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Effects of Information Technology on Organizational Communication: A Case Study of a Selected Healthcare Organization

Toluwani C. Agboola
EFFECTS OF INFORMATION TECHNOLOGY ON ORGANIZATIONAL COMMUNICATION: A CASE STUDY OF A SELECTED HEALTHCARE ORGANIZATION

By

TOLUWANI C. AGBOOLA

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The members of the Committee approve the dissertation of Toluwani C. Agboola defended on June 27, 2013.

Ulla Sypher
Professor Directing Thesis

Jeanette Castillo
Committee Member

Stephen McDowell
Committee Member

The Graduate School has verified and approved the above-named committee members, and certifies that the thesis has been approved in accordance with university requirements.
TO GOD,

MY PARENTS AND BROTHER,

MY HUSBAND ARINOLA OLOKE,

AND

MY SON OLUWAFEMI OLOKE
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ABSTRACT

The purpose of this study was to investigate the effects of information technology on organizational communication specifically in a selected health organization by finding out how the decisions to adopt a technology is made and what influences such decision most. This study used a semi-structured interview with open-ended questions and the evaluation of documents provided by the organization under study. The top management stratum of the organizational hierarchy was interviewed because they are considered as the determinants of the decision to adopt or not to adopt a communication technology by the organization. Six participants were interviewed while evaluating the documents provided as supporting evidence for the claims of the organization. The interviews were audio taped and the participants were given pseudonyms to protect people’s identities. IRB approval was obtained from the Florida State University IRB committee and consent forms were duly signed by each participant. Timeliness was reported mostly as a definition of effectiveness by most of the participants. Ease of use and perceived usefulness or compatibility with the intended task was also considered as very important factors in deciding to adopt a technology for communication. From the revenue-generation perspective, the cost of investment was considered as very important such that if the performance yield of the technology will not be commensurate with the anticipated returns on investment, the likelihood for the technology to be adopted is very low.
CHAPTER ONE

INTRODUCTION

Gagnon, Ouimet, Godin, Rousseau, Labrecque, Leduc, & Abdeljelil, (2010) state that “Information and communication technologies (ICTs) include a set of effective tools to collect, store, process, and exchange health-related information. In that respect, it is believed that ICT could improve safety, quality, and cost-efficiency of healthcare services” (P. 1). They also posit that, “the phenomenon of innovation is omnipresent in the healthcare system where new technologies and interventions are constantly introduced in order to improve health of individuals and populations. Innovation can be studied at four distinct levels: the individual healthcare professionals; the healthcare professionals groups; the healthcare organizations; and the larger healthcare system”. (p. 2). From the submission above, we can infer that in the healthcare world, innovation is a continuous phenomenon as far as health related information and care giving is concerned. In other words, we cannot overemphasize the place of technological innovations and new dimensions in the healthcare system.

Communication is an indispensable means of interaction and association among humans in general whatever the situational context might be. Organizational communication as defined by Papa et al. (2008) can be conceived from different reasonable perspectives and the interpretive perspective defines it as a people’s “culture which consists of their abstract values, beliefs and perceptions that lie behind people’s behavior…thus an organization exists in the shared experiences of the people who constitute it….” (p. 10). Within organizations, communication is the most important tool for executing organizational functions such as communicating meeting schedules through memos, official correspondences, exercising authority, and distinctions between roles and hierarchies. Technology advancement and its
attendant influences on the present world including the world of communication has also placed a premium on the desire to transcend the constraints of time and space in executing administrative and organizational functions, hence the adoption of information technology as a means of enhancing virtualizations and increasing productivity and efficiency.

When people use electronic mail, they can communicate even when they are not physically or temporally proximate. Thus, it is not surprising that most studies report that the use of electronic mail increases the amount of organizational communication (Sarbaugh-Thompson & Feldman, 1998).

Scholars have investigated the relationship between information technology and communication at various levels and we might infer or note that primarily, information technology and communication are inseparable; technology is one of the tools of communication. This research will be taking steps further to investigate the effects of information technology on organizational communication taking a specific look at communication within health organizations.

Specifically, this research is intended to find out the process of decision-making regarding information technology specifically communication software use, in “Alpha+ Healthcare solution”, a limited liability company that provides quality skilled nursing, medical and non-medical services to patients with regard to efficiency and quality improvement in service delivery.

This work will be limited in scope to the case study of this private healthcare organization that has affiliations with other healthcare providers. This study is being conducted to help understand the practical decision-making processes that health organizations follow and
what exactly is considered more importantly in the decision to adopt a technology most; returns on investment (ROI) or cost of investment?.

This study is expected to help explore and understand how organizational structure and leadership type influence the decision to adopt a technology by exploring the perspectives and opinions of different strata within the organization being studied (the decision makers and the actual users of the technology).
2.1 Information Technology and Organizational Communication; the Inter-relationship.

Information technology can be understood as the use of computerized and internet systems to process and distribute stored data and information in different forms, especially digital forms. “The idea that our society has begun an information revolution is a popular one. This information revolution is happening largely because the cost and capabilities of information technology are rapidly changing” (Huff & Munro, 1985, p. 327). The information/communication world of the present age is desperately fast-paced and the struggle to stay ahead of competition and be in the market lead prompts many organizations to adopt emerging information technology systems to beat the limitations of time and space for improved practices and efficiency. We may explain therefore that information is passed through the means of communication and communication, if not well coordinated and properly transmitted, may result in misinterpretations, loss of information or equivocality. Simply put, we may say that the use of information technology helps to foster a better-organized system of communication within the society or organization as the case may be and when miscommunication is taken care of within an organization, most communication-induced problems are probably half-solved.

Organizational communication and its complexity therefore is described by Jehiel (1999) when he says, “In the organizational environment, we wish to address the question of how the transmission of the decentralized information should be organized so as to improve the efficiency of the decision-making.” (p. 660). Jehiel (1999) tries to explain in simpler terms how the process of communication within organizations takes place. Mostly, it takes a form in which strings of information are generated from various units and this information requires
coordination and organization. The need for information technology comes into play at this point for the communication process to be properly organized into a wholesome meaningful piece without losing important information.

Hinds & Kiesler (1995, p. 373) state that “many large organizations have installed a complex network of computer-based technologies such as the telephone, facsimile, printing, voice mail, email, and even videoconferencing technologies. These technologies increase the potential for communication within the organization. They also support the changing dimensions of communication. Because technology reduces the cost and tendencies of unreliability of relaying orders, management can tighten control.” We can infer that information technology fosters collaboration and cooperation in team work for better and faster results thus eliminating bureaucratic hierarchical orders. Not only does the adoption of information technology in communication help to break the barriers of boundaries but it as well translates into having a diagonal direction of communication flow which is necessitated by the pressing demands of the situation at hand for a faster and more efficient approach to solutions.

Hinds and Keisler (1995, p.374) also opine that “employees who need to collaborate and share information will use communication technology to communicate across organizational boundaries.” They define crossing boundaries as “communicating non-hierarchically, that is, laterally, at the same level of the authority structure”, and "diagonally," vertically outside the chain of command. “Communication technologies can be ranked by how well they suit collaboration, particularly the intense exchange of information required for planning and technical exchange” (Kraut, Egido, & Galegher, 1990).

“Organization scientists generally agree that there has been an evolution in organizational forms whereby managerial hierarchy and divisional structures are being
replaced by decentralized, more flexible approaches to arranging and coordinating activities. Unlike its more rigid, bureaucratic predecessor, the new organizational forms are viewed as responsive to varied environmental pressures, including heightened market volatility, globalization of business, increased uncertainty, and demographic changes in labor and consumer sectors” (Fulk & Desanctis 1995, p.338). This might explain better to us why the adoption of technology by organizations are on the rise in the bid to keep up with the pace of advancement in the industry and probably set the pace as well.

Communication technologies avail their end users the vast range of opportunities to manipulate both the communication technologies themselves as well as the organizational contexts that surround them. As well, recent rises in communication technology adoption have been recognized as instrumental on organizational forms. “Early on, the rudimentary file system, interoffice memo, and business meeting contributed to the development of bureaucracies, enabling coordination and control among organizational components” (Yates 1989, p. 355, Yates & Orlikowski, 1992). “Later, telephones, telegraph, and mail systems enabled distributed forms of organization and inter-organizational communication. Organizational forms were designed to match communication needs”. (Fulk & DeSanctis, 1995, p. 337).

There are certain advantages of information technology that most likely propel its adoption. Fulk & Desanctis (1995) call this ‘new technology’, explaining that five features of new communication technologies offer important advancements for organizations. Of the five features identified, two features, time and space constraints management, have been mentioned while the other three identified by them are “the dramatic increase in the speed of communication, with high volumes of data moving from one location to another at rates unimaginable even a decade ago, the dramatic reduction in the costs of communication due
to technical developments in computers and telecommunication technology and wider penetration of technology due to economies of scale” and the fact that “the integration of communication with computing technologies has moved communication technology beyond a purely connective function.” P. 337-8.

From the foregoing, we understand that the adoption of information technology for communication purposes within organizations has been inspired mostly by the range of flexibility and abilities it avails the organizational system itself especially in terms of getting more done in a better way, in less time if we might put it this way. We can then say that information technology eases the tedious and otherwise complex communication process.

“Current technology can affect not only how we communicate but also what we communicate. As a result, the issue for designers of communication support systems has become broader: how should technology be designed to make communication more effective by changing the medium and the attributes of the message itself? The answer to this question requires a shift from current preoccupations with the medium of communication to a view that assesses the balance between medium and message form. There is also a need to look more closely at the process of communication in order to identify more precisely any potential areas of computer support” (Te’eni Dov 2001, p.251). This creates the main crux of the investigation in this research work. Sarbaugh-Thompson and Feldman (1998) state that, "the adoption of a new medium for inter-organizational communication normally serves to increase rather than replace the communication via existing media." p. 686. In other words, we might believe that the adoption of new technology was not in the bid to eliminate face-to-face interaction systems but to enhance and expedite it for faster responses.
We may want to note however, that non-verbal cues in communication may be lost with the adoption of new communication systems. For instance, in a face-to-face communication process, non-verbal cues such as gestures, proxemics, occulesics, touch, etc. that usually foreground the intended meaning beyond mere spoken words especially in instances when the intended meaning transcends the literal interpretations may not be accessible when new technology replaces direct human intercations. In such situations, the interlocutors in communication may have to rely on the non-verbal cues to determine the interpretation and to act accordingly. Relating this to organizations, we might want to think therefore that, the adoption of social media in communication waters off the viability of the communicated message.

Rice (1992) states that “numerous studies have found that text-based computer-mediated communication systems are perceived as less appropriate for social, intuitive or emotional tasks that are difficult to analyze (such as negotiating) and more appropriate for less socio-emotional tasks that are more easily analyzed (such as exchanging information) (pp. 476–7). Daft and Lewin (1993, p. iv) posit that, “Computer-mediated communication technology is becoming the backbone of many organizations, supplanting the formal hierarchical structure to achieve coordination and manage relationships within and between organizations. Electronic communications fuel the growth and effectiveness of an organization and its parts. Information, rather than being limited, controlled, and a source of power, appears to be instrumental for greater effectiveness when widely disseminated and freely available.” (p. iv). And Wiesenfeld, Raghuram, and Garud (1999) in a reflection of the statement above explain that advances in information technology have spurred emerging realities of work because organizations tend to experiment virtual ways of working.
2.2 Organizational Decision-making

We understand that many variables come into play in the decision-making process within organizations ranging from the style of leadership to the organizational culture that exists within the organization itself coupled with other factors such as information processing errors as illustrated in the groupthink tendency model. “The outcomes of technological change are influenced by managerial choices, which themselves depend on a range of factors” (Clegg & Symon, 1991, p. 273).

Usually, an organization survives on the decisions made by some people within such organization. In other words, the decisions made by people in an organization and the choices they set affect an organization’s functions. Decision-making within organizations has been researched and understood from various perspectives ranging from emotional to unanimity and circular perspectives. A decision process can be illustrated as a string of actions and steps taken by stakeholders based on the important signals drawn from other stakeholders involved.

To better understand how a decision process goes through, a chain can be illustrated in stages as follows: at the first stage, the set of operating units is partitioned into subsets; in each subset there is a direct communication (to be collected by the representative of the subset, say the unit with the lowest index). At the second stage (if there is one), the representatives of the first-level groups are themselves partitioned into subsets with a direct communication taking place in each subgroup. In the final stage, all remaining representatives are engaged in a direct communication; the representative of the final group then transmits the output of the communication process to the decision maker. For each communication structure, one may infer the induced distribution of decision outcome. “The characterization of the optimal
communication structures is a priori very complex because the set of all possible nested partitions of the type outlined above is very large” (Jehiel, 1999, p. 660).

Shoemaker, Kazley, and White, (2010) explain decision-making as the processes commonly portrayed as “occurring early in the "problem solving processes"-the sensing, exploration, and definition of problems or opportunities-as well as the generation, evaluation, and selection of solutions”. According to Feidbauer, Boan, Nadzam, Finis, and Nadzam (2008, p. 66), “an organization is at risk of making ill-advised design decisions if it approaches the decision-making process believing that clear and simple solutions will emerge from a quick or cursory review of the research findings.”

Janis (1989) also identified four contributory causes of unsuccessful outcomes of decision-making that could be outside the leaders' control which include unforeseeable impediments to effective implementation, oversimplified beliefs that lead to erroneous assumptions, misleading information that the decision makers had no way of knowing was flawed, and unknown or chance factors commonly referred to as "bad luck." However, Janis argues that one major cause of unsuccessful outcomes is within the leaders' control: the poor quality of the decision-making process used either to arrive at the new policy decision or to reaffirm an existing policy. He states that although defective decision-making processes do not guarantee that a policy decision will have a negative outcome, the likelihood of failure is much higher.

Also closely linked to defective processes and poor outcomes of decisions is the leadership style that is practiced within an organization. Peterson (1997) opine that, “an open (nondirective) leadership style stimulates a greater exchange of ideas, which leads to greater use of information and more solutions being suggested than does a closed (directive) leadership
style. An open leader was described as one who gives an opinion on an issue only after others have given theirs and one who encourages discussion of each potential solution” p. 1108.
On the other hand, a closed leader strongly advocates his/her position on the issue and does not encourage discussion of alternative ideas and solutions. “Leader directiveness was closely associated with abbreviated group discussion, suppression of dissent, a less intensive search for information, and lack of contingency planning… leader directiveness appears to be a potent cause of defective group process owing to a high likelihood of poor group decisions…”(Peterson, 1997, p. 1108).

Shoemaker et al. (2010) explains the idea of a social constraint known as groupthink tendency that also has the potential of affecting the quality of decisions. He states as well that, when this constraint is dominant, the members engage in self-censorship of their doubts and opinions about the decision and defer to the position that seems to be preferred by the leader or the majority of the group” (Janis, 1989).

Further discussing the theory of the groupthink tendency, Janis (1989) explains that at the core of the groupthink theory is the assertion that the presence of certain antecedent conditions within groups of decision makers results in information-processing errors that in turn lead to poor-quality outcomes, as shown in the specification of groupthink model—causal chain is substantially reduced if sound procedures of information search, appraisal, and planning are used in the decision-making process. The groupthink model causal chain is categorized into three possible areas which are the antecedents of groupthink, information processing errors and outcomes.

The groupthink antecedents are such that can be understood as background catalysts that determine whether or not there will be errors in the information processing system. The
antecedents include but are not limited to high personal stress, lack of tradition of impartial leadership, recent failure, group homogeneity, etc. These factors influence information processing in different forms such as omissions in objectives and poor information search. Ultimately, what results from the interaction between the groupthink antecedents and the information processing errors is a low probability of favorable outcomes.

2.3 Healthcare Organizations and Information Technology Adoption

Clegg and Symon (1991, p. 273) posit that “The most common rationale for the introduction of new technology in industry, it is claimed, is the belief that technology is intrinsically worthwhile and cannot fail to bring economic benefits…Companies which do not invest in the latest advanced technology will suffer in consequence (e.g. 'automate or liquidate')…technology is used by management to minimize skill levels, reduce costs and maintain control over the workforce. This is interpreted as the driving force behind the design of progressively more automated manufacturing processes.”

Cohn, K. et al. (2009) explain that Healthcare information technology (HIT) is one of the most expensive capital investments for any healthcare organization. HIT adoption is a complex process because adoption and implementation depend on buy-in from physicians, most of whom are not employed by the organization and whose thinking varies widely. He also states that HIT comprises systems such as the electronic medical record, computerized physician order entry, and decision support systems that integrate and improve access to health- and patient-related data.

Advantages of adopting information technology in healthcare systems administration, from the economic point of view as stated by Cohn, K. et al. (2009), include the opportunity for patient-physician partnership, decision support for clinicians and physicians who face myriad
clinical challenges, access to and storage of medical and patient information, ability to retrieve and store vital information, which allows patients to be notified of medication recalls, side effects, and interactions, reduction in filing, transcription, and staffing costs, decreased duplication, improved coding accuracy and revenue capture.

From the foregoing, we understand that information technology adoption in organizations presents itself more as a necessity rather than a luxury when analyzed from both the work-oriented and economic perspectives.

2.4 Theoretical Framework

Though there are several frameworks and theories applied to the study of adoption of technology in healthcare organizations, the theoretical frameworks within which this study is situated are the diffusion of innovation theory, which will explain the adoption process and influencing factors for the adoption of the technology used by the organization under study. The other framework is the technology acceptance model which will illustrate how perceived ease and usefulness are factored in as the decision-making process to adopt or not to adopt the technology in use by the organization under study. The third framework is the theory of reasoned action and planned behavior that explain reinforcement of behavior and attitudinal dispositions and how it affects the decision to adopt or not to adopt a technology. Gagnon et al. (2010) claim that the Diffusion of Innovation (DOI) has been the centre of much attention in the study of ICT adoption in the healthcare industry. They claim that the diffusion of innovations model points out three main sources influencing the adoption and diffusion of an innovation, which are the perceptions of innovation characteristics, characteristics of the adopter, and contextual factors. “This model has been applied to study the adoption of various information technologies in healthcare. However, the DOI does not provide information on how to assess innovation characteristics” (P.3). Other
identified models include the technology acceptance model which was specifically developed to understand user's acceptance of information technology, the theory of reasoned action, the theory of planned behavior, etc. The media richness theory also explains the effects of the medium of communication employed and the ability of communication to change in meaning based on this.

### 2.4.1 Diffusion of Innovations Theory

We might understand innovation as an act of introducing something new or doing something in a new way and Rogers (2003) and Morris and Ogan (1996, p. 41) state that, “Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 2003). An innovation is an idea, practice, or object perceived as new by an individual or other unit of adoption. The diffusion process typically involves both mass media and interpersonal communication channels. And, in today’s world, information technologies such as the Internet and cell phones – which combine aspects of mass media and interpersonal channels, represent formidable tools of diffusion” (Morris & Ogan, 1996:41).

![Diffusion of Innovation Model](image-url)

*Fig. 1. Diffusion of Innovation Model. Source: Rogers (1995).*
In the diffusion model the aspects key to our study are the perceived characteristics of innovation and the decision-making process that is initiated by the knowledge stage up to the final stage of confirmation and probable reinforcement.

Rogers et al. (2009) also claim that, “Although most observers agree that the diffusion of innovations is fundamentally a communication process. Communication scholars constitute only one of the dozen research traditions presently advancing the diffusion field (along with geography, education, marketing, public health, rural sociology, agricultural economics, general economics, political science, and others). Other communication research areas such as persuasion and attitude change and mass communication effects also began prior to the institutionalization of communication study in university units” (p. 4). This clearly explains that diffusion of innovation is not limited to the field of communication studies only but as well applies to others areas of human endeavor and study as listed above.

Rogers (1983) also believes that it matters little, so far as human behaviour is concerned, whether or not an idea is "objectively" new as measured by the lapse of time since its first use or discovery. The perceived newness of the idea for the individual determines his or her reaction to it. If the idea seems new to the individual, it is an innovation…newness in an innovation need not just involve new knowledge. Someone may have known about an innovation for some time but not yet developed a favorable or unfavorable attitude toward it, nor have adopted or rejected it. The "newness" aspect of an innovation may be expressed in terms of knowledge, persuasion, or a decision to adopt. From the foregoing, we can say that when a thing or invention is conceived does not determine its newness as an innovation and therefore, an innovation is regarded as new at the point in time when an individual finds out about it. This brings us to the categorization of innovation adapters and certain factors and characteristics of innovations which
are responsible for/influence the category an individual adapter of innovation falls into depending on their perception, which includes the following as identified by Rogers (1983).

1. Relative advantage: this is the degree to which an innovation is perceived as better than the idea it supersedes. This may be measured in economic terms but social-prestige factors, convenience, and satisfaction are also often important components. It does not matter so much whether an innovation has a great deal of "objective" advantage. What does matter is whether an individual perceives the innovation as advantageous. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption is going to be.

2. Compatibility: this is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters. An idea that is not compatible with the prevalent values and norms of a social system will not be adopted as rapidly as an innovation that is compatible. The adoption of an incompatible innovation often requires the prior adoption of a new value system.

3. Complexity which explains the degree to which an innovation is perceived as difficult to understand and use. Some innovations are readily understood by most members of a social system; others are more complicated and will be adopted more slowly…new ideas that are simpler to understand will be adopted more rapidly than innovations that require the adopter to develop new skills and understandings.

4. Trialability is the degree to which an innovation may be experimented with on a limited basis. New ideas that can be tried on the installment plan will generally be adopted more quickly than innovations that are not divisible.

5. Observability: the degree to which the results of an innovation are visible to others. The easier it is for individuals to see the results of an innovation, the more likely they are to
adopt. Such visibility stimulates peer discussion of a new idea, as friends and neighbors of an adopter ask him or her for innovation-evaluation information about it.

For the purpose of this study, the diffusion of innovations theory will help us shed light on the most likely influencing factors for the adoption and use of information technology in health organizations. This study will be explaining the characteristics of innovation as listed above by Rogers (1983) vis-a-vis the responses of participants in the interviews conducted for the purpose of this study to explain the guiding principles for the decision to adopt certain information technology within their organization. This will answer the second research question that says “What influences the decision to adopt a communication technology most according to the company’s top management?”

Also, the innovation decision process explained by Rogers (1983) involves the process through which an individual passes from first knowledge stage of an innovation to forming an attitude towards it, to a decision to adopt or reject, to implementation of the new innovation, and to confirmation or reinforcement of this decision. Five stages of innovation adoption process are identified as follows:

Awareness or knowledge stage which is the stage when an individual gets to know about the existence or functionality of a particular invention. We conceptualize five main steps.

1. The persuasion stage is the stage at which the individual develops either a pleasant/welcoming attitude to the innovation or not.

2. The decision stage is the point at which based on the disposition of the individual towards the innovation, a choice is made to either adopt or reject the innovation.

3. At the implementation level, the decision to use an innovation has been made and is being actualized/evaluated in real-world use and practice and this determines if there
will be a re-invention or reinforcement based on the level of satisfaction derived from the use of such innovation.

Against the backdrop of the fact that information technology is perceived as an innovation with its own elements and tools of diffusion, this study will be establishing the innovation decision process as it applies to the organization of the organization used as case study in this study. Rogers explains also that there are three types of innovation decisions which are optional, collective and authority innovation decisions which will be used as yardsticks to identify the type of decision process employed in our case study organization. The optional innovation decision is explained as the decision or choice to adopt or reject an innovation made by an individual independent of/w without the consent of the other members of the system.

The collective innovation decision system involves a consensus among members of the system such that when the decision is made it has to be adhered to while the authority innovation decision is such that allows a few individuals who possess power and expertise to make decisions and a single individual within the system cannot influence the decisions otherwise.

This idea will be investigated in this study to address the third research question that asks “How is the decision to adopt a communication technology made by the company’s top management?”

2.4.2 Technology Acceptance Model

The technology acceptance theory attempt to model how users of technology come to accept and put into use a technology based on their perception of its usefulness and ease of use. The perceived usefulness otherwise known as PU explains how much a user believes that a technology is needed in enhancing his or her performance and output on their job and PEOU—i.e., perceived ease of use has to do with how much the technology eliminates difficulty in its
application. In other words, PEOU has to do with the ease or effortlessness of the use of such technology otherwise termed as performance expectancy and effort expectancy. These two factors, which are the yardstick with which this study will answer the first research question that asks how effectiveness is defined by the top management, influence the decisions of users to adopt or not to adopt a technology for use. The theory of technology acceptance model developed by Fred Davis (1989) is an extension of the theory of reasoned action (TRA).

Legris et al. (2003, p. 192) state that “Davis and Davis et al. proposed TAM to address why users accept or reject information technology. Their model is an adaptation of the theory of reasoned action proposed by Fishbein and Ajzen to explain and predict the behaviors of people in a specific situation. A key purpose of TAM is to provide a basis for tracing the impact of external variables on internal beliefs, attitudes, and intentions. It suggests that perceived ease of use (PEOU), and perceived usefulness (PU) are the two most important factors in explaining system use,” p. 192.

![Diagram](image)

*Fig. 2. Technology Acceptance Model. Source: Davis (1989).*

The claim of the technology acceptance model is that external variables identified as PU and PEOU are the main determinants of an individual’s decision to adopt a technology and actually use it. In other words, these two variables which are considered the external variables...
influence the behavioral intentions of a user and ultimately determine if the technology system will be put into actual use or not.

Going by this proposition of the technology acceptance model, the fourth research question addressed in this study asks “Do the communication software adopted work efficiently according to expectations?” In other words, the question investigates whether the software adopted is perceived as working up to expectations. This is addressed based on the claims of this model of acceptance. This theory notably suggests a feature of voluntariness which means that use or decision to use an information systems or technology is made non-mandatory and subject to certain pre-considerations before a decision is made.

2.4.3 Theory of Reasoned Action and Theory of Planned Behavior

Galletta and Malhotra (1999) claim that the theory of reasoned action (TRA) as a widely-studied model from social psychology is mainly “concerned with the determinants of consciously intended behaviors. According to TRA, a person’s performance of a specified behavior is determined by his or her behavioral intention (BI) to perform the behavior, and BI is jointly determined by the person’s attitude (A) and subjective norm (SN) concerning the behavior in question. TAM uses TRA as a theoretical basis for specifying causal linkages between two key sets of constructs: (1) Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), and (2) user’s attitude (A), behavioral intentions (BI) and actual computer usage behavior....”The theory of planned behavior on the other hand serves as a missing link between pre-conceived beliefs and resultant behaviors and according to Venkatesh et al. (2003) it “extended TRA by adding the construct of perceived behavioral control. In TPB, perceived behavioral control is theorized to be an additional determinant of intention and behavior...”Venkatesh et al. (2003:430) also claim that “TPB has been successfully applied to the understanding of individual acceptance and usage of
many different technologies”. Venkatesh (2003) claim that “Voluntariness was not included in the original TPB…As noted in the discussion regarding TRA, although not tested, subjective norm was suggested to be more important when system use was perceived to be less voluntary….” p. 430.

Finding the baseline correlation between these two intertwined theories can be explained by the understanding that while the theory of reasoned action implies that the behavior of a system user or an individual is defined and decided by a pre-conceived intention to perform the behavior. This premeditated intention is a result of a pre-existing attitude. Simply put therefore, the intention predicts the action/behavior’ intentions are the real actions catalysts.

The relevance of these theories is intended to be reflected in the analyses of responses to questions that address the research question of what influences the decision to adopt a communication software/technology.

2.5 Setting: Alpha+ Healthcare Solutions

For the purpose of this research, the selected organization’s identity will be protected under the pseudonym “Alpha+ Healthcare Solution, Limited Liability Company. This is a young, vibrant, and dynamic private homecare health services provider with its main office located in the state of Georgia. The company was established to meet the need for a viable, cost effective, and beneficial alternative to institutional healthcare. The healthcare company can be regarded as a “one stop solution centre” that is also licensed by the state of Georgia to provide skilled nursing and personal care services. The company is qualified to provide various skilled nursing and medically related activities, companion sitter, in-home respite, homemaker and personal care services as mandated by the Department of Human Resources and Public Health. The company employs only licensed healthcare professionals certified by the state of Georgia with a minimum
of two years of work experience. In-depth orientation is conducted through qualified personnel, and current health status of each healthcare professional is checked before their first assignment. Criminal background check and references check records on all staff are also duly conducted. All staff have CPR certification, are equally bonded, and possess other professional certifications and licenses required by the state of Georgia. The services of Alpha+ Healthcare Solution, LLC are provided across 12 coverage regions within the state of Georgia.

The company has approximately about 200 medical employees on field and about 15 other employees in the main office. It is headed by the Chief Executive officer who oversees the operations, business development, clinical, marketing research and sales and administrative functions while the Chief Financial Officer handles financial management records, billings, training and development, purchasing and inventory, payroll and recruiting issues. The project manager reports directly to the CEO and the CFO because his duties fall under both categories i.e. administrative and financial. The CEO coordinates the intake coordinator, the quality assurance Nurse manager and the clinical nurse manager who all report to her office. The quality assurance manager is responsible for assessment nurses and the field nurses (registered nurses and licensed practitioner nurses) while the clinical nurse manager is responsible for the scheduling coordinator and operations support coordinator.

On the other hand, the CFO who also doubles as the HR director oversees the accountant, the account receivable coordinator and the office manager. The office manager is also responsible for the admin and payroll assistant.
CHAPTER THREE

RESEARCH METHODOLOGY

Research data for this study was collected mainly using semi-structured interviews (open ended) with the executives and top management of the selected healthcare organization. This stratum (top executives/management directors) will be focused on because by virtue of their position, they approve or disapprove the decisions to adopt a communication software Simply put, they determine what communication software is adopted or not by the organization and their level of commitment to such adoption invariably affects the depth of commitment to use, of such software by the subordinates. A secondary data collection method is the content analyses of documents and facts sheet provided by the organization on the current communication software technology they are currently adopting and their documented assessment of the benefits and loopholes of such software. These documents are used to assess the vendor description vis-à-vis the statements of the participants and this helped to gain insight into research question four that asked if the technology works as expected by the actual users of the technology.

On the other hand, interviews with top executives will help to discover how the decisions to adopt certain information technology software are made and how the technology are regarded as more effective in the virtual office situations than in the conventional practices especially in dealing with clients, staff and other affiliated healthcare provider partners.

The staff members of Alpha+ Healthcare Solution, LLC interviewed include the CEO (Chief Executive Officer, The CFO (chief financial officer), the project manager, the office manager, the intake coordinator and the client care and scheduling coordinator. This set of office holders according to the organizational structure is at the apex of decision-making. In other
words, their opinions are most considered by the CEO and the CFO in taking decisions on issues that pertain to the overall welfare of the organization and its working system.

The interviews were audio recorded and each participant will be referred to using pseudonyms to protect people’s identities. The audio interviews were later transcribed to text for easy references and three (3) will be found in the appendix section as examples.

3.1 Case Study Approach

This research will employ a case study approach because a case study provides an empirical approach and as Yin Robert (2003) posits that case study researches cope with distinctive situations especially when more variable s of interest are involved. Yin (2003) also claim that case study researches are preferred when questions of “why” and “how” are asked and they are also generalizable to theoretical propositions without requiring control of behavioral events as we have in experiments.

Patton (1990) suggests that case studies are valuable in creating deep understanding of particular people, problems, or situations, in comprehensive ways. From an analysis of a single case, one can identify and describe basic phenomena and uncover new relationships and new perspectives on a topic (Merriam, 1988).

Khan (2008) states that “it permits a much more direct and frequently interplay between theory and data and allows for a closer matching of conceptual intent and empirical evidence than even exceptional quantitative research…At a theoretical level, the power of case studies is in the ability to reveal the properties of the class to which the instance being studied belongs, produce new typologies, provide the basis for subsequent theory-development, and test and generate hypotheses” (p. 424).

Khan (2008) also identifies some properties of case study approach to include the following:
1. In-depth Study: Case studies help to reveal problems, constraints, conceptual challenges, and technological potentials in an identified field of research.

2. Boundary setting: case study helps researchers set both spatial and temporal boundaries for the research. This may be understood in terms of scope limitation as a feasibility criteria for the study.

3. Multiplicity of data: Khan claims that case study approaches allows for multiple forms of data to foreground claims made by the researcher.

4. Extendability: case study researches provides for how findings from one case setting can be extended to other settings for further research.

From our discussion of case study research approach, we can understand this approach features potentials for in-depth and rigorous, result oriented study which makes it suitable and applicable to this particular study. The interview questions covered several related issues of relevance and importance in the field of organizational communication and information technology as well as health communication specifically. During the interviews, some or all of the following questions may be asked of participants. Related questions may emerge based on participants’ answers, in which case participants will be asked to elaborate more on one or more points they just mentioned.

1. What different software have you used in communicating information within the organization since you started working here?

2. What is the present software technology that is being used in communicating information within the organization at the moment?

3. Are you aware of the various available IT software that are which are being used for communicating within the organization?
4. What factor(s) influence your decision to adopt a communication software technology for use?

5. What defines your perception of effectiveness in communication technology use?

Other questions asked during the interviews are listed in the Appendix.
CHAPTER FOUR

DATA INTERPRETATION AND ANALYSIS

The analysis in this chapter will be done in categories based on the interview scenario which will be narrated and also on responses corresponding with research questions. In other words, there will be a narrative of the interview process and also, the responses of the participants will be analyzed in relation to which of the research questions proposed in this study that they address. Next, the vendor description of the software and its capacity to work will be reflected on vis-a-vis the evaluation/assessment of the users about the technology.

4.1 Narrative Chronology

The interview started with the project manager who has been working with the organization since 2011. He explained that they use Skype and a communicator within the ‘continulink’ software currently in use. In his own statements he explains that the ‘continulink’ was tailored to the specific needs of the organization but they factored in cost management and return on investment before committing to purchasing the software technology. He also noted that one of the factors that encouraged them to adopt ‘continulink’ was because it is web-based and more reliable and flexible as long as there is internet connectivity.

On another note, the project manager claims that quality of service delivery plays a key role because of competition and also because the healthcare industry is a highly regulated industry and to avoid losing clients, quality of care becomes important. However, he adds that the return on investment is also very important because according to him “you need something to roll the wheel.” This gives the first impression that quality of service delivery is considered not because it is regarded as most important to the mission of the organization but because it is required to keep the clients coming for the sake of the organization’s survival. In terms of
benefits, the project manager claims that it is beginning to reap its benefits and has reduced manpower a bit even though the CEO negates this claim in her own statements later.

In reference to the question of how the decision is made in adopting a software technology or not, the intake coordinator at first stated that she was not part of the decision. On second thought, the intake coordinator re-stated that though her opinion was sought and she told them what they needed for their job and what suited their purposes the most, the final decision was not made solely based on her opinions. From this point of view, it is obvious that though the opinions of stakeholders (actual users of the technology interface) were sought, their opinions did not ultimately matter because at the end the decision was made based on cost convenience. The scheduling coordinator as well declined to speak straight on how the decision to finally adopt ‘continulink’ was made and she also tactfully disengaged herself from the question.

Next was the office manager who on her own part felt that the software technology in use, ‘continulink’, was perfect because as far as she was concerned, it fits for her own job. She stated however that she was not sure if fits perfectly for other employees’ jobs “whether it is good or bad” but it suits her own tasks perfectly. On the issue of how the decision to adopt the software was made, she declined making any statement and also claimed not to know if at all the use of ‘continulink’ has improved the profit margin of the organization yet. From her tone and decision to avoid some questions while she responded to other questions, it is evident that the office manager was simply trying to avoid making statements of fact that may be revealing. Instead she chose to simply accept the technology since according to her it is at least better than the previous technology they had. But she made a contradicting statement when she said she gave the new technology ‘continulink’ a rating of 8 on a scale of 1–10. Why did she give an 8 rating when she initially said she considered ‘continulink’ perfect for her job? Why not a full
rating of 10/10? To this question, she said it is because she believes there should be some improvement still. This brings us to infer that in every sense of the truth, the office manager as well would have preferred a better technology though the difference that ‘continulink’ makes compared to the previous technology they had seems to be a huge one. But one notable contradiction is that the CEO seems not to see any fault or shortcoming with ‘continulink’ in all her statements. And this does not substantiate the opinions of other employees who feel there are things to be improved. This suggests that the improvements ‘continulink’ needs are probably already integrated in the second but more expensive software that was not adopted. This is an assumption.

In the interview with the scheduling coordinator, she claimed she didn’t have a lot of problems with the software even though there are identified problems. In other words, there are certain problems. She explained that there are certain things that need to be tweaked with ‘continulink’. She started a statement which on second thought she left unfinished saying, “if I had my own company…. …” Apparently, she was going to make a statement to probably suggest that she would have preferred a better software (maybe the more expensive but more robust one) judging from the fact that she just stated that ‘continulink’ has some issues with it.

From her own end, the CEO stated that in terms of how the decision to adopt ‘continulink’ was made, they all listened to about 16 demos of different software technologies and after evaluations, they narrowed their selection down to two main ones. But ultimately the decision to eventually adopt ‘continulink’ instead of the second one was made by her and the CFO because ‘continulink’ was the cheaper alternative. Even though the other technology was more robust and preferred by the other employees whose opinions were sought, it was more expensive as well. We may understand that the decision to adopt a less expensive option was
made on the premise of the desire for immediate yields and the long term benefits of the more robust though more expensive technology was not considered which I think would have turned out cheaper in the long run. I suppose that adopting the more expensive technology would have turned out cheaper in the long run because I believe that since it offers more in terms of capacity and flexibility, it would have enhanced the performance base of the organization and influenced the organization’s growth and customer base attraction as well. This might take some years before the results are evidently significant but it would have been worth the wait after all.

The CEO also claimed (contrary to the claims of the project manager) that they are not seeing any yields that the adoption of ‘continulink’ has brought so far because according to her, she anticipated that the adoption of ‘continulink’ will help to reduce manpower and costs (payroll costs). Instead, the adoption of ‘continulink’ propelled them to hire more people for the IT department to manage the software which according to her is not a plus. In fact, she regards the continued need for a project manager as not necessary if the technology was as robust as anticipated.

4.2. Research Question 1: How Is Effectiveness Of Communication Technology Defined By The Company’s Decision Maker?

4.2.1 Timeliness

Denning and Raj (2011) posit that “Masterful time management means not just tracking of messages in your personal environment, but managing your coordination network with others.”

In the same vein, the project manager explains that a software is considered effective “if it is real time, on time…in the sense that I want something now and I want it done now, processing period is fast, response period is perfect…time is key in this operation…so effectiveness is about timely delivery…on time real time….”
While speaking, the chief executive officer says also “if I get the information I need on time without having to wait for somebody. That is my drive…so effectiveness to me is when I need any information and it’s at my fingertips without having to call any member of staff….”

On this note, we might take it that the ability to coordinate the pools of information gathered through the electronic technology is considered a form of effectiveness by the decision makers. In other words, a technology is regarded as effective if it helps them in transcending the constraints of time.

4.2.2 Reliability

The project manager in his submissions emphasized that the preference for the ‘Continulink’ (the technology software being used at present by them, stemmed from the fact that it is more reliable because it is not computer or server based but web-based. He terms it as a “software as service technology”. He states that, “the new software that is web based, apart from flexibility of access at any point in time, it is robust, it gives us what we desire.”

According to him, the web based technology eliminates the risks of data loss when servers experience a shut down or problems and also, the server based technologies always require special access to the server to be able to work. In other words, there are certain restrictions on the server based technologies therefore the reliability of a technology is key to effectiveness.

4.2.3 Flexibility of Access and Virtualization:

The office manager explains that effectiveness connotes reliability, internet based system and being able to work from anywhere without necessarily being physically present in the office defines reliability. From her statement, we might understand it that effectiveness from her point of view is more embedded in the advantages of virtualization of office that is, being able to
transcend the constraints of time, space and distance all at the same time which as earlier noted in this paper is one of the main attributes/advantages of information technology systems. The intake coordinator in her opinion/ take states that effectiveness in communication technology use means, “you have what you want, to do your job.”

The client care and scheduling coordinator puts effectiveness of software as: “if it makes me work harder and if it makes my life/work easier.” This might be understood as saying that a technology or software is regarded as effective when it helps to get more work done with less effort.

From the opinions of respondents above and based on our understanding of the theory or technology acceptance model, we discover a link between the factor of perceived usefulness and the idea of effectiveness painted by the responses above. In other words, the usefulness of a software technology in helping to preserve timeliness, virtualization, and ease are the defining yardsticks for effectiveness.

4.3. Research Question 2: What Influences The Decision To Adopt A Communication Technology Most?

The chief executive officer in her response stated that, “Aside from the fact that everybody is going green, we want to go green to save some papers; save the trees you know the global warming. So aside from the corporate social responsibility to also save our environment. We also want to reduce our cost of paper. We also want to improve efficiency. We deal with a lot of paper on each desk. We have about 12 staff in-between the offices. Before we started utilizing electronic companywide software everybody was working with spreadsheet so communication was a challenge particularly after hours. So in order to improve efficiency and reduce the delay time, we considered using the electronic record.”
This explains that the decision to adopt a technology for communication purposes stems from several inspirations ranging from the need to go green and save the trees to the management team’s consideration that it is a corporate social responsibility to also conserve the environment we live in, the CEO also noted the following reasons:

1. The need to reduce cost (especially costs of paper)
2. The need to improve efficiency
3. The need to reduce the challenges of communication barriers during after hours because prior to the adoption of the software, the company used spreadsheets and paper timesheets and the flow of information became restricted and dependent on whose table or office the spreadsheets are at every point in time
4. To avoid duplication of actions (sending two aides to the same client’s home) which invariably results in paying more (to the employees) for a single service
5. And to reduce delay time.

4.3.1 Ease of Use

In addition to this, the client care coordinator specifically mentions ease of use as a main prerequisite for adopting a communication technology. This is closely linked with the TAM (technology acceptance model) which states that perceived ease of use and perceived usefulness are major factors that influence attitudes of people to inventions or technology acceptance. Simply put, a complex technology that requires a lot of mental stress to understand may not get reasonable acceptance which is what is implied by the client care coordinator.

4.3.2 Benefits for Effectiveness And Affordability

While speaking, the client care and scheduling coordinator also refer to effectiveness as a factor being looked out for in adopting a technology. She puts it that technology software will be
considered for adoption if it will improve the effectiveness of their job especially with the control and monitoring of clock-in time of nurses and aides and also to track the validity of and expiration of their nurses’ licenses.

The CEO noted that she believes certain technologies are too expensive for their benefits and we may infer here that the financial returns and benefits potentials of a technology determines its acceptability and consideration likelihood for adoption.

4.3.3 Compatibility

The project manager and the office manager both identify compatibility as a major feature necessary for adoption of any technology. The project manager explains that the software (continulink) was adopted mainly because it is tailored to suit the expectations and task needs of the organization. According to him, the ‘continulink’ is ‘customized’ based on the requirements and the task expectations of the company to help with all task related with home care nursing and other healthcare duties they need. Also, it is compatible with their ‘Dial N DOC’ which is also software used to track and monitor the login and logout times of their staff at their different duty posts.

From the reports of the respondents above, we realize that while the actual users of the software perceive the reasons for adopting a software technology from the task and performance point of view, the chief executive officer emphasizes mostly, the need to cut on costs. This gives an impression that organizations probably adopt technology considering the costs in proportion to the anticipated returns on investment especially where the final decision lies with the top executive and their perceptions.

So, in reference to the diffusion of innovation model as explained earlier in this paper, we understand that the real users of a technology software reason more from the perspective of task
satisfaction and also compatibility noting that the project manager explained in the interview that
the software was actually customized specifically to meet the task needs of the organization and
this compatibility includes process and outcome satisfaction. And if we are to infer further, we
may assume therefore, that there are conflicting interests as far as satisfaction is concerned
between the different strata of hierarchies in organizations in considering the adoption of
technology software for communication.

4.4 Research Question 3: How Is The Decision To Adopt A Communication
Technology Made?

As stated earlier in this paper, that leadership style (directive or non-directive) goes a long way
to determine the outcomes of decisions made on behalf of an organization by its leaders. From
her statements, the CEO explained that the decision to adopt a technology lies mainly with her
and the chief financial officer whom she refers to as “business partner.” This gives the
impression that the type of leadership practice is the closed directive type which does not give
room for the opinion of other stakeholders and usually the outcomes of such singlehanded, un-
researched decisions end as ‘bad-luck’. But on the contrary, the project manager and the
scheduling coordinator both claim that their opinions were sought before the decisions were
made. The scheduling coordinator stated that she was asked what she wanted. Therefore, we may
infer from this scenario painted by the respondents that style of leadership falls mid-line between
the directive and the non-directive because even though the opinions of other team members
were sought, the preferences of the two most senior executives hold the ace. Nevertheless, it is
established that a communication line exists between the superiors and their subordinates when it
comes to decision-making that affects the welfare of the entire organization.
On another note, the CEO stated that though they listened to the demos of different software technologies (the trialability factor in diffusion of innovation model comes to play here), the cost of investment goes a long way in determining the decision to adopt a technology or not. She says, “One of the software like that, it is designed for home care just like the continulink but it is so expensive that I didn’t even bother to get a second quote or to even get a second listening because it was just too expensive. Now that is not perfect for me. A perfect software for me is the one that I can afford”.

The project manager also stressed the importance of ROI (return on investment) as a key determinant in the sense that the profit margin is also considered even though the quality of service deemed important.

One important thing to note in this actions is the fact that several other technologies were sampled and tested even though in demo form but it stresses the fact that as earlier mentioned in this paper, there is the need for proper research in a decision-making process to avoid regrets, waste of resources and unpleasant outcomes. This suggests to us that at the persuasion stage of the decision-making process (reference to the diffusion of innovations theory), the trial-ability and observability of the software reinforced the decision for the adoption and continued adoption of the ‘continulink’.

Another probable factor that we may identify as reinforcement for the adoption of the software technology is the fact that the vendors have webinars and updates for the technology to enhance its performance to further suit the purposes of the organization.
4.5 Research Question 4: Do the Communication Software Adopted Work Efficiently According To Expectations?

At this point, conflicts of interests and expectations were reflected in the responses of the participants. While the top executives thought of the expectations of the efficiency of the software in terms of reduced human personnel and cost benefits, the real interface users of the technology responded in terms of how task-fit the technology is in improving their job outputs.

The intake coordinator claims that the software has helped in making scheduling and task monitoring more effective. She also claims that it has helped in terms of timely task deliveries and accuracy of information submitted to the State department for verifications and other logistics issues. The office manager in her own claims state that ‘continulink’ has been perfectly suited for her job and gives a rating of 10/10 to the performance of the software technology as far as her tasks and responsibilities are concerned.

4.5.1 Vendor Description

A close look at the contract documents signed with the vendor of the ‘continulink’ software reflects several performance capacities of the software as described by the vendors. The main claims include that the application will: (a) increase efficiency, (b) improve clinical compliance, and (c) drive additional revenue.

Additionally, the vendor description claims that the application of the software will help to:

1. deliver a comprehensive scheduling application.
2. provide better billing management.
3. improve the reporting functions.
4. increase efficiency that will result in decreased costs.
5. boost technological efficiencies that will result in paper reduction.

6. result in good, responsive customer support.

The “continulink” software is described as a SOLUTION which will incorporate the following modules: system administration, client record and intake, payer records, employee record, physicians records, scheduling and employee matching, payroll and weekly processing, general ledger and weekly accounting process, payment applications, billing and collections, medications database and interactions, real time clinical data scrubbing, clinical data benchmarking, clinical point of care, telephony, automated mileage calculator, physician portal, employee portal, client and family portal, supplemental healthcare staffing and portal, mobile device access, tele-monitor interface set-up, etc.

From the descriptions above, we can identify the fact that while some of the features are task-oriented, some are revenue-oriented and this applies as well to the evaluation perspectives of the users and the participants in this study.

4.5.2 Task-fit Evaluation

From the task-fit perspective, the project manager explains that the software has helped in monitoring employees tasks and claims for hours worked. He explained that the technology requires the employee to call a toll free number upon arrival to clock in and the system which has been designed to suit that purpose automatically recognizes the location the employee is calling from and the clock in time. Upon work completion the employee again calls the toll free number and enters pre-assigned codes for each task carried out and the system automatically registers the location and time of the call and the reports are immediately available to the appropriate office and can be forwarded for verification purposes.
For employees and clients without cell phones and home phones, a device called the validator which is run by telephony and which is part of the technology package is assigned to each client and installed in their homes. This device generates random 8-digit codes for verification of the location and clock-in/clock-out times of the employees (nurses and aides). According to the claims of the project manager who supervises the running of this technology software, the use of this software has helped to reduce clumsiness.

A further edge to this in terms of task compatibility is that the ‘continulink’ software can be used to reflect the compliance status of each caregiver/nurse, for instance their compliance in terms of their license renewals and updates and their affiliations with other health related institutions like Medicaid, Medicare, professional boards, etc.

Also, the scheduling and client care coordinator state that even though the software has been up to expectations in boosting their job performance and effectiveness, the software has not been able to handle the issues of missed appointments. For instance when an employee clocks in late or clocks out earlier than the stipulated time or when a replacement employee is assigned, then there are usually contradictions and such corrections have to be manually fixed by the scheduling coordinator.

The intake coordinator also identifies a problem with the calculation of the number of hours that the software generates claiming that it is yet to reach accuracy therefore necessitating needing to manually calculate the number of hours worked by the employees in field.

The CEO noted however that the software cannot help locate clients areas which is one feature the project manager also mentioned they expected to see as one of the components of the software and as such they have to use zip code locators to find client cluster areas and new areas.
Notwithstanding the CEO noted that the software has helped in making the organization a proactive one as a whole.

**4.5.3 Revenue-Wise Evaluation**

The CEO and CFO on the other hand believe the software has not yet helped in managing both the human resources and the financial resources because according to them, the adoption of the software prompted the hiring of more personnel (IT specialist) to manage the project instead of reducing the staff number as they anticipated and as a result also helping to reduce the number of people they have on the payroll services.

The CEO also explains that the software has not yet incorporated the billing system effectively and has also not been as effective in time management as expected because she views time resources as closely related to human resources. This loophole was also identified by the client care and intake coordinator as well.

In terms of cost benefits and revenue boost as promised in the vendor description, the CEO and CFO claim that so far they have not seen the yields or returns on their investment on the software aside the fact that information is processed and accessed faster than before when the software was not in place. She states that the “profits were being challenged by human resources.” She anticipates anyway, that the yield will start soon saying it is probably because the software is still relatively new in the system.

From the foregoing, we realize as stated earlier that the expectation interests of the decision makers conflict at some points even though there seemed to be a consensus about the perceived usefulness of the software in improving task efficiency, it is obvious that while the subordinates who are also the actual users of the technology perceived it more in terms of
applicability to their job, the top executives made sense of it more in terms of interests and revenue yields.
Semi structured interview questions were asked the participants which included the decision makers of Alpha+ Healthcare Solutions. The demographic profile of the interviewees included one male participant and five female participants. Of these participants, the organizational structure of the organization reflects that two of them are the most superior in whom resides the power to give final approvals to decisions made on behalf of the organization.

The four research questions in this study were answered using the interview questions responses by the key respondents; a review of the vendor contract and description documents obtained from the organization under study; a reflection on the theoretical framework theories discussed under literature review i.e. the media richness theory, the technology acceptance model, diffusion of innovation, theory of reasoned action and planned behavior.

RQ 1: How Is Effectiveness of Communication Technology Defined By The Company’s Decision Maker?

Of the six respondents, four stressed the importance of reliability, flexibility and virtualization while all six respondents emphasized the importance of timeliness and zero tolerance for delay. Therefore we may sum it up that in this organization, time constraints is considered to be the main hindrance to effectiveness in communication and information processing and as such when time constraints is overcome, the chances of being effective at information access and processing is higher and more likely.
RQ 2: What Influences The Decision To Adopt A Communication Technology Most?

From the respondents, we identify a trend that suggests the factors that influence the decision to adopt and invest in a technology differs from one stratum of administration to the other. The following factors were mentioned which are ease of use, compatibility, benefits and affordability. Following the trend of responses, it is noticed that the respondents who regard ease of use and compatibility as priority are not the main decision makers especially on matters involving financial commitments. In other words, they are to use the software to enhance their own job outputs and performances so there is the tendency that they are more concerned with the task related criteria.

On the other hand, the respondents that emphasized costs and affordability stressed this in terms of ROI (returns on investment) and we may assume that this is because they are the company leaders who not only make the decisions but also bear the costs of the investment so there is the tendency as well that they may be more concerned with the yields and returns on their investment even though they claim to be concerned as well with the task related effectiveness. And we should not as well that the diffusion of innovation theory supports the claims of ease of use and compatibility so we may state that perspectives of the respondents are in line with what we would expect.

RQ 3: How Is The Decision To Adopt A Communication Technology Made?

Notable is the fact that the CEO stressed that several demos were tried out first before a decision was made. This gives credit to the claims of the theory of diffusion of innovation in the sense that the technology was pre-tested to know its relative advantage in terms of relevance to the tasks at hand, the technology was tested and tried and this helped to discover its compatibility. The observed results of the trial period reinforced the decision to adopt and continue re-adopting
‘continulink’ by the organization. This is a perspective from the task oriented point of view which also supports the concept of perceived usefulness (PU) under the technology acceptance model (TAM).

On a second note and from the organizational structure perspective, the response of the CEO suggested that the leadership system followed is the directive type that does not necessarily lend its ears to the opinions of the subordinates but the claims of other respondents suggest on the contrary that the leadership is non-directive. This suggests that the opinions of the subordinates are sought not as a required input for the decision but just as a courtesy protocol as the decision lies mainly on the considerations and perspectives of the top executives.

RQ 4: Do The Communication Software Adopted Work Efficiently According To Expectations?
As much as the respondents seem to appreciate the adoption and integration of the software, they also identify certain loopholes. The CEO claims the software has not yet helped in managing both the human resources and the financial resources because according to them, the adoption of the software prompted the hiring of more personnel (IT specialist) to manage the project instead of reducing the staff number as they anticipated or even helping to reduce the number of people they have on the payroll services.

The CEO and the client care/intake coordinator also explain that the software has not yet incorporated the billing system effectively and has also not been as effective in time management as expected because she views time resources as closely related to human resources. This loophole as also identified by the client care and intake coordinator as well was evident in the area of manual entries of number of hours worked and billing system.

From the foregoing, based on an assessment of the findings enumerated above, we can state here that the factors of trialability, compatibility and observability are mostly dominant in
the features enumerated by the respondents. The decision-making goes in line with the diffusion of innovation model at the points of trial and observations of the 16 demos as said by the CEO. The trial of the demos helped in reaching a decision to adopt continulink which is also one of the demos tired out and observed.

The technology acceptance model which advocates perceived usefulness and ease of use is also alluded to in the decision-making process drawing inference from the statements of the project manager that ‘continulink’ was adopted because it is more ‘robust’ which in other words can be interpreted as meaning that it is more flexible and adaptable to the tasks of the organization as needed. According to the respondents, the ‘continulink’ technology had more to offer in terms of its task-fit affordances which is also in line with the perceived usefulness factor under the theory of technology acceptance model.

From the perspective of the CEO, there is an underlining tone of the theory of reasoned action and planned behavior which is inspired by previous use of other technology and also by the cost of investment for the technology. Compared to the other technology options the organization had to choose from, ‘continulink’ was the cheaper best alternative affordable by the organization and this formed the base template as determinant of the CEO’s attitude towards adopting ‘continulink’.

Overall, the assessment of the technology reflects that the users are at a comfortable threshold with the use of “continulink” but as it is with technology, there will always be one or two flaws in its workings and as a result changes, updates and uprades are always expected and anticipated and that is the reason most of the respondents signaled.
APPENDIX A

INTERVIEW QUESTIONS

1. What different software have you used in communicating information within the organization since you started working here?

2. What is the present software technology that is being used in communicating information within the organization at the moment?

3. Are you aware of the various available IT software that are being used for communicating within the organization?

4. What factor(s) influence your decision to adopt a communication software technology for use?

5. What defines your perception of effectiveness in communication technology use?

6. Which is more important to you in justifying your decision to adopt software: costs and benefits OR quality of service delivery?

7. Which of the ones that have been used is the most effective?

8. What are the effects of using such IT software in communicating compared to the old way communication was done in the past?

9. Do the software technologies you adopt work accurately as specified by the vendors?

10. How well does the usage of this method of communicating help in saving time?

11. Has this method been efficient enough in managing resources?

12. Do you get trained before being asked to use such software as communication channels?

13. How often are these softwares upgraded or changed?

14. How many technical support staff do you have?
15. Is there a way you seek feedback from your staff (nurses and caregivers) on their perception of the software being used?

16. Has there been any significant change in the productivity of the organization since this software has been in use?

17. What implications have the usage of this software had on the profitability of the organization?

18. Any complaints from the users of the software? Or has it been widely accepted by all?

19. Has the usage of the software improved the quality of care and services rendered to the public?

20. Has the usage of this IT software given you an edge over your competitors in service delivery?

21. How convenient has the usage of the IT software been in delivering your day to day activities compared to when they never existed?
Florida State University Behavioral Consent Form

“Effects of Information Technology on Organizational Communication: A case study of a selected Health Organization”

You are invited to be in a research study of the effects of information technology on organizational communication doing a case study of a selected health organization. You were selected as a possible participant because you are an eligible member of staff of the selected healthcare organization under study and you also belong to the executive strata of decision makers whose opinions are required for the purpose of this study. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Toluwani C. Agboola, College of Communication (Integrated Marketing and Management Communication) at the Florida State University.

Background Information:

The purpose of this study is to gain a greater understanding about information technology and organizational communication. Simply put, the purpose is to examine if information technology enhances efficiency and productivity in health organizations. In other words, this research is intended to find out the role of the information technology specifically the communication software used in your organization and also to understand what influences the decision of the management to adopt certain information technology products and software.

Procedures:
If you agree to be in this study, we would ask you to do the following things:

1. Give your responses to about 20 general questions in this interview.

2. Explain your opinions on the use of information technology in your organization.

3. Talk about your perception of quality and principles behind decision-making in organizations.

4. Next, you will be explaining your perceptions on the use of communication technology in terms of effectiveness.


5. Your responses will be audio recorded with no real names mentioning/identification and this is anticipated to take about 30 minutes of your time.

Risks and Benefits of being in the Study:

The study involves minimal risk i.e. the risks of harm anticipated in this research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

You have the choice to either stop participating in the entire study or to opt out of answering a Question.

The benefits to your participation is that you can voice your opinions and assessments of healthcare communication technology and its attendant issues as it affects healthcare delivery in the society and the results of this study can be used to enlighten the larger society and especially other healthcare providers on the benefits of digitizing healthcare records and also the need to adopt technologies for communication purposes within their organization.

Compensation:
There is no form of compensation monetarily or otherwise for participation in this study. It is completely voluntary and not compensatory binding.

Confidentiality:

The records of this study will be kept private and confidential to the extent permitted by law. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records. Only the researcher will have access to the audio taped responses and will be used strictly for the educational purposes of this research and will be destroyed after the interviews have been transcribed. Once the interviews have been transcribed, the data will be kept password protected with the researcher and will be destroyed within five years of the study. All information provided will be kept confidential in lock and key. Data will be locked and will be stored securely and will be available only to the researcher. Consent forms will be stored and locked separately from the audio recordings so that there is no identification possible.


Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University or your organization [Apremium Healthcare Solutions]. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is Toluwani C. Agboola supervised by Dr Ulla Bunz. You may ask any question you have now. If you have a question later, you are encouraged to contact
the researcher, Toluwani C. Agboola, at College of Communication, Florida State University or Dr. Bunz at (850) 644-1809 or ubunz@fsu.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the FSU IRB at 2010 Levy Street, Research Building B, Suite 276, Tallahassee, FL 32306-2742, or 850-644-8633, or by email at humansubjects@magnet.fsu.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

_________________________________ ____________________
Signature        Date

_________________________________ ____________________
Signature of Investigator    Date.
The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 5/9/2013
To: Toluwani Agboola
Dept.: COMMUNICATION
From: Thomas L. Jacobson, Chair
Re: Use of Human Subjects in Research

Effects of Information Technology on Organizational Communication: A case study of a selected Health Organization

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Secretary, the Chair, and one member of the Human Subjects Committee. Your project is determined to be Expedited per per 45 CFR § 46.110(7) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit.
This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 5/7/2014 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Ulla Bunz, Advisor

HSC No. 2013.10352

The formal PDF approval letter: http://humansubjects.magnet.fsu.edu/pdf/printapprovalletter.aspx?app_id=10352
APPENDIX D

VERBATIM STATEMENTS

VERBATIM STATEMENTS FROM THE PROJECT MANAGER

- “The software is actually the software that we are using to run the operation but we have the communicator facility in it and it is like an email; it is called a communication link which we use. It is like an email within the software but we use outlook as our email correspondence in-house and we also use Skype as an instant messenger but most importantly we use outlook as an email and skype as an instant communicator within the office.”

- “Yeah currently we are using ah the software application we are using here in the office right now is called ‘continulink’. ”

- “Continulink is a software as a service technology. It’s rich for home healthcare which is the industry that we are operating in and we bought the software and it was tailored into our own operations and into our needs based on the information they gathered when we wanted to purchase it.”

- “Also, we also factored in cost management as well as our return on investment.”

- “Prior to this software that we are using ‘continulink’ we had software that was being used. The software worked for a while, it is still working but it was not giving us the best output that we expected. It was not robust enough as well it was a computer based software meaning if there is any update you have to go that work station; that computer to really update that application as against the one we are running right now which is a web based software so you don’t need to store anything on the server everything is on the web so you can log in to the application and you can work.”
• “The web based makes your life easier. You can access your information from anywhere in the world once you have internet connectivity.”

• “The new software that is web based, apart from flexibility of access at any point in time, it is robust, it gives us what we desire.”

• “From my point of view something is effective if it is on-time, real time. On time real time in the sense that I want something now, I want it done now. Processing period is fast, response period is perfect. You desire to have something, information because time is key in this operation.”

• “If I want to communicate between one point to another the delay period matters a lot because it is a game changers so effectiveness is about timely delivery, on time real time so if the software cannot (1) give us real time, online real time results, we keep having break in communication, we keep having delays, we cannot process on time then our effectiveness will be questioned. Efficiency will begin to be an issue.”

• “Above all, the nature of our business, quality of service delivery plays a key important role because of competition. Healthcare is highly regulated. If you cannot give quality healthcare delivery and make your customer satisfaction a key game changer, its going to be an issue (1)you lose your clients, you lose your market share, you lose your customer base because they are not getting the quality of service and that being said it puts you at the bottom of the ladder so quality in as much as they are all interwoven the quality of care is important as well as your return on investment because you need something to run the wheel.”

• “Relatively if you look at other applications that people deploy in this industry, continu-link is good, it is an enterprise solution, it offers a wide base of information.”
However it is not 100% excellent. There are areas along the line that we noticed that we will need to have some kind of reports because we do have reports, the system is such that it generates a lot of reports because it is kind of generic but there are some specific reports that we want it some way to be done. When we request for an enhancement we don’t automatically get a response but in terms of support when we run into issues with the system, we get support within 24 hours, sometimes 48 hours. What they said it is going to do it does it but like any other person we expect it to do more but we have to go through an enhancement to get things that we really really like to have.”

- “We run quarterly surveys and we have training both field and office surveys asking them what is their perception.”

- “In terms of reporting, monitoring our compliance and being able to provide adequate service, yes” there have been improvement in productivity.”

- “It is a learning curve, it is a growing curve. It is not exponential, it is not drastic but it is beginning to reap its dividends in terms of better quality service, we are spending less on consumables even the time/manpower we are using is reduced.”

VERBATIM STATEMENTS FROM THE INTAKE COORDINATOR

- “The previous software didn’t give Alpha+ a lot of reports that it needed but this particular system is more updated as far as giving reports. It is just more in line with what we need as a company.”

- “I know that there was a lot of problems that involves scheduling. Me personally on the intake portion, I didn’t have a lot of problems but it was mostly with the scheduling, it was slow, kept shutting down, it was just a lot of problem.”
• “Effectiveness means that it gives you what you want, to do your job. If you don’t have what you need to do your job, you can’t grow, you can’t, you really can’t do anything.”

• “As far as the profit, that’s important too. The profit, very important as well. The quality of service is going in line with the benefits as well.”

• “It is giving us what we need to our job more efficiently…right now we can just pull the reports. It gives the information you need faster. Timeliness.”

• “I wasn’t a part of that as far as collecting the data. Well I was a part of the input telling them okay this is what I think is missing and this is what I think it needed and I believe they called me up and asked me what do you need and I was able to tell them this is what I need and I think I am seeing what I need in the system. definitely and then more.”

• “It is easier to print out to see who has their certifications updated, who can we use at that moment. You know everything is better.”

• “I think the training was for about maybe two weeks or so.”

• “There is always refresher training. They are always improving the system as well so that’s a good thing.”

• “Anything that upgrades your software will help you business-wise.”

VERBATIM STATEMENTS FROM THE CEO

• “Aside from the fact that everybody is going green, we want to go green to save some papers; save the trees you know the global warming. So aside from the corporate social responsibility to also save our environment. We also want to reduce our cost for paper. We also want to improve efficiency. We deal with a lot of paper on each desk. We have about 12 staff in-between the offices. Before we started utilizing electronic companywide software everybody was working with spreadsheet so communication was a challenge
particularly after hours. So in order to improve efficiency and reduce the delay time, we considered using the electronic record.”

- “If I get information that I need on time without having to wait for somebody, that’s my drive first of all. That’s the first thing. So effectiveness to me is when I need any information and I have it at my fingertips without having to call any member of staff, now that is effectiveness and efficiency in fact.”

- “The cost is a given so I will really go with the quality of service.”

- “We had to listen to about 16 different demos to see which is the best pick fit for this company and they all have their different costs so I had to go with the best balance of what is going to cater to our needs here and our operations as well as the cost. There are way better sophisticated software solutions out there but it is just not ideal for us because it is too expensive for the benefits; too costly for the benefits so yes they are great but it won’t be financial viable for us.”

- “Not as accurately as they promised. There is no perfect software.”

- “One of the software like that, it is designed for home care just like the continulink but it is so expensive that I didn’t even bother to get a second quote or to even get a second listening because it was just too expensive. Now that is not perfect for me. A perfect software for me is the one that I can afford.”

- “There are some things we would have loved to see the software do for us particularly with the staffing; we want to be able to staff our clients with the closest aide i.e. the nursing assistant. We want to be able to staff them to the closest clients but unless I pull zip code locator and then pull the client zip code but this software does not have this capability.”
• “As far as human resources is concerned I am yet to see it help us manage.”

• “Before we eventually went with this particular one, I made them listen to two that I narrowed down to; this one and software and we all agreed that this one was better than the other one. At the selection point it was not something shoved down their (employees) throat.”

• “I guess right now I will say that the profit is being challenged by human resources because we acquired the software we were thinking we will not need as many but we acquired the software and we had to hire another staff to take care of the software but we are able to take care of our clients better. I was hoping we could do better profit-wise but I am not seeing what we thought.”
REFERENCES


BIOGRAPHICAL SKETCH

Ms. Toluwani Agboola was born in Ilorin, Kwara State in the North Central geopolitical zone of Nigeria, West Africa. She holds a bachelor’s degree in English from the University of Ilorin (2007), and a Master of Science degree in communication with an emphasis in Integrated Marketing and Management communication from Florida State University (2013). Previous work experience includes a year teaching in a secondary school in Ekiti State, Nigeria as part of the compulsory national Youth Service Scheme, a short self-employment in clothing retail and a two-semester graduate teaching assistant opportunity at Florida State University. Ms. Agboola intends to continue with her career pursuit in academia, research, and teaching in the area of health communication and organizational communication focusing on new communication technologies.