



**An Analysis of ICT Utilization in Ministry of Finance and  
Economic Development (MoFED)**

**Girma Kebede**

**A Thesis Submitted to**

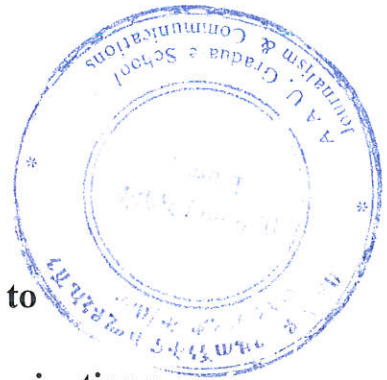
**School of Journalism and Communications**

**In Partial Fulfillment of the Requirements for Masters of Art Degree in  
Journalism and Communication**

**Addis Ababa University**

**Addis Ababa, Ethiopia**

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This is to certify that the thesis prepared by Girma Kebede, entitled *An Analysis of ICT Utilization in Ministry of Finance and Economic Development (MoFED)* and submitted in partial fulfillment of the requirements for the Degree of Master of Arts in Journalism and Communication complies with the regulations of the University and notes the accepted standards with respect to originality and quality.

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Chair of department of Graduate Program Coordinator

**Dedicated to:**

My wife & kids

## **Abstract**

An Analysis of ICT Utilization in Ministry of Finance and Economic Development (MoFED)

Girma Kebede

Addis Ababa University

This study focused on exploring the utilization of ICT as a strategic communication tool in Ministry of Finance and Economic Development (MoFED). The research specially doweled on mainly email, website and ICT policy utilization. In order to generate a realistic data quantitative and qualitative and research methods were employed. Questionnaires were distributed to 172 respondents who were selected through purposive sampling method. Documents investigation both in email inboxes and file boxes was conducted in selected three departments. In order to triangulate the research qualitatively, 10 key informants were interviewed in depth. The research was informed by system theory and network analysis was employed too. Eventually, the research findings revealed that email versus paper mail is unbalanced in the internal communication of MoFED. The respondents' attitudes towards MoFED website mainly fall on weak and satisfactory ratings. MoFED's ICT policy is known only by 36% of the employees. Moreover, findings revealed expenditure for papers and stationeries has been increasing in millions birr and the strategic goal to make the Ministry paper free environment unachieved. Finally, the study forwarded some recommendation to MoFED's ISAC and Management.

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## Abbreviations/Acronyms

AMP	Aid Management Platform
BA	Bachelor of Art
BSc	Bachelor of Science
CEOs	Chief Executive Officers
CMC	Computer Mediated Communication
CMCS	Computer-Mediated Communication Systems
CommGAP	Communication for Governance and Accountability Program
CRGE	Climate Resilient Green Economy
DDS	Decision Support Systems
DMAS	Debit Management Administration System
EC	Ethiopian Calendar
FAQ	Frequently Asked Questions
FTAPS	Financial Transparency and Accountability Program Survey
GE	General Electronics
GSS	Group Supports Systems
GTP	Growth and Transformation Plan
IBEX	Integrated Budget & Expenditure System
IBM	International Business Machines Corporation

ICT	Information Communication Technology
IFMIS	Integrated Financial Management Information System
ISAC	Information System Administration Center
IT	Information Technology
LAN	Local Area Network
MA	Masters of Art
MCIT	Ministry of Communication and Information Technology
MDGs	Millennium Development Goals
MoFED	Ministry of Finance and Economic Development
MSc	Masters of Science
USA	United States of America

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Information Communication Technology (ICT) is a pervasive presence in contemporary society that could afford, shape, and support (and is itself shaped by) the whole spectrum of human communicative action and understanding (Frey and Cissna, 2009). The pervasiveness characteristic of ICT is expressed by some scholars as invading but inevitable. (Castells, 2010) elaborated ICT as affecting society, flexible, pervasive and its networked information tends to converge into highly integrated systems.

Information communication technology has been integrating with the socioeconomic and political life of society all over the world. ICT shapes many aspects of the world's economies, governments and societies. More than 75 percent of people around the world now have access to cell phone, with the number of global mobile-cellular subscriptions quickly approaching 7 billion (World Bank, 2014). The impact of ICT is so huge that a 10 percent increase in high-speed internet connections leverages a 1.4 percent increase in economic growth in developing countries (Ibid).

Nowadays, ICT in Ethiopia has become a focus of interest to the government and various institutions. The Ministry of Communication and Information Technology (MCIT) has been established predominantly to deal with ICT and related activities. According to the ICT policy of Ethiopia, ICT has been given priority both as an industry and as an enabler of socio-economic transformation (National ICT Policy and Strategy, 2009)

Ministry of Finance and Economic Development (MoFED), which is responsible to administer and lead the country's finance and economy, respectively, had been one of the earliest users of ICT among the government offices (Meliket Neway, 1986). Hence, MoFED was one of the first three government organizations which started using computers in Ethiopia in 1967 with the first brand main frame computers that had been rented from IBM Company (Ibid).

For the past 47 years, MoFED has been improving the utilization of ICT applying appropriate ICT technology of each decade passing through heavy set of main frame computers to current sophisticated ICT innovations including video conferencing system. These days, MoFED is one of the heavy users of ICT among government offices as enabler of, finance administration, budget allocation, economy planning, resource mobilization, organizational communication, public relations as well as other organizational activities.

In order to achieve the ministry's Mission, Vision and Goals, MoFED implements organizational communication focusing on ICT as a strategic communication tool (MoFED Strategic Document, 2010). To this end, MoFED had established a well versed IT center equipped with both modern technology and ICT professionals, who are more than 100 in number, working in the IT Center and the Project Office.

The IT Center originally built MoFED's website and currently it is under the supervision of Federal Government Portal which has been administered by the Ministry of Communication and Information Technology. Moreover, the center introduced an electronic mail system called [zimbra@mofed.gov.et](mailto:zimbra@mofed.gov.et) that serves for internal organizational communication. Zimbra is open source software originally used freely in MoFED. Later MoFED bought the enterprise for legal utilization. The IT center technically accomplished configuration activities in creating email account for MoFED employees by dedicating a special server for this email system only.

For effective and efficient utilization of ICT, the IT Center has been running a training center which gives basic computer operational and application systems training to its employees and financial system operating software training to different stake holders who are connected to MoFED with finance administrations, budget allocations and resource mobilizations.

The focus of this study being ICT utilization in organizational communication setting, it is worth to observe here the importance of ICT as a strategic communication tool in MoFED's organizational communication structure. To this effect, ICT has been serving as the center of strategic tool in the ministry's organizational communication in facilitating internal and external communications, public relation and information communication activities and enabling to achieve strategic goals which have significant impact on the nation's growth and development. Out of the top six strategic goals of MoFED, one is about enhancing communication with the

smooth availability and dissemination of information. Moreover, out of the total of 16 main strategic goals portrayed in the strategic mapping of the ministry, three of them deal with information, communication and ICT (MoFED Strategic Document, 2010).

When we look it from organizational culture's point of view, the ministry has a very long and well experienced practice in organizational communication and public relations. MoFED was one of the first eleven ministries established in the modern government structures of Ethiopia in 1907 with the name called "Yegnzebina Yeguada Minster" which roughly means "Ministry of Finance and In house" (Mahiteme Sellassie, 1970). The Ministry with such a 107 years long history, one can imagine that it had passed through a variety of organizational communication trends characterized by the socio economic manner of every regime which ruled the country in the past hundred plus years.

As Servaes (2004) noted, if there are development activities, there are always for sure communication. Based on this understanding, MoFED had gone through various organizational communication approaches before it came to the current ICT era. Therefore, under the study of organizational communication, which is relatively recent field of communication study, exploring the utilization of ICT seems more appropriate from a long organizational history and relatively well organized MoFED's IT Center point of view.

The study of organizational communication mainly deals with leadership, structure, communication networks, team, organizational culture and organizational learning (CommGAP World Bank, 2014). Recently, the study of organizational communication has been incorporating conflict resolution, negotiation, diversity, relationships, working environment, technology and ethics (Lippert and Paynton, 2014). Having observed the various organizational communication study areas, the researcher found communication network worthy of study with respect to looking at ICT utilization in the process of implementing organizational communication in MoFED.

As noted in (Frey and Cissna, 2009) Organizational communication is a good place to begin any discussion of communication technology studies, for it was one of the first areas within the communication discipline where scholars recognized the enormous social and relational implications of ICTs and new media.

(Frey and Cissna, 2009, p.239) further more pointed out that:

The uses of ICTs in organizations was one of the first major research fronts in communication technology studies, mainly because large private and public-sector organizations often were the first entities that could afford to adopt and use the new technologies, including audio and videoconferencing, computer mediated communication (CMC) and collaboration systems, and enhanced telecommunications services.

The studies of communication technologies in organizations focus basically on organizational structure and organizational communication processes in order to find out the effects of ICTs on superior–subordinate relations, information flow within established structures, and the implementation of (or resistance to) structural change (Frey and Cissna, 2009). With the same effect the researcher conducts the study of utilization of ICT in MoFED organizational setting to answer the research questions which are directly related to the new communication technologies.

## **1.2 Statement of the Problem**

In spite of the fact that MoFED is a century long government institution with established organizational communication practices and half a century long ICT applications, there are noticeable problems in ICT utilization from the point of view of implementation and expected output (MoFED Strategic document, 2010). There has been a growing dissatisfaction on the part of MoFED management and especially, from the IT center that the objective of enabling the Ministry to become an ICT friendly organization is still in question.

According to MoFED's five years Strategic document (2010 – 2015), among the main weaknesses of the Ministry are those directly related to ICT and internal organizational communication. The document pointed out that although there is relatively better ICT Center

organized with new technology, the employees of MoFED are not utilizing it to their level best. Moreover, from communication point of view, the document stated the weakness in the internal communication manifested in poor communication networks that go to the extent of being ignorant to the activities of one directorate by other directorates in the same Ministry.

Ethiopia being one of the developing countries which aspires to become middle income nation in 2025 (GTP, 2010) and that gave priority to ICT as industry and enabler of socio economic transformation in its ICT policy is expected to develop the ability and means to exploit it. Uganda's Makerere University scholars, F. F. Tusubira and N. Mulira, who were director and deputy director of Uganda's ICT support directorate and ICT for development experts and advocates respectively argued that developing countries are grappling with the challenges of the digital divide, a divide that denies immediacy of access to information and the ability and means to exploit it for beneficial economic and social use, leading to human development (Tusubira and Mulira, 2004).

(Tusubira and Mulira, 2004) also noted at the organizational level, it is widely accepted that the integration of ICT in organizational functions is necessary for increased efficiency, cost effectiveness, and competitiveness. The tendency unfortunately has been, more often than not, to approach such integration from the technology level, leading to escalating costs without corresponding efficiency gains. This leads to disillusionment, skepticism, and reduced organizational commitment and resources to support ICT services and systems (Ibid).

What the Makerere university scholars pointed out as challenges of ICT utilization in the developing countries and in their organization, is manifested in Ethiopia and MoFED too. When we look at the utilization of different ICT application in MoFED, it has not been exploited to its level best (MoFED ISAC, 2010).

Relatively speaking, MoFED website is well organized and contained basic documents and information about annual budget, economic performance reports, finance administration directives, current news, articles and other finance and economy updates. In spite of all these contents, the website is not frequently visited by its own employees (Ibid).

The IT center's plan to make the Ministry paper free working environment through the utilization of ICT has not been attained (MoFED IT strategic plan, 2010). The trend shows that the predominant formal internal and external communications are letters just as in the past. Even though, MoFED IT center has its own cost for purchasing expensive equipment and monthly payment for 45 mega bit per/sec bandwidth broad band internet service, the ministry keeps on paying for papers, toners and other stationary expenses (MoFED Finance Directorate data, 2015).

These days organizations especially, in developed countries that run paperless offices benefiting in millions dollar annually by avoiding hardcopies and other stationary expenses. Moore, (2001,p.10) cited in Harris and Nelson (2008), stated that the American company GE (General Electronics) expects to save 18 million USD a year by running paper free office just removing the fax machines, desktop printers and copiers that spit out papers.

When we come to the case of MoFED, one can observe fax machines, desktop printers and copiers that spit out of papers in every departments and offices in spite of fully fledged ICT equipments which enable computer mediated communication that could successfully replace the aforementioned machines which are very expensive for a country like ours.

Another important issue worth mentioning is the abuse and misuse of ICT in MoFED. In order to alleviate this problem and to manage ICT resource properly, the IT center formulated ICT policy for a proper utilization of ICT (MoFED ICT Policy, 2011). The ICT policy even went to the extent of warning to exact punishment on those who engaged in abusing and misusing this public property. Yet, there is paucity of research (to the knowledge of this researcher) that has attempted systematically to address this problem. Thus, this study aims at filling this gap by examining the practice of ICT in MoFED.

The aforementioned problems in MoFED's ICT utilization are some of the real concerns which should be addressed so that the meager income of the nation could be properly utilized for the intended purpose in government ministries like MoFED. Failing to serve the purpose in ICT implementation in organization setting leads to what (Tusubira and Mulira, 2004, p.1) stated as imbalance between heavy investment and corresponding gain. They Stated "Implementation of information and communication technology (ICT) services and systems in organizations

generally pose a lot of challenges that, if not properly addressed, lead to heavy investment without the corresponding organizational efficiency gains.”

ICT utilization from infrastructure development and coverage point of view is in an infant level when we compare the Ethiopian status even from sub-Saharan standard (Adam, 2010). However, it would be a basic tool for the smooth operation the most advantageous if humanware, hardware and software are sufficiently provided and well integrated for the proper function organizations in Ethiopia (Gebeyehu, 2011)

### **1.3 Objective of the Study**

The general objective of this study is to investigate the practice of ICT utilization as a strategic communication tool in MoFED organizational communication structure.

#### **1.3.1 Specific Objectives**

The specific objectives of the study were to:

- Examine the utilization of electronic mail versus paper mail (memo) in MoFED organizational communication
- Explore MoFED’s website from organizational communication point of view
- Investigate the impact of MoFED’s IT policy in achieving proper use of ICT
- Analyze the deployment of ICT in realizing MoFED’s public relations and communication activities

### **1.4 Research Questions**

The study attempts to answer to the following questions

- What does the utilization of electro mail versus paper mail look like in MoFED organizational communication?
- How is MoFED website put to use by employees?
- How does MoFED’s IT policy impact the proper utilization of ICT?
- How ICT is deployed in MoFED for public relations activities?

## 1.5 Significance of the study

The significance of the study can be viewed from the significance of MoFED itself in relation to other Federal Government Ministries, institutions, development partners, bilateral and multilateral groups and regional offices. MoFED is highly associated with the above mentioned entities in relation to public finance administration, resource mobilization and economic leadership. Thus, MoFED is directly or indirectly connected or related to 1500 bodies in the country including 948 woredas all over the nation (MoFED Strategic document, 2010).

Currently, MoFED is responsible to manage and administer the budget of 167 federal budgetary ministries, organizations and institutions all over the country. For instance, the 2007 Ethiopian fiscal year budget is 178.6 billion birr (MoFED Budget Proclamation, 2014). In order to administer this public finance, MoFED must communicate to those federal budgetary entities which are frequently connected and related to the budget allocator (MoFED) in program budget implementation and performance reporting.

From economic planning, leadership and coordination point of view, MoFED has been playing significant role. The Growth and Transformation Plan (GTP) has been conducted by MoFED for the past five years. Moreover, important national strategic plans, projects and programs like the Millennium Development Goals (MDGs) and Climate Resilient Green Economy (CRGE) are being implemented by the Ministry too.

These all national financial and economic development activities have direct impact on the social, economic and political life of the whole society at large. MoFED, which is responsible in leading and implementing the nation's financial and economic activities, utilizes ICT in its organizational communication to undertake these giant activities that have direct influence on the society. With the same logic, the significant of this study is directly or indirectly related to the significant of MoFED itself.

Therefore, studying the practice of ICT utilization as a strategic communication tool in MoFED's organizational communication is significant in line with MoFED's roles to the Federal Government Ministries and the impact it has on the society. Thus, the research findings would be significant not only to MoFED but also to other Federal Ministries, organizations and regional

bureaus to look at their own problems based on the findings of this research. Moreover, it may help for those who would be interested to conduct similar study in other organization settings in the future.

### **1.6 Scope of the Study**

The scope of the research, in the first place, dwells in internal organizational communication. Basically, the ICT utilization will be discussed from MoFED'S internal organizational communication point of view. Therefore, the main ICT components namely electronic mail, website and ICT policy will be discussed in relation to their utilization as strategic communication tool in the internal organizational communication platform.

It is obvious that ICT is a strategic communication tool in the current era. So, when we talk about organizational communication, one needs to focus on ICT as an enabler of socio-economic transformation. Therefore, the scope of the research is limited to the above mentioned ICT tools in assessing the practice of ICT utilization in MoFED organizational communication setting. Thus, the study primarily will look at the practice of ICT in the internal organizational communication of MoFED.

### **1.7 Limitation of the Study**

In regard to limitation of the study, two important points can be mentioned. The first is that the research is limited to the study of few aspects of ICT practice in MoFED namely, electronic mail, website and ICT policy while ICT is incorporating a variety of items, characters and applications.

The second limitation of the research is that it only focuses on internal organizational communication while organizational communication consist both the internal and external organizational communication.

## **1.8 Organization of the Thesis**

Chapter one presents the introduction part of the study namely back ground of the study, statement of the problem, objective and research questions of the study. Moreover, briefly it incorporates the research methodology, the significant, the scope and limitation of the study.

Chapter two deals with the related literature on the subject area and Chapter three focuses on the research design and methodology in detail. Chapter four is the main part of the study which presents and discusses the finding or the result of the research. The conclusion and recommendation is presented in the final chapter.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Overview of Organizational Communication

It is worth saying a few words about the term organization before discussing organizational communication. The meaning of organization varies from the simple definition of “consciously coordinated social unit composed of two or more people, that functions on a relatively continuous basis to achieve a common goal or set of goals” (Robbins, 2001) to a more complex definition of “Organizations are complicated, dynamic organisms that take on a personality and culture all their own which can be thought of as systems of people who are in constant motion in which change is inevitable” (Goldhaber, 1993).

Organizations are so pervasive in today’s society that people born in organizations, educated by organizations, and most of them spend much of their lives working for organizations (Etzioni, 1964). Such entities which have paramount impact in every aspect of people’s live from birth to death have become important in communication studies.

When it was discussed about organization it was originally meant corporations, manufacturing plants, the service industries, and for businesses. However, nowadays organizations also include not-for-profit companies, schools, government agencies, small businesses, and social or charitable agencies such as churches or a local humane society (Hahn, Lippert, &Paynton, 2011).

Societies organize together to achieve what they cannot accomplish individually. People organize together for common social, personal, political, or professional purposes. The organizing process happens through communication. Here, organizational communication appears in it full importance and functions.

The same with organization definitions, there are various organizational communication definitions in communication studies. Moreover, the definitions differ based on the school of thoughts or paradigms that each study focused on. Accordingly, while the functionalist define organizational communication as “the sending and receiving of messages among interrelated individuals within a particular environment or setting to achieve individual and common goals”

the interpretivists define organizational communication, as “meaning generation process of interaction that creates, maintains, and changes the organization” (Wayne and Don,1994).

Organizational communication is highly contextual and culturally dependent, and it is not an isolated phenomenon. According to Goldhaber (1990) organizational communication:

- Occurs within a complex open system which is influenced by, and influences its internal and external environments,
- Involves messages and their flow, purpose, direction, and media,
- Involves people and their attitudes, feelings, relationships, and skills.

Organizational communication is highly diverse and fragmented that it incorporates different patterns and functions which can be explained in levels and forms. Thus, organizational communication engages levels, formal versus informal patterns, direction (vertical, horizontal, diagonal) and internal versus external focus (Baker, 2002). Levels refer interpersonal, group, organizational and inter-organizational communication levels while formal and informal communication portray the established communication structure and the non-formal communication channels, respectively (Ibid). Moreover, the organizational communication flow or directions namely, vertical, horizontal, diagonal and the internal versus external communications which deal about internal employees and external stock holders or customers are the significant aspects of organizational communication.

The key functions of organizational communication in most cases revolve around informing, directing, regulating, socializing, and persuading the receiver knowledge or behavior. (Neher, 1997) identifies the primary functions of organizational communication as:

- Compliance-gaining
- Leading, motivating, and influencing
- Sense-making
- Problem-solving and decision-making
- Conflict management, negotiating, and bargaining.

Furthermore, organizational communication helps to

- Accomplish tasks relating to specific roles and responsibilities of sales, services, and production;
- Acclimate to changes through individual and organizational creativity and adaptation;
- Complete tasks through the maintenance of policy, procedures, or regulations that support daily and continuous operations;
- Develop relationships where “human messages are directed at people within the organization-their attitudes, morale, satisfaction, and fulfillment” (Goldhaber,1990,)

Therefore, organizations rely on communication to cope with uncertainty and perform with some degree of effectiveness (Katz & Kahn, 1978). These days, organizational communication is very crucial that the existence of a given organization depends on effective organizational communication. Communication, especially effective oral and written communication is mainly required after skills by organizations. The importance of communication to organization best expressed with the quote “Without communication, there can be no organization” (Simon, 1957).

In spite of the fact that organizational communication is vital for the existence of an organization, it only emerged as a new field of communication studies in late twenty century (Redding and Thompkins, 1988). Redding and Thompkins identify three periods in the development of organizational communication. These are Era of Preparation, Era of Identification and Consolidation and Era of Maturity and Innovation.

During Era of Preparation (1900 - 1940), much of the groundwork was laid for the discipline that is known today. Scholars emphasized the importance of communication in organizations. The primary focus during this time was on public address, business writing, managerial communication, and persuasion.

At the Era of Identification and Consolidation (1940 - 1970) saw the beginnings of business and industrial communication, with certain group and organizational relationships being recognized as important.

During the last era, which is the Era of Maturity and Innovation (1970 - present), empirical research increased, accompanied by innovative efforts to develop concepts, theoretical premises, and philosophical critiques.

One can observe how important effective communication is to any organization. The dynamic change occurring in organization happens in communication which is an ongoing, coactive process between individuals, groups, and systems. Organizational communication is so important to any organization big or small. Its impact has been significant to the extent determining the very existence of the entities.

(Larkin & Larkin, 1996) cited in (Harris and Nelson, 2008, p.12) quoted the importance of effective organizational communication referring US CEOs: “Chief Executive Officers (CEOs) of 531 U.S. organizations that had recently undergone change efforts were asked to identify one thing they would change about their efforts. Overwhelmingly, they pointed to the communication process”

Moreover, organizations listed in “The 100 Best Companies to Work for in 2006” in US see effective two-way communication as an underpinning to employees’ motivation and the organizations’ success (Colvin, 2006).

### **2.1.1 Organizational Communication Directions**

Organizational communication directions or flows are highly related to organizational structures which determine the information channels that direct one way, two ways or multiple ways information flows. A number of organizational communication books and studies pointed out that in most cases organizational communication directions are categorized in to major sub divisions of vertical, horizontal and diagonal directions or information flows (Harris and Nelson, et. al, 2008).

(Greenberg, 1988, p.319) elaborates how organizational structure influence information flows: “The link between organizational structure and communication is a very basic and important one. Simply put, an organization’s structure dictates who can or must communicate with whom. An organization’s lines of authority show the path ways through which messages have to flow within organizations.”

### **Vertical Communication**

Vertical communication occurs between hierarchically positioned organizations or persons and can involve both downward and upward communication flows (Baker, 2002). The downward and upward communication flows are the most dominant organizational communication directions that serve as the established communication channels which deliver information flow from the top management to the lower level and the vice versa, respectively (Griffin & Moorhead, 2014).

Downward communication is characterized by transmission of job instruction and rational, procedure and practice, indoctrination of goals and collecting feedback (Ibid). Downward communication is most effective if top managers communicate directly with immediate supervisors and immediate supervisors communicate with their staff (Larkin and Larkin, 1994). In this direction of communication, managers and supervisors may employ effective communication utilizing oral, written, visual or combined channels taking the consideration of availability, cost, impact, relevance, response and skill of the employees and the organizational environment.

As it is acknowledged in (Katz & Kahn, 1978) the five most prevalent downward communication functions are:

- Giving job instructions
- Providing job rationales
- Explaining procedures, policies, and practices
- Furnishing performance feedback and
- Transmitting information regarding the organization’s mission and goals

When we come to upward communication, it is a type of communication incorporates most of information flow from the lower levels to the upper levels. The upward communication is the reverse of downward communication which employs the upstream information flow from the lower level of organizational ladder to the highest level. The request of information, seeking of comment, information sharing and related information flows from subordinate to upper management are categorized with upward communications (Griffin & Moorhead, 2014).

According to (Katz & Kahn, 1978) functions of upward communication are providing four types of messages. They are suggestions, information about what subordinates are doing, issues of unsolved work problems and general information how subordinates feel about each other and the job.

Comparing to downward communication, upward communication is not prevalent and even less is known about upward communication. Employees' satisfaction with upward communication tends to be lower than their satisfaction with downward communication (Baker, 2002).

(McCelland, 1975) found a number of employee-based reasons why upward communication tends to be poor, including:

- Fear of reprisal - people are afraid to speak their minds
- Filters - employees feel their ideas/concerns are modified as they get transmitted upward
- Time – managers give the impression that they don't have the time to listen to employees

### **Horizontal (Lateral) Communication**

As the name indicates, horizontal communication refers information flows between parallel situated employees or managers in a flat structure. It involves communication among persons who do not stand in hierarchical relation to one another. Recent trends to flatten organizations have enhanced the importance of lateral communications (Baker, 2002). Lateral communications between employees in different functional areas is also becoming a bigger concern as greater attention is being directed at increasing the speed of production and service delivery through

simultaneous, work processes in an attempt to promote learning and the sharing of expertise, best practices, and lessons learned (Ibid).

Horizontal communication which is happening in most case between the same or equivalent authority is favorite in the lower level of organizational structure where coordinating, problem solving, information exchanging and conflict resolutions are very important (Lunenburg, 2010).

Moreover, horizontal communication is a positive feature in many cases for getting the work done effectively. Teamwork, cross-functional work units, tough works, interdepartmental cooperation, and just getting the right people together to solve problems are all examples of horizontal communication (Harris and Nelson, 2008). In general, horizontal communication accomplishes five functions namely coordination, problem solving, information sharing, conflict resolution, and building rapport (Ibid).

The benefit of lateral communication best expressed in (Harris and Nelson, 2008 p.215) as follows: “Allows people at the same level to communicate regarding ongoing issues and increases their ability to resolve potential conflicts. The cooperation increases job satisfaction and can increase efficiency because issues can be resolved at the level they occur.”

### **Diagonal Communication**

Diagonal communication refers to communication between managers and workers located in different functional divisions (Larsen, Vazov, Krumov, and Schneider, 2013). The concept of diagonal communication was introduced to capture the new communication challenges associated with new organizational forms, such as project-based organizations. Also, with the rise of the network organizations, communication flows can no longer be restricted to vertical and horizontal only (Ibid)

Diagonal communication can be functional in organization like MoFED where several national programs and projects have been undertaken. In this regard, a State Minister or a Director of MoFED can diagonally communicate to a coordinator or an expert working in a particular program or project.

## **Grapevine Communication**

Grapevine communication is the flow of messages which are basically known as ‘water-cooler talk’ such as gossip and rumor that travel through an organization with no apparent structure or clear direction (Fisher, 2005). Grapevine is one of the most important information channels where people get unofficial but important information. One survey indicated that 63% of U.S. employees get all or most of their information about their companies from ‘water-cooler talk’ (Ibid).

The grapevine travels in all directions and operates overtly and covertly. First, the grapevine serves as an indicator providing vital feedback to management regarding the organization and its employees. Second, the grapevine functions as an important message source (Harris and Nelson, 2008). According to Harris and Nelson, the grapevine is most active when

- There is great upheaval or change within the organization,
- The information is new,
- Face-to-face communication is relatively easy, and
- Workers cluster along the vine.

Finally, the grapevine provides sense-making information to members of the organization (Ibid).

In spite of the fact that grapevine communication is informal communication and invisible in organizational structure, it has great influence and prevalence in a country like Ethiopia where transparency and accountability is at the enfant stage and secrecy is part of the culture. Thus, paying attention to this form of communication is helpful to understand the real communication environment in an organization.

To sum up, in most organizations, communication directions and channels are the methods used for exchanging messages, information, meaning, and connecting. Communication directions represent the regularized communication interactions. Except the grapevine, communication channels, the downward, upward, horizontal and diagonal communications are the legitimate means of communication in an organization.

### **2.1.2 Organizational Communication Barriers**

The human communication process includes sources and receivers, message encoding and decoding, channels, noise, communicative competence, participant fields of experience, contexts, and effects (Shockley-Zalabak, 2006). These elements are the bases of effective communication and the failure of one of the element especial the occurrence of noise, which is the distortion or interference that contributes to discrepancies between the meaning intended by the source and the meaning assigned by the receiver, cause misunderstanding, which could result communication failure (Ibid)

Organizational communication barriers can be classified in three major sub division namely, structural barriers, the intrapersonal barrier and the interpersonal barrier (Guirdham, 2005). These major sub division barriers incorporated various communication terms or elements such as filtering, selective perception, information overload, emotions, language, silence, communication apprehension and lying (Robbins& Judge, 2005).

When we look at the structural barriers in organization where hierarchical structure is dominant, the status difference is inevitable and this positional difference for sure would bring communication barriers manifested by the closeness of the lower level employees in order to avoid judgment by their supervisors. Moreover, group language such as technical terms and jargons among the specialized groups cause communication barrier in an organization structure (Champoux, 2011)

Filtering, which refers to a sender's purposely manipulating information so the receiver will see it more favorably is a structural communication barrier in organization's vertical levels hierarchy, where there are status differences (Robbins & Judge, 2005). Factors such as fear of conveying bad news and the desire to please the boss often lead employees to tell their superiors what they think they want to hear. With the same as filtering, silence is another type of structural communication barrier. Silence and withholding communication are problematic especially, in relation to serious issues such as discrimination, harassment, corruption, and misconduct that means top management cannot take action to eliminate this behavior. Finally, employees who are silent about important issues may also experience psychological stress (Ibid)

The intrapersonal communication barrier in the other hand happens due to individual personality, knowledge level, and psychological makeup in an organization (Guirdham, 2005). People may interpret the same message differently when they are angry or upset than when they are happy. Most people in negative moods are more likely to scrutinize messages in greater detail; whereas those in positive moods tend to accept communications at face value (Robbins & Judge, 2005).

Outright misrepresentation of information or lying which is highly associated with one's personality and psychological makeup is the most prevalent intrapersonal communication barrier in organization. In one study, the average person reported telling one to two lies per day, with some individuals telling considerably more (Robbins & Judge, 2005: p.355). In a large organization, this is an enormous amount of deception happening every single day. Evidence also shows that people are more comfortable lying over the phone than face-to-face and more comfortable lying in e-mails than when they have to write with pen and paper. (Ibid)

The interpersonal communication barrier in organization is another type of communication barrier could be associated with interpersonal attitudes like selective perception which appears in the communication process when the receivers selectively see and hear based on their needs, motivations, experience, background, and other personal characteristics (Guirdham, 2005). Trust and credibility are key concepts in interpersonal communication that affect and influence the whole communication process that may result in communication failure whenever trust and credibility are in questions.

Communication apprehension is another type of barrier and 5 to 20 percent of the population suffers debilitating communication apprehension, or social anxiety (Robbins & Judge, 2005). These people experience undue tension and anxiety in oral communication, written communication, or both. They may find it extremely difficult to talk with others face-to-face or may become extremely anxious when they have to use the phone (Ibid).

In the interpersonal communication barrier the physical and physiological hindrance could be mentioned as a real problem when the internet connection is lost, telephone cable is defective and communication devices are working poorly (Lunenburg: 2010). Physiological barriers like

hearing and eye impairment as well as inconvenient temperature of the environment can cause communication failure.

### **2.1.3 Effective Organizational Communication**

“Organizations cannot operate effectively without effective communication.” (Henderson, 2003 P.467). Effective communication is a very crucial component for the life of an organization in today’s tough and cut-throat competition era where survival of the fittest is the rule of the game. Moreover, as (Barnard, 1938) noted - the first executive function is to develop and maintain a system of effective communication.

Effective communication is both a primary perspective for understanding how organizations function and a guide for how we should behave in organizations if we are to advance and enjoy our careers (Champoux 2011). Organizing and communicating involve ongoing changes. Change is an inevitable phenomenon in organizations, and effective communication is a central process in planning and implementing change.

Organizational communication is effective when the messages (facts, ideas, feelings, attitudes, opinions and figures) are understood and shared to organization sub-systems and to the total system and act upon it accordingly in a continuous and comprehensive manner (Griffin & Moorhead, 2014)

Starting from Mathematical Communication Model (Shannon and Weaver, 1949), to Shannon (1950) Information Theory of 5 basic mechanistic communication elements, to David K Berlo’s Basic Process Theory of nine communication components (Source, encoder, message, channel, receiver, decoder, meaning, feedback and noise) to Harold Lasswell Model (1948) of four basic questions ( who? what? whom? which?) to more advanced interpersonal/interactional circular or cyclical model, which introduce feedback element, played significant role in making communication process more functional and effective (Fiske, 1990).

Wilbur Schramm’s basic essentials for effective communication have importance even in today’s communication atmosphere:

- It must be so designed and delivered so as to gain the attention of the receiver.
- It must use signals that are understood in the same way by the source and receiver.
- It must arouse a need in the receiver and suggest some way to satisfy those needs appropriate to the receiver's group situation when moved to make a desired response

Moreover, the concepts of the seven C's of communications namely credibility, context, content, clarity, continuity and consistency, and capability still contribute for effective communication. Effective organizational communication bases itself on the very objective of communication namely human relation that means promoting mutual understanding, information giving and taking, discouraging misinformation, influencing the behavior of the recipient, free exchange of information, fostering better relations and fostering attitude - motivation, cooperation and job satisfaction.

The issue of effective organizational communication has been the focus of interest throughout the whole of the 20<sup>th</sup> century and continued to 21<sup>st</sup> century even more influenced by current socioeconomic, global and digital environment. Currently, more than 75% of the jobs in the United States are service related jobs accounting for well over half the United States gross domestic product (Harris and Nelson, 2008). Service means individuals are not engaged in making a product but instead they are providing services ranging from medical care to fast food restaurants. The shift away from a manufacturing-based economy means work is replacing manual labor. When knowledge and service take the socioeconomic arena, effective communication appears as crucial element in the life of individuals and organizations (Ibid).

In addition to the service sector taking the lion share of the socioeconomic activity, the digital revolution, the diversity within and between organizations and in every walk of life including gender, ethnic origin, age, and many other factors demanded effective communication as inevitable strategic tool.

Clifford Geertz & Michael Pacanowsky in their article "Cultural Approach to Organizations" (Griffin, 2012, p.262) stated the importance of culture to an organization as follow: "Organizational culture is not just another piece of the puzzle; it is the puzzle. From our point of

view, culture is not something an organization has; a culture is something an organization is.” With the same logic, one could say: “effective communication is not something an organization has; effective communication is something an organization is”.

These days, effective organizational communication developed in to a competency based approach where organizational excellence, which is the ability of people to work together and utilize technology for the creative solving of increasingly complex problems, is based on effective communication (Shockley-Zalabak, 2006).

According to (Shockley-Zalabak, 2006) communication competency is composed of knowledge, sensitivity, skills, and values. Competence arises from interaction of theory, practice, and analysis. He further elaborated the four key terms (competency) as follows:

- Knowledge competency - ability to understand the organizational communication environment.
- Sensitivity competency - ability to sense organizational meanings and feelings accurately.
- Skills competency - ability to analyze organizational situations accurately and to initiate and consume organizational messages effectively.
- Values competency - importance of taking responsibility for effective communication, thereby contributing to organizational excellence.

Moreover, Zalabak’s statements (Shockley-Zalabak, 2006:p.4) about effective communication is worth quoting here:

In this complex and information-rich society, the key to organizational excellence is effective communication. Communication systems within organizations - both human and technological – are responsible for solving increasingly complex problems creatively. People using the machines of the communications era must

coordinate large volumes of information for the performance of new and dynamic tasks

When we look it from theoretical point of view, we come across some communication scholars who associate media richness theory which is one of the most fully articulated channel-based theories, with effective communication (Frey and Cissna, 2009). Media richness and media appropriateness theories hypothesize that some systems are more suitable for certain types of communication than others, depending on their bandwidth and predict that effective communicators will match the channel they choose with the degree of richness required for a particular message (Ibid).

## **2.2 ICT and Organizational Communication**

The digital age, which brought massive growth in electronic communication, has created a revolution easily as great as the industrial revolution that began in the late 1800s, and the impact on organizational communication was immense (Harris and Nelson, 2008). The technology of information, or infotech, makes knowledge a vital commodity requiring the effective utilization of the distinctly human elements of an organization such as communication, culture, and leadership (Ibid)

In order to begin any discussion of communication technology studies, organizational communication is an ideal place because it was one of the first areas within the communication discipline where scholars recognized the enormous social and relational implications of ICT (Frey and Cissna, 2009). The utilization of ICTs in organizations has been the major research area in communication technology studies, mainly because private and public organizations often are the primary entities that could afford and use the new technologies.

Thus, these days electronic communications or computer mediated communication (CMC) such as e-mail, text messaging, networking software, blogs, and video conferencing became indispensable and in about 71 percent of cases, the primary medium of communication in today's organizations is electronic (Robbins & Judge, 2013).

Such a huge utilization of ICT by organizations resulted in flatten corporate pyramids, change the competitive picture, redraw communication channels, and alter the traditional path ways for success. Moreover, it changed the lifelong tradition and practice of communication tools for instance, electronic communication channels are overtaking memos and other written formats. ICTs are changing organization at a rate unforeseen only a few years ago and the question is no longer do organizations want to change, but how quickly can effective changes be inaugurated (Harris and Nelson, 2008).

Information rich industries are creating a demand for knowledge workers and transforming the world economy from a dependence on manufacturing to services and technology-based organizations (Griffin & Moorhead, 2014). Knowledge workers require continued training to keep their skills from becoming outdated.

In his book “Fundamentals of Organizational Communication: Knowledge, Sensitivity, Skills, Values” (Shockley-Zalabak, 2006:p.3) stated the essence of information society in information rich industries and service delivery sectors in the digital age as follows: “Information society is an environment in which more jobs create, process, or distribute information than directly produce goods. The environment is characterized by mass production of information, which requires the constant learning of new activities and processes.”

With the advent of ICT becoming pervasive and the information society has been dominating the current organizational environment, studies of communication technologies in organizations emphasis on communication technologies and organizing has shifted toward a view of technological systems, organizational structure, and action as mutually determining (Frey and Cissna, 2009). The interplay among ICTs, people, and organizational structures allows people in organizations to construct their own definitions and uses of technology.

ICT highly assisted organizational transformation from a manufacturing-based to knowledge and service based information society as (Boyett & Boyett, 1998,) cited in (Harris and Nelson, 2008:p.5) noted: “The shift away from a manufacturing-based economy means that knowledge and service work is replacing manual labor. In 1990, 1 out of 5 workers in USA were employed

in manual labor. By 2010, no more than 1 in 10 workers will be engaged in making or moving things”

These days, the interplay among ICTs, people, and organizational structures played significant role in downsizing, which is purposely becoming smaller by reducing the size of the workforce or shedding entire divisions or businesses and mergers and purchases of organizations. Moreover, globalization and diversity in gender, ethnic origin, age, and many other factors accelerated the utilization and importance of ICT in organization and organizational communication (Frey and Cissna, 2009).

The information rich organizations characterized by knowledge workers fostered by rapid change, globalization, and the digital age favor workers who excel in manipulating information and solving problems and thus the digital age, change, and diversity underscore the importance of understanding organizational communication.

In spite of the fact that ICT positively affect organizations, the interplay was not without any challenges especially from information management point of view. Organizations all have more information at their disposal than ever. It brings them many benefits but also two important challenges: information overload and threats to information security (Robbins & Judge, 2013). In order to withstand these challenges organizations formulate ICT policies that help them govern the information management control system that went to the extent to supervise employees' blogs and email account. (Shawn Smith's article E-mail in the Workplace: Avoiding legal landmines, <http://www.mediate.com/articles/smith.cfm>)

The earlier organizational communication study area of communication technologies mainly focused on organizational structure and phenomena of ICTs in organizations. These studies addressed structural consequences such as the effects of ICTs on superior - subordinate relations, information flow within established structures, and the implementation of (or resistance to) structural change (Frey and Cissna, 2009). In the current digital age, due to the versatile nature of ICT and its impact on organizations, the focus of the studies have been changed in to the examination of the influence of ICTs on organizational communication processes (Ibid).

### 2.2.1 ICT in Organizations

The pervasiveness of ICT in today's organizations has become so common that most day to day activities of organizations are unthinkable without it. As it was clearly stated in (Robbins & Judge, 2013) nowadays, computer mediated communication (CMC) namely email, text messaging, networking software, blogs, and video conferencing became an indispensable to knowledge workers or organizations.

Peter Hartley, in his book "Interpersonal Communication Second edition" (Hartley, 1999:p. 225), stated this fact as follow:

Two years ago, I used to walk into my office each morning, check the answer phone (which was often full of messages) and look through the pile of memos and notes which would be sitting in my in-tray. Today, I walk in and find at most a couple of messages on the answer phone and probably no written memos. Email is now the dominant channel for messages across my organization and can vary from literally a couple of words to several screens of text.

As (Levitt & Mahowald, 2002) cited in (Harris and Nelson, 2008) e-mail usage is on the rise. In 2002, 31 billion e-mail messages were sent daily - that number was expected to increase to 60 billion in 2006. If e-mail usage almost double in four years, then in ten years' time (that mean in 2015) one may imagine it will triple. Moreover, with ICT development, traditional organizational sources of information such as file cabinets, memos, minutes, and face-to-face meetings will diminish in importance as they are replaced by advances in communication technology. That means word processing replaces typing; e-mail replaces memos; cell phones replace land lines (Ibid).

In the digital age, information is a competitive tool that can be used effectively through information technologies (Holmes, 2005). In addition to ICT's support in making information competitive tool and transforming traditional source of information in to digital nature, its contribution to group work known as groupware became paramount.

ICT's support to groupware or for the development of collaboration was noted in (Baker, 2002, p.11) as follow:

The most notable advances in communication technology are groupware or computer facilitated group communication technologies. Groupware are distinguished in terms of temporal (synchronous/asynchronous) and spatial (distributed/co-located). These communication technologies can help traditional organizational groups work together more effectively. But, more importantly, they help dispersed individuals work as a team.

The new information technology impact on organizational communication is multifaceted. However, three main duties that place the impact of new technology on organizations are worth mentioning (Harris and Nelson, 2008).

- First, technology always has a major impact on organizations.
- Second, organizations are in the middle of massive changes and turbulent times
- Third, organizations and individuals must move from using the technologies simply as a means for improving current activities to developing improved information gathering and utilizing procedures.

The interplay among ICTs, people, and organizations involves interlinked phenomena and interactions that require flexible, learning organizations which continuously change and solve problems through interconnected coordinated self-organizing processes that can be manifested by the whole communication process as (Holmes, 2005: p. 3) pointed out: "Communication does not happen in a vacuum, nor does it happen in homogeneous contexts or simply by dint of the features of a natural language, but in architectural, urban, technically and socially shaped ways."

## **Types of Information Systems in Organizations**

There are five types of information systems concerning utilization of ICT in organization: These are communication, operational, control, decision support, and inter organizational information systems (Harris and Nelson, 2008). Let's see them in brief:

- **Communication Systems** - communication systems are designed to enhance human communication; computer-mediated communication systems (CMCS)
- **Operational Systems** - operational systems help with the structural aspects of work.
- **Control Systems** - control systems, using data collection and entry, monitor and evaluate organizational performance.
- **Decision Support Systems** - decision support systems (DDS) operate as extensions of the planning and decision-making processes. (Group supports systems (GSS) are various types of groupware used to enhance the team process.)
- **Inter organizational Systems** – inter organizational systems link different organizations.

Let's see communication information system further more because it is highly related to the sub topic of "ICT in Organization". It is a cornerstone to the activities of knowledge workers in the information age and the office of the future. CMCS (computer mediated communication systems) change the type of information people receive, overcome temporal and geographical barriers for the information exchange, and break down hierarchical and departmental barriers, standard operating procedures, and organizational norms.

In (Harris and Nelson, 2008: P.381) CMCS are comprehensively noted:

Voice messaging, e-mail, videoconferences, and integrated systems are all examples of CMCS. E-mail has extended our ideas of what we define as active communication. It is remarkably popular because we can write, edit, store and send on our own timetable. Because it is asynchronous, meaning the messages can be sent and received at different times, no coordination of face-to-face

communication is needed. It works well when the messages are well defined, such as giving instructions, and it increases the likelihood for upward communication.

In his book “Communication Theory Media, Technology, Society” (Holmes, 2005, P.4) pointed out with the advent of ‘second media age’ that mean the new information technology, the communication medium became so interactive than the ‘first media age’ means broadcast media. Holmes noted:

It was in the final decade of the twentieth century that the emergence of global interactive technologies, exemplified by the internet, in the everyday sphere of advanced capitalist nations dramatically transformed the nature and scope of communication mediums. These transformations heralded the declaration of a ‘second media age’, which is seen as a departure from the dominance of broadcast forms of media such as radio and television. Significantly, the heralding of a second media age is almost exclusively based on the rise of interactive media, most especially the internet.

One already could observe the impact of ICT on organizations. The following table shows the implication (benefits and challenges) of information communication technology on organizations, leaders, and organizational members.

**Table 1 - The Implication of ICT on Organizations**

Entities	ICT Implication	
	Benefits	Challenges
Organizations	<ul style="list-style-type: none"> <li>• Improves Coordination and Productivity</li> <li>• Flattens the Organization</li> </ul>	<ul style="list-style-type: none"> <li>• Organizational Structures Must Change</li> </ul>
Leaders	<ul style="list-style-type: none"> <li>• Increases Influence</li> <li>• Increases Accessibility</li> </ul>	<ul style="list-style-type: none"> <li>• Greater Accountability</li> <li>• Competency Development</li> </ul>
Organizational Members	<ul style="list-style-type: none"> <li>• Improves Communication</li> <li>• Increases Participation</li> </ul>	<ul style="list-style-type: none"> <li>• Decreases Personal Knowledge Confidence</li> <li>• Difficult to Escape Work</li> </ul>

The new communication technologies are having a major impact on organizations and society. Mechanization, automation, and information technology represent the phases in the introduction of technology into organizations. Changes in general and changes through ICT in particular are inevitable. How we respond to the change is the critical issue (Harris and Nelson, 2008).

### **2.2.2 Technology Determinism and Social Constructivism**

Technology use in organizations is one of the focus areas in organizational communication study. The two dominant study areas regarding technology use in organization focus on the relationship between technology use and an organization's formal and informal structure and

how use of a newly implemented information and communication technology shapes the way people communicate with one another within and across organizations (Rice & Leonardi,2013).

The terms technology determinism and social constructivism are widely used in organizational communication study that primarily focus on technology use in organizations including information communication technology usage. The two terms were well expressed in (Rice & Leonardi, 2013, p.425) as follows:

Technological determinism is the belief that the introduction of certain types of technologies (typically manufacturing or operational systems) directly causes certain kinds of outcomes, such as the centralization of an organization's decision making or the widening of its span of control. Social constructivism holds that both the meanings of and outcomes involving technology are shaped or mediated by the social contexts and interactions into which the new technology is implemented.

From the 1960s to the mid-1980s, numerous studies suggested technologically deterministic views about the relationship between technology use and effective communication. These studies suggested that certain types of information and communicative needs required particular kinds of media if they were to be effective (Daft & Lengel, 1986).

By the late 1980s and early 1990s the pendulum swung toward the constructivist pole as studies showed how choices about what technologies to use for which communication activities were often the products of social negotiations and influence, and subject to socially defined rubrics (Fulk & Steinfield, 1990).

Different communication technologies provide different capabilities for communication, and that the value of these capabilities as they relate to communication effectiveness is a social construct (Fulk, 1993). Even though the two perspectives have their own differences they have also similarities because both the perspectives largely focus on the influences, implementation, processes, contexts, use, and outcomes associated with information and communication technology.

ICTs use in organizations became broad, diverse, and inter-related within and across disciplines in the 21st century and the concepts of technology determinism and social constructivism predominantly focused on three organizational communications disciplines namely, communication, information systems, and management (Rice & Leonardi, 2013).

### **2.2.3 Communication Networks**

Communication networks are the patterns of contact that are created by the flow of messages among communicators through time and space where the concept of message be represented in its broadest sense to refer to data, information, knowledge, images, symbols and any other symbolic forms that can move from one point in a network to another or can be co-created by network members (Monge & Contractor, 2003). The interest in communication and information networks spans the social sciences, including sociology, psychology, history, political science, organization science, and economics as well as the physical and life sciences. As (Castells, 2010) has so comprehensively elucidated, we are now living in the age of the network society.

Networks, in general, are structural configurations that emerge when sets of relations are applied to sets of entities which are typically called nodes, points, or elements and relations are called links or ties (Monge & Margolin, 2001). Communication networks reflect patterns based on message and information flow relations among the elements of the network, thereby creating the information infrastructure on which all organizations and societies depend. These networks take many forms in contemporary organizations, including personal contact networks, flows of information within and between groups, strategic alliances among firms, and global network organizations (Ibid).

Network configurations that occur across a large number of organizations are called network forms, and organizations that share a common network form are viewed as a population. Historically, organizational communication focused almost exclusively on nodes defined as people who were members of specific organizations (Monge & Contractor, 2003). Communication networks and the organizational forms of the 21st century are undergoing rapid and dramatic changes by spectacular advances and convergences in computer and

communication technology and by the collective economic, political, societal, cultural, and communicative processes collectively known as globalization (Fulk & Steinfield, 1990).

The study of networks tends to pursue one of the two general research questions:

- Why are particular networks configured as they are? and
- What are the effects of different network configurations on the people who comprise them, the performance of the institutions which contain them, and the fitness and survival of the larger organizational communities in which they operate? (Monge & Margolin, 2001)

Key to the changing organizational landscape is the emergence of network forms of organization as an integral part of the co evolution of the new network society (Castells, 2010). Built on the basis of flexible, dynamic, ephemeral relations, these network flows constitute the bulk of organizational activity (Fulk, 1993). Thus, global organizations are processes, not places.

Network's nodes and ties can be studied in a variety of ways and relations can be applied to create organizational communication networks for the purpose of information sharing, innovation and friendship (Fulk & Steinfield, 1990). Networks can be created by applying one relation to the nodes, forming a uniplex network, or by applying two or more relations to the nodes, forming a multiplex network (Ibid).

Many organizational communication relations link people directly with each other. Links that tie people together through intermediaries are called indirect links. Relations also have properties such as sign (positive or negative), frequency (how often the link is used), strength (weak to strong), direction (from one member to another), and stability (existence over time) (Monge & Margolin, 2001). Moreover, ties typically have a number of properties that impact the nature of the network.

### **Network Forms, Structures and Effects**

Network forms in organizations such as the chain, circle, wheel, and "comcon" (completely connected), and how the different forms processed information introduced to organizational

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### **Network Forms, Structures and Effects**

Network forms in organizations such as the chain, circle, wheel, and "comcon" (completely connected), and how the different forms processed information introduced to organizational

communication study based on Psychological Field Theory (Lewin's,1936). These network forms varied in the degree to which they were centralized, with the wheel being the most centralized, since all links centered on one individual and the comcon the least centralized, since everyone was connected to everyone else and thus had the same number of links (Monge & Contractor, 2003).

Characteristics or attributes of networks' members such as physical and social variables like age, gender, religious and political affiliations, and physical proximity impact the network structure. For example, a work network might be highly influenced by a friendship network (Monge & Contractor, 2003). The aforementioned physical and social variables have significant influence on the creation, evolution and maintenance of network structure.

The primary focus of the impact of information processing via the different network forms can be viewed from productivity and satisfaction perspectives. Centralized organizations are more efficient for routine tasks while decentralized networks are more efficient for tasks that required creativity and collaborative problem solving. People in decentralized organizations are more satisfied with the work processes than people in centralized organizations.

The transformation of networks has had dramatic implications for the organizations and institutions in which they reside. (Castells, 2010) describes how companies, industries, and national economies have all been challenged by the changes in underlying social structure, with some thriving and others suffering. In particular, a new form of organization, the network organization, has emerged.

Network organizations are flat organizational structures that are more flexible than hierarchies. Network organizations have performed exceedingly well in the environment of the network society. Communication and computer technologies have merged to generate "virtual organizations" so that people at a distance can work as if they were in the same space at the same time (Monge & Contractor, 2003). Thus, globalization leads people to establish new ties at a distance forming new type of networks.

These communication forms alter the way organizations, people, and the rest of the world is experienced. As (Castells, 2010, p.373) says "All messages of all kinds become enclosed in the medium, because the medium has become so comprehensive, so diversified, so malleable, that it absorbs in the same multimedia text the whole of human experience, past, present, and future..."

### **Formal versus Emergent Networks**

Formal networks are networks that represent the legitimate authority of the organization and typically reflected by the organizational chart. The formal networks represent communication channels through which orders are transmitted downward and information is transmitted upward (Weber, 1947). In the other hand, emergent networks are informal networks that emerge from formal and mandated networks. (Fukuyama, 1999, p.146) argues that social and organizational structure spans a continuum that ranges from formal to informal. He says, "No one would deny that social order is often created hierarchically. But it is useful to see that order can emerge from a spectrum of sources that extends from hierarchical and centralized types of authority, to the completely decentralized and spontaneous interactions of individuals."

The informal or emergent networks serve to supplement the limitations of the organization's formal network. According to (Monge & Contractor, 2003) there are three types of emergent networks:

- The shadow networks - the real way things get done,
- The social interaction networks, and
- The career networks - the venue for so-called networking

In organizational communication study formal versus informal networks are the focus of interest. The creation of informal networks in the formal organizational communication structure has been inevitable and naturally emerging in the due course of process. In spite of the fact senior executives and managers are in favor of formal network most of the time, they seem forget the natural trend of emergent network. As (Bateson, 1972) satirically put it, they are found saying "Please network, but don't you dare by pass authority". Hence, organizations create what is called a "double bind," a choice situation where each alternative conflicts with the others.

However, contrary to traditional views, contemporary organizations are increasingly constructed out of emergent communication linkages, linkages that are ephemeral in that they are formed, maintained, broken, and reformed with considerable ease (Palmer, Friedland, & Singh, 1986). The networks that emerge by these processes and the organizations they create are called network organizational forms.

As Krackhardt (1994, p. 218) says,

An inherent principle of the interactive form is that networks of relations span across the entire organization, unimpeded by preordained formal structures and fluid enough to adapt to immediate technological demands. These relations can be multiple and complex. But one characteristic they share is that they emerge in the organization, they are not preplanned

#### **2.2.4 System Theory and Network Analysis**

System Theory is the trans disciplinary study of organizational phenomena which investigates the principles common to all complex entities and the models that describe them (Bertalanffy, 1968). A system can be said to consist of four things. The first is objects - the parts, elements, or variables within the system. Second, a system consists of attributes - the qualities or properties of the system and its objects. Third, a system had internal relationships among its objects. Fourth, systems exist in an environment (Ibid).

A system, then, is a set of things that affect one another within an environment. The fundamental systems-interactive paradigm of organizational analysis features the continual stages of input, throughput (processing), and output. Several system characteristics are: wholeness and interdependence, correlations, perceiving causes, chain of influence, hierarchy, supra systems and subsystems, self-regulation and control, goal-oriented, interchange with the environment, inputs/outputs, the need for balance/homeostasis, change and adaptability and equifinality. Organizational communication in this perspective can be seen as an integrated process - not as an isolated event.

Based on system theoretical framework, the researcher will look at the utilization of ICT in MoFED organizational communication employing simple system model which consist input -

control mechanism so that to implement a modern finance management activities. From 1966 up to 1974 the Ministry went through dynamic changes both in organizational structure and man power capacity building that enabled to acquire highly educated people in economics, accounting and management in the first and second degree. Among the big names of the period were Yilma Deressa, the Finance Minister, Bulcha Demekssa, Deputy Finance Minister, Asfaw Damtte Assistance Minister and later Acting Finance Minister were to name a few. When Emperor Hilesilassie I was overthrown in 1974, Ministry of Finance was one of the big government offices which comprise 1,532 civil servants working all over the country (A Brief History of Ministry of Finance, 1984).

From 1943 till 2002 the ministry implemented its activity by the name Ministry of Finance and in 2002 changed its name in to Ministry of Finance and Economic Development (MoFED) because it merged with another ministry called Ministry of Economic Development and Cooperation (MoFED 100 Years Anniversary Magazine, 2007).

Throughout a hundred and seven years long organizational history, Ministry of Finance later MoFED was led by several ministers. The first minister in 1907 was Bejirond Mulugeta Yigezu (Mahitem Selassei, 1970) and the current minister in 2015 is Ato Sufian Ahimed.

### **Budgeting and Ministry of Finance**

In the government structure, budgeting is one of the major activities of Ministry of Finance all over the world. The same is true in the case of Ethiopia from the starting of the establishment of “Yegenzebina Yeguada Ministry” in 1907. However, the first ever recorded announced budget in Negarit Gazette was in 1945 and the then total annual budget of Ethiopia was 37, 942, 556.31(approximately 38 million) Maria Teresa Birr (A Brief history of Ministry of Finance, 1984: p.12).

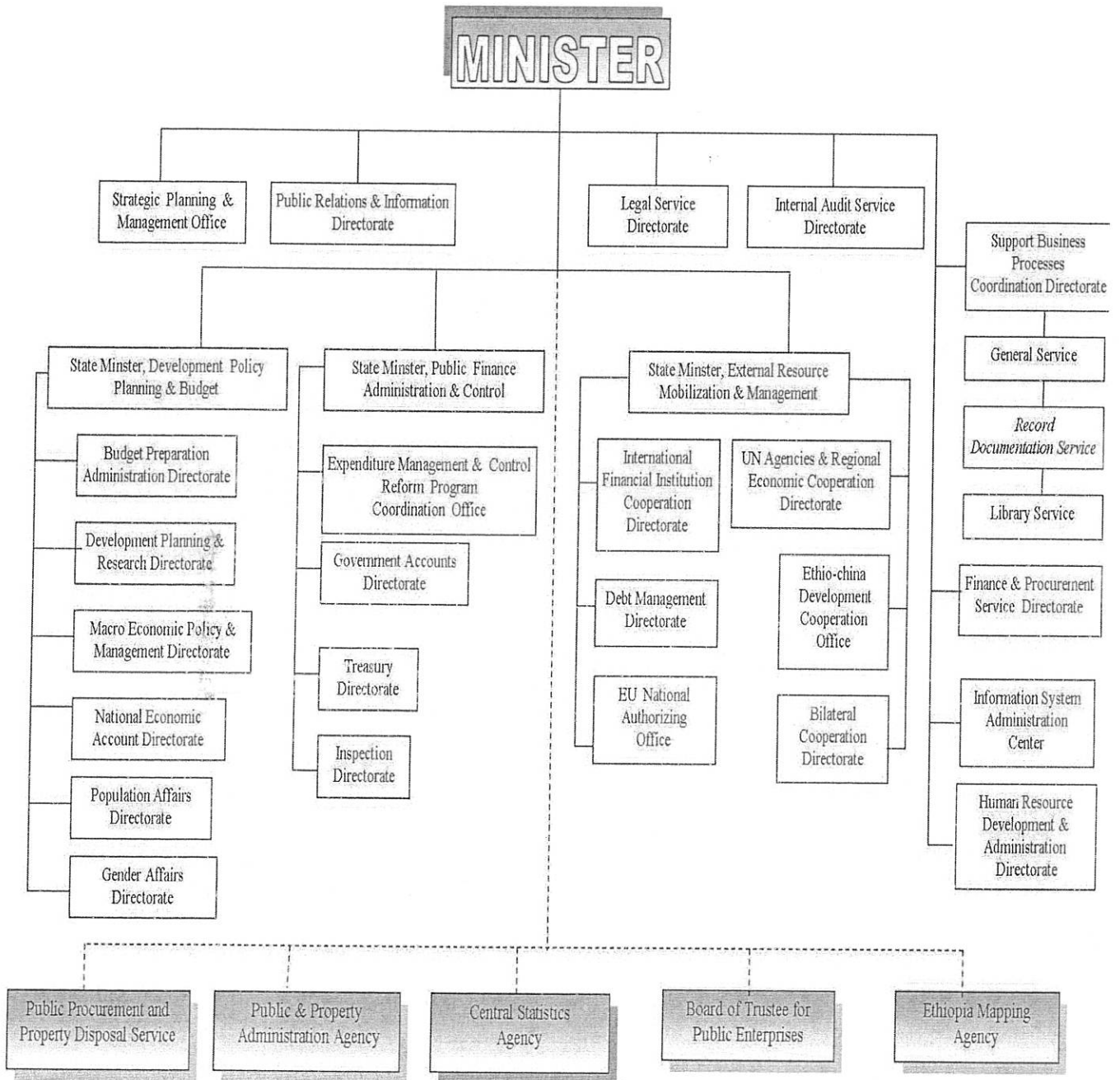
Out of this total annual budget of the country, 49.93% (almost 50%) of the budget that means 18, 946,783 Maria Teresa Birr was allocated to Ministry of Interior and Ministry of Defense and the other 50% of the budget went to 12 other Ministries and two budgetary sectors (Ibid). Previously, even 45% of the annual budget had been allocated to the military only before its share decreased in 1945.

When one talks about annual budget, it is worth discussing the source of the budget. The main sources of budget are internal revenue and external resources. A developing country like Ethiopia filling the budget gap is the usual practice because third world nations couldn't afford fulfilling their expenditures. Due to this long lasting trend, Ethiopia had been covering its budget deficit from external finance sources in the form of grant and loan. Thus, Ethiopia had been receiving official loans from international financial sources especially from the Western Nations starting from 1945 before officially recorded loan obtained from the World Bank in 1950 (A Brief History of Ministry of Finance, 1984).

Ethiopia was the first African country to receive funding in 1950 from the World Bank (World Bank, 2014). The first two funding in 1950 were a 5 million dollar credit for rehabilitation and maintenance of road, and a 2 million dollar credit for establishment of Development Bank (Ibid). Starting from this time, Ethiopia received development aid and loan from International Monetary Fund, International Financial Corporation, International Development Association and African Development Bank and from other bilateral and multilateral donors and development partners (A Brief history of Ministry of Finance, 1984).

One of the important aspects of annual budget from communication point of view is its public announcement trend. With the fact that the source of budget is predominantly public wealth, it is assumed that the public has every right to know how much budget allocated to whom. Thus, as it is customary everywhere, Ministry of Finance had been announcing its annual budget to the general public by announcing through the Negarit Gazette. For instance, the current Ethiopian fiscal year (2007 E.C) Federal Government annual budget is 178.6 billion Birr and it was announced in the Negarit Gazette after the parliament endorsed it. Even more, the Ministry established a Financial Transparency and Accountability team which undertake awareness creation and follow up activities so that the budget could be utilized properly (FTAPS, 2009).

**Table 2 - Organizational Chart of MoFED**



### 2.3.2 Mission, Vision and Goals

MoFED has been formulated its mission, vision and goals in its five years strategic plan which runs from 2010 - 2015. According to the strategic plan the mission, vision and goals are stated as follows:

➤ **Mission**

Make real a prosperous Ethiopia by formulating development policies, preparing development plan and budget, mobilizing and administering external resources, installing modern, efficient, effective and accountable public finance and property administration and controlling system.

➤ **Vision**

Become a capable and leading organization for the realization of faster, sustainable and equitable economic development.

➤ **Strategic Goals (Objectives)**

**1. National perspective**

- Ensure faster, sustainable and equitable economic growth
- Improve the macro-economic administration
- Scale up the supply of resource for development
- Harmonize population issues with economic growth
- Enhance the delivery and distribution of information and communication
- Boost developmental partnership and cooperation

**2. Resource Perspective**

- Improve the effectiveness of resource utilization
- To better resource flow

**3. Operational system perspective**

- Improve public finance and internal audit operation systems
- Strengthen monitoring and evaluation systems
- Improve development planning and budget preparation system
- Improve information communication system

#### **4. Learning and growth perspective**

- Develop the skill, knowledge and attitude of human resource
- Make the working environment conducive
- Improve leadership and decision making capacity
- Increase the supply of information technology

Moreover, the strategy formulated key strategic pillars and values of the ministry as follows:

#### **Strategic Pillars**

- Public finance administration and control
- Resource mobilization and effective utilization
- Economic leadership and management

#### **Values of the organization**

- Law abiding, regulation and guideline for success
- Culture for a team work
- Initiative to learn and change
- Outcome that centered customers' satisfaction

As one can see from the strategic goals or objectives the issue of information, communication and ICT in general have been given due attention as targets to be addressed in the course of the five strategic years. Out of the 16 strategic goals three of them namely,

- Enhance the delivery and distribution of information and communication
- Improve information communication system
- Increase the supply of information technology - are directly related to communication and ICT which initiated the researcher to conduct the study that focuses on ICT utilization in the Ministry and find out what looks like the practice and achievement against the targeted goals.

### **2.3.3 Communication in MoFED**

One may observe the concepts of organizational communication as the sending and receiving of messages and considering it as a key element of organizational climate (Drenth et al., 1998), as the central binding force that permits coordination among people and thus allows for organized behavior and as the behavior of individuals in organizations from a communication point of view (Baker, 2002).

Considering MoFED's organizational chart or structure and its strategic documents (MoFED Strategic Document, 2010 & MoFED Communication Strategy and Tools, 2010) one can identify the main elements of organizational communication namely, communication levels, formal versus informal communication, directions of communication flows (vertical, horizontal, diagonal) and internal versus external focused communication.

When we look at it from an organizational communication level point of view, all types of organizational communication levels including interpersonal, group, organizational, inter-organizational and mass communication levels are functional in MoFED (MoFED Communication Strategy, 2010)

The mass communication level of MoFED can be viewed from MoFED Public Relation and Information Directorate and MoFED's website perspective and both entities serve as a media to the intra and inter organizational communication. MoFED's organizational chart indicates that the Public Relation and Information Directorate is the hub of information and communication that every information flows in and out of it as it is connected and networked. Moreover, the Public Relation and Information Directorate's monthly and quarterly magazines, press and news releases serve as mass communication because the information or message has been released from a center to MoFED employees and external customers (MoFED's Publication Archives, 2015).

Another feature of MoFED's organizational communication worth mentioning is the computer mediated communication (CMC) which has been serving as the central binding force among MoFED employees and as a key element of organizational climate that determines the

rental base so monthly or annual fee was mandatory to use the computers that seem very strange when we see it from personal computer or laptop computer ownership point of view.

Through the advent of ICT, the mainframe computers which were very huge in volume with a massive cupboard size, gave way to personal computers that could be placed on a desk top and the advancement was visible in Ministry of Finance too that in 1986 the computer operation and application was led by equipped IT center known as data processing center (Melikt Neway, 1986). In 1986 computerized utilization was expanded to several departments in the Ministry that initially confined to Government Accounting and Payment Departments only. At this time (1986) the data processing center had capable system analysts, programmers, machine operators and a data processing head who worked in permanent base (Ibid).

Today, MoFED ICT usage and performance is one of the exemplary among the federal government ministries relatively equipped with modern technology and man power both in the ISAC (Information System Administration Center) and Project Office (MoFED ISAC, 2010). MoFED ISAC under takes the whole ICT implementation of the Ministry while the Project Office runs the Integrated Financial Management Information System (IFMIS) which has been implementing the modernization of public finance activities aided by ICT. The focus of this study is MoFED's ISAC which is appropriate from ICT utilization and organizational communication point of view.

These days MoFED's ISAC established a 24 hour broadband internet service with 45 megabits per/sec internet band width which is reliable in supporting and facilitating the smooth flow of information, the electro mail and website (Ibid). The website, [www.mofed.gov.et](http://www.mofed.gov.et) is one of the Federal Government Ministries website that has current information about the country's economic, financial and development performance in the variety of reports, articles and news both in Amharic and English with a standard feature of a website such as Search, Archive, Feedback, Forum, Newsletter, FAQ/Help (MoFED's ISAC Strategic Document, 2010).

Moreover, the ISAC introduced in house electro mail devise called [zimbra@mofed.gov.et](mailto:zimbra@mofed.gov.et) that enable electro message transmission so conducive and friendly independent of the global service

providers such as Gmail and yahoo. In addition to this, the 600 plus modern personal computers and laptops, the additional wireless internet service, the advanced local area network (LAN), the video conferencing system, the strong security protection and the uninterrupted electric power due to a modern standby generator made ICT usage reliable and computer mediated communication (CMC) more comfortable in MoFED comparing to other ministries and government organizations that suffer with a lot of ICT technology deficiency and infrastructure bottlenecks.

### **MoFED's ICT policy**

MoFED's Information System Administration Center (ISAC) formulated the ministry's ICT policy known as MoFED's ICT Directive and Guideline in October 2011 to consolidate and codify current operating policies, guidelines and procedures into a formal ICT directive and guideline document (MoFED ISAC ICT Policy, 2011).

MoFED's ICT policy was formulated to address related issues on appropriate usage of ICT equipment, hardware and software procurement, software development, web site administration, network security, data retention and recovery strategy, internet & email utilization, internal IT and IBEX (Integrated Budget & Expenditure System) support services, and trainings (Ibid).

According to (MoFED's ICT policy, 2011, p. VI - VII) ICT has been defined as follows:

For the purpose of this Directive, ICT covers all the technologies used for the handling and communication of information specifically in MoFED. These technologies include computers, servers, printers, copiers, fax, IP- phones, video conferencing materials networks (wired and wireless), internet, virtual local and wide area instructional software, email, satellite communication, all application software's in MoFED such as IBEX (Integrated Budget & Expenditure System), AMP (Aid Management Platform), DMAS (Debit Management Administration System), IFMIS (Integrated Financial Management Information System)...etc

Moreover, the ICT policy (ISAC, 2011, p.1) declared a mission statement that read as "The mission of the directive is to formulate the proper utilization of ICT resources and quality services through establishing a reliable, secure, and available ICT environment".

The ICT policy stated the objectives, significance, goals and principles of the directive. Thus, it worth mentioning some of them which might be related to the study research questions namely concerns on email, website and ICT policy.

### **Objectives (Goals) of the Directive**

- Provide a framework that will enable ICT to contribute towards achieving MoFED goals.
- Ensure that MoFED ICT infrastructure and capacity are utilized effectively, are compliant with regional and international standards.
- Establish a trusted and secure information infrastructure and a culture of cyber security at all levels of MoFED society.
- Enhance the exploitation of IT across MoFED for increased productivity and efficiency; and transform MoFED into an information-based society where everyone has equitable and affordable access to ICTs and use ICT as tool for its decision.
- Set responsibilities and role to concerned MoFED directorates on the web and proper and ethical usage of MoFED e-mail service.
- Establishes the ways to fill the ICT skill gap in MoFED community.

### **Significance of the Directives**

- As a means of achieving MoFED objectives and goals.
- The introductions and the expansions of ICT in MoFED environment and its integration with other ICT infrastructures outside MoFED.
- Standardize ICT resources utilization.
- To create awareness on proper and ethical usage of ICT Resources.

### **Principles of the Directive**

- Directive ensures the availability, reliability and confidentiality of MoFED information.
- ICT is a powerful tool and backbone for achieving MoFED mission and vision.
- Information is a resource and it should be protected and secured.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Research Design

This research is predominantly exploratory study in the interest of getting to know how ICT is used in MoFED's organizational communication settings. It explored the utilization of selective ICT aspects namely email, website and ICT policy in MoFED. As noted in (Ruane, 2005. P. 12) exploratory research is conducted to know or understand some organization or phenomena: "Exploratory research is typically conducted in the interest of getting to know or increasing our understanding of a new or little researched setting, group, or phenomenon; it is used to gain insight into a research topic."

In addition to exploratory nature, this study has description research aspect which offers a detailed picture or account of some social phenomenon, setting, experience and group in MoFED in relation to the stated research questions. Thus, the descriptive approach employed to know what does the electro mail verses paper mail look like, the magnitude of website utilization and the ICT policy impact in MoFED. In the process of answering some of the research questions, the descriptive research approach utilized some measurements to find out the magnitude numerically such as electro mail verses paper mail prevalence in MoFED's organizational communication.

Having employed exploratory and descriptive research approach, the research design was associated in line with the research goals. Thus, this study utilized cross-sectional research design to serve the research goals and answer the research questions. Taking MoFED as a cross-sectional population which have various directorates, departments and units with cross-sectional professional and academic levels, several ethnic backgrounds, gender and age differences the research covered the population with purposive sampling technique so that to achieve representative insight.

The researcher chose the cross-sectional research design because it document facts, obtains information from respondents in time without any attempt to follow-up over time and asks a

series of questions (e.g., via a survey) of a broad people in order to address the topic of interest (Ruane, 2005).

Moreover, as it is stated in (Ruane, 2005. P. 93) the cross-sectional design is suitable in exploratory and descriptive researches: “Cross-sectional designs are quite common in social research. Obtaining information from a cross-section of a population at a single point in time is a reasonable strategy for pursuing many descriptive and exploratory research projects.”

Therefore, unlike the longitudinal research design which collects data at two or more points in time, the cross-sectional research design collect data at a single point and time was employed in this research with series of questions including survey at a point in time (in current MoFED setting and at the research conducted year that mean in 2015) without any follow-up.

### **3.2 Methods of the Study**

This research employed both quantitative and qualitative research methodology. The researcher chose the mixed research approach in order to address the research questions properly and so as to capture the elements otherwise may be overlooked if employed either of the two approaches only. Mixed approach is valuable for triangulation which is very useful to produce textured results and realistic findings.

Thus, the qualitative and quantitative research methodology is the philosophy or the general principle which guided this research. Since methodology is the overall approach studying a topic (Grix, 2004) the researcher was guided by the mixed approach to achieve the research goals. Therefore, the strategy of inquiry of this study was guided by quantitative and qualitative methodology which systematically employed appropriate methods and techniques that enable to the anticipated research goals.

In order to achieve the quantitative research methodology, which generates statistics through the use of survey (Miller & Brewer 2003), the researcher used one of the major data collecting methods namely questionnaire among the cross-section of MoFED employees. Moreover, the qualitative research methodology was used to explore attitudes, behavior and experiences in relation to the research questions and objectives through the key-informant interviews method.

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### 3.3 Sampling Technique and Size

The researcher used purposive sampling technique which is one of the non- probability sampling technique (Dattalo, 2008). Before determining the sample size using purposive sampling technique, the researcher thought it was obligatory to stratify the whole MoFED's employees or population in to those who utilize computer mediate communication and those who don't.

Out of the total 621 permanent MoFED's employees, about 300 employees who utilize active computer mediated communication were selected in a representative approach from experts directors and secretaries. The remaining employees are supporting staffs, cleaners, drivers, guards, message girls, gardeners and etc. that don't utilize computer mediated communications and even don't own a computer.

Therefore, the populations of this study were those 300 MoFED's employees who do computer mediated communication (CMC) and who have the privilege of accessing a personal computer or laptop with internet online connection. Out of this 300 population 172 sample sizes were taken using simplified formula (Israel, 1992) for determining sample size proportions. Accordingly, the formula is:

$$n = \frac{N}{1 + N(e)^2}$$

Using this formula, where  $n$  is the sample size,  $N$  is the population size, and  $e$  is the level of precision, a 95% confidence level is expected. Moreover, the sampling error or marginal error ( $e$ ) is 0.05 that means the precision level is plus or minus 5%.

### 3.4 Data Sources and Data Collecting Methods

The data sources of this research were both primary and secondary data sources. The primary sources were MoFED's permanent employees namely, experts at different levels, secretaries who

has significant role in internal communication and directors or department heads who have impact on organizational communication channels.

The secondary sources of data were different organizational documents both in file boxes and email inboxes, directives and archives. The data collection method was determined by the research methodology (Dawson, 2007). As the research methodology of the study was mixed research approach, the research methods employed mixed data collection methods or techniques namely, questionnaire, key informant interview and document analysis (both memo files in hard copies and emails inbox in the soft copy).

### **3.4.1 Questionnaire**

Questionnaires were distributed to the cross-section of MoFED's employees whose professional and academic level is quite diverse. With purposive sampling technique 172 respondents were selected among MoFED's permanent employees who have a privilege of internet access and using computer mediated communication in the Ministry.

The researcher prepared and used two kinds of questionnaires in English and Amharic for different group of respondents. Although the content of the questionnaires were almost the same, the English questionnaire was intended for experts and directors while the Amharic one was for the secretaries to avoid communication barriers due to basic English language limitations.

Regarding non response rate, the researcher was expecting 10 percent non response rate because the researcher is the staff of MoFED and he thought the respondents would show a maximum cooperation in responding accordingly. However, when the questionnaires were collected at the scheduled time, the non-response rate became 15% and the final actual sample size became 146 respondents.

### **3.4.2 Key-informant Interview**

In order to know the attitudes, behavior and experiences of the respondents and to serve the purpose of qualitative research, 10 key informants were interviewed in-depth. The 10 key informants were those happen to be resource full and were selected in the representative manner to the cross-section of the divers population of the Ministry.

Among the 10 interviewees four were directors from different departments including the ICT Center and Public Relation directors, five were different level experts of which two were females and the remaining one was a secretary who happened to know MoFED's internal communication in depth. The researcher interviewed 518 megabits audio recording which run totally for 5 hours and 51 minutes. Almost in 6 hours interview the key informants shared their attitudes, experience and views in depth on the main research topics.

### **3.4.3 Document Analysis**

In selected three Directorates namely, Public Relation and Information, Human Resource Development & Administration and Finance & Procurement Service Directorates where all internal organizational communication directed and connected documents were analyzed to discover memos versus email prevalence in a given time frame.

Thus, in these Directorates a six month in and out memos and email messages from September 2014 – February 2015 were analyzed to quantify numerically to answer the research question directed to email versus paper mail utilization.

### **3.5 Data Analysis**

As the research is informed by system theory framework, which features the continual stages of input, throughput (processing) and output in an environment, the researcher analyzed the utilization of ICT in MoFED organizational communication employing simple systems model which consist of input – process – output.

Accordingly, as it was stated in (Frey and Cissna, 2009), the importance of system theory and network analysis in studying the utilization of technology in organizations is paramount. Social network analysis and systems theory have been widely employed to investigate structures and relationships within and across organizational boundaries (Ibid). Thus, the researcher chose network analysis as one of data analysis methods which is a viable approach for studying the role of advanced information technologies in organization (Monge and Margolin, 2005).

Employing network analysis technique which focuses on the communication structure of an organization, the data were analyzed from communication channels (directions), communication pattern (especially the formal pattern including memo verses email) and from effectiveness of information flow point of view. Moreover, the amount and patterns of messages and information flow relations among the elements of the networks, or diverse groups or sub systems of MoFED were analyzed.

As the research has both exploratory and descriptive nature and employed both quantitative and qualitative research methodology, the data could not only be analyzed from network analysis point of view as the research employed data collecting methods such as questionnaire which demanded statistical data analysis. Thus, a great deal of data were analyzed and presented numerically in order to discover how ICT was practically utilized.

Some aspects of the data also were analyzed qualitatively which couldn't be quantify numerically. To this effect some attitudes, feelings, experiences and views were presented in narration forms.

## CHAPTER FOUR

### DATA PRESENTATION AND DISCUSSION OF FINDINGS

#### 4.1. Introduction

These days ICT has been pervasive in every socio-economic life of society. It has been recognized as enabler and an industry in our country too. ICT utilization in MoFED should be viewed from this wide perspective. Thus, when ICT is considered as a strategic communication tool, its span of influence goes to the extent determining the overall performance and existence of a given organization or institution.

This result and discussion chapter presents credible data obtained from mixed research methodology employing quantitative and qualitative data gathering methods. The primary data presented in this chapter about MoFED's ICT utilization namely email, website and ICT policy were collected by administering questionnaire, key informant interview and document analysis.

In the process, two kinds of questionnaires were developed and used in English and Amharic with basic and similar concepts to be filled by directors and experts as well as by secretaries known as office supports in MoFED. The English questionnaire contained 41 questions with the purpose of collecting detail data on the main and specific research objectives and questions. The questions were categorized in three section in search of information on the three ICT research aspects namely utilization of email, website and ICT policy in MoFED. The detail study result and findings are presented with figures and tables categorized in subheadings according to the main ICT aspects and research questions.

#### 4.2 Socio-demographic Characteristics of Respondents

Starting from socio-demographic data of respondent the results are presented accompanied by tables and figures so as to make the data presentation clear and visible. Therefore, Table 3 clearly presents the overall socio-demographic characteristics of the study participants as follows

**Table 3: Socio-demographic Data of Respondent**

<b>Variables</b>	<b>Frequency</b>	<b>Percent</b>
<b>Sex</b>		
<b>Male</b>	<b>84</b>	<b>58</b>
<b>Female</b>	<b>62</b>	<b>42</b>
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Age</b>		
<b>20-29</b>	<b>38</b>	<b>26</b>
<b>30-39</b>	<b>36</b>	<b>25</b>
<b>40-49</b>	<b>41</b>	<b>28</b>
<b>50-59</b>	<b>30</b>	<b>21</b>
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Educational level</b>		
<b>Diploma</b>	<b>37</b>	<b>25</b>
<b>BA/BSc</b>	<b>73</b>	<b>50</b>
<b>MA/MSc</b>	<b>36</b>	<b>25</b>
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Field of specialization</b>		
<b>Accounting</b>	<b>49</b>	<b>34</b>
<b>Economics</b>	<b>34</b>	<b>23</b>
<b>Management</b>	<b>12</b>	<b>8</b>
<b>Secretary science</b>	<b>20</b>	<b>14</b>
<b>Other social and natural sciences</b>	<b>31</b>	<b>21</b>
<b>Total</b>	<b>146</b>	<b>100</b>

Based on the socio-demographic data, the gender representation of the study participant are relatively proportional when we see the actual MoFED employee's gender representation. Thus, the study participants are 58% male and 42% are female. Regarding age characteristic, 26% are young people whose age range from 20 – 29 years old who are considered digital generation growing with information communication technology. The active age group both in office performance and ICT application are 25% whose age range from 30 – 39 years old. The other study participants are mature and old age employees whose age range from 40 – 49 and 50 – 59 with 28% and 21% of the total study population, respectively. This huge amount of mature and old age employees statistically speaking 49% of the population being mature and old age has its negative effect in utilizing ICT to the maximum according to some interviewees. However, the

age characteristic of the study participant is the real age attribute of MoFED with half of its population categorized as mature and old age (MoFED Human Resource Directorate, 2015)

When we come to educational level, the study participants are highly educated civil servants with 75% of them are first and second degrees holders. Thus, 50% and 25% of the participant are endowed with BA and BSc as well as MA and MSc degrees, respectively. The rest 25% are diploma holders with sectary science and accounting field of studies. While the mature and old age characteristic of the study participant had negative influence in utilizing ICT, the 75% highly educated characteristic may compensate in contributing for effective and proper utilization of ICT.

In regard with field of specialization, nearly 60% of the respondents are accountants and economists that are highly expected in Ministry of Finance and Economic Development where the Federal Government finance and economy is administered. As per the data, 34%, 23%, and 8% of employees are with accounting, economics and management field of studies, respectively while the remaining 35% are with different social and natural science as well as secretary science field of studies.

#### 4.3 Email versus Paper Mail Utilization in Vertical and Horizontal Communication

Variables	Frequency	Percent
<b><u>zimbra@mofed.gov.et</u></b>		
users	49	34
Non users	97	66
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Amount of email per week</b>		
none	16	11
1-3	72	49
4-7	32	22
> 7	26	18
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Vertical communication</b>		
email	45	31
memo	101	69
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Horizontal communication</b>		
email	77	53
memo	69	47
<b>Total</b>	<b>146</b>	<b>100</b>

<b>Evaluation of email utilization</b>		
<b>weak</b>	<b>41</b>	<b>28</b>
<b>satisfactory</b>	<b>42</b>	<b>29</b>
<b>Good</b>	<b>37</b>	<b>25</b>
<b>Very good</b>	<b>21</b>	<b>14</b>
<b>Excellent</b>	<b>5</b>	<b>3</b>
<b>Total</b>	<b>146</b>	<b>100</b>

**Table 4 - Email versus Paper Mail Utilization in Vertical and Horizontal Communication**

MoFED's Information System Administration Center (ISAC) had introduced an email system called [zimbra@mofed.gov.et](mailto:zimbra@mofed.gov.et) for internal communication purpose. However, the employees who use zimbra email system for internal communication are only 34% while the majority of 66% don't use it. Basically, the email system was introduced to replace the formal paper mail especially the internal memo to electro mail.

According to the data obtained from the survey, 11% of respondents don't send or receive any job related messages in a week. Almost half of respondents that mean 49% of them send or receive 1 - 3 job related email messages on average during a week. While 22% send or receive 4 - 7 job related email messages on average in a week, only the other 18% send or receive over 7 email messages per week. The data shows only 40% of the respondent send or receive one and over one email messages during a day on average which is a very small amount comparing to the current digital era where overload of information is the order of the day.

When we look at the prevalence of email versus paper mail or memo in the vertical communication the result is even more alarming that email utilization is stile at the enfant stage. In the vertical communication which includes both the downward and upward communication only 31% is done by email while 69% is conducted by the formal letter or memo just like old times. Of all communication directions vertical communication is hierarchical which needs chain of commands among superiors and subordinates as it is manifested in this data.

However, horizontal communication direction in contrary is taking place among equals or peers with colleague or friendly manner demanding less formality. With the same logic the horizontal email versus paper mail communication in MoFED shows exactly the same scenario that 53% of horizontal communication is performed by email while 47% is conducted by memo. A 53%

email communication is a promising achievement where a 69% vertical communication is conducted by memo and where paper mail is a dominant communication tool.

Based on the data, the overall evaluation of the email utilization in MoFED is presented realistically by 28%, 29%, 25%, 14% and 3% weak, satisfactory, good, very good and excellent respectively. This evaluation is produced by respondents in relation to their personal email utilization trend and considering the institutional culture and the characteristic of email utilization in MoFED.

#### 4.4 Investigation of Email versus Paper Mail Prevalence in Inboxes and in File Boxes

Directorate	Number of memos		Number of emails	
	received	sent	received	sent
Public Relation	165	22	14	31
Human resource	140	140	none	none
Finance & procurement	162 (in a month)	26 (in a month)	none	none

**Table 5 - Email versus Paper Mail Prevalence in Three Directorates**

In addition to the questionnaire data collecting method, the researcher conducted document analysis in three selected MoFED's directorates namely Public Relation and Information, Human Resources and Management as well as Finance and Procurement Administrations. These directorates are the hub of all information and communication directions where different MoFED's directorates and departments internally communicate to them in search of information, personnel and finance administration.

According to the document investigation both in the file cabinet and email inboxes of the three directorates from September 2014 to February 2015, with selected memo and email messages items a few types of memos and email messages has been presented. For instance, in Public Relation and Information Directorate where all the Ministry's internal and external information and communication activities go through, during the sixth month of specific time 456 internal and external email messages have been received and 52 email messages have been sent back as response to some of the messages which need prompt responses. Moreover, at this particular

time 351 internal and external formal letters have been sent to public relations of which 165 are internal memos sent by different directorates and departments. In addition to this, 146 events based internal forms ranging from notifying meeting schedule to demanding conference hall arrangement has been sent to Public Relation. Thus, having observed the huge magnitude of messages and information within six month only the internal formal letters and emails have been presented to show how big the prevalence of email versus memo in Public Relation Directorate is.

The same way, in the Human Resource Directorate where a lot of personnel administration is conducted, the case of annual leave asking and granting communication has been taken in to consideration to see email versus paper mail prevalence. In the given period of time while 280 memos received and sent back in asking and granting for permission annual leave, there were no email messages received or sent concerning the issue.

In some human resource administration activity namely hiring of a new employee, from notifying to human resource to completing the hiring process there are in average five formal letters exchange among the hiring directorate, Human Resource and other concerning departments like Finance Directorate. For example between the aforementioned time 54 hiring new employee and promoting permanent employees inquiring formal letters sent to human resource from different directorates. So multiplying by five 270 memos or formal letters has been exchanged among the concerned bodies throughout the process. While all these loads of memos written, printed and carried by messages girls, who are more than 30 in the Ministry, from one directorate to the other not a single email messages sent or received concerning the issues.

When we look at the Finance and Procurement Directorate the case is even worse. There is no email message in the internal job related communication. Unlike the previous two directorates, it became enough observing only one month email versus paper mail prevalence in this directorate. In November 2014, 162 memos have been received inquiring per dime and fuel expenses. In response to these memos 26 memos has been sent back. However, there is no email message regarding the case in point.

Therefore, the data found from the document investigation even more graver than the survey data which indicated email versus paper mail prevalence is almost nil to something except in Public Relation and Information Directorate where a few amount of email messages are appearing. The following table clearly shows the selected issues of email versus paper mail prevalence in the three directorates.

#### 4.5 Cost Analysis of Stationary versus ICT Materials

Expenditure title	Annual Cost in Ethiopian Birr				
	2003(E.C)	2004	2005	2006	2007 (9 month)
<b>Stationary</b>	<b>1,064,981</b>	<b>1,266,480</b>	<b>1,419,563</b>	<b>1,976,393</b>	<b>1,270,922</b>
<b>ICT materials</b>	<b>507,717</b>	<b>516,423</b>	<b>1,017,492</b>	<b>2,332,102</b>	<b>848,275</b>
<b>Budget for computer</b>				<b>569,853</b>	<b>1,298,042</b>
<b>Monthly fee for 45 m/b/s band width internet service</b>					<b>&gt;50,000</b>

**Table 6 - Cost Analysis of Stationary versus ICT Materials**

When we talk about ICT utilization in general and email versus paper mail in particular, it is worth discussing about expenditure because it matters a lot to a developing country like Ethiopia. As it is shown in a table below expenditure for stationary for the past five year has been increasing starting 1,064,981 birr in 2003(E.C) to 1,976,393 birr in 2006 (E.C). Even a nine month expenditure in 2007(E.C) is 1,270,922 birr which definitely increases when the budget year ends. Therefore, the expenditure for stationary namely for paper, toner, writing pad, pen and pencils, binders, box files, markers, etc. are increasing each year while the expenditure for ICT materials, computers and internet service fee is still on the rise.

As it is clearly shown in the table below, expenditure for ICT material such as hard disc, ram, adaptor, battery, cables, external hard disc, network cards etc. are increasing too in the past four years except 2007 fiscal year nine month even though we don't know what happen when the budget year ends. Moreover, when we look at the allocated budget for purchasing computers in 2006 and 2007 Ethiopian fiscal year, it shows more than a double increment from 569,853 birr to 1,298,042 birr.

In addition to this expense, the Ministry is paying more than 50,000 birr monthly fee for 45 megabits per second band width internet service. So the Ministry is incurring cost both for the stationary and ICT which is in increasing trend each year. Here, the Makerere University ICT scholars' (Tusubira and Mulira, 2004, 1) statement "Implementation of information and communication technology (ICT) services and systems in organizations generally pose a lot of challenges that, if not properly addressed, lead to heavy investment without the corresponding organizational efficiency gains." is worth to be mentioning.

From the following table of expenditure for both the traditional medias namely print media including stationeries as well as for the new media one may observe heavy investment without corresponding gain.

#### 4.6 Utilization of Website as a Strategic Communication Tool

Variables	Frequency	Percent
<b>Number of website visitors</b>		
visitors	100	68
Non visitors	46	32
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Reason of not visiting</b>		
Technical problem	38	83
Lack of information	8	17
<b>Total</b>	<b>46</b>	<b>100</b>
<b>Visitors comment on the website feature</b>		
Lack of feed back	51	35
Lack of FAQ	23	16
Lack of photos & video	39	27
Lack update info	33	22
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Website evaluation</b>		

<b>Weak</b>	<b>38</b>	<b>26</b>
<b>Satisfactory</b>	<b>50</b>	<b>34</b>
<b>Good</b>	<b>44</b>	<b>30</b>
<b>Very good</b>	<b>9</b>	<b>6</b>
<b>Excellent</b>	<b>5</b>	<b>3</b>
<b>Total</b>	<b>146</b>	<b>100</b>

**Table 7 - Utilization of Website as a Strategic Communication Tool**

From organizational communication point of view, an organization website is regarded as one of strategic communication tools which serve in communicating organizational activities and facilitating the overall performance of the institution. MoFED's website ([www.mofed.gov.et](http://www.mofed.gov.et)) is one the government established websites with its own strategic goals. Based on the data collected from the survey, out of the study participants 68% are visiting the website while the other 32% don't. Among the non-visitors 83% stated the reasons of not visiting is due to technical problems such as the static nature of the website without having up-to-date information and its non-interactive feature that denies the visitors room for comments and feedback. The remaining 17% of the respondent for the researcher great amazement said they have no idea that MoFED had such a website; if it had one, which should have been promoted and introduced to its employees so that they could visit it.

Those who regularly visit the website responded their attitude towards the website giving priority what they think the website lack most or they think it should incorporate. According to the data, 35, 16, 27, and 22 % of the respondent said the website lacks feedback, FAQ (frequently asked question), photos & videos and up to date information respectively.

When we look at the general attitude of respondents towards the overall features and characteristic of the website, 26% said it is weak while 34% responded as satisfactory. The remaining 30, 6 and 3% stated it good, very good and excellent respectively. It shows that the majority of respondent rate the website as weak and satisfactory. Only the 40% of respondent gave the website good and above grade from its features and characteristic as well as strategic communication tools point of view.

#### 4.7 The ICT policy and Its Impact

Variables	Frequency	Percent
<b>Knowledge of ICT policy</b>		
yes	53	36
no	93	64
<b>Total</b>	<b>146</b>	<b>100</b>
<b>Reason of unawareness</b>		
Not been communicated	84	90
Personal failure	9	10
<b>Total</b>	<b>93</b>	<b>100</b>
<b>Impact of ICT policy</b>		
Negative	9	17
Positive	44	83
<b>Total</b>	<b>53</b>	<b>100</b>

**Table 8 - The ICT Policy and Its Impact**

Based on the data collected from the questionnaire about MoFED ICT policy, those who know about the policy are only 36% and those who don't know even the existence of the policy are 64%. Out of these huge unaware population 90% of them became unaware because they have never been communicated by the concerned bodies and never got any kind of information about the existence of such a policy. Those who attributed their ignorance as personal failure are only 10%. These respondents think whether there is communication about the policy by concerned body or not, they took the responsibility on themselves knowing about the organization policy. However, the great majority of respondents assume they should have been communicated about it.

Regarding respondent attitude towards the impact of the ICT policy on proper ICT utilization 83% said it has positive impact while 17% stated its negative impact. When we look at the general respondent attitude towards the policy, even those who happen to know about the policy and those in favor of its positive effect don't have detail knowledge about the policy when they are asked specific point about the policy provision and deprivation. Out of the 36% minority who happen to know the policy only few respondent identified the pros and cons of the policy clearly on the questionnaire.

In spite of the fact 83% of the knowing minority responded positively towards the policy, the 17% respondents who assume negative impact of the policy even went to extent of stating its hindrance to the proper utilization of ICT.

Generally speaking, the policy is known only by 36% respondent whose knowledge is not far from the sake of knowing without further elaboration. The majority 64% are totally ignorant of the policy.

#### 4.8 Utilization of ICT in Public Relation

Variables	Six Month Inbox Data from Sep. 2014 – Feb 2015		
	Email	twitter	Face book
Sent (messages)	52	80 (twitted)	65 (posted)
Received (messages)	456	62 (re twitted)	66 (commented)
Number of followers		6,953 (June 2/2015)	14,159 (June2/2015)

**Table 9 - Utilization of ICT in Public Relation**

Utilization of information communication technology in public relation is relatively in a better status comparing to other MoFED supporting Directorates such as Human Resource and Finance Directorate where internal communication is frequent due to the service delivery to other main directorates in communication, human resource and finance administration.

Based on the data obtained from document investigation namely from Public Relation and Information Directorate email, twitter and face book account from September 2014 to February 2015, 52 email messages has been sent while 456 emails received. Moreover, during this period 80 messages has been twitted and 62 been re twitted by others to MoFED PR. Additionally, 65 face book messages has been posted and 66 messages has been received as comments.

According to the data collected from MoFED Twitter and Face book account on June 2/ 2015, MoFED has 6, 953 and 14, 159 twitter and face book followers respectively. This number is one of the highest among the 45 Federal Government offices that categorized in the economy cluster (MoFED PR report, 2015).

#### 4.9 Discussion

It is true that ICT utilization from infrastructure development and coverage point of view is in an infant level when we compare the Ethiopian status even from sub-Saharan standard (Adam, 2010). Ethiopia's low level of internet penetration, computer per capita and other backward trend in relation to ICT are the bottle necks which should be addressed accordingly. However, the case in MoFED could be observed from Federal Government Ministries and from its comparative advantage in equipment (hardware) and human capital (humanware) perspective.

The problem in utilizing ICT is manifested in low performance level of employees and directors in making use of the new technology as a strategic tool in organizational communication of MoFED. Most of the formal internal organizational communication has been functioning predominantly by letter writing in the hard copy which has to be replaced with electro mail. To this effect, MoFED's ISAC had introduced a particular E-mail system called [zimbra@mofed.gov.et](mailto:zimbra@mofed.gov.et) to communicate internally in the Ministry even when there is no internet connection and without depending on global email service providers like Yahoo and Gmail. However, the outcome is not as promising.

In the previous section of this chapter, we went through the results presented quantitatively that have been collected from questionnaire and document investigation. As the research is guided by mixed research methodology, both quantitative and qualitative research methodology is employed. Thus, in order to triangulate and arrive to textured results, qualitative data collection method has been conducted.

To this effect 10 key informants have been interviewed in depth as per the research objectives and research questions. Accordingly, the result found from quantitative data collection method has been triangulated by qualitative data collecting method too.

In the result presentation section, we have seen that the email versus paper mail prevalence in MoFED is unbalanced and to some extent it went to the extent nil to something ratio. In every aspect of MoFED's internal communication paper mail or formal letter is dominant over email. It has been proved both the data collected from the survey and the document investigation in inboxes and file boxes.

Moreover, the investment on ICT still going on and the expense for stationary is sky rocketing each year. The Ministry's internal email system [zimbera@mofed.gov.et](mailto:zimbera@mofed.gov.et) has not been used properly and even it is unknown by some of MoFED's employees. Although the ICT policy clearly stated that MoFED's internal communication is conducted only by [zimbera@mofed.gov.et](mailto:zimbera@mofed.gov.et) the majority of employees (66%) use global email services such as yahoo and Gmail.

Among the key informant, one interviewee who is the senior software developer in MoFED reacted on unbalance email versus paper mail prevalence and improper utilization of email system in the Ministry with two main attributes. He noted

As a senior ICT professional in MoFED over five years, I observed two main points as the root cause of the problem. The first is the inability to go out of the traditional media to the new media. In this digital age, lots of mature and old age employees are still culturally tied with stationeries. Second MoFED's directors and head of departments who should be responsible for proper ICT implementation are not committed. If they had been committed they could have informed, influenced and persuaded the employees under their leadership to use ICT to whatever effect including internal communication (Personal interview, May, 2015).

Another ICT aspect which is one of the research objectives and questions presented in the result or finding is about MoFED's website. The website which is one of the strategic communication tools is visited by 68% of the respondent. The visitors range from few regular visitors to once on the blue moon visitors. The remaining 32% are non-visitors or quitted visiting for various reasons.

The qualitative data obtained from in depth interview voiced divers opinion on the website starting from technical problems to miscommunication. An interviewee commented on the website non interactive nature. He stated:

Whenever I visit the website, I see the same old story. No up to date information at all. The website is static. The features are not attractive even from some equivalent line Ministries standard point of view. The worst situation is, it has no

a comment or a feedback section which gives room for visitors to react and interact (Personal interview, May, 2015).

MoFED's ICT professional themselves share the comment of this informant. Originally the website was developed with acceptable standard of a multifunctional website. According to them all the basic features and structures that mean the skeleton were there hoping to develop it into full-fledged website with necessary applications. However, before it finishes all its development in to a well to do website it has been incorporated in to government portal under Ministry of Communication and Information Technology.

Another key informant accepting the situation that MoFED website be under government portal cause a certain amount of limitation in doing as MoFED's ISAC wish, however, there is still room for some activities updating constantly and some promotional activities to create awareness among the Ministry employees especially to the new one. He further commented that communication about the website is crucial because there are some employees who still don't know MoFED has a website.

Similar situation is there with regard to ICT policy too. Among the respondent of the questionnaire about MoFED ICT policy, only 36% of them have knowledge about it. The majority of the respondent being ignorant about the policy shows failure of communication on the part of MoFED's ISAC according to some key informant. One key informant commented strongly "I have been working in the Ministry for years; however, I have never heard about ICT policy. How on earth I am supposed to know about it without being informed or communicated?" He asks.

In the process of qualitative data gathering, among the key informant, one interviewee put the existing situation in regard to MoFED ICT policy in the following balanced way

I read the policy thoroughly, the policy is by any standard is a good one. If it is implemented accordingly it is a functional directive. However, on some parts of the policy it has some limitation and it needs some revision and adjustments. After all, the policy that was formulated in 2011 says 'the policy will be revised

annually'. The other point I would like to comment is that there should be PR activities on the part of ISAC for awareness creation and promotion on the center's activities including the ICT policy (Personal interview, May, 2015).

In spite of sharing some of the key informant comments, some of ISCA professionals that work in software development, network administration and IT support team who are key informant themselves disagree with some of the comments mentioning they are working under some challenges both from MoFED's employees and management. On the part of the employees there is technology resistance that must be redressed before moving in to full engagements of any ICT related programs. On the part of management there is lack of follow up in implementing some ICT activities by full filing the necessary humanware and hardware.

Another key informant from ISAC stated that

After ISAC professional developed software for different department's activities, the management couldn't implement it for not full filing the appropriate human and hardware. In spite of all the challenges, ISAC and its professionals are doing their level best in running the three main ICT teams and still working hard to attain one of the Ministry's five years strategic goals namely paper free environment (Personal interview, May, 2015).

Moreover, a key informant who is working at director level and serving the ministry for several years in different capacity shared his view on MoFED's ICT utilization and on the research three ICT aspects namely email, website and ICT policy differing in views than the earlier opinion. He noted

MoFED is one of the earliest ICT utilizing Ministry among government offices. I believe that MoFED is still one of the heavy users and implementers among the federal bodies. Regarding bottlenecks in implementing ICT, the lion share goes to MoFED's ISAC according to my opinion. If the ICT policy says MoFED's internal communication is carried out by internal email system called [zimbra@mofed.gov.et](mailto:zimbra@mofed.gov.et) it should be done accordingly. ISAC based on the policy

can shut the other email systems and force the employees to use zimbra. That is all. Another point I wish to share is, whatever activities is done in ISAC they don't do change communication. Any output should be communicated (Personal interview, May, 2015).

Contrary to this opinion another key informant gave an opinion against the earlier informant. This interviewee, who is a director himself at MoFED, said,

No one be successes full in forcing someone to adapt and use a certain ICT application. Rather, it would be wise to bring forward some kind of ICT application to be accustomed and in the process to be chose and adapted. If something is competent enough to some other ICT application, there is no reason to be rejected. I remember, when [zimbra@mofed.gov.et](mailto:zimbra@mofed.gov.et) was introduced there were some application and technical problems. May be they has solved it now. If so, no problem at all in adopting and implementing it. But this forcing thing is not sustainable working approach (Personal interview, May, 2015).

Now it became clear that for any activity to be effective there should be integration among systems and sub systems. As this research is informed by system theory which advocates a system has internal relationships among its objects and exist in an environment, ICT utilization in MoFED should be integrated and inter related to other systems in the Ministry. Moreover, a system is a set of things that affect one another with continual stages of input, throughput (processing), and output (Bertalanffy, 1968).

Based on system theory, when we see MoFED as a system existing in an environment with internal relationship with its objects namely systems and sub systems characterized or categorized by directorates and departments that affect one another with continual stages of input, throughput and output, it looks half closed and half open system. As stated in the literature review of this study the communication pattern of MoFED is basically hierarchically structured from top to down with vertical, horizontal and diagonal communication directions which allows information flow in the day to day activities of the ministry (MoFED Communication Strategy, 2010).

Considering MoFED's organizational chart or structure (Table 2) one can identify the hierarchical structure with formal organizational communication flows which is suitable for formal letter or memo communication that has fulfilled all the criteria with signature, titles and seals which is too formal to be an open system. Due to this too formal communication pattern, MoFED as a system is said to be closed.

However, there are some patterns too, that make an open system due to its wheel type communication network and Computer Mediate Communication (CMC) characteristics. In spite of the fact that MoFED's communication pattern is hierarchical, due to the flat structures of each Directorate, Office, Service, Unit and Center an employee can communicate directly to the director or the office head without passing through a team leader or a coordinator. Hence, the communication network in MoFED at the directorates level being wheel type and aided with CMC to some extent informal communication exists which creates a conducive environment for an open system. That is why the researcher dared to say the system in MoFED is half closed and half open in relation to system theory point of view.

Although the system is said to be a half open system, ICT utilization which has great contributions for internal relationship and communication among systems and sub systems of MoFED's has not been employed to its level best. Therefore, when we see the effect or aspects of ICT utilization in MoFED from system theory point of view, the problems of integrations and communication look apparent.

The results found through the quantitative and qualitative data collection methods namely unbalanced email versus paper mail prevalence, unsatisfactory or in-between website utilization and widely unknown ICT policy are results of not integral performance that doesn't match with system theory concepts. ISAC develops and tries to implement various ICT applications and programs, the employees are tied with technology resistance unable to go out from the old and customary comfort zone, the management is reluctant in moving things in constant speed. This all miscommunication and disintegration hinders the utilization of ICT as a strategic communication tool in MoFED.

As it is stated in table 1 in literature review of this study ICT has great implication on organizations and employees (Harris and Nelson, 2008) in bringing the following benefits:

- Improves Coordination and Productivity
- Flattens the Organization
- Increases Influence
- Increases Accessibility
- Improves Communication
- Increases Participation

However in the case of MoFED ICT utilization we don't see these benefits clearly.

When we look at MoFED's ICT utilization from technology determinism and social constructivism concepts which believe in argument that introduction of certain types of technologies directly causes certain kinds of outcomes and technology is shaped or mediated by the social contexts and interactions (Rice &Leonardi, 2013) respectively, point of view it tends to the later one. Instead of technology determinism, social constructivism is witnessed in MoFED where ICT is used according to social context and interaction from exhibiting technology resistance to being nostalgic to old media.

## CHAPTER FIVE

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Conclusions

The study drowned number of findings in regard to the research topic. As a conclusion, the researcher would like to say a few words about the study findings in general. In spite of the fact that MoFED has a half century long ICT utilization culture, relatively well organized hardware, software and humanware, the current ICT utilization performance doesn't match with the background.

When we look at from specific research topics namely email, website and ICT policy utilization point of view, the findings are not encouraging. According to the study findings, utilization of email in MoFED particularly email versus paper mail prevalence is unbalanced. At this digital age, in the internal communication of MoFED paper mail or memo is still dominant over electro mail. In some departments, the prevalence even went to the extent nil to something with zero email messages to lot of paper mail in a given internal communication aspects. Thus, the expenses for stationary are increasing in millions birr, the dominance of paper mail or memo over electro mail is getting stronger and eventually the promise to make the Ministry paper free environment unmeet. The only place where relatively email and social media better utilized for internal and external communication is in MoFED's Public Relation and Information Directorate.

In regard with the website ([www.mofed.gov.et](http://www.mofed.gov.et)) utilization for strategic communication tool, the majority (60%) of the respondents' attitudes fall with weak and satisfactory ratings. With 32% non-visiting rate among its employees, the website is by far below employees' expectation in playing a role awareness creation, information dissemination and image building. Although the website has a standard website skeleton, it is not up to date and interactive that could give room for feedback and comment which enable two way communications.

Even worse than the website, MoFED's ICT policy is unknown by 64% of the respondent let alone they use it as directive for effective and efficient utilization as the policy declares its purpose. These great majorities (64%) are still unaware of that MoFED has an ICT policy. Those

happened to know it (36%) even don't have average understanding to implement it and assess its impact.

Generally speaking, utilization of ICT in MoFED has been going through lots of challenges as there is always happen in introducing a new technology to an environment where technology resistance is expected. However, as the research finding showed three stake holders are responsible for the challenges MoFED ICT utilization faced.

The first responsible stake holder is MoFED's ISAC itself not playing the leading role in ICT implementation communication and integration. It became isolated sub system in MoFED environment without proper and sustainable communication and integration activities. ISAC has not been doing communication activities to the other stake holders in introducing and promoting what has been done in the center, awareness creation and refreshment training has not been done in continuous and sustainable manner. Failing not doing ICT integration activity, made the ISAC an isolated subsystem in the supra system of MoFED environment where sub systems are expected be inter dependent and integration is not a matter alternative.

The second responsible stake holder for under performance of ICT utilization in the Ministry are the directors or middle level management low commitment and performance in taking the initiative in role modeling, encouraging and positively influencing employees for effective and efficient utilization of ICT.

The last stake holder are some of the mature and old age employees whose age range from 40 to 59 years old and accounted almost half of the respondents (49%) are highly associated themselves with papers to the extent being nostalgic and weak in utilizing and applying ICT. Thus, employees' weak and low level information technology application and utilization hampered the overall ICT utilization in the Ministry where paper free environment was promised.

However, in spite of all the odds and challenges, ICT utilization in MoFED has not been halted and heading forward in the hope of improving and becoming successful after beating the challenges and the bottlenecks. Relatively speaking MoFED's ICT structure, administration and utilization is in a better position than some parallel ministries because it has national mandate too

to administer such as wordanet server and some other national programs like IFMIS (Integrated Financial Management Information System).

Therefore, whatever draws from the study as recommendation is given hopefully going to be accepted and implemented anticipating MoFED's ISAC, management and employees capacity for improvement and self-organizing characteristics.

The report in this result and presentation chapter also voiced all the stack holders views, opinions and ideas that could be taken as an input in proper and effective utilization of ICT in MoFED. Moreover, the final conclusion and recommendations which may be taken as concept idea for future implementation and intervention are drawn from this main study section.

## 5.2 Recommendations

### 5.2.1 For MoFED's Information Systems Administration Center (ISAC)

- Having observed ICT is important communication strategy tool and the backbone of the Ministry's overall performance, ISAC should formulate ICT utilization communication strategy
- In order to ICT function as a system among MoFED's sub systems integrally, ISAC should do continuous and sustainable ICT integrating activities in individual, groups, departments and upper management levels
- In order to identify what is needed from ISAC and evaluate its failure and achievement in a sustainable manner, it should be established a research team or focal group to undertake activities at full time bases.
- As there is apparent information and communication gap between ISAC and other directorates as well as between some of ICT facilities and employees there should be a communication specialist working as a bridge in ICT utilization awareness creation, promotion, sensitizing, integrating and collecting feedback for sustainable communication and integration activities.
- As ISAC organized only by computer science and IT technology professionals, the Center structure need to be revised so that it accommodates other appropriate social and natural science professionals too.

### 5.2.2 For MoFED's Management

- The directors including the upper management must be committed and take the initiative for effective and efficient ICT utilization and be role models for employees in leadership, promotion, encouragement and positive persuasion.
- In order to synchronize humanware, hardware and software the management should facilitate and provide the necessary financial and administrative supports so that ICT utilization take off.
- To avoid serious technology resistance among the employees, the necessary informing, educating and some other administrative measures including persuasion activities should be taken.

- In order to implement the ICT policy properly enforcing measures should be taken on those of who violet the policy and misuse the ICT resource.
- In order to serve the employees and the general public, MoFED website should be up to date and interactive. To this end the management should give direction to directorates to feed the website with quality data and standard documents so that the website become rich with up to date information and interactive.
- Since these day well versed ICT professionals being a hot cake in the market and ICT professional turnover is high, MoFED should maintain its professionals doing the appropriate incentives and supports.

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## APPENDICES

### Appendices I - Questionnaire for MoFED employees (in English)

Questionnaire to be filled by MoFED's employees (directors and experts) who utilize CMC (computer mediated communications)

Dear respondents,

The researcher is conducting this study as a partial fulfillment for the degree of Master of Arts in Journalism and communication. The research title is "An Analysis of ICT Utilization in Ministry of Finance and Economic Development (MoFED)" It focuses on exploring the main ICT aspects mainly email, website and ICT policy. Your genuine response is very crucial to the quality of data which determine the overall study result. Thus, you are kindly requested to complete this questionnaire. The researcher is very grateful in advance for your cooperation.

The researcher

1. Sex \_\_\_\_\_
2. Age \_\_\_\_\_
3. Educational level \_\_\_\_\_
4. Field of study \_\_\_\_\_
5. Current Position \_\_\_\_\_
6. Service years \_\_\_\_\_

## Part I

### Questionnaire about email

7. Do you use e-mail?
- Yes                       No
8. Which e-mail account do you use?
- a. Zimbra@mofed.gov.et
- b. @Yahoo.com
- c. @Gmail.com
- d. @Yahoo.com&@Gmail.com
- e. other
9. If you don't use zimbra@mofed.gov.et, why is that?
- a. It is not friendly to use
- b. I am accustomed to other e-mail accounts
- c. The other e-mail accounts are more friendly and easy to use than Zimbra
- d. I haven't been given the privilege of using Zimbra e-mail account
- e. I have no information that MoFED has an e-mail account called Zimbra
- f. Technically, Zimbra is not effective and efficient to do computer mediated communication (CMC)
10. How often do you use e-mail for job related internal communication (eg. Communicating with a colleague or interdepartmental communication in the Ministry)

- a. Daily
- b. Weekly
- c. Fortnightly (In two weeks)
- d. Monthly

11. How many job related email messages do you send or receive on average during a week?

- a. One - to - three e-mail messages
- b. Three - to - seven e-mail messages
- c. Above seven e-mail messages
- d. none

12. When you formally communicate upward to your boss in requesting permission for annual leave or a per diem for field trip, which of the two mentioned communication channels do you use most?

- a. Formal letter (memo)
- b. E-mail

13. When you formally communicate upward to your boss on job related issue such as report delivery, which of the two mentioned communication channels do you use most?

- a. Formal letter (memo)
- b. E-mail

14. When you communicate horizontally with a colleague or line departments on job related issues, which of the two mentioned communication channels do you use most?

- a. Formal letter (memo)
- b. E-mail

15. When you communicate horizontally with supporting Departments such as Public Relations, Human Resource and Finance Directorates, which of the two mentioned communication channels do you use most?

- a. Formal letter (memo)
  - b. E-mail
16. When you communicate down ward to your subordinate on job related issues which of the two mentioned channels do you use most?
- a. Formal letter (memo)
  - b. E-mail
17. Do you communicate through e-mail diagonally to your subordinate or low level employ in another line Directorate?
- Yes                       No
18. Which activities do you communicate through e-mail in the Ministry most?
- a. Job related issues
  - b. General knowledge materials
  - c. Jokes, entertaining contents and some other job unrelated materials
  - d. Personal affairs or issues
19. How do you rate the utilization of e-mail in MoFED as a strategic communication tool in achieving the overall performance of the Ministry?
- a. Weak
  - b. Satisfactory
  - c. Good
  - d. Very good
  - e. Excellent
20. How much time do you spend on average daily on checking, receiving, downloading And sending e-mail messages ?
- a. Below 30 minutes
  - b. 30 to 60 minutes
  - c. 1 to 2 hours
  - d. Above 2 hours

21. If you have any idea concerning email utilization in MoFED, please put it in the space provided bellow

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## Part II

### Questionnaire about MoFED Website

22. Do you visit MoFED's website?

- Yes                       No

23. If you do, how often do you visit MoFED's website?

- a. Daily
- b. Weekly
- c. Fortnightly (In two weeks)
- d. Monthly

24. If you have never visited or quit visiting it, why is that?

- a. I didn't know that MoFED had a website
- b. I found it static and it doesn't have up-to-date information comparing to other websites
- c. The whole setup of the website is not attractive
- d. It is not interactive which gives the visitors room for comments and feedback

25. If you are one of the regular visitors of the website, which section do you like the most?

- a. News updates and feature articles
- b. Featured resources
- c. Featured Information
- d. Featured Documents
- e. Regulations and Directives
- f. Archives

26. Which section of it do you dislike the most?

- a. News updates and feature articles
- b. Featured resources
- c. Featured Information
- d. Featured Documents
- e. Regulations and Directives
- f. Archives

27. What one of the following do you think the website lacks the most?

- a. Comment
- b. Photos, graphics and videos
- c. News and articles
- d. FAQ (Frequently Asked Questions)

28. How do you rate MoFED's website in its role playing organizational communication activities including information dissemination, information sharing, ideas exchanging, awareness creation and image building?

- a. Weak
- b. Satisfactory
- c. Good
- d. Very good
- e. Excellent

29. If you have any other idea concerning MoFED's website, please put it in the space provided bellow.

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**Part III**

**Questionnaire about MoFED's ICT Policy**

30. Do you know that MoFED has formulated and implemented an ICT Policy?

- Yes                       No

31. If you don't, why is that?

- a. MoFED's Information System Administration Center (ISAC) has

never announced to or informed me

- b. I have never heard about MoFED' ICT policy from my colleagues or boss.
- c. There has never been any kind of communication about the ICT policy in my stay in the Ministry.
- d. The policy hasn't been published and been distributed to MoFED' employees.
- e. I myself never tried to find out whether MoFED had an ICT policy or not.

32. If you know and read it, how do you evaluate its importance?

- a. It is important for the overall effective and efficient performance of ICT in the Ministry
- b. It doesn't make any difference
- c. It even hinders free utilization of ICT
- d. It is a non-functional Policy

33. Which section of the policy do you think is progressive and empowers the employees' utilization right the most?

- a. The grant of 1GB disk space quota to all employees on MoFED's mail server
- b. Being eligible to use MoFED's e-mail system ([mofed@gov.et](mailto:mofed@gov.et))
- c. The right of employees to request file restoration
- d. Being eligible to use antivirus in central and systematic approach
- e. Granting website exemption for a limited duration or to a limited scope of employees
- f. Users right to have ICT related support service from MoFED's Information System Administration Center (ISAC)
- g. The right of having quality training to fulfill employees skill gap

34. Which part of the policy do you think deprives the employees' ICT utilization right?

- a. The part which prohibits installation of any unauthorized software
- b. The part which announce the right of MoFED's ISAC (Information System Administration Center) to add or delete internet service
- c. ISAC right to filter or control potential harmful contents from the internet through its proxy server
- d. Controlling download materials that can diminish network performance
- e. The part that states email service shall not be used for bulk mail and chain letters
- f. The part which grants ISAC to reserve the right to monitor email to prevent illegal purpose
- g. The part which states that users e-mail address is not private information and ISAC is free to include it in MoFED's contacts database
- h. The section that declares ISAC reserves the right to cancel the privilege of using email service at any time
- i. The part that states about users account remains disable for two months will be deleted

35. How do you evaluate the practice of social media utilization (Face book, You tube) limitation on a specific time?

- a. It violet the right of employees to use social media
- b. It is up to the authority or right of ISAC to decide the appropriate utilizing mechanisms
- c. It helps the employees to use the time effectively and efficiently for the job related activities
- d. It benefits both the employees and the organization

36. How do you evaluate the impact of MoFED's ICT policy on the overall utilization of ICT

- a. It has no effect of any kind
- b. It has negative effect
- c. It has positive effect
- d. It violets the privilege of employees to utilize ICT as an employees and citizen right
- f. As any policy provision, it exercises and offers both the right and responsibility which goes together

37. If you have additional idea concerning MoFED's ICT policy, please put it in the space provided bellow.

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Appendices II - Questionnaire for MoFED employees (Amharic)

ለገንዘብና ኢኮኖሚ ልማት ሚኒስቴር የቢሮ ረዳቶች ወይም ሴክራቴሪዎች የተዘጋጀ መጠይቅ

ይህ መጠይቅ በጋዜጠኝነትና ኮሙኒኬሽን ትምህርት ዘርፍ የማስትርስ ዲግሪ ማሟያ ለሚቀርበው የመመረቂያ ጽሁፍ መረጃ ለማሰባሰብ የተዘጋጀ ነው። የምርምር ጽሁፉ ርዕስ “የኢንፎርሜሽን ኮሚኒኬሽን ቴክኖሎጂ አጠቃቀም ትንተና በገንዘብና ኢኮኖሚ ልማት ሚኒስቴር” የሚል ሲሆን የሚኒስቴር መስሪያ ቤቱ የቢሮ ረዳቶች (ሴክራቴሪዎች) በኮምፒውተር በሚታገዝ የመልእክት ልውውጥ በአጠቃላይም በኢንፎርሜሽን ኮሙኒኬሽን ቴክኖሎጂ አጠቃቀም የራሳችሁ የሆነ ሚና ስላላችሁ ይህ መጠየቅ በተለየ ለናንተ በአማርኛ ተዘጋጅቷል። ስለዚህም ጥናቱ ውጤታማ ይሆን ዘንድ መጠይቁን ትኩረት ሰጥታችሁ ትሞሉ ዘንድ አጥኚው በትህትና እየጠየቀ ለትብብራችሁ በቅድሚያ ያመሰግናል።

የጥናት አቅራቢው

1. ጾታ \_\_\_\_\_
2. እድሜ \_\_\_\_\_
3. የትምህርት ደረጃ \_\_\_\_\_
4. የሰለጠነበት ሞያ \_\_\_\_\_
5. አሁን ያሉበት የስራ መደብ \_\_\_\_\_
6. የአገልግሎት ዘመን \_\_\_\_\_

ክፍል 1 - የኢሜል አጠቃቀምን በተመለከተ

7. ኢሜል (የኤሌክትሮኒክስ መልእክት ሲስተም) ይጠቀማሉ?
  - እጠቀማለሁ
  - አልጠቀምም
8. ከሚከተሉት ውስጥ የትኛውን የኢሜል አገልግሎት ይጠቀማሉ?

ሀ. [Zimbra@mofed.gov.et](mailto:Zimbra@mofed.gov.et)

ለ. [@.Yahoo.com](mailto:@.Yahoo.com)

ሐ. [@Gmail.com](mailto:@Gmail.com)

መ. [@.Yahoo.comእና@Gmail.com](mailto:@.Yahoo.comእና@Gmail.com)

ረ. ሌሎች

9. የሞሬድን ኢሜል [Zimbra@mofed.gov.et](mailto:Zimbra@mofed.gov.et) የማይጠቀሙ ከሆነ ምክንያቱ ምንድነው?

ሀ. ሞሬድ የራሱ የሆነ የኢሜል አገልግሎት እንዳለው አላውቅም

ለ. ሌሎቹ የኢሜል አገልግሎቶች ለአጠቃቀም ቀላል ስለሆኑ ይመቹኛል

ሐ. የሞሬድ የኢሜል አገልግሎት የምፈልገውን አይነትና መጠን መልእክት ለማስተላለፍ አቅም የለውም

መ. የታወቁትን የኢሜል አገልግሎቶች በመልመድ ለሞሬድ ኢሜል ትኩረት ስለማልሰጥነው

ረ. ዜምብራን ለመጠቀም የሚያስችል አካውነት ስላልተሰጠኝ

10. በቀን ውስጥ በአማካይ ምን ያህል የኢሜል መልዕክቶችን ወደ ተለያዩ የመስሪያ ቤቱ የስራ ክፍሎች (ዳይሬክቶሬቶች) ይልካሉ እንዲሁም ይቀበላሉ?

ሀ. ምንም

ለ. ከአንድ እስከ ሶስት

ሐ. ከሶስት እስከ ሰባት

መ. ከሰባት እስከ አስር

ረ. ከአስር በላይ

11. በቀን ውስጥ በአማካይ ምን ያህል የጽሁፍ መልዕክቶችን (ሜሞ) ወደ ተለያዩ የመስሪያ ቤቱ የስራ ክፍሎች (ዳይሬክቶሬቶች) ይልካሉ እንዲሁም ይቀበላሉ?

ሀ. ምንም

- ለ. ከአንድ እስከ ሶስት
- ሐ. ከሶስት አስከ አስር
- መ. ከአስር እስከ ሀያ
- ረ. ከሀያ በላይ

12. ከገጽ ለገጽና ከስልክ ግንኙነት ውጪ ስራን በተመለከተ ከአለቃዎ ጋር ይበልጥ ግንኙነት የሚያደርጉት በየትኛው የመገናኛ ዘዴ ነው?

- ሀ. በመደበኛ ደብዳቤ (ሜሞ)
- ለ. በኢሜል
- ሐ. በማስታወሻ (ስቲክር)

13. ከገጽ ለገጽና ከስልክ ግንኙነት ውጪ ስራን በተመለከተ ከኤክስፐርቶችና ሌሎች ሰራተኞች ጋር ይበልጥ ግንኙነት የሚያደርጉት በየትኛው የመገናኛ ዘዴ ነው?

- ሀ. በመደበኛ ደብዳቤ (ሜሞ)
- ለ. በኢሜል

14. በእርሶ ወይም በስራ ክፍሉ የኢሜል አድራሻ ለአለቃዎ የተላከ መልእክት ሲደርሱ አብዛኛውን ጊዜ የትኛውን ዘዴ በመጠቀም መልእክቱን ለአለቃዎ ያደርሳሉ?

- ሀ. መልእክቱን በወረቀት ፕሪንት በማድረግ
- ለ. መልእክቱን በኢሜል ፎርዋርድ በማድረግ

15. በእርሶ ወይም በስራ ክፍሉ የኢሜል አድራሻ ለክፍሎ ሰራተኛ ወይም ለኤክስፐርቶች በኢሜል የተላከ መልእክት ሲደርሱ አብዛኛውን ጊዜ የትኛውን ዘዴ በመጠቀም መልእክቱን ያስተላልፋሉ?

- ሀ. መልእክቱን በወረቀት ፕሪንት በማድረግ
- ለ. መልእክቱን በኢሜል ፎርዋርድ በማድረግ

16. ከገጽ ለገጽና ከስልክ ግንኙነት ውጪ በእርሶ የስራ ክፍልና በሌሎች የሚኒሰቴሩ የስራ ክፍሎች ወይም ዳይሬክቶራቶች መካከል የሚደረገው መደበኛ የስራ ግንኙነት (communication) በአብዛኛው የሚከናወነው በየትኛው የግንኙነት ዘዴ ነው?

ሀ. በመደበኛ ደብዳቤ (ሜሞ)

ለ. በኢሜል

17. የራስዎን የኢሜል አጠቃቀም ደረጃ እንዴት ይመዘኑታል?

ሀ. ደካማ

ለ. መካከለኛ

ሐ. ከፍተኛ

መ. በጣም ከፍተኛ

ረ. እጅግ በጣም ከፍተኛ

18. የኢሜልን አጠቃቀም በተመለከተ የሚገልጹት ሀሳብ ካለ በተሰጠው ቦታ በጽሁፍ እንዲያሰፍሩ በትህትና ይጠየቃሉ

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**ክፍል - 2 የሞፌድ ድረ-ገጽን በተመለከተ**

19. የሞፌድ ድረ-ገጽን [www.mofed.gov.et](http://www.mofed.gov.et) ይጎብኙታል?

አጎብኛለሁ

አልጎብኝም

20. የሚጎብኙ ከሆነ በምን ያህል ጊዜ ውስጥ ይጎብኙታል?

ሀ. በየቀኑ

ለ. በየሳምንቱ

ሐ. በየሁለት ሳምንቱ

መ. በየወሩ

ረ. አልፎአልፎ

21. የማይጎበኙ ከሆነ ወይም መጎብኘቶችን ያቋረጡ ከሆነ ምክንያቱ ምንድን ነው?

- ሀ. መስሪያ ቤቱ ድረ-ገጽ እንዳለው ስለማላውቅ
- ለ. ድረ-ገጹ አዳዲስ መረጃዎች ስለሌሉትና ለአይን ማራኪ ስላልሆነ
- ሐ. እንደአስተያየት መስጫ ያሉ አሳታፊ ገጽታዎች ስለሌሉት
- መ. ከትምህርት ደረጃዬና ከእለት ተለት ስራዬ ጋር የሚዛመድ መረጃ ስለማላገኝበት
- ረ. ድረ-ገጹን ለመጎብኘት ልዩ ኮድ የሚያስፈልግ ስለሚመስለኝ

22. ድረ-ገጹን የሚጎበኙ ከሆነ የትኛውን የድረ-ገጹን ክፍል ይወዱታል?

- ሀ. የዜናና የመጣጥፍ ክፍሉን
- ለ. የህግና የደንብ ክፍሉን
- ሐ. የበጀት ክፍሉን
- መ. የስራ ክንውን ሪፖርት ክፍሉን

23. በእርሶ እይታ ድረ-ገጹ ይጎድለዋል የሚሉት ምንድን ነው?

- ሀ. የአስተያየት መስጫ
- ለ. ተጨማሪ መረጃ የሚሰጡ ምስሎችና ቪዲዮዎች
- ሐ. የተለያዩ የትምህርት ደረጃ ላላቸው ሰራተኞች የሚጠቅሙ መረጃዎች
- መ. በአማርኛ ቋንቋ የተዘጋጁ መረጃዎች

24. የድረ-ገጹን አጠቃቀም በተመለከተ የሚገልጹት ሀሳብ ካለ በተሰጠው

ቦታበጽ ሁኖ እነዲያሰፍሩ በትህትና ይጠየቃሉ

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**ክፍል - 3 የ ICT (Information Communication Technology) ፖሊሲን በተመለከተ**

25. ሞፌድ የICT ፖሊሲ አውጥቶ ተግባራዊ እያደረገ መሆኑን ያውቃሉ?

- አውቃለሁ
- አላውቅም

26. ፖሊሲውን የሚያውቁት ከሆነ ጠንካራና ደካማ ጎኑን እንዴት ይገልጹታል?

ሀ. ፖሊሲው ICT በአግባቡ ጥቅም ላይ እንዲውል ያስችላል

ለ. ፖሊሲው ለውጥ አያመጣም

ሐ. ፖሊሲው በተግባር ከተደገፈ ውጤት ይኖረዋል

መ. ፖሊሲው ጥቅል በመሆኑ ለአንዳንድ የስራክ ፍሎች አይመችም

27. ፖሊሲውን የማያውቁት ከሆነ ምክንያቱ ምንድን ነው?

ሀ. ፖሊሲው ጸድቆ ስራ ላይ መዋሉን የገለጸልኝ አካል የለም

ለ. ከስራ ባልደረቦቼም ስለፖሊሲው ሰምቼ አላቅም

ሐ. የበላይ አለቆቼ ስለ ፖሊሲው እንዳውቅ አላደረጉኝም

መ. ፖሊሲው ታትሞ ባለመሰራጨቱ ላውቀው አልቻልኩም

ረ. በራሴ ድክመት ምክንያት ፖሊሲውን አላውቁትም

28. ፖሊሲውን ባለማወቅ በስራዎ ላይ የገጠሞት ችግር አለ?

- አለ
- የለም

29. ካለ አጋጣሚውን ተጠቅመው ፖሊሲውን ለማወቅ ጥረት አድርገዋል?

ሀ. ጥረት አላደረኩም

ለ. ጥረት አድርጌ ፖሊሲውን አውቄዋለሁ

ሐ. ጥረትባደርግም ፖሊሲውን ላገኝ አልቻልኩም

መ. ፖሊሲው ከአለት ተአለት ስራዬ ጋር ግንኙነት ስለሌለው ትኩረት

አልሰጠሁትም

30. የ ICT ፖሊሲን በተመለከተ የሚገልጹት ሀሳብ ካለ በተሰጠው ቦታ

በጽሁፍ እንዲያሰፍሩ በትህትና ይጠየቃሉ

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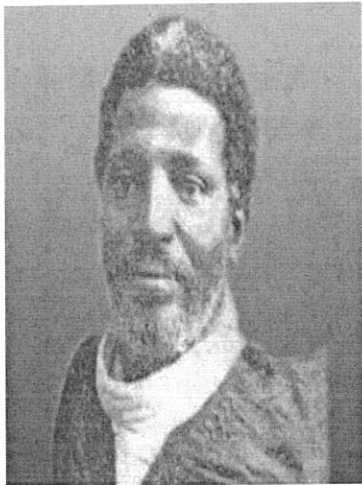
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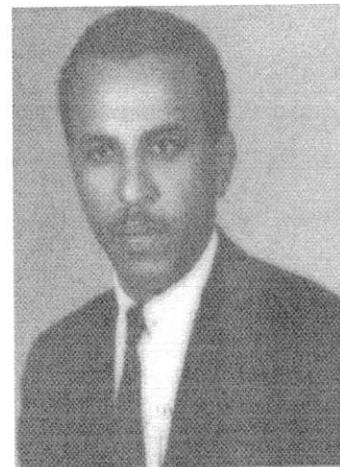
### Appendices III - Interview Guide for Key Informants

1. What is your overall opinion towards MoFED ICT utilization?
  - የሞፌድን የኢንፎርሜሽን ኮሙኒኬሽን ቴክኖሎጂን አጠቃቀምን በተመለከተ ያሉት አጠቃላይ ሀሳብ ምንድን ነው?
2. According to your observation what does email versus paper mail utilization look like in MoFED?
  - በርሶ ምልክታ መሰረት በሞፌድ የኢሜልና የመደበኛ ደብዳቤ አጠቃቀም ምን ይመስላል?
3. Do you use the internal email system of MoFED namely [zimbra@mofed.gov.et](mailto:zimbra@mofed.gov.et) ?
  - ዚምብራ የተሰኘውን የሞፌድን የውስጥ የኢሜል አገልግሎት ይጠቀማሉ?
  - If you use it how do you evaluate the overall implementation from internal communication point of view?
  - የሚጠቀሙ ከሆነ ከውስጥ ግንኙነት አንጻር አተገባበሩን እንዴት ይገመግሙታል?
  - If you don't use it why is that?
  - የማይጠቀሙ ከሆነ ለምን አይጠቀሙም?
4. Do you visit the Ministry website [www.mofed.gov.et](http://www.mofed.gov.et) ?
  - የመስሪያ ቤቱን ድረ-ገጽ ይጎብኛሉ?
  - If you visit it, how do you assess it as a strategic communication tool?
  - የሚጎበኙ ከሆነ ከስትራቴጂክ ኮሙኒኬሽን መሳሪያነት አንጻር እንዴት ይመዘኑታል?
  - If you don't or quit visiting it what are the main reason?
  - የማይጎበኙ ከሆነ ወይም መጎብኘቶትን ያቆሙ ከሆነ ምክንያቱ ምንድነው?
5. If you know about MoFED's ICT policy, what do you say about the policy?
  - የሞፌድን ICT ፖሊሲ የሚያውቁ ከሆነ ስለፖሊሲው ምን ይላሉ?
6. Do you believe that paper free environment in MoFED has been achieved?
  - በሞፌድ ውስጥ ከወረቀት ነጻ የሆነ የስራ ግንኙነት ተፈጥሯል ብለው ያምናሉ?
7. What do you suggest in the future for the proper and sustainable ICT utilization in MoFED?
  - ለወደፊቱ በሞፌድ ውስጥ አግባብና ዘላቂነት ያለው የ ICT አጠቃቀም እንዲኖር ምን መደረግ አለበት ይላሉ?

## Appendices IV – Pictures



Bejirond Mulugeta Yigezu  
The first  
Finance Minister of Ethiopia  
1907 – 1915 (1900-1908 E.C)  
Picture - 1



Bulcha Demekissa  
1953- 1963 (E.C)  
Picture - 3



Yilma Deressa  
1950-1963 (E.C)  
Picture - 2



Asfaw Damite  
1955 -1960 (E.C)

Pictures - 4

## Declaration

I, the undersigned, declare that this thesis is my original work and all the sources of materials used for the thesis have been duly acknowledged.

Name: Girma Kebede

Signature:  \_\_\_\_\_

Date of submission: June 2015

Place of submission: Addis Ababa, Ethiopia