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INFORMATION AND COMMUNICATION TECHNOLOGY PROJECTS AND MANAGEMENT INFORMATION SYSTEM IN NIGERIAN UNIVERSITIES: A DESIGN REALITY APPROACH

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INFORMATION AND COMMUNICATION TECHNOLOGY PROJECTS AND MANAGEMENT INFORMATION SYSTEM IN NIGERIA UNIVERSITIES: A DESIGN-REALITY APPROACH

ABSTRACT

This paper focuses on a design-reality gap assessment of selected information communication technology (ICT) projects in federal universities, South West of Nigeria. We determine the success and failure rates of the selected ICT projects based on the design-reality gap model dimensions: information, technology, processes, objectives and values, staffing and skills, management systems and structures, and so on. Thus, we adopt survey research design, including qualitative and quantitative methods of data collection in this paper. Moreover, we use purposive sampling technique in selecting the sample data. Five (5) heads of unit of the selected ICT projects responded to the questionnaire based on the Design-Reality gap model checklist and were also interviewed. The analytical tools adopted were percentage distribution. The data from interview were analysed thematically. The outcome of the study revealed that, UNILAG-CITS, FUTA-CRC, FUNAAB-ICTREC, OAU-MIS and UI-MIS ICT projects as partial failures. The study recommended that ICT project stakeholders/managers should draw up policy statements guiding the initiation, implementation and delivery of ICT project, it is important to conduct a need analysis/assessment prior to the implementation of ICT project initiatives. This will stimulate the demand for the ICT project.

Keywords: ICT; ICT Projects; Management Information System; Design-Reality Gap Model

Introduction

Information and Communication Technology (ICT) is defined as the use of electronic systems /machines/tools in the collection, processing, storage, dissemination and retrieval of information (Pulkinen, 2004). The advent of ICT has impacted every sphere of the human society positively including the educational sector. Over the years, ICT has changed and added value to the teaching, learning and management processes in the educational system leading to following: electronic learning(e-learning), electronic library, online examination, electronic registration (portal systems for registration, admissions, result checking, transcripts processing etc.), thereby enabling an effective and efficient management information system (MIS) (Gambari & Chike-Okoli (n.d) & Farrel and Wachholz, 2003).MIS is process of collecting, processing, storing and transmitting relevant information to support decision making in organisations (Laudon & Laudon,2007). Before the advent of ICT, the manual MIS was being used, it involves record keeping through the use of files (paper based), indexing, filing and sorting of information was carried out by clerks, secretaries and office staff (Nkankwo,2001).

The manual MIS was inefficient resulting in problems such as inaccurate information; delay in accessing and retrieval of records such as student academic transcripts; and lack of organized information for planning and decision making (Bhatti & Adran,2010; Nkankwo,2001 and Fabunmi,2004). However, the application of ICT to MIS activities has led to the computerized MIS which has to do with records input, processing and retrieval through the use of software's and electronic machines (Nkankwo,2001). Computerized MIS has brought about energy and time conservation for staff and clientele; ease in the preparation and issuance of student's transcripts. Also, the computerized MIS provides institution with all the information they need for decisions making, when they need it, and the form that aids their understanding and stimulates action (Bassey, Okodoko & Akpanumoh (2009) & Osakwe, (2012)

Owing to this fact, the Nigerian government and other stakeholders in the education sector devised mechanisms for incorporating ICT into the Nigerian educational system. This has taken the form of ICT project. ICT project refers to ICT initiatives that typically results in the development and installation of new software product. ICT project often introduce new hardware, software and/or new product development as part of the project (Dekkers and Forselius, 2007). Nigeria government, through National University Commission (NUC) initiated the move to get Nigerian Universities to embrace ICT in its management practices through its Nigerian Universities Management of Information System (NUMIS) ICT project

(Raymond, 2006; Olorunsola, 1997; Etim, 2006; Sani and Tiamuyi, 2005 & Nwankwo, Ugwude &Ugwude,2020). The NUMIS project was aimed at solving the problems which often occur in data collection, processing, storage and the need for modern information automation technology for the management of resources in the university system (NUC,1995 & Olorunsola, 1997). In I989, the NUMIS project took off and was planned to capture data on students records, staff records, finance records and physical structure records with the NUMIS software (NUC MIS unit, 1996).The project was designed to achieve the following objectives : to standardize the system of obtaining reports and statistical information , ensure that such information are accurate and timely , and organize such information for planning and decision-making in order to improve utilization of resources, to help the universities put in place an effective management system (Fadekemi &Ajayi (2007); Olorunsola,1997& NUC Annual Report, 1997 as cited in Olatokun, 2003). While, the aforementioned objectives are laudable, it is expedient to note that the NUMIS project initiated by the Nigerian government and its agencies is non-existing, though it laid the foundation for the incorporation of ICT into the Nigerian universities' management practices, particularly the federal universities. As a result of this, Universities administrators embarked upon the establishment, development and improvement of its own University based information system to manage its activities. This study focuses on the five selected ICT project in Federal Universities in South west, Nigeria. Further to this study, ICT(MIS) centres were labelled differently at various universities. They are :1) *Management Information system (MIS) project*: The concept of management information system in University of Ibadan, Ibadan and Obafemi Awolowo University, Ile-Ife is an integrated, user-machine system providing information to support operations, management and decision-making functions in these institutions. The aim of MIS is to develop a viable system to maximize the effective use of modern data approach to management practices. (2) *Computer Resource Centre (CRC) project:* The Computer Resource Centre (CRC) is the Information and Communication Technology (ICT) nerve centre of the Federal University of Technology, Akure. It is saddled with the responsibility of ensuring an ICT driven environment based on current technology trends. It is a central service unit that provides ICT facilities for teaching, research and consultancy services within the University and to the outside world. *(4) Information and Communication Technology Resource Centre (ICTREC) project:* The Information and Communication Resource Centre (ICTREC) C is an interdisciplinary organ of the University to support teaching, learning, research, instruction, networking and outreach within Federal University of Agriculture, Abeokuta (FUNAAB) and beyond. It also coordinated all ICT related activities in the university. *(5) Centre for*

Information and Technology System (CITS) project: The Centre for Information and Technology System in the University of Lagos, is responsible for the development and maintenance of information and communication technology system infrastructure such as email for both staff and students, student records and research and development. CITS is also involved in e-teaching and e-learning with interfaces in the UNILAG library and learning management. This study focuses on the above selected ICT projects that will be assessed with the Design-Reality gap model: a monitoring and evaluation tool used to measure the success and failures of ICT4D projects. The Design-Reality gap model according to Heeks (2002), is a monitoring and evaluation tool used to measure the success and failure of ICT4D projects, especially e-government projects. The basis of this model developed by Richard Heeks is the idea that there are two points in any e-government project: the reality, that is 'where we are now,' and the goal of the project, that is 'where the e-government project wants to get us. The larger the gap between these two points, the more difficult it is to successfully complete the project. The smaller the gap, the higher the chance of success. Heeks (2003) identified 7 dimensions that determine this gap (ICT4D @ Tulane University, 2013). These are: 1. *Information -* Quantity of information, information flow, informal information and information in use by stakeholders; 2. *Technology -* The amount and type of Computer hardware, computer software, telecommunication; *3. Processe*s - information-handling, decision, transaction, and informal processes.*4. Objectives and Values -* operational staff objectives, senior official and other stakeholders' objectives and values. *5.Staffing and skills -* staff numbers, technical skills, operational, knowledge and other skills; *6. Management systems and structures-* the support of the management;*7. Other resources*: initial investment, ongoing expenditure and time. These dimensions were helpfully summed up in the acronym ITPOSMO. From the review of extant literature, we observe that Design-Reality Gap Model is often used in other countries of the world to assess the success rate of ICT projects. The works of DeLone and McLean (1992), Beynon-Davies (2002) and Heeks (2002) threw a lot of explanations on the applicability of the model to ICT. The first two models deal with ICT/IS in general but Heeks model is for ICT/IS implementation and can be used in explaining reasons for success and failure of ICT projects especially in developing countries. The research model adopted for this study is the Design-Reality gap model developed by Heeks (2002). It is therefore imperative that the ICT projects could be evaluated using the Design-Reality Gap Model.

Studies have shown that several ICT projects have been initiated in Nigeria universities with vast literature concentrating on the history, role, development, availability, evaluation,

challenges and their utilization (Mac-Ikemenjima,2005; Sani & Tiamiyu, 2005; Etim, 2006; Nok, 2006; Ibrahim,2008; Idowu & Esere, 2013 and Gambari and Chike-Okoli (2014). However, the rate of success and failure of these ICT projects have not been identified or stated in previous studies. Heeks (2002) asserts that there is difficulty in determing what proportion of ICT projects in developing countries falls under success, partial failure and total failure due to lack of literature on evaluation as well as focus on case studies. This is true as case studies on literature are concentrated on individual ICT projects which provide no basis for estimation of overall failure/success rates. More so, Heeks (2002) states that where most ICT projects are introduced, they mainly end in failure – *either partial or total* due to large gaps that often exist between project design and the African public sector reality, of which Nigeria is a key component and this arises particularly because ICT project concepts and designs have their origins in the West; origins that are significantly different from Nigerian realities. Thus, it is pertinent to ask, *what are the success and failure rate of these ICT projects*. With this enlightenment about the need for ICTs, no research work has actually sought to assess existing ICT projects in Nigerian universities using the Design-Reality Gap model. This study is of practical implication, as it will provide information about the state of ICT projects in the Nigerian universities and will be useful and important for the effective planning, implementation and management of ICT projects thereby, laying a strong foundation for assessing ICT projects. More so, it will benefit the government, partnering agencies (sponsors and donor agencies) and other stakeholders in providing background for designing policies for ICT project.

Literature Review

ICTs are defined as a set of technological tools and resources used to create, communicate, disseminates, store and manage information (Hamilton-Ekeke & Mabchu,2015; UNESCO, 2006). Such technologies include radio, television, video, DVD, telephone, satellite systems, computers and network hardware and software as well as the equipment and services associated with these technologies such as video-conferencing and electronic mail (UNESCO, 2006). More so, ICT according to Murdic and Ross (1971) as cited in Nwangwu (2005) is the process in which information (in-put) is recorded, stored and retrieved (processed for decision (output) on planning, coordination and controlling. Over the years, the use of ICT in all sectors of education especially universities have increased dramatically, introducing new method of teaching and management activities (Farrel & Wachholz,2003; Nwezeh, 2010 and Sani (2011).

Universities are general centers for data generation and by extension management (Nwankwo, 2001). University information needs, programmes and activities have become extremely complex over the years and this has made modern university education administrators to depend on Management Information System (MIS) to support and facilitate management activities. MIS is basically concerned with the process of collecting, processing, storing and transmitting relevant information to support decision making in any organizations (Laudon and Laudon, 2007). An MIS system convert data from internal and external sources into information; and to communicate that information in an appropriate form to managers at all levels, to enable them make timely and effective decisions for planning, directing and controlling the activities for which they are responsible (Bee & Bee, 1999 & Ajayi & Omirin, 2007). In addition, an MIS system produces information that supports the staff, students and management functions of higher institutions (Harsh,2000).There are two types of management information systems as identified by Nkankwo (2001).These are the manual MIS which has to do with records keeping through the use of files(paper based), indexing, classifications and filing by Clerks, secretaries and office staff, while the computerized MIS deals with records input, processing and retrieval through the use of software's and electronic machines. The information needs of complex organization like universities institution have become quite enormous and challenging, this situation has arisen as result of the need to handle large volume of data which they must process speedily in order to provide information for management decision-making as well as meeting the information requirements of their clientele namely: students, parents, alumni, government, information community, the general public (Bright & Asare 2019, and Association of African Universities (2001). The manual MIS cannot handle the growing complexities of universities information needs often resulting in problems such as inaccurate information; difficulty in accessing and retrieval of records such as students' progress transcripts, final year students' academic transcripts and such delayed access to vital records and documents creates lags in candidates' further progress either for postgraduate studies or employment purposes (Bhatti & Adran,2010; Nkankwo,2001 and Fabunmi,2004). The growing complexities of universities information needs makes the application of Hi-Tech information and ICTs indispensable due to the enormous volume of information to be managed, it is apparent that the computerized MIS is a sine qua non for effective institutional goal attainment, since it is required for needs assessment, logistics and planning, resources utilization, operational control and management or evaluation of results (Okorie, Agabi & Uche, 2005; Association of African Universities,2001). More so, Computer based MIS in universities is used for the process of

mechanized analysis, updating, storage, display and retrieval of sets of information, particularly those connected with the management and operational sides of administrative decisions(Bassey, Okodoko & Akpanumoh (2009).The benefits of computerized MIS are individual and institutional development; energy and time conservation for staff and clientele; mutual confidence between academic staff, non-academic staff and students will be enhanced; good judgment based on facts and figures will prevail. More so, computerized MIS will also facilitate the preparation for and issue of transcripts to graduates who wish to further their education on time and also facilitate the keeping of accurate records in the areas of examination, staff recruitment and promotion, publishing, and students' enrolment and admissions (Osakwe, 2012).In addition, a computerized MIS provides institution with all the information they need for decisions, when they need it, and the form that aids their understanding and stimulates action (Bassey, Okodoko & Akpanumoh (2009). In view of the benefits of computerized MIS and the complexities of Nigerian universities are in terms of the organizational structure, number, and rapid increase in student population, the Nigeria government through the National Universities Commission (NUC) initiated the Nigerian Universities Management Information system (NUMIS) project aimed at solving the problems which more than often occur in data collection, processing, storage and the need for modern information automation technology for the management of resources in the university system (NUC,1995; Nkanu & Okon (2010); Oyelekan (2008) ;Ifinedo & Uwadia, (2005); Sani & Tiamiyu (2005); Etim (2006); and NUC,(1995). However, a study on Challenges to Management Information Systems in Nigerian Universities by University of Manchester's Institute for Development Policy and Management (2008) showed the NUMIS project could not achieve the objectives that were set, leading it to be seen as a white elephant project and waste of money. No university has been able to generate either transcripts or correct enrolment data from the system, and the NUC has stopped the funding of the project in a number of universities. Moreover, Statistics still have to be generated manually, which is an inaccurate and time-consuming process, and a cause of frustration and stress amongst those staff involved(University of Manchester's Institute for Development Policy and Management (2008) Also, Oranu (2008) in a study on Enhanced information system for the self – sustenance activities of tertiary institutions stated that no MIS unit in the universities that use NUMIS has been able to complete the creation of staff and students' records and produce reports as required due to inadequacies of the NUMIS project. In addition, Ajayi, &Omirin (2007) in their study stated that no university adequately utilized MIS in its decision-making process. More so, the NUMIS project was evaluated as largely unsuccessful, considering its

long duration and level of achievement recorded. This according to Ifinedo and Uwadia (2005), was due to difficulty to secure funds from project sponsors, shift in top management commitment and support that arose due to change in top leadership of NUC (Top management committee that controls and monitors the project) and inadequate technical team expertise. Other causes of its failure are: lack of good management skills, lack of users' support and also, lack of IT literacy among users and top management administrators contributed to the failure of the NUMIS project (Ifinedo and Uwadia, 2005). Nevertheless, Sani and Tiamiyu (2005) in their study, evaluated the implementation and impact of efforts led by the Nigerian National Universities Commission (NUC) since about 1990 to mid-2002 on NUMIS project, their study revealed that management information systems (MIS) have been developed to varying degrees in all the federal universities, staff and student records were being maintained in databases with the NUMIS software, which captured bio-data, matriculation information, examination results, etc. It is worthy to note that the NUMIS project set the foundation for the use of ICT in management activities in Nigerian Universities. As a result of this, Universities administrators embarked on developing and customizing their MIS units. For instance, University of Ibadan MIS units collects and stores data on students, staff and pensioners. It also processes such data and produce reports and statistical information for use by the various units of the university etc. (UI,2021). Similarly, the MIS unit in Obafemi Awolowo University handles the collation of students and staff records for easy accessibility and analysis, development of data bank for planning and budgeting and information system for the University to ensure constant availability of data in the data bank for the development of indices for planning and determination of performance indicators etc. (OAU,2021). More so, the Information and Communication Technology Resource Centre (ICTREC) at the Federal University of Agriculture is responsible for managing of students and staff records, supply of information to Management and other authorized users in desired formats. It is also responsible for administration of online Student Registration, production of ID cards, acquisition and management of virtual libraries, electronic books, teaching and learning aids, making them available to staff and students on the intranet (FUNAAB, 2021). In addition, the Centre for Information and Technology System (CITS) at the University of the Lagos is responsible for the development and maintenance of information and communication technology system infrastructure such as email for both staff and students, student records and research and development (UNILAG, 2021). This paper reviewed the MIS ICT projects that is operated in Five (5) federal universities in South-West, Nigeria due to the level of MIS activities availability and awareness in these institutions as stated in the studies reviewed

above to determine the success and failure rate of these ICT project which will be assessed on the basis of the level of information, technology that is put into use, the processes of delivering this information, objective of the project, the management system and structure, staffing and skills required for the project and other resources(ITPOMSO),hence the need for assessment using a scientifically established model/standard.

Design-Reality Gap Model

The Design- Reality Gap Model is a monitoring and evaluation tool used to measure the success of ICT4D projects, especially e-government projects. The ITPOSMO model seeks to explain the high rates of failures of information systems in developing countries Heeks (2002). This model assumes the designers of Information Systems are remote which means their contextual inscriptions are liable to be significantly different from user actuality. It assumes the designers come from developed countries or have been trained in developed countries and their knowledge of the local circumstances is at variance with the local reality (Gichoya, 2005). The basis of Heeks' model is the idea that there are two points in any e-government project: the reality, that is 'where we are now,' and the goal of the project, that is 'where the e-government project wants to get us. The larger the gap between these two points, the more difficult it is to successfully complete the project. The smaller the gap, the higher the chance of success (ICT4D, 2008).In addition, Almarabeh and Ali (2010) noted that large design-reality gaps are a result of using an off-the-shelf solution from an industrialized country for a developing country is one of the causes of failure of ICT projects. There are 7 dimensions that determine this gap, they are: information, technology, processes, objectives and values, staffing and skills, management systems and structures, and other resources: time and money which are summed up in the acronym ITPOSMO, which are necessary and sufficient to provide an understanding of design-reality gaps.
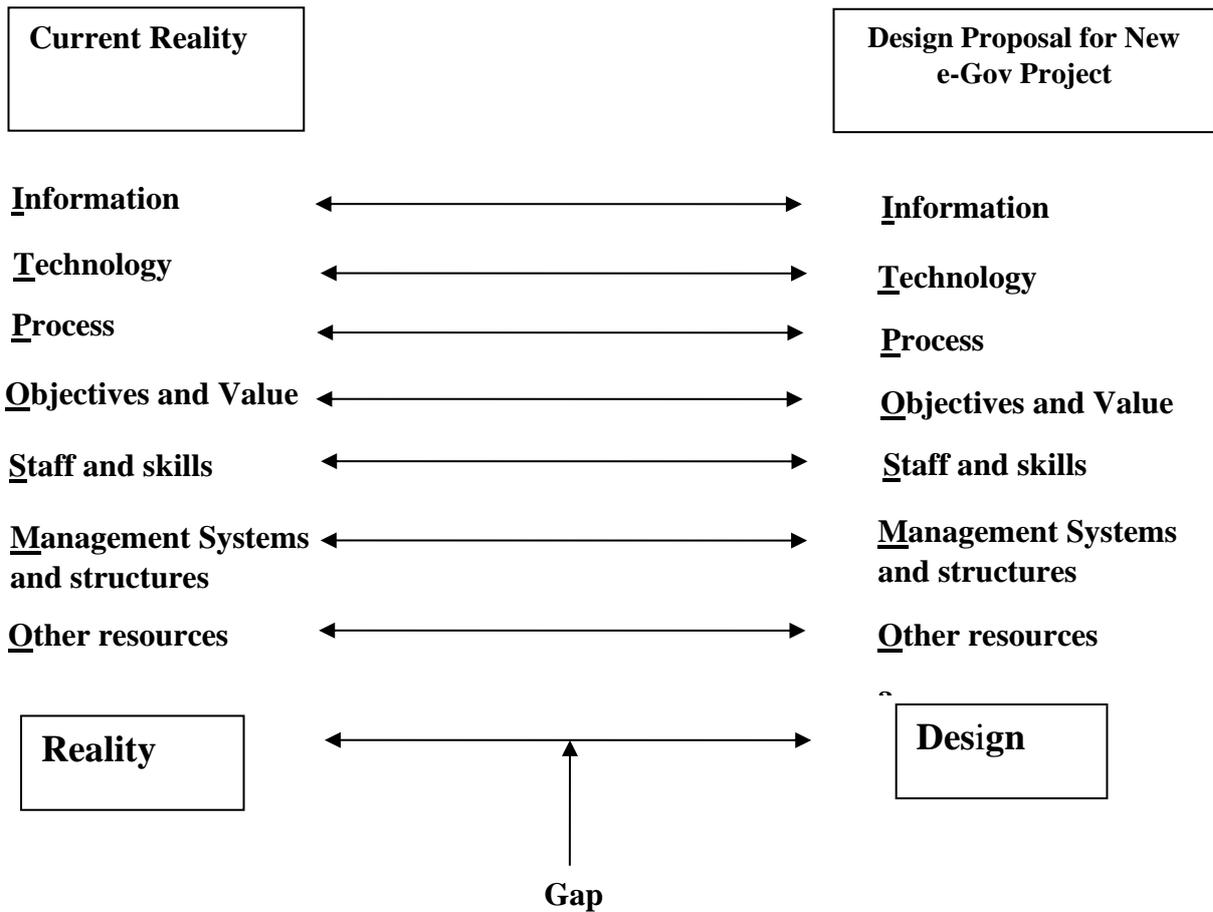
Current Reality		**Design Proposal for New e-Gov Project**

Information ⟷ **Information**

Technology ⟷ **Technology**

Process ⟷ **Process**

Objectives and Value ⟷ **Objectives and Value**

Staff and skills ⟷ **Staff and skills**

Management Systems and structures ⟷ **Management Systems and structures**

Other resources ⟷ **Other resources**

Reality ⟷ **Design**

Gap

Table 1: Design-Reality Gap (Heeks, 2002).

Overall Rating	*Likely Outcome*
57-70	Your ICT project will almost certainly fail unless action is taken to close design-reality gaps.
43-56	Your ICT project may well fail unless action is taken to close design-reality gaps.
29-42	Your ICT project might fail totally, or might well be a partial failure unless action is taken to close design-reality gaps.
15-28	Your ICT project might be a partial failure unless action is taken to close design-reality gaps.
0-14	Your ICT project may well succeed.

Table 2: The overall rating scale for ITPOSMO Dimensions (Heeks, 2002)

Methodology

The descriptive survey research design was adopted for this study because of its suitability in gathering information about prevailing conditions of the selected ICT projects. The population of the study is the ICT projects stakeholders. The ICT projects stakeholders are those at the strategic level in the organizational structure of the ICT projects in the institutions, which are the heads of units of the ICT projects. The purposive sampling technique was used to select 10 heads of unit of the selected ICT projects. According to Bryman (2012), Purposive sampling allows access to respondents who are relevant to the research i.e. Information rich participants on the topic of interest. The five (5) of them constitute the initial sample size. Data was collected with the use of a questionnaire based on the Design-Reality Gap model checklist and a semi-structured interview conducted based on the variables of the model. To ensure that the questionnaire yielded valid and reliable data, it was accessed with face and content validity based on its use in previous literatures and researches.

Results and Finding.

Further to this study, ICT(MIS) centres were labelled differently at various universities. For this research work we observed that University of Lagos is (CITS), Federal University of Technology, Akure is (CRC), Federal university of Agriculture, Abeokuta is (ICTREC), while OAU and UI referred to it as Management Information System (MIS). The responses were captured as labelled.

Table 3: Characteristics of ICT Projects' Heads of Units

Name of Institution	ICT Project	Status/Position
FUNAAB	ICTREC	Director
FUTA	CRC	Director
OAU	MIS	Senior Planning Officer
UI	MIS	Principal System Analyst
UNILAG	CITS	Higher Tech. Officer

The result presented in Table 3 shows that two different heads of ICT projects in FUNAAB and FUTA (ICTREC and CRC) bear a common status of 'director', whereas the statuses seen on OAU and UI MIS (Senior Planning Officer and Principal System Analyst) and UNILAG

CITS (Higher Technical Officer) possibly came from respondents who represented the projects' heads.

Interpretation of Questionnaire for MIS ICT Projects (-CITS, CRC, ICTREC & MIS)

According to Heeks (2002), the seven (ITPOSMO) dimensions overall gap score is 70, implying that each dimension (seven factors) has an ideal score of 10 (i.e. Goal or ideal score). However, there are sub-dimensions or items (dimensional score) under each of the ITPOSMO dimensions. Therefore, if a dimension has 5 or 6 items, the dimensional score is 50 or 60. In order to get the reality score, there is need for a conversion index to generate the scores of each sub-dimensions or items and is gotten thus, by dividing the ideal score (10) by the total dimensional score for each dimension. Hence, the reality score is gotten by computing the score for each dimension as provided by the respondent (Project score), then multiplying it by the conversion index score. The rating/ gap is gotten by subtracting the reality score from the goal or ideal score, which is (10) for each of the ITPOSMO dimensions. The results for each ICT projects evaluated are presented on tables 4.13 to 4.22 below. For example:

Information dimension has 5 sub-dimensions or items =50, Ideal score =10. To get the score for sub-dimension or items = 10 /50 = 0.200, this is the conversional index. This means that each of the 5 sub-dimensions or items under the Information dimension has a score of 0.200. project score = this is addition of all the gap rate as provided by the respondent on the Information, which is = 12. The reality score is gotten by multiplying project score (12) by the conversion index (0.200) = 2.400. Therefore, the gap rate is then gotten by subtracting reality score (2.400) from the ideal score (10) for each dimension, this is = 7.600. This is the same procedure for all the other dimensions.

(a) Table 4: UNILAG (CITS) ICT project

Dimension	Dimensional Score (DS)	Goal/Ideal Score (IS)	Conversion Index (CI) = IS/DS	Project score (PS)	Reality Score (RS) = PS x CI	Rating/Gap = IS - RS
Information	50	10	0.200	43	**8.600**	1.400
Technology	50	10	0.200	21	**4.200**	5.800
Processes	30	10	0.333	27	**8.991**	1.009
Objectives & Values	60	10	0.167	42	**7.014**	2.986
Staffing & Skills	70	10	0.143	38	**5.434**	4.566

Management Systems & Structures	40	10	0.250	22	**5.500**	4.500
Other Resources	30	10	0.333	21	**6.993**	3.007
Overall Gap Total						**23.268**

The table 4 result above shows that this project's overall gap or rating score is 23.268, lying on the second category (15 – 28) of Heeks (2002) model rating table. UNILAG's CITS project might be a partial failure unless action is taken to close the design-reality gap(s). From the table above, there are large gaps between design and reality, the ITPOSMO dimensions show large gap rate, especially in the Technology dimension, followed by the Staffing and skills and Management systems and structures dimensions respectively which shows greater risk of failure, implying that current realities do not show what was design. However, in the Information and Processes dimensions, there is little gap between design and reality, which implies that realities do show what was designed.

(b) Table 5: FUTA (CRC) ICT project.

Dimension	Dimensional Score (DS)	Goal/Ideal Score (IS)	Conversion Index (CI) = IS/DS	Project score (PS)	Reality Score (RS) = PS x CI	Rating/Gap = IS - RS
Information	50	10	0.200	32	**6.400**	3.600
Technology	50	10	0.200	35	**7.000**	3.000
Processes	30	10	0.333	21	**6.993**	3.007
Objectives & Values	60	10	0.167	43	**7.181**	2.819
Staffing & Skills	70	10	0.143	51	**7.293**	2.707
Management Systems &Structures	40	10	0.250	30	**7.500**	2.500
Other Resources	30	10	0.333	14	**4.662**	5.338
Overall Gap Total						**22.971**

The result above shows that FUTA CRC project's overall gap or rating score is 22.971 ($\approx$ 23), lying on the second category (15 – 28). This implies that FUTA's CRC project might be a partial failure unless action is taken to close the design-reality gap(s). From the table above, there are gaps between design and reality, the ITPOSMO dimensions show large gap rate, especially in the Other resources (5.338) which shows risk of failure, implying that current realities do not show what was design.

(c) Table 6: FUNAAB ICTREC Project

Dimension	Dimensional Score (DS)	Goal/Ideal Score (IS)	Conversion Index (CI) = IS/DS	Project score (PS)	Reality Score (RS) = PS x CI	Rating/Gap = IS - RS
Information	50	10	0.200	33	**6.600**	3.400
Technology	50	10	0.200	38	**7.600**	2.400
Processes	30	10	0.333	20	**6.660**	3.340
Objectives & Values	60	10	0.167	40	**6.680**	3.320
Staffing & Skills	70	10	0.143	42	**6.006**	3.994
Management Systems & Structures	40	10	0.250	23	**5.750**	4.25
Other Resources	30	10	0.333	23	**7.659**	2.341
Overall Gap Total						**23.045**

The above result indicates that FUNAAB ICTREC project's overall gap or rating score is 23.045. Thus, FUNAAB's ICTREC project might also be a partial failure unless action is taken to close the design-reality gap(s). From the table above, there are large gaps between design and reality, the ITPOSMO dimensions show large gap rate, which shows greater risk of failure, implying that current realities do not show what was design.

(d) Table 7: OAU MIS ICT Project

Dimension	Dimensional Score (DS)	Goal/Ideal Score (IS)	Conversion Index (CI) = IS/DS	Project score (PS)	Reality Score (RS) = PS x CI	Rating/Gap = IS - RS
Information	50	10	0.200	35	**7.000**	3.000
Technology	50	10	0.200	42	**8.400**	1.600
Processes	30	10	0.333	20	**6.660**	3.340
Objectives & Values	60	10	0.167	43	**7.181**	2.819
Staffing & Skills	70	10	0.143	47	**6.721**	3.279
Management Systems & Structures	40	10	0.250	18	**4.500**	5.500
Other Resources	30	10	0.333	18	**5.994**	4.006
Overall Gap Total						**23.544**

The result of OAU MIS project shows that this project's overall gap or rating score is 23.544, lying on the second category (15 – 28) of Heeks (2002) model rating table. This design-reality gap score indicates that OAU's MIS project might be a partial failure unless action is taken to close the design-reality gap(s). From the table above, it's only the Processes dimension that

shows little or no gap between design and reality, whereas, the other dimensions show large gaps rate between design and reality, which shows greater risk of failure, implying that current realities do not show what was design.

(e) Table 8: UI MIS ICT Project

Dimension	Dimensional Score (DS)	Goal/Ideal Score (IS)	Conversion Index (CI) = IS/DS	Project score (PS)	Reality Score (RS) = PS x CI	Rating/Gap = IS - RS
Information	50	10	0.200	29	**5.800**	4.200
Technology	50	10	0.200	27	**5.400**	4.600
Processes	30	10	0.333	14	**4.662**	5.338
Objectives & Values	60	10	0.167	29	**4.843**	5.157
Staffing & Skills	70	10	0.143	36	**5.148**	4.852
Management Systems & Structures	40	10	0.250	21	**5.250**	4.750
Other Resources	30	10	0.333	19	**6.327**	3.673
Overall Gap Total						**32.57**

The result above shows that the UI MIS project's overall gap or rating score is 32.57, lying on the third category (29 –42). This implies that UI's MIS project might fail totally, or might well be a partial failure unless action is taken to close the design-reality gap(s). From the table above, there are large gaps between design and reality, the ITPOSMO dimensions show large gap rate, which shows greater risk of failure, implying that current realities do not show what was design. More so, the interview transcription on the Technology dimension states: "the MIS unit uses an internally generated software which is more effective than the NUMIS software"

The results of this study revealed that all the ICT projects assessed in this study are partial failures. Heeks (2003) described partial failure as ICT initiative in which the major goals/objectives are unattained or in which there are significant undesirable outcomes. This is supported by the work of Heeks (2002) who clearly stated that only 15% of ICT projects are successful with the rest 85% percent classified as either partial failures or total failures in developing countries. Also, the result of the study stated the following ICT projects: UNILAG-CITS, FUNAAB- ICTREC, FUTA-CRC, OAU- MIS and UI-MIS as partial failures, though the first four ICT projects fall under the second category of Heeks (2002) overall rating table, the UI-MIS falls in the third category which states the ICT project might totally fail or might well be a partial failure. This is be attributed to the large dimensional gap that exists between design and reality. This is supported by Heeks (2003) who states that if the success rate of developing countries ICT projects is to increase, there need for more local improvisations that reduce design-reality gaps. This means changing local realities to make them closer to

Information System IS) design, and/or changing the (often 'imported') IS designs to make them closer to developing countries organizational realities. Also, supporting this view, Almarabeh and Ali (2010) noted that large design-reality gaps are a result of using an off-the-shelf solution from an industrialized country for a developing country is one of the causes of failure of ICT projects.

Conclusion and Recommendation

This study has contributed to the existing body of knowledge by providing insight/data on the current state of ICT projects in Nigerian universities management activities. The study revealed that, there is a high rate of failure than success with respect to the selected ICT projects. Based on the findings of the study, it can be concluded that all the selected ICT projects were partial failures. The results revealed that the partial failures are as a result of the large gap between design and reality.

Based on the findings from the study, the following are recommended for government, donor agencies, ICT projects stakeholders, managers, administrators and each university institution surveyed:

I.   ICT project stakeholders/managers should draw up policy statements guiding the initiation, implementation and delivery of ICT projects.

II.   It is important to conduct a need analysis/assessment prior to the implementation of ICT project initiatives. This will stimulate the demand for the ICT project.

III. There should be an establishment of a monitoring body or agency to monitor ICT projects and their implementation.

IV.   ICT projects are capital intensive, so there should be adequate funding of ICT projects to increase the success rate.

V.   There should be strong management commitment to enable the success of ICT projects.

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