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INDOLENT DISPOSITION TOWARDS ICT ACCEPTANCE AMONG PRACTISING QUANTITY SURVEYORS IN NIGERIA

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ABSTRACT: *Information and Communication Technology infrastructure provides a wide platform for exchanging data, coordinating activities, sharing information, and supporting globalization of businesses, all based on powerful computing and networking technology. However, quantity surveying firms appears to make sluggish progress towards effective Information and Communication Technology implementation for its unique features which distinguish it from other industries, it remain weak and data cannot be exchange efficiently, especially in the developing countries like Nigeria. The objective of this paper is to conceptually synthesize the attitude towards ICT acceptance for construction cost management. Therefore, this study reviews the causes and impact of sluggishness in the usage of information and communication devices for a sustainable construction cost management. It found that human and organizational culture is among the major cause of the slow acceptance of the Information and Communication Technology devices for construction cost management, whereby, it affects the selection and usage of the devices.*
KEYWORDS: *Information and Communication Technology, Cost Management*

INTRODUCTION

Information and communication technology is a combination of information technology and communication technology. ICT is used as a general term for all kinds of technologies which enable users to create access and manipulate information. In other words, Information and communication technology, involves all aspect of information technology which is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information. While communication technology is a way of exchanging messages or information via electronic systems between individuals or groups such as telephones, e-mail, radio, television, video, and electronic data interchange.

In addition, a study conducted on 115 construction industries that adopted the use of technological innovations in Nigeria shows that it enhanced the quality of services of the firm (Musa et al., 2010). But, with all these benefits that ICT offers, quantity surveyors are not taking serious action towards advanced adoption of ICT. In addition, clients have been demanding for executing projects within budgeted cost and completion at estimated time, likewise, firms are seeking for strategies and tools to improve the quality of their services (Akintoye, 2001).

Thus, information and communication technology (ICT) had been identified as a sustainable technological strategy used in the technological advanced nations to achieve this goals. However, quantity surveying firms had been using ICT for their services since 1980s (Ayeni, 1989), but the usage is at the basic stage only typing, printing, phone calls, using Microsoft word and excel and the likes, no advancement into the usage of sophisticated software's because of their negative perception and fraudulent activities. According Musa et al. (2010) is now close to two decades of continuous adoption and use of the technological innovation in work practices of the firms, yet its effects on service delivery have not been empirically established. It is admissible to review the root of the inactive attitude towards the acceptance of information and communication technology for sustainable construction cost management. The objective of this paper is to conceptually synthesize the attitude towards ICT acceptance for construction cost management.

QUANTITY SURVEYING IN NIGERIA

A quantity surveyor is a qualified professional responsible for drawing up bills of quantities and advising the client on contractual and financial matters. Ashworth and Hogg (2002) define quantity surveyors as those that cost design, and produce procurement and construction document.

Professional Quantity Surveyors in Nigeria are practicing under the umbrella of the Nigerian institute of Quantity Surveying (NIQS). The Nigerian institute of quantity surveyors was founded in 1969, and then operated under the lands perpetual succession Act to which it was registered in 1970.

The regulated and other professions (miscellaneous provisions) Act 1978 recognised quantity surveying profession as one of the scheduled professions while the degree No. 31 of 1986 gave legal backing and recognition to the quantity surveying profession, and also set up the Quantity surveyors registration board of Nigeria (QSRBN) to regulate the profession.

In addition the vision and mission statement of the Nigerian institute of quantity surveyors are: the vision is to be the profession in Nigeria responsible for total cost and procurement management, for the achievement of client's objectives in all types of capital projects and developments, from conception to commissioning and maintenance, in all sectors of the economy, for the attainment of sustainable national development and goals. While the mission statement is promotion of quantity surveying principles of construction economics, costs, procurement and management as sine qua non for effective delivery of all types of capital projects and developments from conception to commissioning and maintenance in all sectors of the economy. Likewise, among the aims and objective of the institute are:

- *To promote the science and practice of the quantity surveying profession in all its ramifications.*
- *To provide a platform or forum for meeting and discussing matters of mutual interest to quantity surveyors in Nigeria.*
- *To undertake research study and to collate information from any quantity surveying bodies from any part of the world on the latest development and technologies in the practice of quantity surveying and make available such information to its members.*
- *The maintenance of the highest standards of discipline and professional conduct. Thus, all aforementioned vision, missions up to the aims and objectives of establishing quantity surveying profession is toward effective accomplishing client's objectives and sustainable cost management, but achieving these purposes has been affected by so many traditional or cultural aspects. According to Aje and Awodele (2007) is "a professional trained, qualified and experienced in dealing with problems relating to construction cost, management and communication in the construction industry". Then, Oke et al. (2010) state that the problem lies in the management of construction projects which entails cost and communication. This should be the area of concern to Nigerian quantity surveyors in discharging their duties since a well-managed project is always a well delivered project. Furthermore, the business of the construction worldwide has seen an emerging demand for construction projects which embody whole life value and performance, excellent design and functionality; and which are delivered within budget, on time and defect-free, but this encompasses dealing to a large extent with information. According to Musa et al. (2010) practicing quantity surveyors are to ensure that resources are utilized to the best advantage of the society by providing financial management for projects and cost consultancy services to the clients, designers and contractors during the construction process. Also, Nigerian institute of quantity surveyors (NIQS) (1998) state that they are more concern with the financial probity in the conceptualization, planning and execution of development new and refurbishment works. They listed the major services of consultancy practice in project development chain to include:*
  - *preliminary and final budget estimate;*
  - *contract documentation and procurement;*
  - *contract administration;*
  - *cost modeling and final accounts.*

Table 1: Stages of work and Quantity Surveying services

S/NO	Stage	QS Services
1.	Conceptualisation/ Inception	Clients outline requirements (initial cost indication)
2.	Determination of general requirement (scope, user's requirements, special features)	Budgetary Planning
3.	Revision and amendments to schemes and final designs	Cost Plan
4.	Delivery of production drawing	Contract documentation
5.	Tender evaluation/Appraisal of client	Tender reporting and representation of client
6.	Review of work method/sequence	Cost check and control, cost/value control
7.	Verification of defects	Final costs from finalized accounts
8.	Commissioning	Conclusion of Accounts

Source: Anyadike (2001)

All these cannot be achieved without efficient and effective transmission and dissemination of information. The practicing quantity surveyor is expected to source for data (market survey) both internally and externally, process the data to decision-friendly and disseminates it at appropriate time to users at various stages of construction process. Therefore, construction business needs to manage information and exchange it both between their employees and with their suppliers and clients. Oyediran (2005) asserted that there has been some rapid progress in the application of ICT in commerce particularly in financial services, this is because of the seamless communication nature of ICT, and the construction industry has been sluggish in adoption of ICT despite the amenability of its process to IT operations. This sluggishness can be traced to conservativeness of the industry, high degree of

fragmentation in both the procurement process and production systems, absence of management driven IT strategy (Cartidge, 2002).

But according to Svidt and Christiansson (2006) lack of actual knowledge of cost savings when using information and communication devices makes the industry practitioners not willing to use it. However, the only way to succeed is through full implementation of ICT (Ahuja et al. 2009). Hence, construction industries are reluctant to adopt information and communication technology because some of their daily practicing activities where not taken into consideration by the ICT devices (Lofgren, 2007).

DISCUSSIONS

In Nigeria today, there is still no flexibility in choosing methods for cost management because of what people are custom to, the same method that was used in the olden days is still in place but in a modified version. That is why is very difficult for people to change very easily, the following factors are among the ones that influenced the adoption of ICT devices for construction cost management by practicing quantity surveyors.

1. Supplanting

This is the act of taking the place of another, as through force, scheming, strategy, or the like. It is very common in construction industry, because the job is not sufficient for the entire professionals to strive on. The little that is available, all and sundry will rush to get their shares from it. This might lead to killing or using charms against each other in order to survive.

This can be controlled using ICT devices, whereby the person that qualified to do the job will be contacted online, be given some codes and password that be only used by him to access the information and report back through the same procedure, then e-payment can be issued.

2. Mismanagement of funds and resources

This is another factor that is affecting quantity surveying practice in Nigeria. The money allocated for the execution of a project are diverted to personal accounts by contractors , while the professionals are given token amount of money to produce the necessary documents that can show the work is either partially completed or fully completed.

This kind of transaction makes the contractors as well as the professionals does not have interest in ICT usage. Thus, this type of transaction can be monitored and control by the application of ICT devices in the management of all capital projects. ICT devices can easily capture and store any type of transaction on its data base without any fear or favour.

3. Organizational unethical attitude

Quantity surveyors exercise their own skills and judgments; also they are accountable to the client and bound by their professional code of ethics. But, contractors on the other hand are keen to make a profit, and hence their actions inclined to business ethics. Each profession has its own interests which are often divergent and competing in nature.

Their diversity can be a source of conflicting ethical standards and practice which may affect quality performance and accountability to clients and customers. The uniqueness of the sector and the need to perform accountability among all participants can be fully effective when ICT devices are employed.

4. Bureaucracy

This refers to all rules and procedures followed by government departments and similar organizations, which are complicated and cause long delays. It is generally claimed that the public organization is more bureaucratic than the private due to the ownership, funding, and control. Bureaucratic rule has negative effect on modern organizations. Rules and procedures are essential elements to govern the operation of an organization.

However, if there are excessive rules and procedures which do not serve any functional purpose, they become red tape where resources are wasted to comply with these rules and procedures. Adoption of intranet and extranet can ease all this bureaucracies.

5. Individual's unethical behavior

The following attitudes are conducted by officers in charge of projects either in public or private sectors (Alutu, 2007):

- *Contractors are given vital information on a contract by paying agreed sum of money to officials of the awarding organization.*
- *A contractor must include a "kickback" in his tender or else he will not win the contract.*
- *Contract officers (engineers, quantity surveyors, etc.) have a vested interest on the jobs they are advising on, so they favor their firms.*

This signifies that there is an urgent need for a strategy that can control all sorts of unethical attitudes which is the full implementation of ICT usage by all private and public sectors; so that face to face contacts that seek for kickbacks are avoided.

6. Software applications

Regarding the extent to which software is a contributing factor to the poor implementation of ICT. Software could discourage project information sharing when different applications are used or when data is imported into a different file format, poor communication among professionals especially on the location of information on the data base, data standards are not compatible due to poor information

sharing between pre-contract and post-contract activities. Incompatibility between difference disciplines of the design team discourages ICT usage.

7. Network problem

In this case fault from internet providers may render the network inaccessible at an urgent time, rendering the whole related work force redundant. These kinds of services make the professionals to be frustrated and abandon the use of ICT.

8. Lack of soft skills for professional's interaction

This item is depicting that how professionals are interacting with each other has effect especially based on soft skills such as people management, communication and integration management, team building and management, culture and industry norms and the like. If professionals cannot deal with these soft issues, it becomes difficult for them to use the ICT to share information.

9. Traditional method remained

Some professionals said traditional aspects of quantity surveying must remain un-automated like taking off quantities. The traditional aspects are important to learn, but harder to share information with others, thus it is ought to be improved by using ICT.

10. Lack of Management Support

The management of firms seems not to be providing the necessary leadership for strategic computerization of quantity surveying services; they felt that computerization is not necessary. That is why support of the management is very weak and weak IT strategy (Oyediran and Odusami, 2004; Oni, 2003).

In general, according to some researchers like Oladapo (2006) the following factors are the one that constraints the acceptance of ICT devices:

a) Insufficient/erratic power supply,
b) Job sizes and fees not enough for ICT,
c) High cost of hardware/software,
d) Fear of virus attack,
e) High rate of obsolescence of software/hardware,
f) Inadequate ICT content in construction,
g) Scarcity of professional software,
h) High cost of engaging computer staff,
i) Lack of management desire and appreciation of ICT,
j) Security,
k) Low return on investment in ICT,
l) Personnel abuse, and
m) Fear of ICT making professionals redundant.

In addition, Rezgui et al., (2004); Brewer et al. (2005); Pasupathinathan and Pieprzyk (2008); asserted that the reasons for the relatively low adoption of ICT are as follows: issues relating to the legal ramifications of electronic communications, vague security framework, and issue of trust. Furthermore, organizational and human issues have been highlighted as the key factors affected the use of technologies in the construction sector (Olukayode and Adeyemi, 2011). Likewise Oyediran and Odusami (2005) state the following factors as those that are responsible for the slow acceptance of ICT by quantity surveyors:

Table 2: Factors Affecting the Use of Computer by Quantity Surveyors

Group of Affecting Factors	Elements of the effect
Operational Inhibitors	Rate of virus attack leading to loss of data, and associated problems.
	The rate at which software becomes out-dated and require up dating.
	Durability of clones (locally assembled computers)
	Branded computers are not replaceable
Educational problems	QS training institutions are not equipped\positioned to give computer education to their students
	There is no tailor-made QS training by private computer school trainers
	Management of organizations rarely give in-service training to Q. S staff
	Software education is poor
	Capacity to Q. S educators are low
Return on investment	Inadequate job order to encourage investment in computer
	The cost engaging computer literate is high
	Fees are not paid to justify computerization of PCMS
Management attitude	Management is not willing to computerize PCMS
	Management does not see the need to computerize
Myth factors	It makes other professionals to encroach on QS jobs
	QS believes computer training and usage is for the coming generation
	It is capable of creating unemployment for QSs

Source: Oyediran and Odusami (2005)

Unless the professional quantity surveyors adapts to the rapidly changing demands of its services, it is in danger of losing its leading role in providing services to its key markets (Matipa et al. 2009).

BENEFITS OF INFORMATION AND COMMUNICATION TECHNOLOGY

Many researchers come-up with the benefits that they think is as a result of the adoption of information and communication technology. To some ICT reduce the time for data processing and communicating information, and to improve communications for effective decision making and coordination among construction participants (Peansupap and walker, 2005), to enhance construction productivity (Liston et al. 2000).

This is possible because the internet-based tools of ICT allow communication between even remote users and enables them to share files, comment on changes and posts requests for information (De lapp et al., 2004).

In addition, Oladapo (2006) in Oyediran and Akintola (2011) states the following as advantages of using ICT; makes professionals jobs easier, facilitates decision making, saving in operating cost, improve public image of users, gives users competitive advantage, enhances productivity, saves time, and improve document presentation. While, Olukayode and Adeyemi (2011) presents that reduction of workload, enhances efficiency through transaction cost savings and reduced direct procurement costs, transparency, accountability, ease of use, and speedy exchange of information, are among the benefits of ICT. Likewise, Uwaifo and Omede (2006) enumerate the following elimination of duplication in data entry operations, improvement in the control of operations, error reduction in data handling operations, improvement in the speed of operations or services, increased range and depth of service, reduction in staff costs, and improve staff morale and prestige.

CONCLUSIONS

This study investigates the factors affecting acceptance of information and communication technology devices for practicing quantity surveyors in Nigeria. The literature search has revealed the aforementioned factors as among those that slow down the acceptance of ICT, and they can be group into two which can either be human (individual) or organizational culture that cause each of the factors. For the practicing quantity surveyors to reap the above mentioned benefits, computing power (information and communication technology) is inevitable in the cost management of any construction industry, because it increase the speed to capture, analyse and share data to facilitate decision making. Therefore, it is recommended for the practicing quantity surveyors to conduct holistic investigations by considering all relevant factors, so that a best solution can emerge to solve the challenges.

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