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Information Communication and Technology Effects on Administrative Principles, Practices and Standards

Ronald Bunule Wulnye

Lecturer, Wa Polytechnic, Ghana

Emmanuel Aikins

Lecturer, Wa Polytechnic, Ghana

Ibrahim Abdul-Fatawu

Lecturer, Wa Polytechnic, Ghana

Abstract:

Organizations have embraced Information Communication and Technology as one of the key strategies to facilitate the smooth attainment of organisational goals. Organizations are gradually becoming reliant on the adoption of Information Communication and Technology as tool to achieve set objectives. The purpose of this study was to examine the effects of Information Communication and Technology on administrative practices, procedures and standards at the Community-Based Health Planning and Services Unit of Regional Health Directorate, Upper West Region. Relevant literature with specific reference to Information Communication and Technology and implication of technology were reviewed. With a descriptive survey, structured questionnaires were used to collect data from all the 20 staffs of the Community-Based Health Planning and Services Unit. Stratified and purposive sampling techniques were used to select the respondents for the study. Results indicated that, Information Communication and Technology had an impact on the administrative practices, procedures and standards. Again, lack of finance, unsustainable internet connection, limited professional staff in the Information Communication and Technology and outdated technologies affect the implementation of Information Communication and Technology. The study suggested the need to improve financial resources, procurement of up-to-date technologies, training of staff and effective communication for the improvement of the implementation of Information Communication and Technology at the Community-Based Health Planning and Services Unit.

Keywords: *Information communication and technology, information technology, administrative principles, administrative procedures, administrative standards, community-based health planning and services unit,*

1. Introduction

Information Communication and Technology (ICT) has emerged as one of the key strategies embraced by organizations in order to enable the smooth attainment of organizational objectives. Information and Communication Technology (ICT) is at the center of today's global change curve. Laudon and Laudon, (1991) contended that managers cannot ignore Information Systems because they play a critical role in contemporary organizations. Given the dynamics where the CHPS Unit of the Regional Health Administration in the Upper West Region operates, it has found it necessary to formulate strategies; principles and procedures that assist in achieving intended objectives. The impact of technology on organizations has brought a complete change in the organizational structure and workforce and huge increment in the productivity and output.

Information and Communication Technology is concerned with the aspect of managing and processing information through the use of electronic computers and computer software to convert, store, protect, process, transmit and retrieve information. It is the handling and processing of information for use by means of electronic and communication gadgets such as computers, cameras, telephones or mobile phones etc. (Okute, 2001), "the harnessing of electronic technology in its various forms to improve the operations and profitability of the business as a whole" (Uzoka, 2002), Information and Communication Technology is the combination of computing, telecommunication and video techniques for the purpose of acquiring, processing, storing, and disseminating vocal, pictorial, textual and numerical information (Buseni, 2013).

The adoption of ICT which has replaced the old and former manual system of providing administrative, procedures and standards is to influence service delivery. It is important to note that the CHPS Unit of Regional Health Administration in

Upper West Region is using ICT not just as a means of penetrating new markets in the country but also as a strategy to improving service delivery.

According to Stam & Stanton (2010) asserted that collective and individual productivity in organizations which depend on the effective and appropriate use of technology have made researchers have long and abiding interest of the impacts of new technology in organizations. Recent scholars and popular literature has examined the role that information technology plays in promoting collaboration and information sharing both inside and across organizational boundaries (Daft, 2006, Kalpic & Bernus, 2006, Zhang Chulkoy, 2011). For the past years the role of ICT has changed from a supporting, function to a key function, enabler and active force for organizations. ICT has become a dynamic and strategic asset of an organization for the successful achievement of its mission and goals. Hence, organizations are becoming increasingly dependent on a well-functioning ICT infrastructure.

Technology has played a major role in the development of business in the world (Mahajan & College, 2015). Almost all business sectors have depended on technology to get into the competition in order to survive. Information systems have been the key step towards efficiency when automating different tasks in the companies, presumably to help reduce margin error and realize larger savings (Butt, 2015). The emergence of the Internet in the mid 1990's brought new life in the market by extending the frontiers of globalization, challenging time and space. This affected the way the world conducts economic and business practices. There are only few aspects of life which are unaffected by information technology currently. In recent years, information systems technology has become crucial and is playing important role in modern society and intensely is changing economy and business. Business is conducted in a global environment and simply could not serve without computer-based information systems (Mahajan & College, 2015). Using information systems as a factor of efficiency and success of a business has contributed for enterprise to have better position in global market. Computerization system is organized as combination of people, hardware, software, network communications, databases and procedures. These components are organized as a whole unique concept which has to help supporting businesses to create competitive advantage and to support the decision-making process to provide support business in operational processes.

Lucey (2005) argued that information systems are playing an increasingly vital role in organizations of all types, regardless of their size. It is often stated that information systems are a tool to help improve management by using available information for decision making. Though fast changes are taking place due to technology, still technologies are significant contributor to the unstable and competitive market. The disparity amongst the organization is observed due to competencies in different technologies (Dasgupta, Gupta & Sahay, 2011). The current dynamic environment demands all organizations to radically and incrementally change.

2. Theoretical Issues

2.1. Concept of Information Communication and Technology

The term information communication and technology have been conceptualized as electronic machines, devices, and their applications that have both computing and communication capabilities (Bezweek and Egbu, 2010) and technologies such as desktop and laptop computers, software, peripherals, and connections to the Internet that are intended to fulfill information processing and communications functions (Statistics Canada, 2008). The United Nations Educational and Scientific Cooperation (UNESCO, 2002) also defined Information Communication Technology as "the combination of information technology with other, related technologies, specifically communication technology". Thus, ICT uses the newest technologies to process and communicate information. ICT as a discipline is broad and diverse, so in developing these technologies the originator for the Internet, Arpanet banned commercial use of the emerging technology (Internet History, 2006). The Organization for Economic Co-operation and Development (OECD, 2002) published a definition of the ICT sector as "a combination of manufacturing and services industries that capture, transmit and display data and information electronically".

ICT has experienced a convergence that has twisted communications with photography, communication with information access, and software with real-time technology. As stated by the International Telecommunication Union (ITU, 2009), there is a growing number of hand-held devices and Internet users who can access the Internet and telecommunication networks. Freeman & Hasnaoui (2010) suggested that ICT encompasses potential innovations within organizations by enabling the use and sharing of information. Today, ICT permeates different industries and is responsible for the growth of production and revenue (Basu and Ferald, 2008). With the increasing global penetration of computers and networks enabled by the Internet (Chinn and Fairlie, 2007), there are many studies indicating the adoption of ICT positive impacts such as creation of significant differences in the world, economic productivity, poverty alleviation, and sustainable development (Puri, 2007). Specifically, in business, ICT is noted as important for reducing costs in the international and transnational arena (Rangan and Sengul, 2009). ICT networks have been included in numerous corporations and business enterprises including not for profits and humanitarian enterprises, political campaigns such as seen in the 2008 US presidential campaign, and governments (Cardoso, Cunha, and Nascimento, 2004) among others.

2.2. Information Communication and Technology in Organization

The use of computers and technology today has become fundamental to the operation of organizations and society (Kroeker, 2010; Yonck, 2010). With approximately 8 out of 10 Internet users owning a smart phone, information and data are

increasing by leaps and bounds (Rowinski, 2015). This rapid growth, especially in developing countries, has led ICT to become bedrock of everyday life, in which life without some facet of technology renders most of clerical, work and routine tasks dysfunctional. The most recent authoritative data, released in 2014, shows that Internet use continues to grow steadily, at 6.6% globally in 2014, 3.3% in developed countries, 8.7% in the developing world) the number of Internet users in developing countries has doubled from 2009-2014, with two thirds of all people online now living in the developing world (ITU, 2015). However, hurdles are still at large, of the 4.3 billion people not yet using the Internet, 90% live in developing countries. In the world's 42 Least Connected Countries (LCCs), are about 2.5 billion people, access to ICTs remains largely out of reach, particularly for these countries' large rural populations (ITU, 2015). ICT has yet to penetrate the remote areas of some countries, with many developing countries lack of any type of Internet. This also includes the availability of telephone lines, particularly the availability of cellular coverage, and other forms of electronic transmission of data. The latest "Measuring the Information Society Report cautiously stated that the increase in the aforementioned cellular data coverage is ostensible, as many users have multiple subscriptions, with global growth figures sometimes translating into little real improvement in the level of connectivity of those at the very bottom of the pyramid; an estimated 450 million people worldwide live in places which are still out of reach of mobile cellular service (ITU, 2015)

The phrase ICT had been used by academic researchers since the 1980s. The term ICT is now also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. There are huge cost savings due to elimination of the telephone network to merge the audio-visual, building management and telephone network with the computer network system using a single unified system of cabling, signal distribution and management (Sallai, 2012).

Zhang, Aikman and Sun (2008) define ICT as technologies used by people and organizations for their information processing and communication purposes. Information Technology Infrastructure Library (ITIL, 2011) defines ICT as the application of science to the processing of data according to programmed instructions in order to derive results. In the widest sense, ICT includes all communications, information and related technology. The term Information Technology (IT) is used in a narrower sense, typically excluding telecommunications (voice) technology although almost all networks today are digital, as a reference to the systems that support information processing (ITIL, 2011)

Various professional resources such as TechTerms.com offer definitions that are equally as broad including technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but telecommunication focuses primarily on communication technologies. Zuppo, (2012) defines ICT to include the Internet, wireless networks, cell phones, and other communication mediums.

Modern information communication and technologies have created a "global village," in which people can communicate with others across the world as if they were living next door. For this reason, ICT is often studied in the context of how modern communication technologies affect society (TechTerms.com).

2.3. Organization Structure, Principles and Procedures

Every organization has a goal and the organization structure is among the forces that work towards achievement of that goal. The structure is helpful to achieve efficiency and provides guidance to all the members. The structure of the organization is simple, but it gets complicated as technology develops. Every organization needs a structure that is based on functional division in order to operate systematically. The structure follows the organization's rules and procedures and characterized by having precise authority lines for all levels in the management and is influenced by technology. Technological skills, systems and procedures handle environmental factors effectively at the input stage (Jones, 2010). Depending on the organizational values and nature of the business organizations tend to adopt line, functional/divisional, line and staff and committee structures.

Organizations coordinate work through formal standard operating procedures for accomplishing tasks that have been developed over a long time to cope with all expected situations. The majority of the rules are formalized, but a lot of others are informal work practices. As employees learn these standard routines, they become very productive over time and the organization is able to achieve its objectives as efficiency increases. Organizations are the object of analysis for some disciplines, such as sociology, political science, psychology, management, organizational communication and economics (Sytse & Hein 2013). The following different perspectives also exist:

- From a functional perspective, the focus is on how entities like businesses or state authorities are used.
- From an institutional perspective, an organization is viewed as a purposeful structure within a social context.
- From a process-related perspective, an organization is viewed as an entity being organized, and the focus is on the organization as a set of tasks or actions.
- From an economic point of view, markets and organizations are alternative coordination mechanisms for the execution of transactions (Sytse & Hein 2013).

2.4. Role of ICT in Organizations

In today's rapid pace of change competition, small, medium, or large organizations, have continually generated ICT to deal with the environmental changes. Working with technology enables innovation, strengthens performance, productivity,

and learning, engages employees, satisfies customers, stakeholders and investors (Reid, 2011). Nowadays ICT is used in different businesses (Fitterer and Rohner, 2010; Hynes, 2010), in different countries (Dimelis and Papaioannou, 2010), for various purposes (Martinez-Caro and Cegarra-Navarro, 2010; Sharif, Irani, and Weerakkody, 2010). Technology simultaneously improves quality and service, overall efficiency and reduces costs at every level of the conversion process and it occurs at every stage from input to conversion to output (Jake, 2011).

ICT is constantly changing the way organizations conduct business in areas such as, decision making, middle managers, information processing and communication. Also, technology influences design of the organization such as activities concerning the design of the organization, and the inter-relationships of design and technology with people on job. To confirm the effect of internet in organizations design there are many examples available. Further, e-businesses focus on design as they adapt to the dynamic internet environment. Besides characteristics of the innovation or the new technology itself, other factors have been proposed, namely, organizational and environmental attributes such as the size of the organization, its willingness to absorb risks, the degree of competition in the industry, the activeness of change agencies, type and extent of authoritative intervention, etc. (Rahmati, Darouian, & Ahmadiania 2012).

The new technology helps to reduce costs, improve quality and productivity, and encourage the use of innovative and creative methods for solving problems. But, it was also observed that many team members resisted technological changes and adoption of new practices. This attitude of the workers was apparent because employees did not have the skills, ability or knowledge necessary to use the new technology which may help them to perform effectively. Recruitment process has also taken a new dimension in this era of information technology with automation replacing the entire recruitment process. According to Ahmed (2014) automation has reduced the cost per hire by more than 50 percent. Today wage payment system of organizations has been facilitated by technology, and offices now send employees salary directly to banks eliminating a lot of accounts work and long queues of employees waiting to receive their salaries every month. Thus, new technologies are a more efficient way for transacting business because it greatly improves work flow, and a new set of organizational behaviors. These bring consistency, order and conformity in an organization. The use of the internet and information technology in organizations increases the number of users in network, productivity and brings about recognition of general procedures. According to Cheen (2002) whatever the number of users who would join to the network increase the other users who could have connection with them in the network.

2.5. Information Technology in Organization

The usefulness of IT in an organization can be put into many areas. The functions are arranged in a directorate way and according to the procedure's details in different managerial levels. Daft (2006) notes the following issues as the IT effects on organizations' structure and processes: decreasing the height of organizational pyramid, centralization or decentralization, congruency improvement, precise description of duties, increasing the number of expertise staffs and alternation the working environment culture.

Certainly, this effect in informational dimension which is the specification of directorate in high organizational level causes direct and indirect effects to commodities, purchasing and have connection with other sites (Maclean & Blackie, 2004). Main developments in information technology has led to organizational business aspects become computerizing such as bank affairs, planning, legal system, accounting and production (Hameda, 2004).

2.6. Information Technology and Organizational Procedures and Structure

Information Technology helps organizations reach competitive advantage. Porter (1985) described competitive advantage as the organizational factors that enable a firm to outperform its competitors and further explained that competitive advantage grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm's cost of creating it. Organizations that try to achieve competitive advantage hope to preserve it over time and much of what is written about competitive strategy taken the need for sustainability. An organization should carry out related activities to the value creation for a product and low expenses services which leads services distinction (Porter 2001). According to Johnson et al. (2008) firms that wish to succeed evaluate two types of competitive advantage: lower cost than rivals and the ability to differentiate and command a premium price that exceeds the extra cost of doing so.

Many companies targets the use of electronic tools to improving relations with providers, improving the directorate of product chain competitors in use of electronic tools (Zuppo, 2012) Information technology, development of commodities and services, increasing awareness according to the trade mark, fulfilling the customer satisfaction, formation an interrelation between staffs and attract their satisfaction, create a new electronic market, produce and supply commodities with customer admiring, utilize more innovation, forming new distribution channel, improving relationship with commercial colloquies and interested parties, finding new markets for commodities and services, decreasing operational expenditures and convergence with, besides being a device for research, is propounded as a tool (Alemayehu 2004) to improve and facilitate organizational learning, knowledge creation process and knowledge acquisition. On the other hand, in case of problem solving, internet helps managers for finding possible solutions.

2.7. Implications of Technology

A company can use technology to create a competitive advantage by creating barriers that discourage entry of competitors, offering new products or technology processes that attract new clients, or changing the rules of competition in

the business (Zahra, 1996) Technology focus in low technology organizations is mainly to utilize and expand technology innovation, technology in high technology industries is one of critical factors for determining the future success of firms (Antoniou & Ansoff, 2004).

Although, there are several implications of technology, but two implications have the most influence in organizations today (Nye, 2006). First one is the automation or new technology and the other one is information technology. Automation and information technology are not unanimous words rather they cover a wide range of tools, components and systems (Sheridan, 2002). Modern production systems use computer-based technology for integrating various aspects of manufacturing process in a better and improvised manner and also allow quick and cost-efficient modifications of any product. Technology can be liberating in enabling people to work at all times and in places of their choice (Orlikowski, 2007). Information technology also has enormous potential to transcend, geographical, cultural and temporal boundaries and so increase collaborations amongst organizations and their members according to Cartwright (2003). The knowledge may be shared and distributed with this turbulent technological change. The electronic media is responsible to reduce the social aspects of communication between the individuals working together. As the electronics has been invasive, useful and established therefore the earlier relationship between technology and employment may be transformed. It is expected in future to have new establishment of organizational behavior, a new feature of work, new model of production of goods and services and a new style of employment (Rahmati et. al., 2012).

2.8. Technologies

Organizations currently are effectively integrating new know-hows to gain an edge over others in terms of productivity. There are remarkable changes in the processes like human resource development with the help of technology. Technology is useful in accurate decision making, time and money saving etc. Today technology and business cannot be separated. The variety of technologies available continues to change. One of the technologies connected directly to organizational implications according to Sheridan, (2002) is telecommunication. Gale (2007) also identified the following technologies use in today's offices: Intranets and Internets, teleconferencing, Web Pages, Web-Based e-mail, voice mail, electronic calendars, office suites, portable PCs, groupware and decision support systems, voice recognition and video-conferencing, multimedia system, electronic whiteboard, smart board and records management

2.9. Limitation of ICT in Respect to Organizational Structure, Principles and Procedures

The key challenges of ICT relating to organizational structure, principles and procedures stem from factors such as budget constraints, resistance to change, lack of skills and knowledge among the organization's workers and low ICT penetration within organizations (Gichoya, 2005) in addition to poor organization structures, the nature of leadership styles, culture, bureaucracy and attitudes of an organization's workforce (Bastedo, 2006). These attributes also lead to agency conflicts among top decision makers with some viewing ICT as integral to organization's strategic plans while others rating it as a cost focus (Mukhongo, 2013). This is coupled with a slow acceptance of the national ICT policies and laws governing matters such as ICT ethics and patent laws can have an adverse effect on how projects are implemented and how ICT is driven to penetrate organizations or even society.

Challenges with economies around the world have led to the decline in ICT investments in many organizations Galliers and Leidner (2009) mentioned that a lot of high flying IT and telecommunication companies begun to decline and some sought to reduce costs through consolidation. The budgets inclined up at a declining rate with a growth of IT budgets standing at 8% but reducing drastically to 0.1% in 2002 in the United States. Related to budget is the challenge of the high cost of IT equipment and solutions due to few and powerful suppliers. Wilcocks (1999) as cited by Galliers and Leidner (2009) observe that it is estimated that companies in the developing world spent in the region of 2% of their annual turnover on hardware and software alone.

The degree of process change refers to the extent to which the firm's processes and people need to evolve to adapt to the new technology solutions at the core of the IT dependent strategic initiative to allow it permeate across the organization (O'Hara et al., 1999 as cited by Galliers and Leidner, 2009). Galliers and Leidner observed that evidence exists that users of technology are rarely involved in the process of technology development only for them to be expected to have input during operationalization stage in aspects such as working conditions, practices, tasks, decisions about methods, tools and techniques. According to the Modernization plan 212/14 for Ghana Revenue Authority (GRA, 2012), there is also a challenge of skills and knowledge required to roll out advanced ICT projects and conduct ICT business analysis. This is a result of low IT penetration among staff of many organizations. GRA also noted that implementation of ICT projects is also faced with limited coverage of IT infrastructure and services such as fiber networks and power challenges in remote locations.

Getting funding especially development partners and donor agencies has been a challenge to many organizations. The duration of loans is determined without adequate consultation or carrying out of a needs analysis of recipient organization. Funding for capital and human resource requirements usually ends with the project phase. Once the capital expenses are met the government agency is left with the responsibility of meeting operation and resources costs. Many organizations also suffer from duplication and overcapacity in data centers and lack of ICT knowledge and even measurement of the cost of ICT. The strength of suppliers and the limited number of solution providers has seen the ICT industry controlled by few powerful companies such as Oracle, Microsoft and IBM. This has made ICT solutions expensive to roll out and rigid to change platforms.

Apart from all these challenges since implementation has a strategic plan as input, then any poorly formulated plans lead to poor implementation (Borura 2010).

Availability and use of an organization's capital resources, human resource capacity in terms of numbers, knowledge and skills and the organization's enterprise architecture capacity are the challenges as a result of operationalization. Other challenges relate to institutionalization coming from culture, politics and resistance to change. Gichoya (2002) identified the barriers of successful implementation of ICT to be infrastructure, financing, poor data systems and lack of compatibility, lack of skilled personnel, poor leadership styles, culture and bureaucracy and poor work attitude. It is obvious that the challenges are either as a result of internal within the or outside the organization, with factors within centered on institutionalization and operationalization of strategy. Burke, et al.(2001) opined that human resource related issues have an enormous effect on processes because whenever implementation is successful, it is because a focused attention was paid to the human issues. Organizations do not always have sufficient staff for the successful implementation of ICT projects (Burke et al., 2001) and four variables; quality of ICT systems, information intensity, ICT specialization and organization readiness have statistically significant influence on adoption of ICT projects (Muathe et al., 2013).

2.10. Contribution ICT impact on Organizational Development

The contribution of information technology and its impacts on the organization is emphasized by Nadler and Gerstein (1992) as cited in Gerstein, Nadler, and Robert (1992), who states "perhaps the largest single influence on organizational architecture and design has been the evolution of information technology, certainly has its performance among the key elements which shape an organization" Several measures have been put in place to realize a successful implementation of ICT strategies. This ranges from aligning vision to strategy during the planning phase, having unqualified government support and an enabling legal and regulatory framework. This can also be done through identification of priority themes, embracing technological changes and embracing modernization and globalization practices. Exercising due diligence and benchmarking with the best practices can be integral to successful choice of technology and this can go a long way in ensuring successful roll out of projects as well employing strong programme and project management practices. Ahmed, (2014) argued that use of ICT in integrated platforms among related entities such as government departments, organizations or regional blocks and ensuring the stakeholders such a consumers and stockholders are sensitized to expect certain levels of services and products are other factors that can ensure a fair chance of succession implementing ICT relate to

Galliers and Leidner (2009) proposed extending the life-cycle approach to lengthen the time frame of implementing ICT projects, bullet proofing the infrastructure through rethinking and reprioritizing due to economic decline can be used to lessen the challenges occasioned by the reduction in budgets. The authors further elucidated that challenges relating to overcapacity and duplication can be mitigated through introducing central controls to promote consistency and integration, consolidating services, removing excess capacity in data centers and duplicated applications and adopt the use of open source software and streamlining procedures. It is also important to create of a common ICT infrastructure for government agencies and use ICT to enable and deliver change and strengthen ICT governance.

Addressing duplicity of platforms can be handled through the adoption of open standards that promote interoperability of systems and security. Galliers and Leidner (2009) addresses the concern of duplication and overcapacity by arguing that organizations should learn from one another and become more skillful at sharing IT assets and resources. This can echo well with accepting e-governance by building common infrastructure for most government agencies as opposed to having disparate system across government departments.

Improving communication among all the stakeholders, involving them at the very planning phase and having a planned change and management strategy with the ICT strategy can be used to overcome the lack of awareness and fear for change. The adoption of change management strategy addresses issues of stakeholder involvement and reduces occurrences of resistance to change. For Ward and Peppard (2002), it is also necessary to involve staff during strategy development as opposed to only involving them in implementation of decisions made by a few individuals. Employees accept change when they have been involved in the change process and will psychologically be seen as part of the development of the change process.

3. Research Methodology

3.1. Research Design

Descriptive research which provides opportunity for the researchers to gain valuable insights into the existence of a phenomenon was employed in this research. Descriptive research may be characterized as simply the attempt to determine, describe or identify what is (Ethridge, 2004) examines variables in their natural environments and do not include researcher-imposed treatments (Simon & Goes, 2011). Descriptive research is aimed at casting light on current issues or problems through a process of data collection to describe the situation more completely than was possible without employing this method (Fox & Bayat, 2007). This research design was used to describe various aspects of the research phenomenon, characteristics and/or behavior of the sample population.

3.2. Population

Strangor, (2011) is of the opinion that population is the entire group of people that the researcher desires to learn about. The entire staffs of the Community-based Health Planning and Services (CHPS) Unit of the Regional Health Administration in Wa constitute the population of the study. The Unit has a total population of 20 personnel ranging from the CHPS field technicians, health information officers, public health nurses, health coordinators and deputy directors. For monitoring and supervision among other responsibilities in the region, the CHPS Unit has to employ the use of technological devices in order to keep up to date state and status of CHPS implementation in the region. (JICA, 2016),

3.3. Sample Size and Sampling

The selection of the sample size for the study was guided by the need to obtain rich data as well as ensure that the sample size will be fairly represented from the population. Neuman (2000) explained that one principle of sample size is that the smaller the population, the bigger the sampling ratio has to be for an accurate sample. Since the population was less than 30, the researchers use all the twenty (20) staff members of the CHPS Unit as respondents. The size of the sample and the way in which it is selected will definitely have implication for the confidence on data and the extent to which the study can be generalized (Saunders et al., 2007).

Sampling determines which category of people would be most suited to obtain information from (Schreiber and Asner-Self, 2011). Stratified and purposive sampling techniques were used to break the employees of the CHPS Unit into various levels and to intentionally select respondents who in their opinion were relevant to the research (Tashakkori & Teddlie, 2003).

3.4. Data Collection Instruments

Questionnaires were used as instrument to obtain adequate data. The questionnaires were designed in line with the study objectives as a means of collecting data. A questionnaire is a structured technique for data collection consisting of a series of questions, written that a respondent answer to give appropriate information needed to meet research objectives (Malhotra and Birks, 2007), a means of eliciting the feelings, beliefs, experiences, perceptions, or attitudes of respondents to obtain specific information to meet research objectives. The research information was attained from respondents normally from a related interest area (Key 2017). The questions were in two folds, thus open ended and close ended questions. The open-ended questions provided the respondents freedom to formulate their own answers in the way they considered appropriate while the closed ended questions provided responses in the form of simple 'Yes or No' choices and some multiple choices to ease answering.

3.5 Data Analysis Techniques

The data collected were edited and analyzed using both quantitative and qualitative analytical techniques and computer base packages. The quantitative analysis used descriptive statistics in the form of frequency tables, percentages, histograms and pie charts among the appropriate computer base systems (Statistical Package for the Social Science (SPSS). and the qualitative technique used participatory research in the form of reports to ascertain the level of responsiveness to the instruments.

4. Data Analysis and Discussion of Results

4.1. Demographic Characteristics of Respondents

The following information provides a vivid description of the respondents' background.

4.1.1. Academic Qualification

Qualification	Frequency	Percent (%)
Diploma Certificate holders	5	25
HND	1	5
FirstDegree	11	55
Master's Degree	3	15
Others	0	0
Total	20	100

Table 1: Academic Qualification of Respondents
Source: Field Survey, 2017

Table 1 represents the qualifications of the respondents that were interacted with. Majority of the respondents 11 (55%) were First degree holders, 5(25%) of the respondents were diploma holders. Also 3(15%) of the respondents were master's degree holders and 1(5%) respondent had Higher National Diploma certificate.

4.2. The Role of Information Technology in Applying Administrative Principles and Procedures

This objective seeks to identify some of the role ICT plays in attaining organisational goals. Some of the topics discussed include the roles of ICT and impact ICT to improving indicators for the Unit.

Roles of ICT	Frequency	Percent (%)
Reducing communication barriers	3	15
Fast communication	5	25
Economically feasible to adopt	2	10
Facilitate monitoring	3	15
Provide up to date information	4	20
Provide an alternating working environment culture	1	5
Provide clear and precise description of duties	2	10
Total	20	100

Table 2: Role of ICT in Organization

Source: Field Survey, 2017

From table 2, respondents indicated that, the importance roles of ICT in organisations included reducing communication barriers between and among staff of the Unit and the districts and region as whole represented by 3 (15%) of the respondents. Other roles identified included fast communication 5 (25%), economically feasibility to adopt 2 (10%), facilitate monitoring of data collectors in the field for 3 (15%) of the respondents and 4 (20%) of the respondents indicated ICT provided up to date information from the districts information systems. 2 (10%) of the respondents also highlighted the provision of clear and precise description of duties to staff, increasing the number of expertise staffs at the Unit and 1 (5%) of the respondents showed that ICT provided an alternating working environment culture among staff.

4.3. Information Technologies That Are Applied in Administrative Principle and Procedures

This objective highlights some of the technologies that are used in the CHPS zones. Readings from table 3 indicates that 9(45%) of respondents were found to have access to video- conferencing whilst 13 (65%) engages in audio conferencing. Also 20(100%), 5(25%) and 20(100%) were found to use text messaging, fax and emails respectively output delivery while another 20(100%) of staff made use of telephone/cell phones. Other forms which included of information transmission were also 5(25%). This is a clear indication that staff of the Unit is abreast with modern forms of technology and hence would be able to speed up in the processing and delivery of their service.

Technologies	Frequency	Percent (%)
Video Conferencing	9	45
Audio Conferencing	13	65
Text messaging	20	100
Fax	5	25
Emails	20	100
Telephone/Cell Phone	20	100
Others (voice mail)	5	25

Table 3: Information Technologies Applied in Administrative Principle and Procedures

Source: Field Survey, 2017

4.4 Challenges of Information Technology

Readings from table 4, indicated that 5(25%) for lack of professionals who are inclined with ICT applications, installations, maintenance, training of staff, and 2(10%) respondents indicated problems related to software health hazards respectively. 10(50%) of the respondents were of the view that high cost of IT equipment was the most challenging, 1(5%) of the respondents attributed the challenges to other causes such as lack of training of staff in the adequate use and application of ICT, the lack for a sustainable internet connection and access to an open internet service. This concludes that, the major challenge confronted by the Unit in executing their activities is the high cost of IT equipment.

Challenges	Frequency	Percent (%)
Lack of professionals	5	25
Software problems	2	10
Health hazards	2	10
High cost of IT equipment	10	50
Others (lack of training, lack of sustainable internet connection, access to an open internet connection)	1	5
Total	20	100

*Table 4: Challenges with ICT Application
Source: Field Survey, 2017*

4.5. Improving the Performance of the Administrative Principles and Procedures Using Information Technology

Respondents were very inspired about the ways of improving ICT in the organisation that they suggested the following initiatives to be adopted:

From table 5, 5(25%) percent of the respondents said the provision of a sustainable internet connection for the Unit, thus, the availability of a sustainable internet connection will aid the prompt, adequate and constant communication with field officers who collect and also update relevant database for the Unit. 8(40%) of the respondents were of the view that, frequent maintenance of equipment and devices is highly relevant to the Unit. Most of the already equipment and devices at the Unit are broken or outdated to use. It will be prudent to have a constant maintenance agenda to service these machines to maintain effective work at the Unit.

On training of staff to be up-to date with new ICT interventions, 3(15%) of respondents were also very particular about training of some basic uses of some computer applications and software such as MS Access and Coral Draw. These they said will add efficiency to the work. 2(10%) respondents suggested that financial resources should be provided to support the Unit procure some ICT equipment and devices such as laptops, printers, photocopier machines, internet access points etc., and antiviral protection software. for the sustainability of some of the initiatives adopted at the Unit. Another 2(10%) percent of the respondents suggested that, it was important the Unit be provided with basic communication devices such as a sustainable internet connection and telephone lines to stay in contact with field workers as well as those at the districts levels.

Initiatives to Improve ICT	Frequency	Percentages (%)
Provision of a sustainable internet connection	5	25
Frequent maintenance of equipment and devices	8	40
Training of staff to be up-to date with new ICT interventions	3	15
Provision of financial resources to support the procurement of ICT equipment and devices	2	10
Improving communication	2	10
Total	20	100

*Table 5: Ways to Improve Administrative Principles and Procedures
Using Information Technology
Source: Field Survey, 2017*

4.6. Limitations to the Study

The respondents of this study are only staff of the CHPS Unit of the Regional Health Directorate; they cannot be a statistical representation of all units of the organization. Again, using questionnaires has its own weaknesses caused by respondents' awareness of their behaviors, tendency for giving socially favorable answers to question which may not be the real state of affairs on the ground., Some of the respondents used unstandardized abbreviated words for the open-ended questions making it difficult to figure out the exact meaning. The whole organization was not captured in the study due to financial and logistics constraints of the researchers.

5. Summary of Findings

This study investigated the information and communication technology effects on administrative principles, practices and standards. On that basis, the following findings emerged.

- ICT encompasses technologies used by people and organizations for their information processing and communication purposes. Example of such technologies used in organization included office suits, electronic calendars, electronic devices among others. The failures of implementing ICT in organizations can be attributed to technical, project, organizational, environmental, budget constraints, resistance to change, lack of skills and knowledge among the organization's staff and low ICT penetration within organizations.

- The best practices in ICT strategy implementation should always involve proper appreciation of the ICT environment an organization is operating in, careful selection of projects, capacity building among staff through re-skilling, identification of the right technologies, proper management practices and ensuring the organization processes fit the technology.
- Fifty-five percent (55%) of respondents were degree holders expressing a high level of academic qualification in their field of work. Forty (40%) of respondents (health information officers) had spent more than 8 years to the use of ICT in carrying out their roles and responsibilities, thereby allowing them to form one of the relevant components for the study.
- Twenty-five percent (25%) of respondents identified fast communication as the important role of ICT in organisations. This was followed by 20% of the respondents who indicated that ICT provides up to date information from the districts information systems.
- The technological innovations that have been used to support carry out administrative operational procedures were identified to include video and audio conferencing materials, text messaging, fax and emails, including telephone/cell phone which was a clear indication that, staff of the Unit were abreast with modern forms of technology and hence would be able to speed up in the processing and delivery of their services.
- The CHPS Unit of the Regional Health Administration is highly equipped with modern technology such as computers, printers, storage devices, cameras, photocopiers among others. However, there is the need for the Unit to upgrade existing ICT infrastructure with modern ones and also ensure their regular maintenance.
- In-house IT training of Unit staff and maintenance and upgrading of ICT equipment have mostly done with the introduction of new software and upgrading and maintenance of equipment usually on a yearly basis.
- The major challenges identified in the study was high cost of IT equipment and lack of professionals to effectively implement ICT projects

5.1. Recommendations

For improving the scope of contributions of ICT the researchers recommended that:

- A sustainable internet connection need to be provided to enhance prompt, adequate and constant communication with field officers who collect and also update relevant database for the Unit.
- Frequent maintenance culture of ICT equipments should be embraced for the broken or obsolete equipment and devices, in order to maintain effective work at the Unit.
- Assessment should be conducted to determine the training gap whenever there are new ICT interventions to make staff up-to date so that they can be efficient and effective to enhance productivity.
- Adequate budgetary allocation should be made to the CHPS Unit to support procure modern ICT equipment (hardware e.g. laptops, printers, photocopier machines, internet access points) and devices (software including anti-virus protection software, data processing, video editing, graphic illustration among others) for the sustainability of the initiatives adopted at the Unit.
- Basic communication devices such as a sustainable internet connection and telecommunication to stay connected with field staff at the districts levels should be provided.
- Conducive work environment aimed at providing a high level of job satisfaction should be created.
- Regular staff training and workshops need to be organized to upgrade the skills of employees in the application of technologies that have been developed to facilitate administrative principles, practices and standards to achieve its optimum benefits
- The CHPS Unit should promote skills and knowledge transfer, streamline procurement processes, bring all stakeholders on board in the system analysis and requirement to improve planning and coordination of ICT programs.
- The CHPS Unit should embraced best practices, ICT project monitoring and evaluation, adopt new tools and technologies for quality assurance and improvement of quality in data management.

5.2. Conclusion

The use of information and communication technology (ICT) is an essential tool for the efficient administration of an organization and delivery of services to clients. ICT is being integrated into administrative principles, practices and standards throughout business, government, and the community. With the increasing global penetration of computers and networks (Chinn and Fairlie, 2007), ICT has positively impact concepts such as creation of significant differences in the world, economic productivity, poverty alleviation, and sustainable development (Puri, 2007).

Information and Communication Technology has brought about a paradigm shift in all spheres of life including the Health delivery services. In a bid to improve the quality of client service delivery, and reduce transaction cost, the CHPS Unit has invested in ICT, and have widely adopted ICT networks for delivering a wide range of value added services and significant effect on development of more flexible and user-friendly health services.

ICT is an enabler of strategic advantage that can help organizations to achieve goals and objectives, but not all intended ICT strategies are realized due to inherent challenges. The internal environmental factors such as organization culture,

structure, change preparedness and penetration of ICT, ICT usage in organizations, skills development among staff to effectively support to put ICT into action are important in determining success of ICT strategy.

ICT significantly impact the human resource capacity development, and platform for easy and quick communication for staff no matter where they are allocated. Moreover, ICT is helping to provide effective monitoring and evaluation system which provides necessary information to support management planning, decision making and actions. In further, ICT has helped the CHPS Unit in its data management and protection especially from unnecessary information tampering. Above all, ICT has enhanced the skills of employees for efficient performance of legitimate and delegated duties, has the potential of increasing human resource productivity, and has significant effects on administrative practices, principles and standards of organizations.

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