An Empirical Study of the Integration of Information and Communication Technology into Management of Students and Staff Information in Obafemi Awolowo University, Ile-Ife

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ABSTRACT

The main thrust of this study was to assess the impact of Information and Communication Technology on administration and management at Obafemi Awolowo University, Ile-Ife. Three hundred and eighty participants formed the sample for the study. Three instruments were used to collect data for the study. They are (i) structured questionnaire using four-point Likert Rating Scale (ii) Oral interview and (iii) Observation schedule. The structured questionnaire contained 54 items. The results showed that there are inadequate facilities to ensure effective e-administration. A low-level competency skill was also a major challenge in the successful integration of e-administration in OAU Ile-Ife. It was also found that there was an improvement in management and administration after introducing e-administration; however the improvement was not statistically significant. Other conclusions made are that e-administration is less time consuming, quicker, more reliable, less costly and of higher quality services than the conventional administration method. In addition, the staff and students of OAU Ile-Ife were favorably disposed to e-administration.

KEY WORDS: e-administration, Changing economy, Globalization, Information and Communication Technology, Strategic Plan, Innovation and Diffusion.

INTRODUCTION

Background

Today as a result of globalization, changing economy and technology development, different organizations including higher institutions of learning are depending more on the use of ICT for teaching, research, administrative and management of students' information. In the light of the new economy, management has changed because of the diffusion of ICTs that have changed our values and ways of life. As the diffusion of ICT has impacted every facets of human endeavor positively, so also education and how it is managed (Naisibitt 1994). As in the industries where traditional jobs have changed to become multi-skilled, so also the change in management and administration. ICTs have helped to streamline management of information systems and the nature of job. This is enhanced through the development of new strategies based on modern technology. Under this new dispensation, there is the need for a change because our clients are interested in services and products delivered in less time than in the past. In asking for these new demands in less time, our clients are very sophisticated in expressing their demands. Obafemi Awolowo University is not an exception. Other challenges affecting effective management and administration of staff/student information include exponential increase in students and staff population, dwindling resources and obsolete management/administrative techniques.

Prior to the integration of ICT into managing students/staff data, the university depends on the traditional method of filing information. However, because of the increase in staff and students population, it is sometimes difficult and problematic to retrieve the necessary information. Many important files have been destroyed either by fire or pests. As at today, the population of both students and staff are well over 70,000 including all the Distance learners (MBA, Nursing, Education and other Diploma programmes). The exponential increase in students' enrolment and shortages of academic/non academic staff made administration and management very difficult. There is however compelling evidence on the potentials of Information and Communication Technology in changing the way people work and in managing change. As a result of technological revolution and globalization, it may be an understatement that ICT have impacted administration and management practices in institutions of learning in advanced countries. This is why Obafemi Awolowo University, Ile-Ife in 2003 took a giant step at integrating ICT into management. The University came up with a strategic plan (2004-2008).The aspects of the strategic goals that are relevant to the study include:
- enhancing ICT capability and application to teaching, learning, research and services;
- computerization of the University Bursary Department and Library;

According to Kehinde (2003) the University's vision is to:

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- make the entire community (staff and students) ICT literate,
- develop ICT to the highest level and to enable it serves as the back bone of OAU;
- set aside an appropriate fund to support ICT, encourage the staff and student have access to interest;
- computerize all the registry, health centre and halls of residence so that information can be processed at a faster rate and
- establish an ICT centre (at the rate of IPC per 50 students).

In order to appreciate the impact of the new technology on management and administration, it is necessary to have an overview of the administrative structure at OAU Ile-Ife.

Organizational Structure of OAU Ile-Ife.

The University Registry is the nerve centre of administrative support. It is made up of different offices, units and directorates. The Registry is headed by the Registrar who is the Chief Administrative Officer and the Coordinator for all other administrative of the Directorates and units under the Registry. While all the Unit Heads, Directors are responsible to the Registrar for the day to day running of their Units, Department and Directorates. For the purpose of the study, the focus will be on the Directorates of Academic Affairs and Personnel Affairs. The Directorate of Personnel Affairs is concerned with the management of staff. This unit handles appointments, promotion and welfare of the different categories of staff. It also provides professional support to the Departments and management of staff records. Under this Directorate are: Academic Staff Establishment (ACSE), Administrative and Technical Staff Establishment (ATSE), Junior Staff Establishment and Welfare (JSE) and Staff Training Development Unit (STDU)

The Directorate of Academic Affairs is comprised of Admission Office, Examinations and Records, Transcript Section and the Senate Office. From the above structure, it is evidence that the registry has many functions to perform. However, under the new economy and this age of globalization, it is glaring that these units need to improve upon its current method of information management.

As clearly expressed in the OAU ICT Strategic Plan, the university needs to employ a more efficient, less time consuming, less costly, higher quality service delivery and management through ICT. Good as the plan is, there is little or no empirical information about its success in administration and management. It is this that gave impetus for this study. The main thrust of this study therefore is to assess the impact of ICT on management and administration of staff and students information at OAU Ile-Ife, Nigeria. In order to effectively do this, the following research questions are generated.

Research Questions

(1) How adequate are the ICT facilities provided for management and administration of information at OAU Ile-Ife?
(2) Compare information management before and after the integration of ICT.
(3) The integration and application of ICT less costly and less time consuming.
(4) How does the staff react to the application of ICT in management and administration?
(5) Is there any significant improvement in the management and administration of information at OAU Ile-Ife?

Research Objectives

The following objectives are stated for the study.
(i) Examine the adequacy of the ICT facilities provided;
(ii) compare the management before introducing ICT and after ICT integration;
(iii) investigate whether there is any improvement in the way information is being managed after the introduction of ICT;
(iv) find out staff reaction to the new innovation;
(v) assess the impact of ICT on the administration and management of staff/students information; and
(vi) identify the problems and challenges this innovation is facing;

Justification

This study is very necessary at this point in time when the management of the university have invested a huge sum of money in the implementation of its new strategic goals and the various attempts at encouraging the use of ICTs in all facets of the university system. Since monitoring and evaluation is the bedrock to the success of any project, it is expected that the present study will provide information on the main technological development and how it has influenced the students, staff information and management. It is also hoped that the findings will provide further empirical information that will be useful for improving communication, management process, students and personnel administration. This study is also very necessary as there are paucity of empirical studies in developing countries especially Nigeria on the impact of e-administration as this is a new area. It is therefore hoped that the study will add to the existing knowledge on the impact of e-administration on management and administration in a deprived economy.

Research Hypotheses

The following hypotheses were generated for the study.

(1)   The integration and deployment of ICT into administration in OAU Ile-Ife do not necessarily ensure less costly, less time consuming and higher quality services delivery.

(2)   There is no significant improvement in management after the introduction of ICT in OAU Ile-Ife.

(3)   The integration and deployment of ICT into management and administration do not necessarily influence/enhance communication.

(4)   The staff of OAU Ile-Ife is not favorably disposed to the integration and deployment of ICT in management.

Theoretical Framework

This study is guided by the theory of innovations (Kim & Gaille 2004), diffusion in relation to ICT adoption. Specifically Rogers (1995) and Fichman (2000) classical model was used. According to this model, three factors were considered, they are:

-    characteristics of OAU Ile-Ife, the nature of ICTs adopted and the context in which it was adopted;
-    the timing and the extend of adoption;
-    factors that determine the extent and pattern of ICT adoption.

These three fundamental questions formed the frame-work for this study, they are:

-    What is the pattern/extent of diffusion?
-    What factors necessitated the adoption of ICTs in OAU Ile-Ife?
-    To what extent is this innovation being used and for what purpose?

RESEARCH METHODOLOGY

The study employed exploratory and triangulation approaches. (Denzin 1978 and Dixon 1988). The sample for the study was drawn from the Registry Staff of OAU Ile-Ife, Nigeria. Eighty staff was selected from Directorate of Academic Affairs (DAA) and Personnel Affairs (PA). The 80 sample was selected using stratified sampling technique based on gender, job type and cadre (see table 1).

Table 1 – Distribution of Sample

Cadres	Frequency	%	Valid %	Cumulative %
Junior Staff	22	27.5	7.5	7.5
Senior Staff	52	65.0	27.5	35.0
No response	6	7.5	65.0	100

Three types of instrument were used to collect data for this study. They are (i) structured questionnaire, (ii) observation schedule (iii) oral interview schedule. The structured questionnaire is made up of 40 items divided into sections. The first post solicited for information on demography of the sample used section II involved status of administration and management before the introduction of ICT. This section also contained information on problems associated with the old method section III contained information on the type of ICT resources available, its adequacy and the extent of utilization in administration and management. The last section contained information on disposition of the Registry Staff to the current effort at integrating ICT into administration and management of information. The observation schedule is designed to collect secondary information on the current effort of the University at integrating ICT into management. It included on the spot assessment of the facilities available and documents.   The oral interview involved members of the ICT Committee, INTECU, DAA and DPA. The data collected was analyzed using descriptive and inferential statistics.

FINDINGS AND DISCUSSION

Table 2 – Adequacy of ICT Facilities for Administration and Management

	Yes	No
Do you have enough personnel to handle the equipment?	42%	58%
Can you independently work on the computer?	65%	35%
Do you have adequate ICT facilities for e-administration in your office?	39%	61%
The system software employed for e-administration is effective	69%	31%

The results obtained in respect of question 1 reflected inadequate ICT facilities for the administration and management of information at OAU Ile-Ife. For instance, personnel needed are low (42%) so also the competency level (49%) inadequate facilities (39%).The implication of the above is that ICT cannot be effectively adopted if the administrators do have the right equipment and the competency.

The data collected with respect of question II is shown below.

Table III Paired sample correlation of management in the past and after the integration of ICT.

	Mean $\overline{x}$	N	Correlation	Standard Deviation
Information management in the past and ICT renovation in OAU	16.53	80	0.190	4.76140
Information management in the past and staff attitude	12.15	80	0.127	3.65
Effectiveness of ICT based management I and management of information in the past	19.33	80	0.093	4.986

When a correlation of management in the past and after the integration of ICT was carried out a mean of 16.53 with a standard deviation of 4.76 and a correlation of 0.19 was gotten. However the correlation was not statistically significant. Although mean value was higher so also the correlation, the t value = 0.977 df = 79, P<0.3) was very weak. It implied that there was a weak improvement in the management and administration of information; however it was not statistically significant. Based on the above result, it can be concluded that there was no significant improvement in information management after the introduction of ICT (tc=0.977, df=79, P <0.3).Hence the null hypothesis was upheld. The reasons for the above may be due (i) lack of appropriate ICT skills (49%) (ii) 58% did not have the appropriate ICT tool to ensure effective e-administration and lastly most of the administrators are not exposed to workshops, conferences and research in ICT .This may partly be responsible for weak impact of ICT in improving management and administration(t=-2.599,df=79p<0.1,.see table6)

Table 4 – Cost, Integration and Deployment of ICT

	Pearson correlation	Coefficient
Using ICT based/e- administration is more effective than the old method	Pearson correlation (2-tailed) sign N	0.454** 0.00 80
ICT based/e- administration is less time consuming, quicker and more reliable than the old method	Pearson correlation . (2-tailed) sign N	0.283** 0.01 80
Application of ICT in administration has improved inter department communication	Pearson correlation (2-tailed) sign N	0.306** 0.006 80

** Significant

Table 4 provided answers to question 2, 3 and hypothesis III when the old method of management was compared with e-administration the result showed that e- administration was more cost effective than the old method (r=0.454, P<0.09). With respect to ICT based administration being less time consuming, quicker and more reliable than the old method a correlation of 0.283 was obtained which was significant at 0.01 level, hence hypothesis I which states that ICT based administration is not cost effective, less time consuming and ensure higher quality service delivery was rejected. As regards hypothesis III that stated that ICT based administration does not necessary enhanced communication, the data showed correlation value r=0.306 which was significant at 0.006 level. Thus hypothesis III was rejected. On staff attitude to e-administration the result obtained showed that the staff of OAU Ile-Ife were favorably disposed to ICT based administration (tc = 8.11 df=79 p< 0.01. hence the hypothesis that stated that the staff OAU Ile-Ife were not favorable disposed to ICT based administration was rejected. (see table 7).

Table 6– Paired t –test of the effectiveness of ICT-based administration and the old method of administration

	Mean $\overline{x}$	Standard Deviation	Standard Error	Lower	Upper	t	df	Sig (2-tailed)
Effectiveness of the old method and ICT based administration	-.2.0750	7.140	0.798	-3.664	-0.486	-2.599**	79	.011

** Significant

Table 7: Paired T-test of staff disposition to e-administration

	Mean $\overline{x}$	Standard Deviation	Standard Error	Lower	Upper	t	df	Sig (2-tailed)
Staff disposition to ICT based administration	5.100	5.62454	0.62884	3.84832	6.35168	8.110**	79	.001

**significant

SUMMARY AND CONCLUSION

The following conclusions are made based on the findings:

There are inadequate ICT facilities to ensure effective e-administration in OAU Ile-Ife. There is also generally low competency skill among the administrators to use in ICT in administration. It was also found that there was a weak improvement in management and administration after employing ICT based administration but the improvement was not statistically significant. Other conclusions made are that ICT based administration is more reliable, quicker, less time consuming and of better quality services than then conventional method of management. In addition, it is less costly and it enhanced interdepartmental communication. Finally the staff of OAU Ile-Ife were favorably disposed to e-administration.

Recommendations

The following recommendations are made:

Appropriate ICT facilities should be provided. It should include the development and design of appropriate software for e-administration. The Electronic Data Processing course that was made mandatory for all the administrative staff should be restructured to make it more relevant to the needs of the administrators, as research evidence showed that the course was in adequate for the administrators. More of the administrators should be encourage to attend conferences and workshops on ICT for effective e-administration. More internet facilities should be provided as e-administration is found to be less costly, less time consuming and more effective than the traditional method of administration. All other offices that are yet to be net worked and linked to the internet should be linked and the problem of power outage be solved if e-administration is to be successfully employed.

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