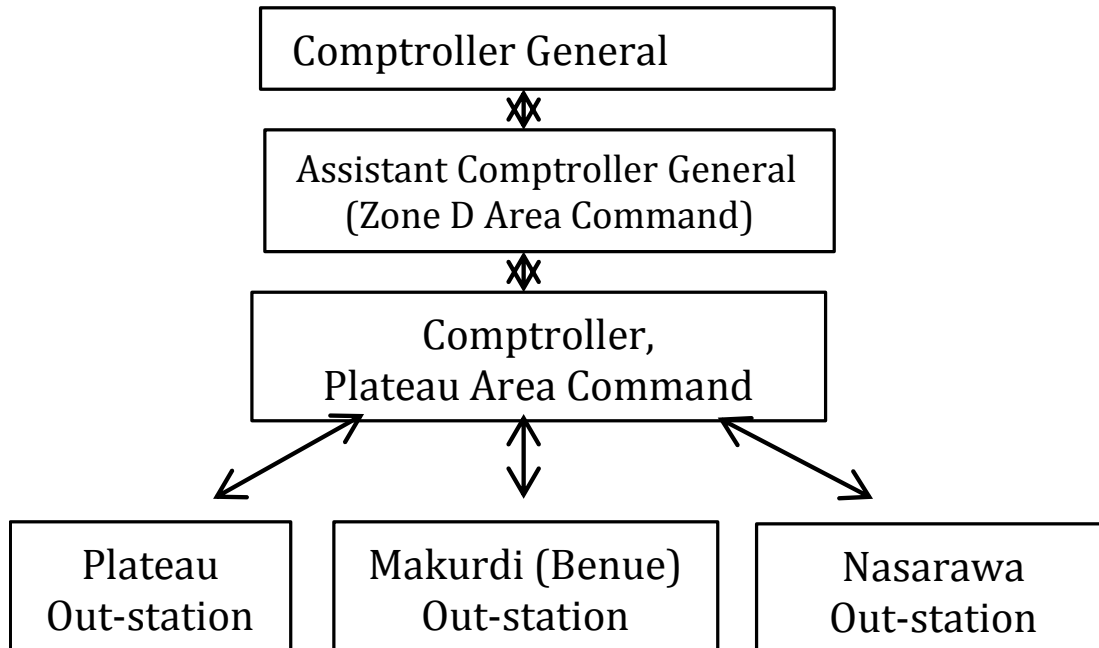
The advent of intranet for instance, brought a limitless level of collaboration and information exchange within organizations, creating enhanced capacity for effective internal communications (Barret, 2002). An explanation of the expected functions of the Intranet is illustrated in Figure 1.

The figure combines the theories of Hooff (2006) and Stenmark (2002) and argues that information, awareness and communication should be the main characteristics of an Intranet. Provision of information gives opportunity for knowledge creation, and awareness facilitates

communication and collaboration, allowing employees to find each other and engage in dialogue, while communication enables employees to collectively share information and knowledge by supporting various forms of channels for discussion. The speed, interactivity and feedback nature of the intranet have made it a viable and effective management tool for communication and information exchange. With the intranet interactivity, staff or officials of an organization in different parts of the world can chart a common course together or collectively, thereby eliminating the barriers which geographical locations is capable of causing during communication interface between people (Holtz, 2008). Unlike the mainstream media which still depends more on programme schedule and gatekeepers to get access to information, the intranet (an internal communication system) allows for individuals or staff input/opinion, thereby enhancing the management knowledge, decision/policy making and implementations (Lehmuskalio, 2006). Staff of organizations can freely express themselves in variety of ways and contribute in exchanging information, shaping opinions, organizational policies and national development. It is believed that this can be achieved where there is an effective functional internal communication system.

### **Purpose and objective**

Two Nigerian parastatal organizations -Nigerian Customs Service (NCS) and Agricultural Development Projects (ADPs) have different specific mandates but have the responsibility of creating effective communication to enhance efficient interaction and management. Informal discussions with some staff of the organizations in Benue State showed that NCS has limited Intranet facility services while the ADP does not have. According to



**Figure 2.** Organogram for Plateau Area Command in Zone D of the Nigerian Customs Service.

Barret, (2002) a good internal communication improves everyday cooperation in the agency: knowing who does what and whom to turn to, helps to avoid activities overlapping, and if the experiences and knowledge of officials are systematically documented, it will help to keep the state or organization on a consistent path of development. Internal communication in any organization like the Nigerian Customs Service that is characterized by complex regulations and bureaucracy is a necessary criterion for information sharing and effectiveness.

In our present generation, it is expected that where relevant communication facilities like the Internet or Intranet are not available or ineffective, where they exist in organizations, a gap in information dissemination, distortion of facts, suspicion and rumors are likely to emerge. Keghku (2011) observed that such gaps give rise to strained relationship based on perceived distrust amongst employees and the management. This study was therefore carried out to determine workers perception of the effectiveness of the intranet in enhancing internal communication in the Benue Command of the Nigeria Customs Service and to establish a base for encouraging the Agricultural Development Projects whose mandate is agricultural extension to adopt the use of intranet for effective organizational management. We hypothesize that:

Ho<sub>1</sub> Internet related parameters have no significant effect on workers perception of the effectiveness of intranet for internal communication.

HO<sub>2</sub> Intranet has no capacity to enhance efficient organizational management.

## MATERIALS AND METHODS

### Study area

Plateau Area Command, the study area is located in Zone D of the Nigerian Customs Service (NCS): a paramilitary agency of the Federal Republic of Nigeria established in 1891 and saddled with the responsibilities of import/export, duty collection and suppression of smuggling. This assignment suggests the effective utilization of an intranet facility to cope with the necessary information challenges associated with smuggling. Plateau Area Command (Figure 2), which consists of Benue, Nasarawa and Plateau states, has a total staff population of 209: 10 management staff, 81 senior staff and 118 junior staff. All staff of NCS must attain the minimum age of eighteen years and have at least a Senior Secondary School Certificate (Equivalent of General Certificate of Education) before recruitment. In addition, Staff of the organization is regarded as men. Therefore, every staff (male or female) is a "Sir".

### Sample size determination

Research Advisers (2006) sample size determination formula (Table 1) which gives a 95% confidence level and 5% sampling error for each sample, deduced from a predetermined population range, which was used to estimate the sample. For populations of 200 and 250 the sample sizes according to Research Advisers are 132 and 152, respectively. Since the study population is 209, an estimated sample size of 134 was chosen. Having determined the sample size, the management staff was purposefully chosen because they were 10 in number. Thereafter, a list of all senior and junior staff was drawn and 124 respondents were randomly selected using the ballot method.

### Research instrument and method of data analysis

A structured questionnaire was administered to the sample. Data

**Table 1.** Sample size for different population at 95% confidence level.

Population Size	Sample size (Margin of Error =5.0%)
10	10
20	19
30	28
50	44
75	63
100	80
150	108
200	132
250	152
300	169

obtained from the survey were aggregated and presented with descriptive statistical tools to indicate the relative frequency of occurrence of the items measured. Logit Regression was used to test the effect of internet-related parameters on the effectiveness of the use of intranet for internal communication, while chi-square was used to test the capacity of Intranet to enhance efficient organizational management. The Logit regression model which, was used to test hypothesis ( $H_1$ ) is specified as follows:

$$Z = \ln \frac{P}{1-P} = \ln Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e_i$$

$$b_1 \geq 0; b_2 \geq 0; b_3 \geq 0;$$

Where: Z = Probability of effectiveness of the use of intranet for internal communication

P = Probability of effectiveness of the use of intranet (1)

1 - P = Probability of ineffectiveness of the use of intranet (0)

$X_1$  = Computer literacy (2 = Yes, 1 = No)

$X_2$  = Internet use (2 = Yes, 1 = No)

$X_3$  = Awareness that intranet can perform same functions as internet (2 = Yes, 1 = No)  $b_1 - b_3$  = parameter estimates. The Chi-square model which was used to test hypothesis ( $H_0$ ) is specified as follows:

$$X^2 = \sum \frac{(O - E)^2}{E}$$

Where:  $X^2$  = Chi-square ; O = Observed values; E = Expected values.

## RESULTS AND DISCUSSION

Of the 134 respondents, 10 (7.5%) were management staff, 56 (41.8%) senior staff, and 68 (50.7%) junior staff (Table 2). Workers on salary grade level 8 to 12 (Assistant Superintendents to Chief Superintendents) are classified as senior staff while those on levels 2 to 7 (Custom Assistants to Inspectors) are junior staff. Management staffs are also senior staff, indicating that the ratio between senior and junior staff is about 1:1 (66 and 68). This ratio suggests a balanced response on the basis of staff categorization. In other words, data

**Table 2.** Respondents status.

Status	Respondents (%)
<b>Age</b>	
18 – 35 years	60 (44.8)
36 – 58 years	74 (55.2)
<b>Office</b>	
Management staff	10 (7.5)
Senior staff	56 (41.8)
Junior staff	68 (50.7)
<b>Farm</b>	
Own large farm (About 100m x 100m)	5 (3.7)
Own small farm (About 50m x 30 m)	87 (65.0)
Have backyard garden (About 20m x 6m)	15 (11.2)
No form of farming	27 (20.1)

collected is not skewed either to the left or to the right. 74 (55.2%) were 36 to 58 years and 60 (44.8%) were between 18 to 35 years (age range stipulated by the Nigerian National Youth Policy of 2001 for defining youths (Anasi, 2010). Furthermore, the mandatory minimum age of eighteen years and attainment of a Senior Secondary School Certificate (equivalent of General Certificate of Education), is required for employment into NCS and indicates that the sample consists of an energetic workforce that can read and write.

The study showed that 3.7% of the respondents have large farms, 65.0% have small farms and 11.2% maintain gardens around their homes (Table 2), explaining that civil servants who have the opportunity to farm do so after office hours or employ labour to work on their farms. It is not surprising because the middle belt of Nigeria, which includes Benue and Plateau States, produce substantial food for the country. In addition, Table 2 shows that 44.8% of the respondents were between 18 to 35 years while 55.2% were between 36 to 58 years indicating that a good number of the respondents are youths going by the 2001 Nigerian National Youth policy definition (Anasi, 2010). In reality, vigor and spontaneity are used to define youths in Nigeria, and they are often between 14 and 45 years, and they are found among political youth wings and farmers youth groups.

Ninety one point eight percent (91.8%) of the respondents are computer literate, 95.5% use the Internet regularly and 74.6% access the net through their mobile phones, (Table 3) indicating that very few staff of the organization are often assisted when they go to the net. Such staff should be identified and given basic computer trainings to minimize wastage of other people's

**Table 3.** Respondents reaction to Internet-related questions.

Internet-related questions	Respondents reactions	
	Yes (%)	No (%)
Are you Computer Literate?	123 (91.8)	11(8.2)
Do you use the Internet regularly?	128 (95.5)	6 (4.5)
Do you think the Intranet can perform the same functions as the Internet?	104 (77.6)	30 (22.4)
Do you access the net through your mobile phone?	100 (74.6)	34 (25.4)

**Table 4.** Respondents observed communication challenges.

Communication Challenges	Respondents	%
Speculations	73	54.5
Wrong information	88	65.7
Inadequate information	75	55.9
Fear of asking questions	96	71.6

time and improve their communication skill. The result also shows that educated people within the age range of 18 to 58 in Nigeria hunger for understanding and they constantly seek for information to sustain and improve their knowledge need. 77.6% of the respondents believe the intranet can perform the same functions as the internet (Table 3), suggesting some poor level of understanding of the difference between a local and restricted network and a global computer network that consists of interconnected networks. Their response may be based on the reality that both networks are created using the World Wide Web software, computer-based and provide a variety of information and communication facilities.

Table 4 indicates that some staff (71.6%) of the Nigeria Custom Service are scared of asking questions for fear of being victimized. Other communication challenges observed in the organization are speculations (54.5%), wrong information (65.7%) and inadequate information (55.9%). The scenario observed in the Nigeria Custom Service is similar to results of discussion with two focused groups (fifteen (15) 500 Level agricultural extension students and twelve (12) junior staff) in the University of Agriculture Makurdi, during a PRA training session where respondents expressed fear of asking some kinds of questions or making some comments in the presence of their superiors, and the effect of rumors on their attitude towards what they hear.

Table 5 shows that majority of the respondents have heard about the intranet and believe it can be used to enhance job performance by providing organizational news (91.8%), disseminating staff postings (85.1%), sending circulars and verifying information (81.3% respectively), enabling group discussions, publishing monthly orders and serving as a complaint mechanism (73.9% respectively) for aggrieved staff. This belief may

be founded on their interaction with the Internet and the services it is capable of providing. Although, 76.1% did not agree that the Nigerian Customs Service has Intranet facilities to meet these organizational needs (Table 6) the result indicates that 10% of the respondents are aware of the availability of Intranet, thus, explaining the underutilization of the facility. It is expected that most staff of the organization should have access to the facility to reduce rumors and gossips (91.8%), reduce information distortion (96.3%) and provide quick feedback from staff (95.5%) (Table 7).

Since the study was trying to deduce the effectiveness of the use of the intranet if adopted and fully implemented as an internal communications mechanism by the Nigeria Customs Service, Logit regression was used to test the effect of Internet related parameters (computer literacy, Internet use and awareness that Intranet can perform similar functions like the Internet) on the effectiveness of intranet for internal organizational communication. The Nagelkence  $R^2$  of the Logit regression is 0.783 (Table 8) implying that the independent variables in the model accounted for 78.3% of the variations in the probability of the effect of the use of internet related parameters on the perception of the effectiveness of the use of intranet for internal communication. The  $X^2$  statistic of the model (125.526) is also significant at 1% level. Hence, computer literacy, Internet use and some knowledge of the functions of the Intranet and Internet, have significant effect on workers perception of the effectiveness of intranet for internal communication.

The result further showed that, Computer literacy ( $X_1$ ) and knowledge that Intranet and Internet can perform similar functions ( $X_3$ ) increased the likelihood of the use of intranet for effective internal organizational communication and they were significant at 10 and 1%, respectively. The Chi-square test showed that intranet

**Table 5.** Respondents perception of the use of Intranet in enhancing job performance.

Response options	Frequency	%
Sending circulars	109	81.3
Staff postings	114	85.1
Verifying information	109	81.3
Complain mechanism	99	73.9
Publishing monthly order	99	73.9
Enabling group discussion	99	73.9
Video conferencing	105	78.3
Organizational news	123	91.8

**Table 6.** Respondents awareness of Intranet facility in the Nigerian Customs Service (NCS).

Availability of Intranet facility in NCS	Frequency	%
Agree	10	7.5
Undecided	22	16.4
Disagree	102	76.1
Total	134	100

**Table 7.** Respondents view on the value of Intranet to the Nigerian Customs Service.

Response Options	Frequency	%
Reduction in communication expenses	123	91.8
Quick response of staff to instructions	123	91.8
Reduction in information distortion	129	96.3
Quick feedback from staff	128	95.5
Reduction of rumor & gossips	123	91.8
Reduction of traveling risk	123	91.8

**Table 8.** Effect of Internet-related parameters on effectiveness of Intranet for Internal communication.

Independent Variables	Coefficients	Wald	P- Value
Constant	10.717	9.372*	0.002
X <sub>1</sub>	-2.43	3.242**	0.072
X <sub>2</sub>	-0.136	0.237	0.627
X <sub>3</sub>	-4.54	14.908*	0.000

\*, \*\* = Wald is significant at 1 and 10% respectively. Negelkence  $R^2 = 0.783$ ;  $X^2$  Statistic = 125.526; P-value of  $X^2$  statistic = 0.000.

has the capacity to enhance effective and efficient organizational management ( $X^2$  calculated = 99.34 >  $X^2$  tabulated = 0.0201). The observed values presented under the frequency column in Table 9 were used to compute the Chi-Square test.

The Expected value, which is the mean of the distribution, is 44.9, and the degree of freedom is 2.  $X^2$  calculated is 99.34 while  $X^2$  tabulated at 99% confidence

on df 2 is 0.0201. The rule states that if Chi-square calculated is greater than Chi-square tabulated, the null hypothesis ( $H_0$ ) should be rejected for the alternate hypothesis ( $H_A$ ). Therefore, since  $X^2$  calculated (99.34) is greater than  $X^2$  tabulated (0.0201), the alternate hypothesis ( $H_A$ ) is hereby accepted indicating that Intranet has the capacity to enhance effective and efficient organizational management. It is expected that

**Table 9.** Respondents opinion of the capacity of Intranet to enhance organizational management.

Response option	Frequency	%
Yes	100	74
No	19	15
No Response	15	11
Total	134	100

since communication is becoming more sophisticated, with the improvement in relevant gadgets, and workers increasingly understand their role in management, organizations should strive to adjust to the changing complexities because it is believed that changes in the modes of communication shapes human history.

## CONCLUSIONS AND RECOMMENDATIONS

The study showed that most staff of the Nigeria Customs Service that are regular with the Internet considers the Intranet as a communication tool that can enhance job performance in their organization and improve internal management communication. Apart from reducing high administrative communication cost, the use of Intranet will facilitate video conferencing, group discussions, and verification of information. However, very few staff of the Nigeria Customs Service believes the organization has Intranet facility, suggesting that the network is either underutilized and highly limited in its usage or not really functional. It is therefore recommended that the Nigeria Customs Service and organizations with similar challenges like the Agricultural Development Projects (which is responsible for agricultural extension in Nigeria) should establish functional Intranet facilities as an internal communication mechanism that are accessible to staff of every category to improve vertical and lateral communication and reduce gaps that can cause distortions of information and rumors. The achievability in this recommendation is premised on the understanding that 79.9% of the respondents are involved in farm activities. Furthermore, observation shows that Nigerians including farmers own and use mobile phones that have Internet facilities, therefore, if the ADPs establish a viable Intranet facility and educate their stakeholders, the resource will facilitate effective agricultural communication and development.

## Conflict of interests

The authors have not declared any conflict of interests.

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