



***The Challenges of Managing Development Programs in Public Sector:
The case of e-government Program in Ethiopia***

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Abbreviations

ANT	Actor Network Theory
BIS	Business Innovation and Skills
BOT	.....	Build Operate and Transfer
EICTDA	.....	Ethiopian Information and communication Technology Development Agency
FDRE	.....	Federal Democratic Republic of Ethiopia
GCIS	.....	The Government Center for Information Systems
IBEX	.....	Internet Based Exchange
IBM	.....	International Business Machines Corporation
ICT	.....	Information and communications Technology
IEMIS	.....	Integrated Education Management Information System
IFIs	.....	International Financial Institutions
IFMIS	.....	Integrated Financial Management Information System
ITU	.....	International Telecommunications Union
MCIT	.....	Ministry of Communication and Information Technology
MoE	.....	Ministry of Education
MoFED	.....	Ministry of Finance and Economic Development
NGOs	.....	Non-Governmental Organization
PEM	.....	Public Expenditure Management
PM	.....	Program Management
PMO	.....	Program Management Office
PPP	.....	Public Private Partnership
UN	.....	United Nations
UNCTAD	.....	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
VSAT	Very Small Aperture Terminal

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ABSTRACT

Information and Communication Technologies (ICTs) have been expected as a powerful tool for development. However, there is a high rate of e-government project failures. The purpose of this study was to assess the challenges of managing development programs in public sector: the case of e-government program in Ethiopia. Descriptive survey method was used to attain the objective of the study. The study was conducted by using 4 public institutions engaged in e-government program and or program project implementation and beneficiaries. Respondents were from management of the program/program project, experts, support staffs teachers, students and from business community. Respondents were selected through purposive sampling. Questionnaires, interviews, document review and observation techniques were employed. The statistical tools used to analyze data were percentage, tables, graphs and charts. SPSS is employed to analyze the data. The results have revealed that e-government program has faced and still facing various challenges like lack of public awareness, limited participation of beneficiaries in design and implementation, limited electronic service development culture in Ethiopia, lack of organizational capability, weak program governance and poor strategic e-readiness many of which arise from lack of strategic e-readiness given appreciation to the efforts done so far. As far as the contributions of e-government in the area are concerned, it is insignificant. The government of FDRE has enacted e-government strategy in 2010, which is a tool for e-government program in Ethiopia. Its immediate impact will be discouraging against efforts exerted and even the cumulative positive effect of its outcome is time taking. In the long term its effect will be highly encouraging as the experience from literature, empirical review and discussion part shows. Office for e-government councils should be opened. Government in a short period shall designate e-government high level council members to overcome the challenges. Finally it will support to assure the expected outcome of the program.

Chapter One

1. Introduction

1.1. Background of the study

Until about 1970s, the concept of bureaucracy provided the uncontested organizational model for implementing policies. Since the 1980s, however, the concept of bureaucracy has been criticized for resulting in underperformance, inefficiency, and lack of responsiveness to needs and requests of citizens (Homburg, 2008). Following the above mentioned critiques as a factor, governments these days often boast about the efficiency of their electronic systems. Information and communication technologies (ICTs) apparently allow public service to become cheaper, faster and more democratic. E-government has become another buzzword, the shining future of the public realm. Critics claim, however, that ICTs' potential for democratic renewal is hampered by ancient assumptions of how governments should function (Ibid).

As Aman (accessed: 2/10/2013); Information communication technology (ICT) is so profound a phenomenon that it has truly revolutionized the way we live and work. It is by no means an exaggeration if its impacts in terms of magnitude are analogized to that of the impacts of the industrial revolution that swept Western Europe three centuries ago. ICTs are proving to be highly potent forces in terms not only of bringing alternative and unprecedented technical solutions; much more beyond the technological frontier, they have also stimulated a deep-rooted cultural transformation, part of which is fundamental.

The rapid and continuing growth and development of ICT is indeed transforming the ways in which we live and work. Advances in ICT have continued to change the way the world interacts that some have termed the trend "the second industrial revolution" (Feather, 2002 cited in EICTDA,2007). According to Primo Braga et al (2005) which also cited in EICTDA, 2007; while it took 75 years for telephone to reach 50 million users when it was invented, it has taken the World Wide Web (WWW) only 4 years to reach the same number of users.

In order to harness the full potential of the benefits of the global information society, it is imperative that all nations and the people of the world share this opportunity equally, i.e., ICT must be as accessible as possible. However, the reality unfolding in the world is marked by considerable “digital divide” between the rich and poor countries and a widening gap between the e-haves and e-have not’s (UN Economic and Social Council, 2000; and Rodriguez and Wilson, 2000 cited in EICTDA, 2007). In this regard, many poor developing countries face serious obstacles in providing equal access to ICT. Ethiopia is one of these countries where ICT still remains the least developed as compared to countries in sub-Saharan Africa and elsewhere in the world. Equally, the number of computer hardware and software products remains negligible while traditional information delivery system largely based on radio or newspaper continues to dominate.

Cognizant of its role as enabler of socio-economic development, and in a bid to address these challenges, the Ethiopian government through its ICT Policy Document has recognized the development of ICT as one of its strategic priorities. The Document broadly articulates policy guidelines and identifies thirteen critical areas for development of ICT in Ethiopia ranging from development of physical ICT infrastructure to supporting the universal access and expansion of information communication services to all parts of the country. According to UN Global E-Readiness Report (2005) cited in EICTDA, 2007; new technologies are likely to continue to have a profound impact on the political, economic, social and cultural values of the world in the coming decade. As a result, governments of the world are seeking to harness this potential of the ‘Information Society’ for development, economic and social transformation.

One of the strategic thrust of the Policy Document relates to “Community Access to ICT and Service Delivery”. It emphasizes the significance of access of the country’s rural population to ICT as instrumental in transforming the country into a knowledge and information - based economy and society. Sets of strategic means and ends are identified in this section to address the challenges of ensuring access of ICT to vast majority of people living in rural areas and whose literacy levels are quite low (UN, 57/295: 3). As e-government is a rapidly growing phenomenon, it has an increasing impact on the work of the public sector. It absorbs an

increasing proportion of public sector budgets. It promises a solution to many public sector problems like inefficiency, ineffectiveness (Heeks 2006:1).

With recent advances in ICT connectivity, and the emergence of new ICT applications and services, including in least developed countries, the scope for ICT-enabled solutions to make a difference in the area of [development] has radically improved (UNCTAD 2011:12). Considering these all, Ethiopian government has launched an e-government initiative/Program in 2010 which is currently running several projects; like, WoredaNet, SchoolNet, Rural connectivity, Call Center, Community ICT centers, and like.

1.2. Statement of the problem

The management of programs across organizations and organizational units with some degree of autonomy is of growing interest in the public sector. Increasingly, fragmented public sector bodies will need to conduct electronic business between themselves (GCIS, 1995: 6). The fact that nearly 50% of the annual budgets of many developing countries are devoted to financing a wide variety of development programs and projects adds to the significance of the study (Paul 1982: 1). Governments design a program to achieve the strategic objective of the country or a given organization. Given the above mentioned concern of ICT; Ethiopian government has designed a program to attain the demand of the public on ICT. One of the areas on which this study focuses is e-government program which is designed to improve service delivery in public sector.

As mentioned above and written by many researchers like Takeuchi (2008:18) and Debretsion (2011), since the advantage and rationale of ICT use for development is understandable, an optimistic expectation may be generated that ICT is used as a powerful tool for development in many projects under the adequate government initiative. However, the reality is different from such an optimistic expectation. According to Heeks (2003), 35% of e-government projects in developing and transitional countries are total failures and 50% are partial failures. Generally studies conducted on e-government are from perspective of its contribution to development and as well specific to projects not at a program level. Specifically; challenges in managing e-

government program are not discussed at program level. Therefore, assessing and analyzing the challenges encountered in the process of realization of the ICT development through e-government program is found to be timely and critical.

1.3. Research Questions

The major research questions to be addressed by this study are:

1. What are the challenges faced by e-government?
2. What kind of challenges e-government is facing?
3. How can e-government program overcome the challenges?
4. How can the lessons from e-government program be used for other public sector in Ethiopia from development program perspective?

1.4. Objectives of the study

1.4.1. General Objective

The general objective of the study is to assess the challenges encountered and to indicate possible remedies for the e-government program.

1.4.2. The specific objectives

- ❖ To gauge the extent to which e-government program/initiative is implemented.
- ❖ To assess the achievements of e-government program/initiative.
- ❖ To identify and analyze the problems/challenges of managing e-government program/initiative.
- ❖ To suggest relevant and specific methods to improve the implementation / management of e-government program/initiative.

1.5. Significance of the study

Every research should have something to contribute since a lot of time, money and above all human energy is exerted. To do it so; the study reveals the major factors that affect e-government program management. It also creates awareness on the part of program/project managers how carefully planned program/project is important to attain national/organizational goals.

In addition it provides more and valuable information for other related sectors which are already running initiatives in a program manner on how the sector will be managed in a scientific way. Moreover, the study helps to apply the theoretical knowledge and to provide additional information to existing literature on program management and its related consequences for programs which are not properly managed. Finally, the study serves as a springboard for other researchers who like to study the same issue in a wider scale.

1.6. Scope of the study

Program management, as one of the best tools in achieving national/organizational strategic goals is carried out by organizations. However, the study is delimited to the challenges of managing development programs in public sector specifically e-government program in Ethiopia. Therefore, this research paper does not include other aspects of development program management.

1.7. Limitations of the study

Even though the sector was functioning under different agencies; the institutional setup at ministerial level was arranged in 2010 taking different departments from different ministries. As the result, the sector is not organized well on the related documents, faced with limited data and reference materials on the subject matter related to e-government. Besides, due to resource constraint; the researcher faced with shortage of two critical resources, time and finance (money) which are basic resources for a given research to be accomplished successfully. Lengthy appointments to return questionnaires or to conduct interviews have also affected the analysis of the study. On top of it, the major challenge was limited or no knowledge of e-government in

most of respondents even the management. Despite this, the researcher overcame the problems by using various mechanisms. Frequent visits and phone calls were also used to deal with the constraints. Until the executives in the field or meetings returned, the researcher also used to collect data from secondary sources.

1.8. Organization of the study

This research report has been organized under four chapters. Chapter one deals with introduction. It includes the background of the study, statement of the problem, objectives of the study, significance of the study, the scope and limitation of the study. Chapter two explains the review of related literature both theoretical and empirical starting with definition of key terms and concepts and it is assumed as it covers basic areas for the study. Chapter three deals with research design and methodology. Chapter four contains data description, data analysis and summary of findings. Chapter five is the one to provide conclusions and policy recommendations. The suggestions for the future public sector development programs are derived from discussion and analysis in the chapter three.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Theoretical Review of literature

2.1.1. Definition of key concepts and terms

Program: Program is a group of related projects managed in coordinated way to obtain benefit and control not available from managing individually. Program may include elements of related work outside scope of the desecrate projects in the programs (IBM, 2006).

Project: A temporary organization that is created for the purpose of delivering one or more business products/outputs according to a specified Business Case (BIS, 2010: 23). Project management in other way, is the planning, organizing, directing, and controlling of company resources... for a relatively short-term objective. It is clear from this definition that project management is concerned with the dynamic allocation, utilization, and direction of resources with time in relation to [.....] both the acquisition and consumption of funding.

Program management: is the process of managing several related projects, often with the intention of improving an organization's performance. Many writers define program management in different ways. As office of government commerce quoted by IBM, (2006:4); programme is defined as “the co-coordinated organization, direction, and implementation of a portfolio of projects and activities that together achieve outcomes and realize benefits that are of strategic importance”. On the other way it could be stated as “the centralized coordinated management of a program to achieve the program’s strategic objectives and benefits” as Project Management Institute draft is quoted by IBM, (2006:4). Department of Business Innovation and Skills (BIS, 2010: 23) Program is defined as “the coordinated organization, direction and implementation of a dossier of projects and activities that together achieve outcomes and realize benefits that are of strategic importance”.

E-Government: refers to the strategic use of ICTs, in and around Public administrations, for the purpose of creating a ‘wired’ or ‘digital’ government. Ideally, a wired government is more focused on and responsive to societal needs, it delivers services 24 hours a day and 7 days a week through ICTs, and makes governments more efficient and democratic (Homburg 2008: 87). Generally, e-government is the use of information and communication technologies (ICTs) to improve the activities of public sector organizations. There are some definitions which restrict e-government to Internet-enabled applications only, or only to interactions between government and outside groups.

Portfolio: The totality of the change initiatives within an organization; it may comprise a number of programs, stand-alone projects and other initiatives that achieve congruence of change (BIS, 2010:23).

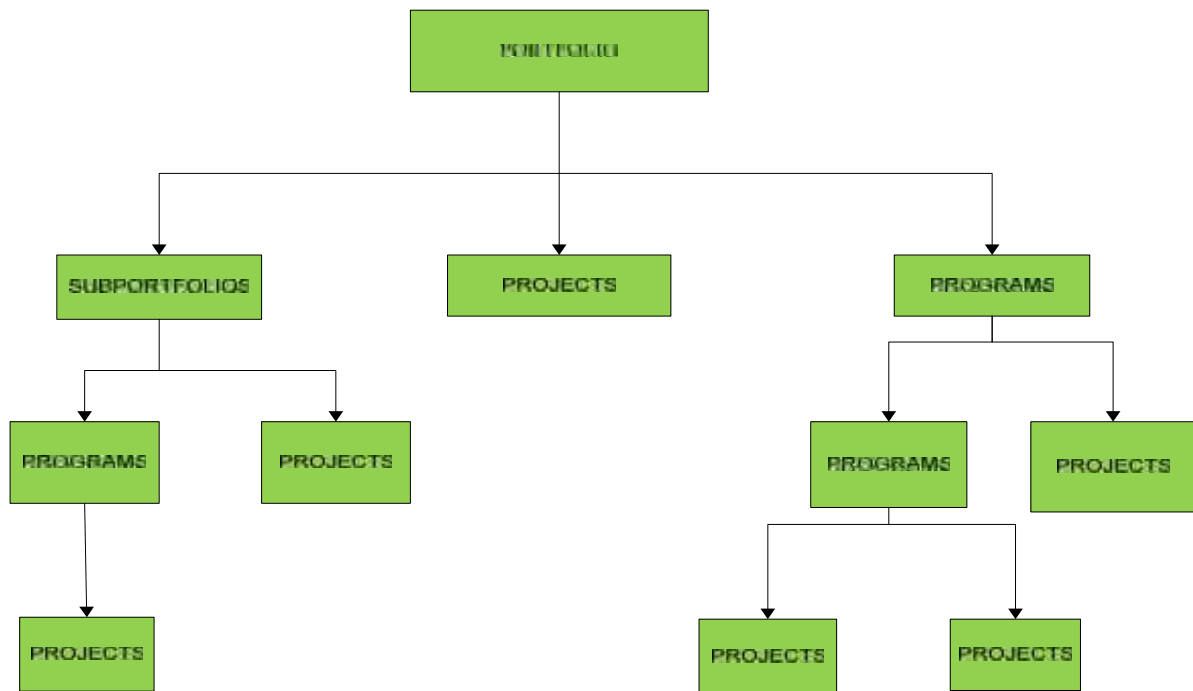
2.1.2. Differences between Program Management and Project Management

A review of the literature, and discussion with active Project and Program Managers, will sometimes elicit discussion (and some confusion) around the similarities and the differences between the disciplines of “project” management, and of “program” management. There are some who do not even see these as separate disciplines. An approach of comparison and contrast may help to promote an understanding of some of the differences, and also provide some additional insight into each of these disciplines (IBM 2006:14). Determining if the work to be undertaken is a project or a program is important because it will determine what management approach to use. Attempting to manage a program as a project can lead to failure, or at best sub-optimal outcomes.

According to project management institute and the office for government commerce in the United Kingdom as cited in mosaic project service pty Ltd (2009) agree that organizations have one or more portfolios of projects and each portfolio contains a number of programs and projects. Portfolio management focuses on selecting the optimum mix of projects and programs the organization should undertake based on its available funding and resources. Program

management focuses on the coordination of a number of related projects over time to deliver outcomes that benefit the organization and projects are about the efficient delivery of a defined output. The below chart is to show just structurally, where the programs and projects are where the difference begins.

Figure 2.1: Programs, projects and Portfolios chart



Source: mosaic project service pty Ltd (2009).

In many respects, the management of projects and programs appear similar. Both are selected on the basis they support organization's key strategic initiative. However, there are distinctly different themes, focuses and approaches in managing projects and programs which have major consequences on the style of management as seen in below table:

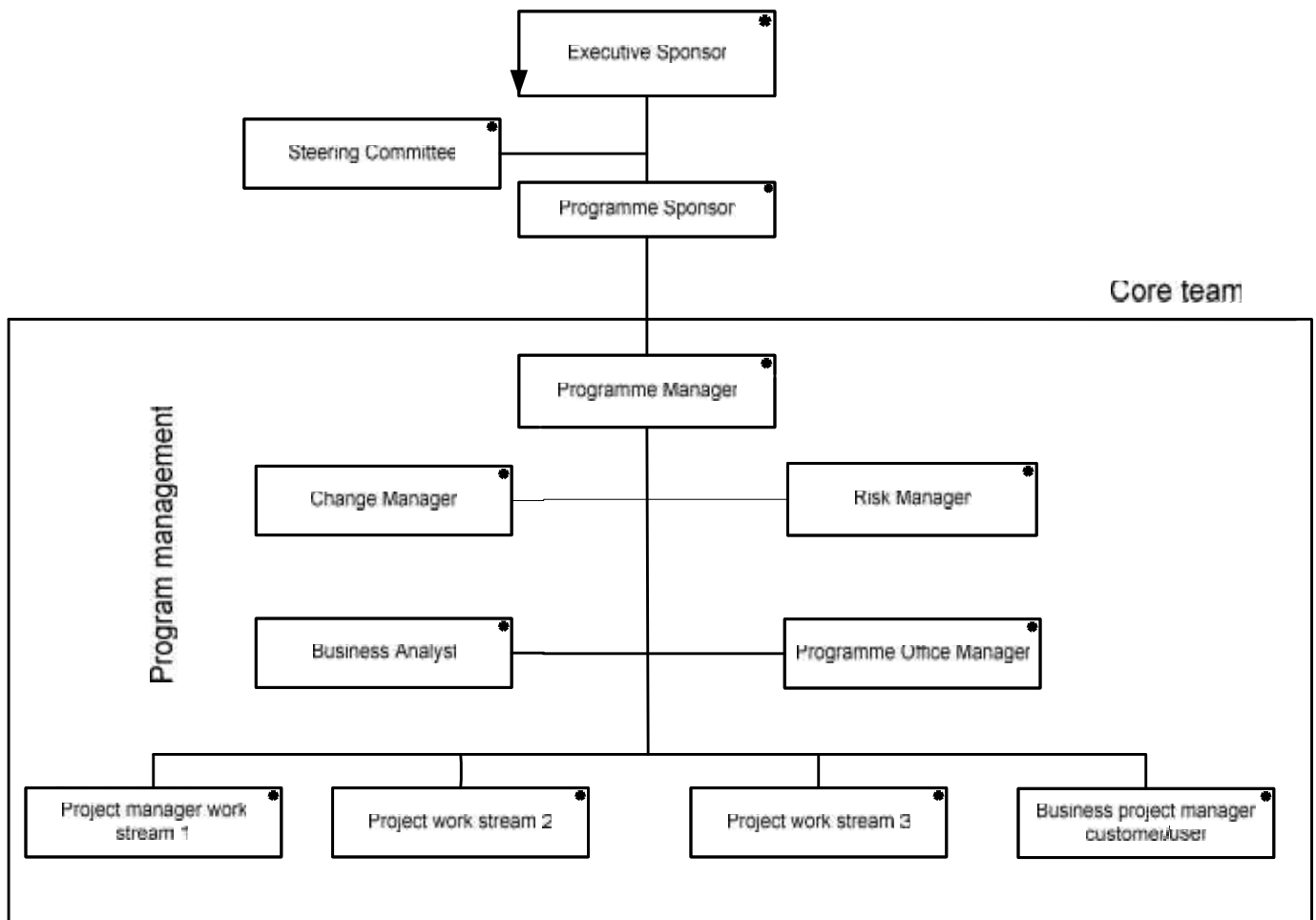
Table: 2.1: differences of Program management and project management

	Program management	Project management
Management theme	<ul style="list-style-type: none"> -should be focused on the overall benefits being created, taking more time or spending more money to deliver increased benefits can be a good outcome; 'value is driver rather than budget'. -Program managers focus on integrating the deliverables in to the organization's operations to reap the maximum benefit from using the deliverables. -Stakeholder management is a far more complex and important issue for program managers as most benefits are only realizable in the future. -The risk management profile of a program is open ended and heavily influenced by external factors. 	<ul style="list-style-type: none"> -A succesful project is delivered 'on time and on budget' -Project managers focus on producing the optimum deliverable. -Project managers should be working within a more constrained framework. -The risk management framework of a project should be largely definable.
Management focus	<ul style="list-style-type: none"> -Focuses on the vision of the program architecture design, priorities and align the projects to create the vision -Is strategic, focused on the big picture and the implementation of the strategy to realize the benefits. -Requires management and coordination with an overall business focus. 	<ul style="list-style-type: none"> -Focuses on the detail, planning and managing the work to deliver your component of the overall vision. -Is tactical, focused on delivering the specified outputs on time and on budget. -Requires leadership and facilitation to achieve the projects technical objectives.
Management approach	<ul style="list-style-type: none"> -Expect uncertainty as the world changes and impacts on the organization -Embrace change to future works to maximize the benefits delivered to the organization whilst maintaining stability for current projects. -Expect undefined risks to occur. Maintain adequate contingencies for future occurrences and actively seek new opportunities. -Engage with stakeholders and use the relationships to map future possibilities focused on maximizing long term value to the organization. -incorporate the project schedules at a summary level and manage the gaps and interfaces between the projects. 	<ul style="list-style-type: none"> -Seek certainty before commencing execution. -Seek to minimize unnecessary change. -Seek to minimize undefined risks by locking in benefits and mitigating threats. -Seek to align stakeholders with the projects objective. -Seek to encompass 100% of the work within the schedule at an appropriate level of detail for controlling the work.

Source: Adopted from mosaic project service pty Ltd (2009).

2.1.3. Program Responsibility

Figure 2.2: Governance structure for a complex program



Source: Adopted from

http://www.esiintl.com.sg/Delivering%20Successful%20Programs_%2010%20Essential%20Steps.pdf?elq=a777961cec6043d28a8fcee1ebcaeda0 accessed 21/02/2014.

2.1.3.1. Responsibilities of a program manager/director

There is a need for a “role”, and a set of associated responsibilities, in which an individual is responsible for conformance (and alignment) of the Program effort to specific goals and goal components in the Enterprise Business Strategy (this is the origination of the Program effort).

This individual provides overall leadership and management for the Program effort. Basic ideas associated with the Program Director/Manager role, include :(IBM, 2006:11)

- ❖ Accountable to executive sponsors for schedule, budget, and quality of all program elements.
- ❖ Lead high-level sessions for program plan and schedule development.
- ❖ Reviews/approves project plans for conformance to program strategy and program plan and schedule.
- ❖ Acts as the communications conduit to executive sponsors and program steering committee and conducts periodic briefings/status updates.
- ❖ Escalates decisions to executive sponsors as necessary.

2.1.3.2. The responsibility of Program Executive Sponsor

The incumbent in this role is a member of the executive staff of the organization, and, likely one who is responsible for success in one or more goals or goal components in the Enterprise Business Strategy. This role is the senior decision-making individual associated with the Program effort. Some basic ideas associated with this role include: (Ibid)

- Contributes to and facilitates delivery of the business and technical strategy used by the program effort.
- Exercises governance over the program
- Requires and participates in periodic review and oversight sessions for the program
- Provides needed decisions and guidance.

2.1.3.3. The Program Steering Committee: A Mechanism

A mechanism is required, at the executive level, to ensure that all of the major organizational segments (and also sometimes business partners), which are dependent upon the results of the program effort are: represented, engaged, informed, and where needed involved in decision-making. This mechanism is typically a committee in which a senior executive represents each major business segment.

According to IBM, 2006:12; Steering committees can exercise their function across a broad range of authority and decision-making. This will vary according to the management “style” of the organization, its culture, and the specific needs of the program. An important component of the effective use of a Steering Committee is the need to define the areas over which the steering committee exercises some authority, and to strictly and specifically define its decision-making capabilities. This is especially true of the relationship between the steering committee and the executive sponsor.

2.1.3.4. The Program Management Office (PMO): A Mechanism

In many organizational contexts, there is a function, and a collection of roles identified as a Program Management Office (PMO). This is variously identified as: the Enterprise PMO, the Project Management Office, and so on. This PMO function is a significant component of the overall application of the program management structure to an initiative. The program management office (within the context of the IBM Rational Program Management Method) provides support and enablement across multiple workspaces and dimensions, in the form of services and implemented practices to the entire program team. A catalog of these workspaces includes: (IBM, 2006:13)

- Administration (individual expenses, time-tracking, repository, supplies, status preparation, and reporting)
- Finance (program expenses, budget administration, and financial reporting)

- Methods (development, delivery; administration of program policies, practices, and procedures)
- Facilities (providing workspace, furniture, printers, conference, or training sites)
- Planning (support for program and projects planning, and plans maintenance)
- Resources Administration (acquisition and ongoing management of all program resources)
- Contracts Administration (negotiation and administration of terms for contracts for consulting or contract staff)
- Communications (developing and managing all communications and information originating from the Program). As e-government is sensitive area and which requires expertise skill on the area, the above stated responsibility matrix is highly required while governing the initiative in program level.

2.1.4. Program Management Challenges

According to Gartner (PMI, 2010), "Sixty-six percent of large program initiatives fail to achieve their business objectives due to mal program management. Further, they are delivered late or substantially over budget". Most of these failures are people-related and can be traced back to: Underestimating program complexity, Lack of firm leadership, commitment and sponsorship, Poor cross-functional communication, Lack of integrated planning, No defined success metrics, Poor requirements management, Lack of broad change management, Misaligned stakeholder expectations, Inadequate program management skills and Lack of resources

Even in the best conditions, lack of project integration can be a challenge for program management. Project integration is the set of project management activities and processes necessary for coordinating and combining the elements of a project. It allows the project manager, team, and project stakeholders to fit the various elements of the project together to make sure that the cross impacts are managed to create results that satisfy all of the stakeholders (Wirick 2009:57).

Nothing kills public sector projects/programs (and project managers) more often than poor scope definition. Good scope definition is the foundation for project management, and without it, project failure, frustrated team members, and dissatisfied stakeholders are almost guaranteed (Ibid). Therefore, the following ten steps are designed to help mitigate or eliminate each of these troublesome areas.

2.1.5. Some Steps for Delivering Successful Programs

To determine whether a program should be initiated and continued through to its conclusion, a business case is needed. An effective business case provides the required justification to commit the organization's resources (time, money and effort) towards a program's intended outcomes and benefits. In particular, it should reflect the most important strategic dimensions and clearly articulate how the program will address and support these dimensions (BIS, 2010). There are many steps used but for this study purpose the researcher selected three which may not be necessarily in step.

2.1.5.1. Build a Well-Defined Program Architecture/Roadmap

The program architecture is the road map of a program from design or planning stage to the outcome what is to be realized. It provides an outline demonstrating how the projects within the program will deliver the required benefits. It should clearly: Define the projects within the program, Ensure projects deliver benefits and Define high-level dependencies. Many programs suffer from a lack of proper alignment at a high level, which inevitably leads to friction and contention across project teams. Establishing a top-down approach to defining the program architecture early will ensure effective alignment among stakeholders and the implementation team (<http://www.esiintl.com>, 2014).

2.1.5.2. Practice Systematic Risk Management

Effective program risk management involves a coordinated, holistic approach. For each project within a program, the program risk manager should direct and ensure: Assessment of both program and project-level risks, Prioritization of all assessed risks, Definition of response strategies, Integration of all response strategies into the work breakdown system, Allocation of risk reserves. Even though the program manager is focusing on the program level, he or she should not be afraid to conduct risk reviews on individual projects to ensure the project manager has been actively identifying and dealing with risk. In fact, good risk management should be considered key criteria for ongoing assessment. Also, it is important that all risk identification and analysis be performed in groups to avoid individual bias.

Once a list of risks has emerged, the program risk manager should prioritize the list to focus the development of response strategies on the most severe. Response strategies should then be incorporated into the integrated program master plan so they can be properly tracked. Finally, the program team can decide how to respond to risk by utilizing the risk reserves that should be included in the program budget (BIS, 2010).

2.1.5.3. Identify Achievable Benefits and Requirements

The attainability of program benefits is directly linked to the achievability of the stipulated requirements. For a program to have any chance of success, it is vital that requirements and benefits be Realistic, Clearly articulated, Understood by all stakeholders, Accepted and signed off as viable, Supported by a rigorous change management process (PS PMA- 2011).

Benefits management is best led by a change manager who can link outcomes to strategies, events and assumptions. He or she should also establish agreed-upon benefits-tracking metrics. Without an agreed-upon measurement system in place, disagreements will be inevitable and the entire program will suffer. Requirements management is ideally led by a qualified business

analyst. This critical role must ensure that the front end of the program and any later projects are consistent with common practices and processes for requirements elicitation and documentation.

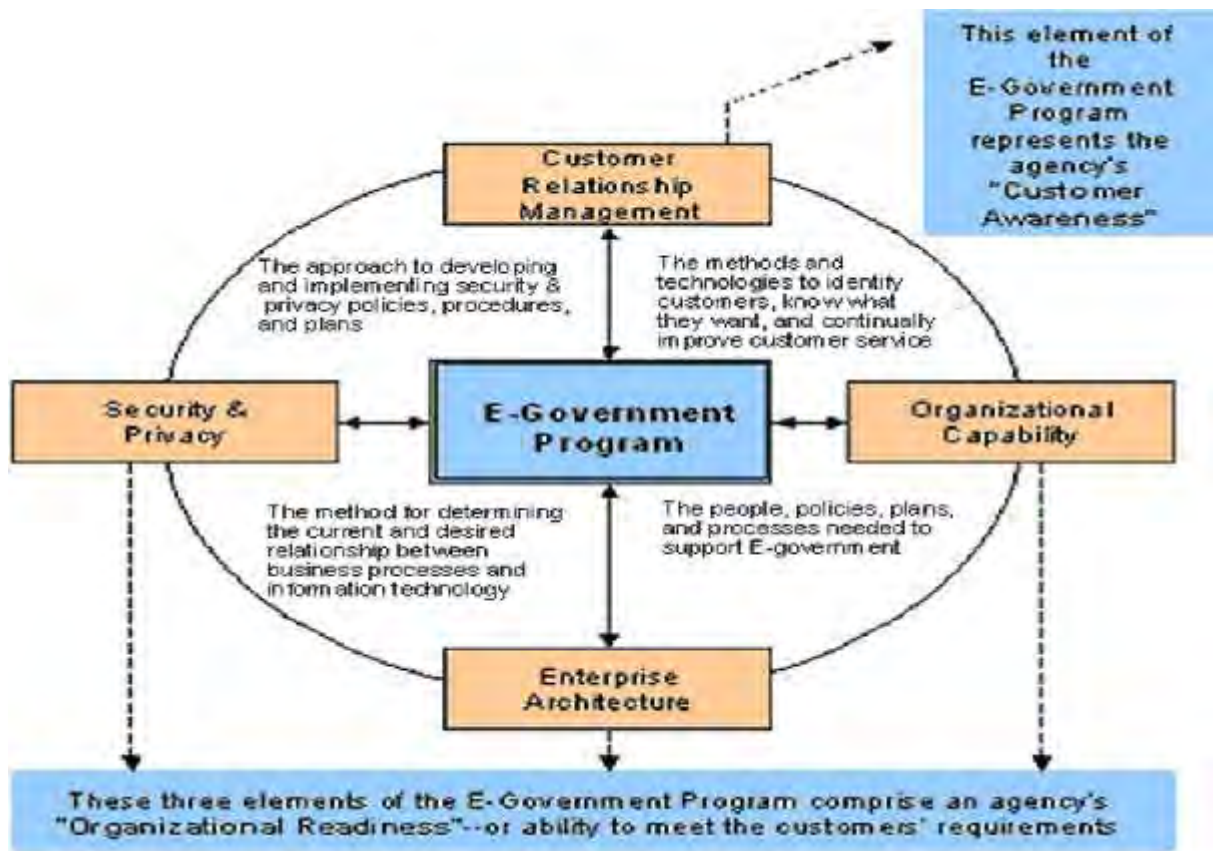
Lastly, it's essential to include benefits and requirements impact assessments in order to maintain commitment and control. Given all the highlights stated about program management in the above section, to make the literature meaningful and complete for the study, it is better to see some relevant aspects of e-government.

2.1.6. E-Government and Theoretical Framework of the Study

The advent of the Internet has given this usage more than just a new name e-government; and a higher profile. It has also accelerated the diffusion of e-government applications worldwide. A growing number of public agencies in virtually every country are using ICTs according to UNDESA (2003), quoted by Heeks (2004). Globally, government expenditure on ICTs is rising, and increasing numbers of government stakeholders both employees and clients are coming into contact with the new technology. According to Heeks and Bailur (2006), virtually unknown a decade ago, e-government as a term, as an identified activity, and as a topic for research has grown dramatically. As the researchers stated, now a days there are MSc programmes on e-government Several annual conferences devoted to e-government Journals devoted solely to e-government and books on e-government.

Following this evolution of e-government; governments around the world are implementing it by incorporating in their national ICT strategic policies. Ethiopia which is selected as study area on the subject e-government is currently implementing it with due attention from government. There are different e-government implementation models even if it is the recent phenomenon for which scientific community gives attentions not more than two decades. The below implementation model indicates the elements of e-government as well readiness and capability.

Figure 2.3: E-Government Implementation model



Source: US Agency for Healthcare research and Quality (2004) archive.

<http://archive.ahrq.gov/about/gpra2004/fig1.htm> accessed on 17/02/2014.

2.1.6.1. Aspects of e- government

According to Heeks, (2002), African governments have been using information technology for more than 40 years. E-Government should thus be seen as evolutionary, not revolutionary. Nonetheless, we can make a simplistic contrast between the old model: information technology automating the internal workings of government by processing data. And the new model: information and communication technologies (ICTs) supporting and transforming the external workings of government by processing and communicating data.

While ICT is used in the public sector in many ways to reform the government along with the NPM, e-government initiatives can be classified in to four spheres such as e-Administration, e-Society, e-Citizens and e-Services. The above four aspects/domains of e-government initiative are defined almost on similar way by different researchers. The four aspects are briefly stated below.

1. **E-Administration:** according to Heeks, (2002), and as Heeks (2007a) quoted by Takeuchi (2008), e- administration is defined as improving processes deal particularly with improving the internal workings of the public sector. To elaborate more; it is:
 - ❖ *Cutting process costs:* improving the input: output ratio by cutting financial costs and/or time costs.
 - ❖ *Managing process performance:* planning, monitoring and controlling the performance of process resources (human, financial and other).
 - ❖ *Making strategic connections in government:* connecting arms, agencies, levels and data stores of government to strengthen capacity to investigate, develop and implement the strategy and policy that guides government processes.
 - ❖ *Creating empowerment:* transferring power, authority and resources for processes from their existing locus to new locations. Generally, e-administration is way of improving process/reform tool.

2. **E-Society:** Reform initiatives for building external interactions deal particularly with the relationship between public agencies and other institutions. To elaborate more, such initiatives deal particularly with the relationship between private sector companies, non-

profit and community organizations and with the relationship between civil society institutions in addition to Public agencies. It focuses on:

- ❖ *Working better with business*: improving the interaction between government and business. This includes digitizing procurement from and services to business to improve their quality, convenience and cost.
- ❖ *Developing communities*: building the social and economic capacities and capital of local communities.
- ❖ *Building partnerships*: strengthening institutional relationships. This has two parts. First, building government partnerships: strengthening relations between government and other institutions such as NGOs or international organizations. Second, building civil society partnerships: strengthening relations between the institutions of civil society, such as between NGOs. Generally, e-society is building external interactions.

3. **E-Service**: Reform initiatives for improving the delivery of public services deal particularly with the relationship between government and its service consumers: either citizens or businesses. Generally speaking, it is improving the services delivered to members of the public along dimensions such as quality, convenience and cost.

4. **E-Citizens**: Reform initiatives for connecting citizens deal particularly with the relationship between government and citizens. To brief it, e-citizens is:

- ❖ *Talking to citizens*: providing citizens with details of public sector activities. This mainly relates to certain types of accountability: making public servants more accountable for their decisions and actions.

- ❖ Listening to citizens: increasing the input of citizens into public sector decisions and actions. This could be flagged as either democratization or participation. Generally, according to Heeks, (2002), both e-Services and e-Citizens initiatives deal particularly with the relationship between government and citizens: either as voters/stakeholders from whom the [...] public sector should derive its legitimacy, or as customers who consume public services. These initiatives may well incorporate the process improvements stated in e-administration.

2.1.6.2. Challenges of e-government

According to Heeks (2003), e-Government; the use of information and communication technologies (ICTs) to improve the activities of public sector organizations brings with it the promise of greater efficiency and effectiveness of public sector operations. For this and other reasons, an increasing number of e-government projects are being implemented in developing and transitional economies. Even if, e-government projects are being implemented; there are challenges especially in developing and transitional economies like Ethiopia where the study focuses. According to Adeboye, T.O. (1995) as cited in Heeks, (2001a), many developing countries do not have governance that even approximates to a normative framework. Many states lack stable institutions; many lack macro-economic stability; in many, rule is by personalized leadership with rule by the executive that largely marginalizes the legislature and judiciary; there are social cleavages along ethnic, tribal and other lines in many developing countries.

Within this situation, the potential for e-governance initiatives to make a significant difference may well be limited. However, that is not a rationale for inaction, and one must recognize that ICTs can act as a relatively concrete lever to change. According to Heeks, (2002), first, most African countries have undertaken only a limited number of e-government projects. Second, most African e-government projects fail in some way. The challenges are now discussed in greater detail.

A. Slow Diffusion of e-Government

African governments have fewer e-government initiatives than industrialized countries; make less use of ICTs in their work than industrialized countries; and use older generations of technology than industrialized countries Zammit (2000), West (2001) cited in Heeks (2002). Of course a major explanation is financial. African governments have far less money in both absolute and per capita terms to spend on ICTs than Western governments. Both related and additional to this issue is the greater lack of strategic "e-readiness for e-government" in Africa.

According to Bridges.org 2001, McConnell International 2001 as quoted by Heeks 2002 E-Readiness has become sufficiently widespread as a concept to offspring a number of variants. From these variants; like data system infrastructure readiness, legal infrastructure readiness, institutional infrastructure readiness, human infrastructure readiness, technological infrastructure readiness and leadership and strategic thinking readiness. Overambitious timescales lead to short cuts that reduce sustainability; for example bringing in expatriate consultants or looking for off-the-shelf ICTs. Adhering to the keep it simple principle can help here. So too can make project scheduling more recipient-driven than donor-driven (Heeks, 2001a).

B. High Failure of e-Government

The six areas of e-readiness just identified above represent the strategic challenge to e-government in developing countries especially in Africa where Ethiopia is located in. They operate at the macro-level of the whole nation, and they act as a pioneer to e-government. In addition, though, there is with less consideration but potentially more significant tactical challenge that faces the micro-level of individual e-government projects during their implementation. This is the challenge of avoiding failure and achieving success. The significance of this challenge can be seen in the high incidence of failure within African e-government projects. In analyzing case studies of such projects, three dominant categories of reported outcome emerge, as they would for analysis of any set of ICT projects. According to Heeks (2002), quoting Anonymous (2000), first, there is the total failure of an initiative never implemented or in which a new system is implemented but immediately abandoned. For example, a land licensing information system was introduced by a municipal government in

Southern Africa. The system was never used, largely because it conflicted with the entrenched interests of powerful groups who used land licensing for their own gain.

A second possible outcome is the partial failure of an initiative in which major goals are unattained or in which there are significant undesirable outcomes. This includes the 'sustainability failure' of an initiative that at first succeeds but is then abandoned after a year or so. An example is the creation by central government of a set of touch-screen kiosks for remote rural communities in South Africa's North-West Province Benjamin (2001) as cited in Heeks (2002). These were initially well received by the communities. However, the kiosks' lack of updated or local content and lack of interactivity led to disuse, and they were removed less than one year later.

Finally, one may see the success of an initiative in which most stakeholder groups attain their major goals and do not experience significant undesirable outcomes. Central to e-government success and failure is the amount of change between 'where we are now' and 'where the e-government project wants to get us' the larger this design-reality gap, the greater the risk of e-government failure. Equally, the smaller the gap the greater the chance of success (Heeks, 2003). 'Where we are now' means the current realities of the situation. 'Where the e-government project wants to get us' means the model or conceptions and assumptions built into the project's design. E-Government success and failure therefore depends on the size of gap that exists between 'current realities' and 'design of the e-government project'.

C. Failing to balance external and internal interests

The danger of e-governance being too external: many e-governance initiatives in developing countries are donor or vendor led. The latter is particularly problematic given often conflicting objectives between vendors and governance, and the poor quality of some vendors. Care must be taken that both initiatives and institutions relating to National e-Government Initiative do not become vendor-dominated (Heeks, 2001b).

On top of the above; Heeks adds the danger of e-governance being too internal the other way of the above. For some ruling elites in developing countries, it seems that governance is seen as a tool for serving personal, then ethnic, then social affiliation and last the national interest. All

state machinery, institutions and mechanisms are viewed and used in this light. E-Governance initiatives will be just the same: if senior public officials do come to see e-governance as being in their interests and are able to take control of those initiatives, they are likely to direct projects towards their self-interest, and potentially away from broader goals.

As Njelesani, B.C. (1999) quoted by Heeks (2001b), it is very difficult, but a balance must be struck between external and internal interests. Njelesani justifies his argument with one lesson from a recent Zambian management information system initiative for which an independent project team was required so that government cannot intimidate team members and that donor countries cannot hijack the project for their own benefit. In addition to the challenges mentioned above; the researchers state the below issue stated under section 'D' as lesser challenges.

D. Weakness of central e-Governance Units

Such units are not a universal remedy that they can be weak and find it hard to push initiatives through within individual ministries and agencies. Nevertheless they are a necessary part of the process to act as a focal point both nationally and internationally.

2.1.6.3. Measuring E-Government

The general overview, aspects and challenges of e-government have been discussed briefly from theoretical perspective as it could be seen in the above consecutive sections. To say e-government program is failed, who said that or from what point of view can we measure it? Many writers have many different views on the measurement of e-government environment. But for the purpose of this study, the researcher prefers to use some of them.

According to ITU (2009), referring to Ojo, Janowski, and Estevez, (2007), measurement/analysis of e-government environment takes into consideration both quantitative and qualitative indicators. Three different types of indicators can be distinguished by their specification for e-government readiness. These are (1) indicators and indices on general aspects of a state, economy or society; (2) general e-readiness indicators, describing how different sectors of an

economy or society are positioned to make use of ICT; and (3) core e-government readiness indicators, which target the thematic more narrow aspect of government using ICTs.

Nevertheless, none of the broadly accepted indices stands completely without critique as Kauffman and Kumar, (2005) cited in ITU (2009). All these well-regarded indices are highly aggregated. The indices help understand the status of e-government readiness and related issues but, so far, none of them could be used as the main source for the recommendations on e-government priorities and activities alone. The table below is just to show top 20 countries in e-government development and latter to compare where Ethiopia stands.

Table 2.2: Top 20 countries in e-government development

Rank	Country	E-government development index value	Rank	Country	E-government development index value
1	Republic-of Korea	0.8785	11	Singapore	0.7476
2	United states	0.851	12	Sweden	0.7474
3	Canada	0.8448	13	Bahrain	0.7363
4	United Kingdom	0.8147	14	New Zealand	0.7311
5	Netherlands	0.8097	15	Germany	0.7309
6	Norway	0.802	16	Belgium	0.7225
7	Denmark	0.7872	17	Japan	0.7152
8	Australia	0.7863	18	Switzerland	0.7136
9	Spain	0.7516	19	Finland	0.6967
10	France	0.751	20	Estonia	0.6965

Source: <https://communities.vmware.com/community/vmtn/archive/cto/public/blog/authors/dphunter> Accessed: 17/02/2014.

2.1.7. ICT in Ethiopia

2.1.7.1. ICT Policy and Strategy

After the change of government in 1991, the Ethiopian People's Revolutionary Democratic Front (EPRDF)-led government adopted a new constitution in [1995], which placed a special emphasis on access to information. Under Article 29 of the constitution, "Every one shall have the right to freedom to seek, receive and impart the information and ideas of all kinds, regardless of frontiers, or through other media of his choice" (<http://www.giswatch.org>).

In addition to the constitution, FDRE government has adopted national ICT policy one step forward to enhance the development of the sector. The first National Information and Communications Technology (ICT) Policy was first drafted and submitted to the Council of Ministers in 2002. The policy's vision is "to improve the social and economic well-being of the people of Ethiopia through the exploitation of the opportunities created by information and communication technologies, for vitalizing and ensuring the establishment of a sustainable democratic system and good governance, and for achieving sustainable, rapid socio-economic development" (Ibid). ICT in Ethiopia at present is at the early stage of development. The absence of appropriate legal and regulatory frameworks; Limitations in telecommunications infrastructure and low level of internet services penetration; Lack of organized data and information resources, and poor accessibility to those that exist; Lack of skilled human resources coupled with low ICT literacy and Under developed private sector are major indicators pointing to the low level of ICT Development (FDRE, 2009:1).

These constraints present the Government with real challenges, but also opportunities, for all accelerated development of ICT in Ethiopia. Thus, the government of Ethiopia recognizing the importance of Information and Communication Technology development has adopted different strategies of which e- government is the one. The strategic focus of Ethiopia's ICT policy is considering the ICT as one of the fundamental components of the country's socio-economic development goals and objectives. Thus, one of basic focus areas of the policy is ICT for

governance (e-government); especially: ICT in the education sector, ICT for improved health, ICT for agricultural modernization (Ibid: 5).

Following a recommendation from this process, government also shows a commitment by establishing institution called Ethiopian ICT Development Authority (EICTDA) in 2003 and also it is upgraded to ministry level in 2010, primarily to complete and implement the policy. One of the main pillars of the policy is e- government which aims, among other things, at providing public access to information and government services, enhancing good governance and strengthening the democratic process.

2.1.7.2. ICT for Public Service (E – government)

The Ethiopian Ministry of Communications and Information Technology (MCIT) has a mission to develop, deploy and use ICT to improve the livelihood of Ethiopians and optimize its contribution to the development of the country. Thus the ministry is undertaking a number of e-Government assignments to avail government services online and improve the access to the general public (MCIT, 2010: 14). Within the framework of public sector capacity building program, the government of Ethiopia has initiated a series of measures to make the civil and public service more efficient and effective in the delivery of government services. In recognition of the critical role that ICT plays in consolidating the process of democratization and strengthening of good governance and national institutions, the government has taken wide-ranging measures for its development (FDRE, 2009: 12).

2.1.7.3. The extent of implementation

The strategic directions here are to ensure that the information and communication infrastructure already in place is effectively utilized such that it provides higher qualities of information and communication services. In addition, ensuring a secure IT system will be a strategic direction of GTP, while development of domestic ICT sector will also be accorded due emphasis. To use e-government especially in developing countries there are many challenges. MCIT in its annual bulletin of 2013, volume 3, number 3 states Problems in ICT infrastructure development and

channels to be used by community; Telecom fraud; Security and privacy related issues; The ability to use ICT based services by the community (Lack of ICT knowledge) as major challenges.

Areas of focus for the telecommunications sub-sector are to upgrade the existing ICT network to accommodate the latest information technologies and improve network quality and expand services, an all-inclusive telecommunication service delivery and ICT support where it is a requirement of other development program will be put in place, and the human resource capacity of the sector will be built. Ongoing projects to develop the network will be finalized IT services available across the country, including high quality integrated telecommunication services packages (converged value added services), will be provided, at a reasonable price (MCIT, 2013). Until July, 2013 FDRE government has accomplished different projects under e-government program. To provide e-services to the public, e-government projects has to be in place. If we see basic e-government projects accomplished in 2012/2013 (MCIT 2013, volume 3);

- E-service portal (<http://www.eservices.gov.et>) for more than 80 services has developed;
- Encouraging and acknowledging government institutions with best ICT utilization;
- Unified online billing system (UBS) project was completed in 2011/12 and started operation in 2012/13 which is currently with more than 33 centers in Addis Ababa and 4 centers in region;
- Community radio centers in Humera and kebridehar has installed this number was 9 as of June 2013;
- Fifteen community ICT centers are implemented this number was 146 as of June 2013;
- Internet bandwidth of woredaNet is upgraded from 120mbps to 420 mbps;
- Free information service provisioning for citizens from 10 federal offices and 6 Oromia regional state offices via 888 call center. Four regional call centers with the same 888

service number are installed in Bahir Dar, Mekelle, Dire Dawa and Hawassa. But he first two are only operational until write up of this study is completed.

The above are the major areas done in last Ethiopian fiscal year 2012/13. Those done before and after fiscal year are stated accordingly in description. Basic issue is just to show the extent of e-government even still it is not exhaustive. The remaining major projects are presented in the next section.

i. WoredaNet project

As stated above in key actions accomplished by government under e-government program in 2012/13 upgrading woredaNet bandwidth from 120 megabyte per second to 420 megabyte per second. The bandwidth upgrading is done following the increase in number of woredas which join this network and the variance in data nature being transferred. Due to this and other like reasons, the stated bandwidth is also upgraded to one gigabyte per second in 2013/14.

Table 2.3: Number of woredas connected by woredaNet till May 2014

Administrative Region	Wired connection	Wireless (VSAT)	Total
Afar	20	8	28
Amhara	106	24	130
Benishangul Gumuz	12	8	20
Dire Dawa	1	0	1
Gambella	5	0	5
Oromia	201	50	251
SNN & P	84	19	103
Somali	3	37	40
Tigray	61	0	61
Total	493	146	639

Source: ethio telecom, 2014

The above table shows the number of woredas connected to woredaNet in respective regions. The connection media depends on the nature of geographical location of woredas and accessibility to telecom infrastructure. Accordingly to enable all woredas get connected, ethio

telecom is striving in deploying infrastructure which is more than 10,000 kms transmission link over the country by fiber optics cable. All woredas are expected to join this huge network until end 2013/14 fiscal year which means one year ahead of GTP plan.

The amount of bandwidth stated above (1 gigabyte) is not limited to be used only for the stated number of woredas in the above table. The bandwidth upgrade is made to incorporate other big networked government institutions to this national data center. For example: Integrated Financial Management Information System, which is under implementation by MoFED in 592 woredas in first phase, Construction and Housing Development Bureau of Addis Ababa 116 woredas and one additional registration site for housing program and the like are incorporated. We can say except schoolNet the rest wired internet based networks are under national data center.

i. School Net

As Hare, 2007 cited in Takeuchi, 2008 the Ministry of Education of Ethiopia launched the SchoolNet project in 2003 with support from UNDP. Now the project is 11 years old with almost the same trend except adding Integrated Educational Management Information System (IEMIS) which started in 2013/14. The scope of the project includes all schools from primary first cycle to preparatory. Keep in mind that, when we say SchoolNet project, there are two sub projects since 2013/14. The first which launched in 2003 is focusing on broadcasting which we call plasma TV to provide standardized education nationally. Currently around 1299 Schools are connected.

The second is Integrated Educational Management Information System (IEMIS) which mean enabling schools to have access to broad band internet. This project is initiated in 2013/14. The project is being implemented in those Schools connected to Plasma to and continues side by side the others parallel with broadcasting. As we can see from the table below within the initial year around 500 schools are identified. Of these 359 are already get connected, 104 are on progress

and 33 are delayed due to resource problem. ShoolNet project is expected to be finalized within GTP one period; until June 2015.

Photo 1: VSAT antenna equipped in a school in rural area in Ethiopia



(Source: photo taken by the author)

Table 2.4: status of SchoolNet project implementation with respective regions till May 2014

Region	Completed	On progress	No resource	Total
Addis Ababa	23	8	0	31
Oromia	121	44	15	180
Amhara	87	7	11	105
SNNP	81	37	6	124
Tigray	16	4	1	21
Somali	1	0	0	1
Benishangul Gumuz	5	5	0	10
Gambela	10	1	0	11
Afar	11	2	0	13
Diredawa	4	0	0	4
Total	359	108	33	500

Source: ethio telecom

ii. Rural Telecom Business Project

This project is very vast according to the above given the complexity. The scope of the project is enabling each rural kebeles of Ethiopia which has no access to wired fixed telephone service within 5kms. The owner of the project is Ministry of Communication and Information Technology and stakeholders of the project are Ethio telecom and regional ICT agencies and respective kebele administrations. The house construction to host telephone installed is made by respective kebele administrations. So far sixteen thousand two hundred twenty six (16,226) kebeles are with telephone access. For nine hundred two (902) kebeles, it is on progress. The project is expected to be finalized one year ahead of GTP one until June 2014 even though it has been planned until June 2015.

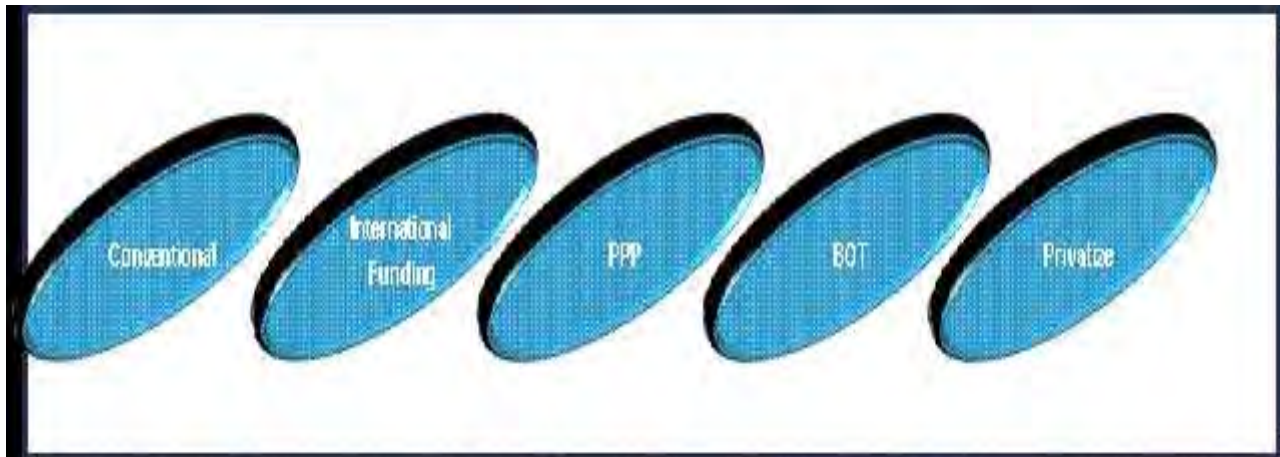
iii. Challenges encountered

According to MCIT, 2013 annual report and unpublished operational reports of ethio telecom, 2014 the below listed are some of challenges frequently occurred.

1. Administration problem: once the telephones are installed, the kebele administration is responsible to handle any telephone related issues in collaboration with stakeholders. This includes constructing host house on time and maintaining on time when necessary and managing telephone interruption in collaboration with ethio telecom.
2. Handset shortage according to requirements and lengthy procurement process is the other challenge which is seen in almost all public institutions. Currently 20,000 handsets are on tender to upgrade existing connections.
3. Limited access to electricity and frequent interruption where there is access.
4. Lack of access to skilled professionals

2.1.7.5. Program Finance

Figure 2.4: Key possible source of finance for e-government program



Source: MCIT, e-government strategy (2010)

Currently the program is being implemented by the conventional/capital budget (from government) and partially PPP (public private partnership). An example for public private partnership in e-government is UBS (unified billing system) or which we call or known with local brand “lehulu”. From the budget allocated to ICT development, the lion share is provided to e-government program. Stated below is the expected proportion in financing the program.

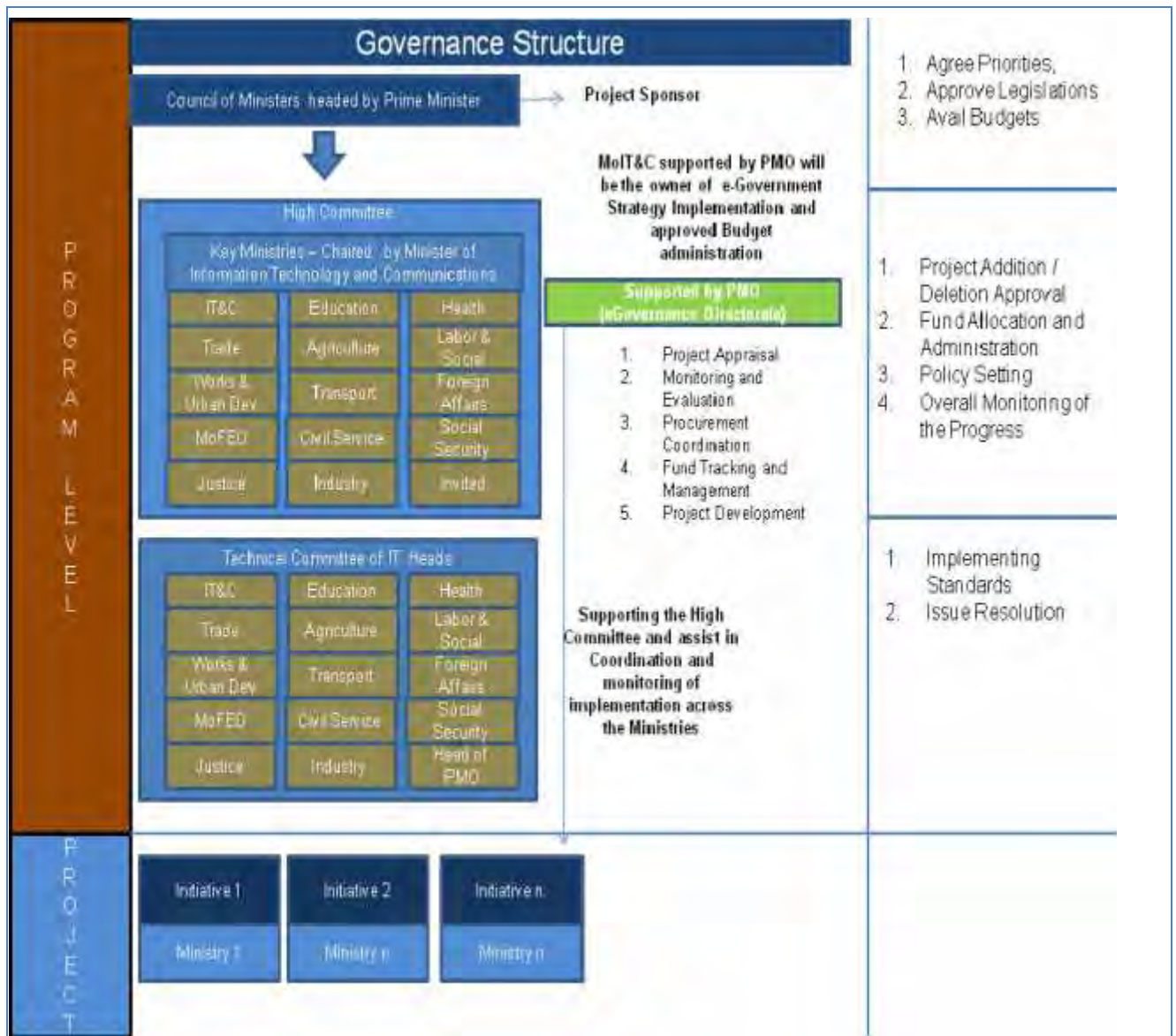
Figure 2.5: Funding source with proportion



Source: e-government strategy document, 2010

2.1.7.6. E-government program Governance

Figure 2.6: E-government program governance structure



Source: e-government strategy document; 2010

As shown in the figure 3.10 above, the ultimate responsibility for the implementation of the Ethiopian e-Government program lies with the Council of Ministers under the Ethiopian Prime Minister. The High Committee will be assisted by the PMO in Ministry of Communications & IT for monitoring, coordinating and directly following up the execution of IT initiatives. Ministries

and other Government Agencies are the owners of their respective core and cross Government projects and will get the support for delivering these projects from the PMO.

In addition, Ministries and other Government Agencies are responsible for developing their vertical IT Strategies and implementation plans in coordination and under the direct supervision of the Technical Committee, in line with the e-Government Strategy and are responsible for deploying their Ministry/Agencies specific IT vertical projects. The Technical Committee will report on the progress and the issues of the strategy implementation to the High Committee.

2.2. Empirical review of Literature

The study conducted in Sri Lanka by Stanforth (2006) focusing on specific case study: the fiscal reform program and the public expenditure management (PEM) information systems with the main title “analyzing e-government implementation in developing countries using Actor-Network Theory”. The study focuses on successful project implementation as an important analytical issue with objective of exploring the value of ICTs in supporting the “good governance” agenda of public sector reform programmes in developing countries.

Using ANT model the researcher came up with finding, the implementation of the modern methods of public sector financial management to support “good governance” as attempted in Sri Lanka was complex. As the target of attention, the government ministries and agencies typically do not have the institutional structure or the resources to support them. Alongside specific findings about the global and local networks that have shaped this set of e-government applications, the study also reflects on the value, applicability and operationalization of actor network theory in development informatics research.

Takeuchi (2008) studied ICTs for Development in Ethiopia: A case of the SchoolNet Project. The problem statement of study focuses on use of ICTs in education in many developing countries; especially the “poorest of the poor” is associated with high cost and potential failure. The objective of the study was to discover the reason of ICT for development project failures and solutions to avoid and overcome the failures using Participative approach. The finding of the study was that the ‘design-reality gap’ (Heeks 1999a; 2002a) as cited by the researcher shows the techno-centric and the top-down approach without considering the local reality is the cause of several challenges that the project faced.

Finally three suggestions are drawn as solutions to lead future ICT for development projects to success. (1) The socio-technical approach is essential to avoid misleading ICT for development

projects as the technology-centered projects. (2) User participation is crucial to minimize the design-reality gaps. (3) Longer term strategy with flexibility and the shift of users' status from consumer to producer of information are important to encourage real user participation as well as to motivate users to participate in ICT for development projects more willingly and actively.

Debretsion (2011) also conducted study on exploring the perception of users of community ICT centers on the effectiveness of ICT on poverty in Ethiopia. Even though further researches are made by different scholars, the findings vary in describing the role of ICT in poverty alleviation. Therefore; according to the researcher further research on this issue in the context of usage of ICT community centers could facilitate in addressing or settling the gap observed. The objective of the study was to explore the role ICT plays in addressing poverty using exploratory qualitative multiple case study method.

Finally, the findings of the study suggest that each community ICT center has demonstrated the benefits of using the center and these benefits have an influence on the daily life of the users. However, the benefits for individual centers were influenced by factors that were unique to each of the centers. Insights from the study have important implications on effective utilization of community ICT centers in addressing poverty. It is imperative to link community ICT centers with the development program of the community to effectively use ICT to alleviate poverty.

CHAPTER THREE

3. Research Methodology

3.1. Research Method

Research methods: Descriptive and semi analytical research method was employed for the assessment of challenges of managing development program in Ethiopia on the assumption that it could help to describe various challenges of development programs. The method used is qualitative supported by simple quantitative measurements in the form of percentages, tabular illustrations and graphs. The available data is explained, analyzed and utilized to suggest ways and means to improve the situation. Hence, more descriptive method of research is used.

3.2. Sampling

The researcher assumed program management in public sector as the real problematic issue and e-government is selected since it is key area. As result, Purposive sampling method is employed which involves snowball to determine specific respondents as it is new phenomena which requires also technical knowledge of the area. To collect data required to answer research questions, the researcher has selected ten schools, 3 Ministries including MCIT which is program owner, MoE and MoFED; 1 public enterprise i.e ethio telecom based on their active engagement in e-government program as beneficiaries and program owners. According to different people contacted, the information about e-government is not well developed as it is recently institutionalized at high level with this responsibility. Thus, the above mentioned organizations which are expected to provide relevant information are selected. In the same way, 82 respondents for questionnaire and 7 respondents for interview are selected through snowball/ referential purposive sampling method from concerned institutions.

IT experts, Managers, support from the domain, students, teachers, business community are involved in responding questionnaires and interviews provided. MCIT is the owner of the program and from that perspective the researcher involved from support to higher officials within the program domain during conducting questionnaires and interviews. The respondents are selected with the exposure they have to e-government. They could be beneficiary/stakeholder, program sponsor, program management members and the like.

3.3. Data type and collection

During conducting research, both primary and secondary data were used. To collect primary data; field visit /observation, structured interviews of key informants and questionnaires consisting of both closed and open ended questions were employed. The secondary data were collected from published and unpublished books, journals, annual reports, technical reports and manuals.

3.4. Method of data Analysis

Data presentation and analysis is one of the core points in this research and has been handled as follows. Data collected through the above mentioned tools were organized and analyzed by using statistical tools (SPSS) such as percentages, tables, graphs, figures and multiple response analysis. Qualitative analysis was also applied to elaborate the data collected through interview and document reviews. Hence, both quantitative and qualitative approaches were employed in the research to come up with the thesis report.

3.5. Ethical Considerations

Ethics are norms or standards of behavior that guide moral choices about our behavior and our relationship with others. The goal of ethics in research is to ensure that no one is harmed or suffers adverse consequences from research activities (Cooper & Schindler, 2006). As a

researcher the obligation was not only professionally but in particular ethically to make value judgment and use discretion in resolving the ethical issues (Lancaster, 2005).

Therefore, for the purpose of this research the ethical standards of doing the research were strictly followed. The researcher verified the reliability and validity of the research with triangulate the information through document review, conducting interview with key informative persons and distribute questionnaires for respondents who are close to e-government directly or indirectly.

CHAPTER FOUR

4. DATA PRESENTATION AND ANALYSIS

In this chapter, data collected from different sources is presented. Analysis and discussion is made across the collected data and the literature. Before presentation and analysis of the data, it could be important to describe the process of data collection. As indicated in the methodology section of this research the researcher intends to collect primary and secondary data through questionnaires, interviews, document reviews and observation.

Hundred questionnaires were distributed to three Ministry offices engaged in the deployment of e-government projects, one public enterprise which is telecom service provider in Ethiopia and the beneficiaries selected for this study. In addition, seven key informants were interviewed to collect the required data. Out of the total questionnaires distributed to executives and experts, eighty two were properly filled out and used for analysis. Document review was also another method employed for collecting the required data. From those documents researches, reports, publications were the major ones.

This chapter has five sections. The first section deals with the general profile of the respondents. The second section discusses about the culture of electronic service development in Ethiopia. The third section deals with user participation in program design and implementation. The identification and analysis of challenges implementing public institutions faced while discharging their duties and responsibilities constitutes the fourth section. The last section deals with summary of findings.

4.1. PROFILE OF THE RESPONDENTS

In this particular study, most of the respondents are directly or indirectly engaged in e-government program. Even though the target sampling frames are engaged in beneficiaries and program owners of e-government program, it is important to look at the respondents in terms of

educational level, professional background and position. The researcher distributed the questionnaire to 100 target population of which 82 responded and returned the questionnaire whereas the rest of them due to different reasons they do not respond the questionnaires. Therefore, the response rate is 82 percent and this figure is considered as 100 percent sample of data obtained through questionnaires.

In addition to this, selected two senior management members from Ministry of Communication and Information Technology, one person from Ministry of Education, one person from Ministry of Finance and Economic Development and the rest 3 from beneficiaries were approached through interview techniques. The responses and comments were incorporated under each section of the chapter.

Table 4.1: Response Frequency

Respondents organization	Frequency	Percentage
Ministry of Information & Communications Technology	19	23
Ministry of Finance & Economic Development	14	17
Ministry of Education	12	15
Ethio telecom	5	6
Beneficiaries	32	39
Total	82	100

Source: Field Survey, 2014

The above table shows that the response frequency. The organizations which have been approached are three ministry and one telecom service provider public enterprise and beneficiaries of the program. Most of the organizations stated above have been participated during the policy formulation and almost all of them are main actors in implementing the Ethiopian e-government program/initiative. When we look at these organizations some of them

are engaged in providing basic infrastructure, in service provisioning, implementing e-government projects within their organization, supporting project implementers and other related e-government activities.

Table 4.2: Respondent's profile in terms of educational and professional background and positional status

S.No.	Educational Background	Respondents Professional Background	Position of the respondent				Total	%age
			Management	Expert	Support	Beneficiaries		
1	High School & Diploma	IT Related	1	1	1	3	6	7
		Business Related	0	0	1	2	3	4
		Other	0	0	1	9	10	12
		Total	1	1	3	14	19	
		Percent	1	1	4	17		23
2	BA/BSC	IT Related	7	11	0	9	27	33
		Business Related	3	5	3	5	16	20
		Other	0	0		1	1	1
		Total	10	16	3	15	44	
		Percent	12	20	4	18		54
3	MA/MSC/PhD	IT Related	9	2	0	2	13	16
		Business Related	2	2	0	1	5	6
		Other	0	1	0	0	1	1
		Total	11	5	0	3	19	
		Percent	13	6	0	4		23
Grand Total			22	22	6	32	82	
%			27	27	7	39		100

Source: SPSS survey, 2014

Table 4.2 illustrates the general profile of the respondents. Out of the total respondents, those are at management and expertise level accounts 27 percent each respectively. Support constitutes 7

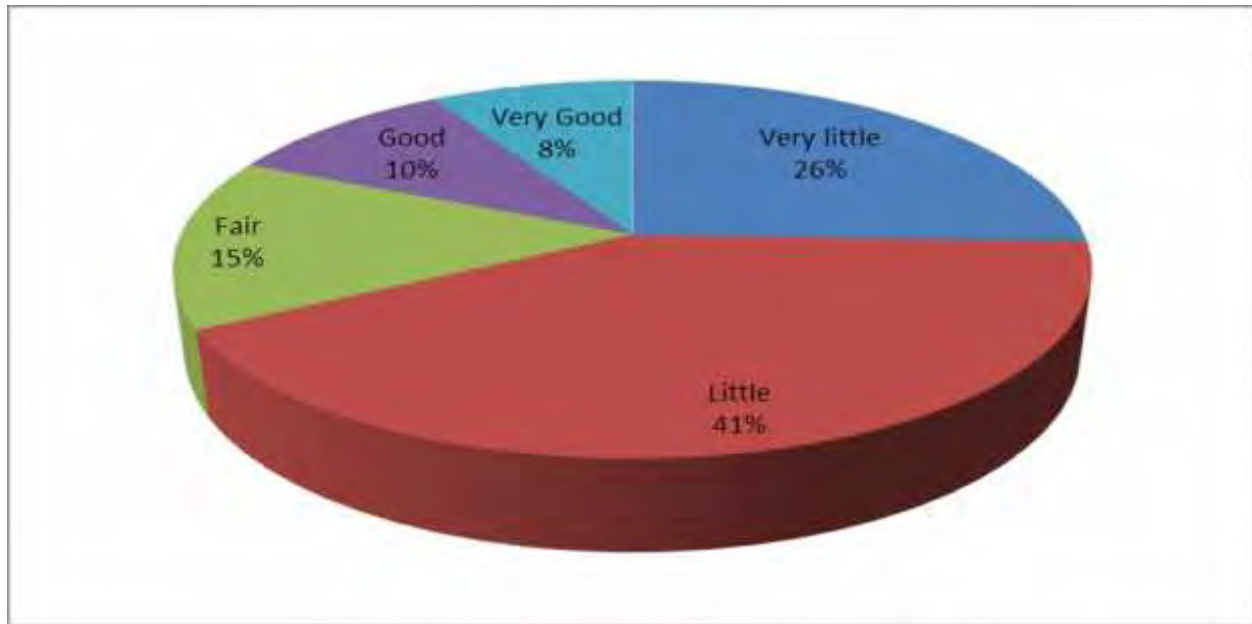
percent and 39 percent goes to beneficiaries. This indicates that the majorities of the respondents are program/ program projects management which constitutes 54 percent and followed by beneficiaries which accounts 39 percent.

Regarding educational qualification, program/Program project management who are diploma, first degree and second/third degree holder accounts 1 percent, 12 percent and 13 percent respectively. 1 percent of the experts are diploma holders and those with first degree constitute 20 percent. Those with second and third degree account only 6 percent. All respondents from support category are diploma and first degree holders, which account for 4 percent each respectively. The beneficiary group constitutes 17 percent with diploma and below, 18 percent first degree holders and 4 percent with second/third degree. Thus, table 4.2 illustrates that 23 percent of the respondents are diploma and below, 54 percent goes to first degree holders and the remaining 23 percent are second/third degree holders.

Table 4.2 also shows that 56 percent of the respondents are graduates of IT related profession. Those with business related profession constitutes 30 percent and the remaining 14 percent of the respondents goes to other category like law, agriculture, health and the like. The awareness or knowledge of respondents about e-government services or program is presented in Figure 4.1.

From the figure 4.1 below, it is possible to deduce that more than 82 percent of the respondents have insufficient understanding of e-government. This indicates that the majority of the respondents have not adequate experience and knowledge to execute their respective duties effectively and as a beneficiary to use the services already developed.

Figure 4.1: Knowledge of Respondents about e-government in Ethiopia



4.2. Development of Electronic service in Ethiopia

To assess the culture of electronic service development in Ethiopia respondents of the questionnaire are asked to select from the list of five options ranging from very little to very good. The interviewees are asked to express their opinion about the development in the area. Data collected from 82 respondents is summarized in the table 4.3.

Table 4.3: Culture of Electronic Service Development in Ethiopia

No	Item	Frequency	%	
1	Development of Electronic Service in Ethiopia	Very little	0	0%
		Little	30	37%
		Fair	24	29%
		Good	28	34%
		Very Good	0	0
Total		82	100%	

Table 4.3 shows that 34 percent of the respondents have an opinion that the culture of electronic service development in the country is in a good condition. Out of the total respondents, 29 percent perceive as fair while those who see as little accounts 37 percent. Thus, the opinion of the respondents' reveals that there is considerable improvement in the area since the coming of FDRE in 1991. The improvement can be manifested by various measures government has taken to promote development of ICT.

Even though government is investing multi billions of dollars in the sector via vendor financing, major challenges remain in the areas of rural connectivity, development of national telecom infrastructure, mobile telephony, data communications, and availability and affordability of Internet and related services. The Information Technology sector (computers, networks, and related services) is small but growing. ICT human resources are limited due to small markets, low salaries, low on the job incentives, and lack of institutional infrastructure. Sector-specific ICT applications are limited in scope, and very often are implemented in a disjointed and fragmented manner. The implemented solutions are also generally under-utilized. Information availability, particularly in local languages, is limited.

4.3. Extent of user Participation in program/project design & implementation

To assess the extent of participation in design and implementation of e-government program/project of the country, respondents are requested to express their opinion. To this end, they are provided with a list of five options ranging from very little to very good. The response of 82 respondents is presented in the table 4.4.

Table 4.4: Extent of participation in program/Program Projects design and implementation

No	Item		Frequency	%
1	Extent of Participation during Program/program Project Design	Very little	40	49%
		Little	20	24%
		Fair	3	4%
		Good	11	13%
		Very Good	8	10%
		Total	82	100%
2	Extent of Participation during Program/program Project implementation	Very little	17	21%
		Little	24	29%
		Fair	11	13%
		Good	17	21%
		Very Good	13	16%
		Total	82	100%

The result in the table 4.4 under item 1 revealed that 77 percent of the respondents perceive the extent of their participation to expected level in program/program project design as minimum. The remaining 23 percent see the participation as good. In line with this, 63 percent of the respondents believe that their participation even during implementation is minimal. As we can observe from the opinion survey, in both cases the participation of program/program project managing institutions and beneficiaries engagement as stakeholder is minimal which will probably lead to failure or below standard output/outcome. As to Heeks 1999a; 2002a cited in Takeuchi (2008), shows that the techno centric and the top down approach without considering the local reality is the cause of several challenges that the project faced (design reality gap).

According to Takeuchi three suggestions are stated to lead ICT projects to success. These include (1) the socio-technical approach which is essential to avoid misleading ICT for development projects as the technology-centered projects. (2) User participation is crucial to minimize the design-reality gaps. (3) Longer term strategy with flexibility and the shift of users' status from consumer to producer of information (participatory approach).

Currently FDRE government is working with commitment especially the third issue. The ICT park one project of ICT development programs which is under construction is involving the private sector (consumers of information) to make them producers. And they are actively and willingly engaged and still engaging. Even government has stated public private partnership as one strategy for ICT development of the country. Unified Billing System (UBS) for utility services (water, power and telecom utilities in Addis Ababa) is outcome of PPP.

4.4. The Extent to which the following factors are the determinants of E-government program

To assess the challenges of e-government program of the country the respondents of the questionnaire are asked to select from the list of five options ranging from strongly agree to strongly disagree. The interviewees are also asked to express their opinion about the challenges in the area. Data collected from eighty two respondents is summarized in tables below in five sub category. The sub categories are organizational capability, program governance, strategic e-readiness, risk management and setting clear benefits and requirements of e-government program. Each category has five to nine items each.

4.4.1 Organizational capability

To assess the limitations on organizational capability of e-government program of the country, the respondents of the questionnaire are asked to select from the list of five options ranging from strongly agree to strongly disagree for each of eight items. Seven interviewees are asked to express their opinion about the challenges in the area.

Table 4.5: Survey response statistics on organizational capability

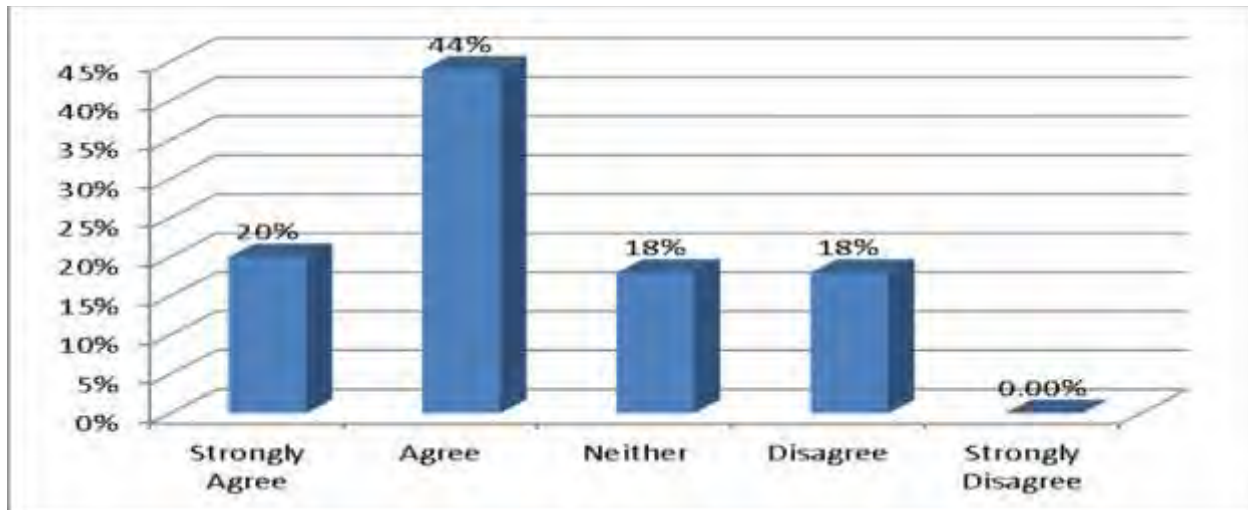
		Items								Total	Percentage
		Failing to balance internal & external interests	Lack of Understanding Program Complexity	Lack of firm leadership and commitment	Lack of sponsorship	Lack of resources	Lack of integrated planning	Poor Requirements Management	Lack of broad change management		
Strongly Agree	Frequency	16	16	16	15	15	15	0	24	117	18%
	%age	20%	20.3%	19.5%	18%	19%	18%	0.0%	29%		
Agree	Frequency	36	41	25	9	29	37	21	18	216	33.3%
	%age	44%	51.9%	30.5%	11%	37%	45%	25.6%	22%		
Neither	Frequency	15	7	18	15	10	19	39	22	145	22.3%
	%age	18%	8.9%	22%	18%	13%	23%	47.6%	27%		
Disagree	Frequency	15	11	19	39	20	7	22	14	147	22.7%
	%age	18%	13.9%	23%	48%	26%	8%	26.8%	17%		
Strongly Disagree	Frequency	0	4	4	4	4	4	0	4	24	3.7%
	%age	0.0%	5%	5%	5%	5%	5%	0.0%	5%		
Total		82	79	82	82	78	82	82	82	649	
%age		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		100.0%

Source: SPSS survey, 2014

Based on the response collected from 82 respondents about organizational capability to e-government program of the country, eight thematic areas are identified as shown in the table 4.5 above and will be discussed separately in the following sections to see extent of their impact on the program.

a. Failing to balance external and internal interests

Figure 4.2: Opinion Survey towards failing to balance external and Internal Interests

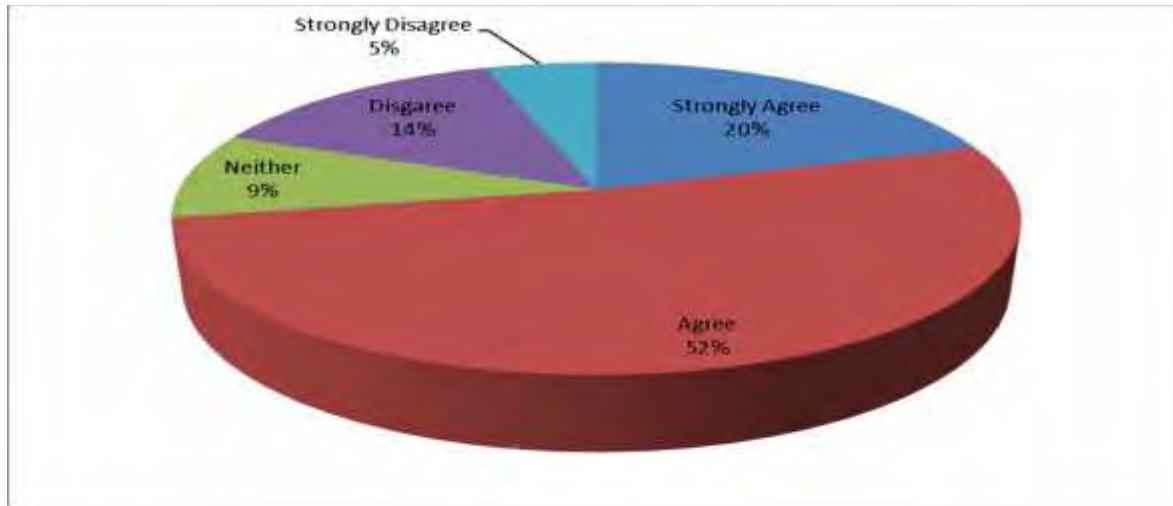


As table 4.5 and figure 4.2 shows, 20 percent of the respondents strongly agreed that failing to balance external and internal interests is a limitation for organizational capability of e-government program. Out of the total respondents, 44 percent still agreed while those are neutral and disagreed constitutes 36 percent. No one responds as strongly disagreed. Agreed and strongly agreed accounts 64 percent of the total response. According to (Heeks, 2001 b), states the danger of e-governance being too external and too internal. To make clear, care must be taken that national e-government initiative do not become vendor dominated. On the other hand in developing countries the governance is seen as a tool for serving personal, then ethnic, then social affiliation and last the national interest.

In addition Njelesani, B.C. (1999) cited in Heeks (2001b), a balance must be struck between external and internal interests. His justification was supported with real experience from Zambian management information system initiative for which an independent project team was required so that government cannot intimidate team members so that donors cannot hijack the team for their own benefit. Thus, the opinion of the respondents reveals that there shall be focus to improve balancing internal and external interests in e-government program.

b. Lack of Understanding Program Complexity

Figure 4.3: Opinion towards the limitation in understanding program complexity



Wirick, (2009: 57) stated that good scope definition is the foundation for project management. Unless, there will be a probability of project failure, frustrated team and dissatisfied stakeholders existence. In addition, in the beginning of this chapter program awareness has been discussed. And most of the respondents which comprises 67 percent agreed as they have very little or little knowledge about e-government initiative. The respondents are both from beneficiaries as well program/project implementing institutions. So, this is another limitation area of the government to be improved.

According to table 4.5 and figure 4.3 72 percent of the respondents agreed or strongly agreed with the view that there is lack of understanding program complexity. And 19 percent of the respondents disagreed or strongly disagreed about the question as the challenge for e-government program. The remaining 9 percent goes to neither.

c. Lack of firm leadership and commitment

Figure 4.4: Opinion towards Lack of firm leadership and commitment

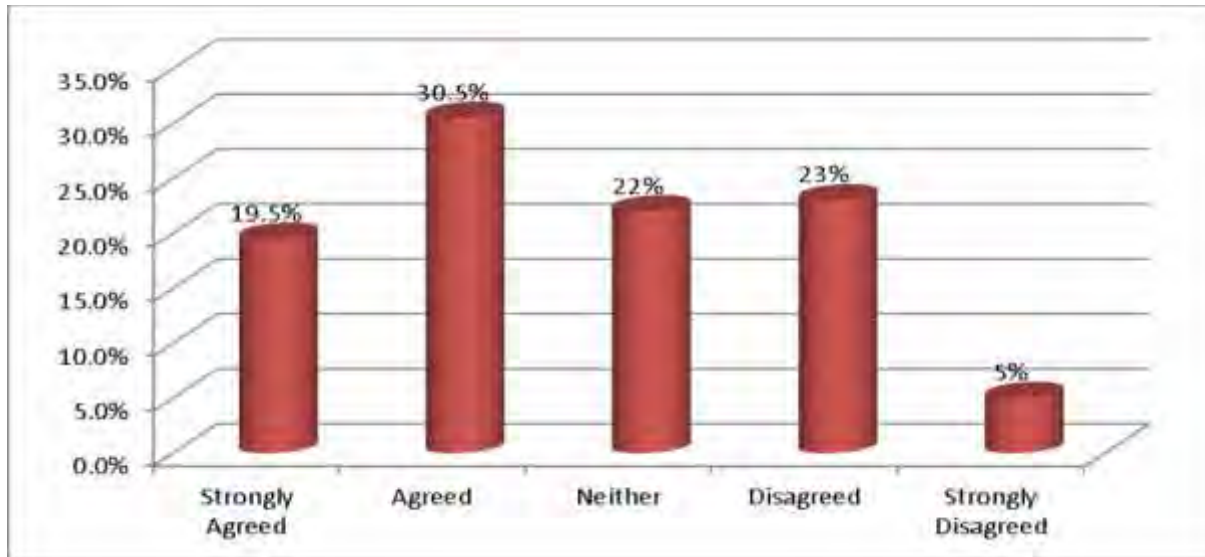
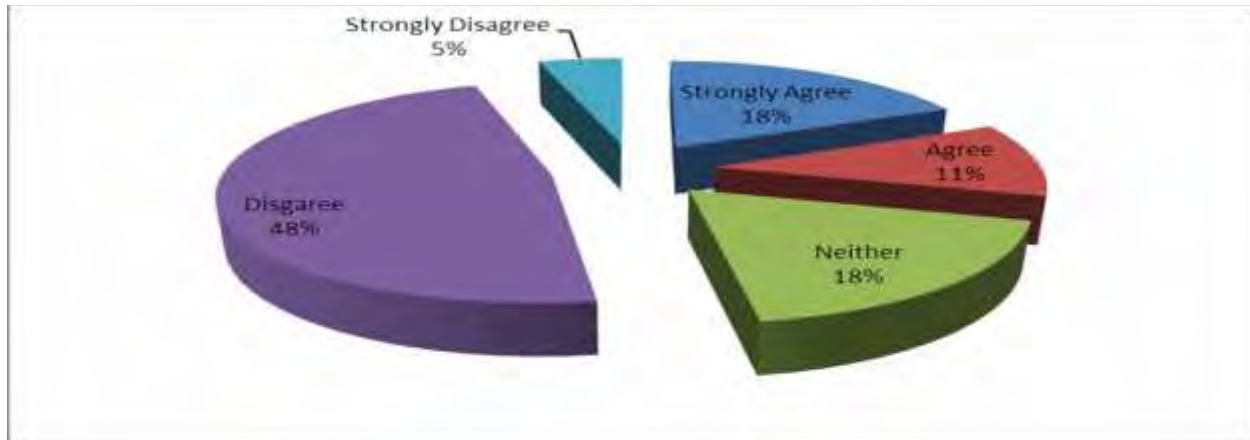


Table 4.5 and Figure 4.4, above depicted that 50 percent of the respondents agreed or strongly agreed with the view that lack of firm leadership and commitment is a limitation for program organizational capability which results in challenging e-government program. Explanations for their agreement include as there shall be a study on future national e-government policy and strategy approaches, e-government as a curriculum in a country.

And 22 percent of the respondents are neutral and the rest 28 percent disagreed or strongly disagreed about the question as the challenge for e-government program. Literature shows or justifies as sixty six percent of large program initiatives fail to succeed due to lack of firm program management which may lead to be delivered late and substantially over budget (PMI, 2010). On top of it, according to Wirick, 2009; 57, nothing kills public sector projects/Programs (and Project managers) more often than poor scope definition. As per the reality on ground based on the observation, e-government program is being managed as usual programs. There are no institutions in the country provide e-government as a curriculum either in form of formal education or training as it is recommended by the respondents. This matters how to handle the initiative.

d. Lack of sponsorship

Figure 4.5: Opinion towards lack of sponsorship/fund as a limitation



Currently the program is being implemented by the conventional/capital budget (from government) and partially PPP (public private partnership). An example for public private partnership in e-government is UBS (unified billing system) or which we call or known with local brand “lehulu”. From the budget allocated to ICT development, the lion share is provided to e-government program.

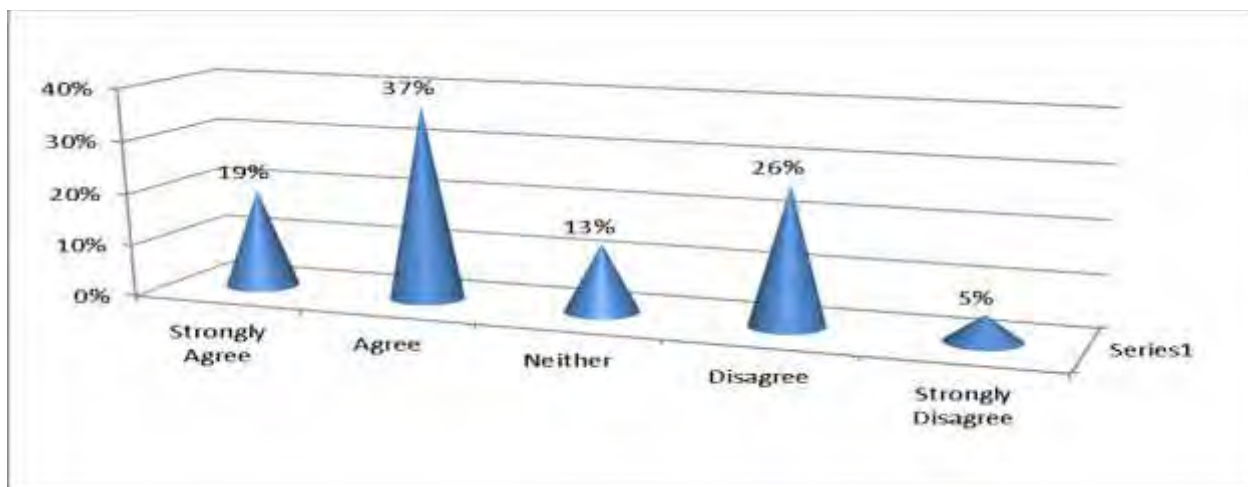
According to Table 4.5 and Figure 4.5 above, 53 percent of the respondents disagreed or strongly disagreed with the view that lack of sponsorship/fund is limitation for program organizational capability which results in challenging e-government program. An explanation for their agreement includes the need from a government for a program implementation is encouraging factor. The e-government strategy document shows five key possible sources of finance for e-government namely; conventional (government budget), International fund, Public Private Partnership (PPP), Build Operate and Transfer (BOT) and Privatization.

On top of the questionnaire survey; an opinion collected from interview, there is a preparation to collaborate with development agents. Starting from 2014/15 development partners will be onboard in addition to the first two. By then the second option of funding (international funding) is assumed to be implemented. The rest; BOT (Build Operate and Transfer) and privatization are not practical currently and no clear direction when to be operational until the end of data survey for this purpose.

And 18 percent of the respondents are neutral and the rest 29 percent agreed or strongly agreed about the question as the limitation on source of fund is a challenge for e-government program. Even in program document the portion for source of fund was clearly stated as 20% from government, the other 20% from PPP and the remaining lion share (60%) from funding agency. Thus, PPP is not fully engaged and funding agencies are not donating; the conventional budget is not fully utilized within budget; this ambitious e-government initiative is being implemented under 20 % of finance capacity (which is conventional budget).

e. Lack of Resource

Figure 4.6: Opinion towards lack of Resource



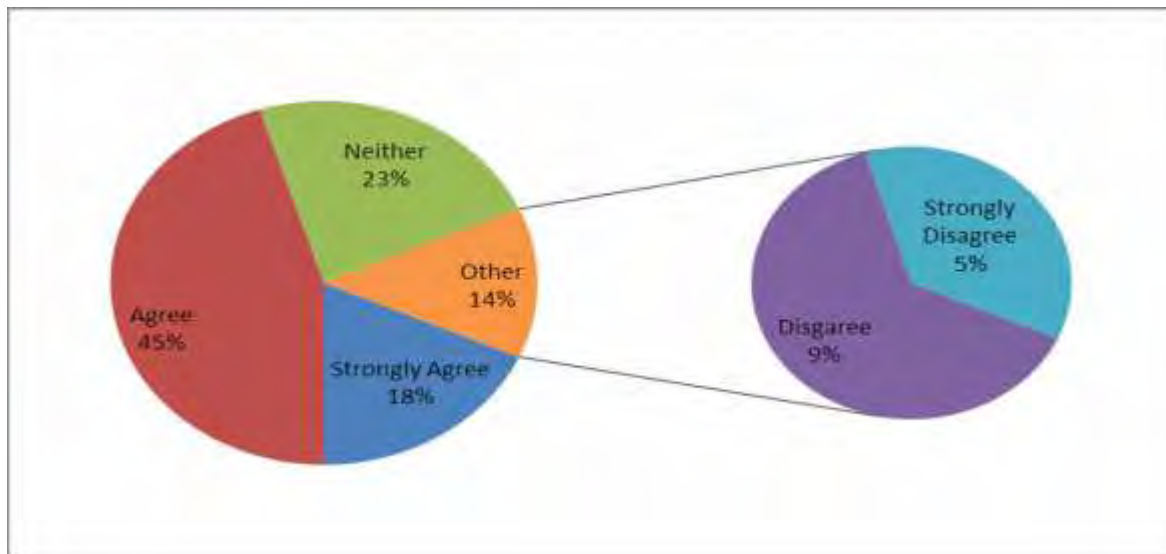
In addition to table 4.5, figure 4.6 shows that 56 percent of the respondents agreed and strongly agreed with the view that there is lack of resource. Here what are considered as resource are aspects other than finance like network infrastructure availability, network equipment, and other ICT tools. Reports both from ethio telecom and MCIT also share the opinion of the respondents. When we see the schoolNet project implementation; about 33 schools out of 500 planned are not connected due to resource problem (infrastructure). In addition those connected by VSAT which are more than 146 specific to Woreda net (which is costly terminal) is due to lack of access to terrestrial (wired) infrastructure. The rural telecom business project is also the one where government faces a big challenge for which lack of access to terminals is basic challenge.

The terminals like VSAT and like others which are used as substitutes in areas with lack of access to infrastructure are imported and costly which is the other challenge of the program. Taking all these in to consideration and the criticality of the program; the government is taking corrective actions in solving root cause. To minimize limitation to access of infrastructure vendor financing scheme only for infrastructure deployment has signed.

In 2006/07 \$1.5 billion investment is done in changing the then network infrastructure. Even that can't afford ICT demand of the nation and government also signed multivendor scheme valuing \$1.6 billion on telecom expansion project in 2013 which is under implementation. It is assumed to make accessible to 85% of the country's geographical coverage at the end of project deployment. And 19 percent of the respondents disagreed or strongly disagreed about the question as the challenge for e-government program. The remaining 9 percent goes to neither.

f. Lack of integrated planning within projects and stakeholders

Figure 4.7: Opinion towards lack of integrated planning within projects and stakeholders



Lack of project integration can be a challenge for program management even in the best conditions. According to Wirick, 2009: 57; project integration allows to fit the various elements of the project together to make sure that the cross impacts are managed to create the results that satisfy all of the stakeholders. Thus, these multi projects of e-government initiative (call center,

Rural telecom business, SchoolNet, WoredaNet, IFMIS and the like) requires due attention to succeed.

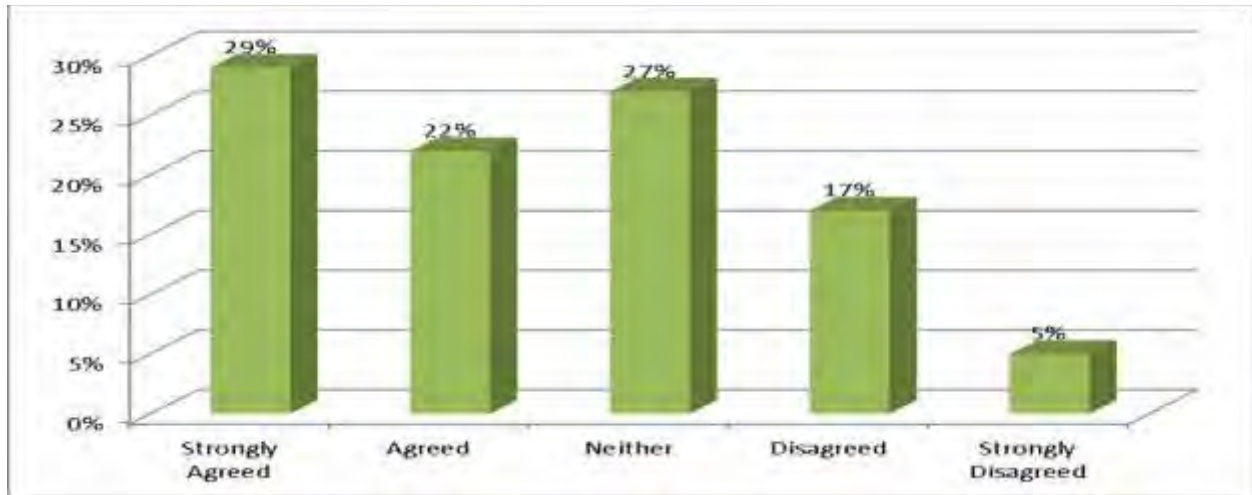
As indicated in Table 4.5 and Figure 4.7 above 63 percent of the respondents agreed or strongly agreed with the view that lack of integrated planning within projects and stakeholders is limitation for program organizational capability which result in challenging e-government program. And 23 percent of the respondents are neutral and the rest 14 percent disagreed or strongly disagreed about the question as the challenge for e-government program.

The challenges stated in the projects under literature review part; the challenges specially aligned to rural telecom business project like administration problem, problem in access to rechargeable card and handset/terminal shortage are purely integration problems. The integration may be during planning or implementation. Here it shows failing to balance internal and external interests. Even if it is useful for the community, there is no awareness creation done so far to the public according to the field observation and it was the interest of the government.

Heeks (2002), quoting anonymous (2000), has stated two possibilities in high failure of e-government. The first is the total failure of an initiative never implemented or in which a new system is implemented but immediately failed. And a second possible outcome is the partial failure of an initiative in which major goals are unattained or in which there are significant undesirable outcomes. So that, the second possibility is the good indicator of most e-government projects in Ethiopia especially rural telecom business project, school Net and developed portals the core reason being lack of integration. But currently government has taking crucial measures in integration and awareness creation in keeping the projects for expected public services.

g. Lack of Strategic change Management

Figure 4.8: Opinion towards lack of broad change management in e-government program



As table 4.5 and Figure 4.8 shows, 51 percent of the respondents agreed or strongly agreed with the view that lack of broad change management is limitation for program organizational capability which results in challenging e-government program. And 27 percent of the respondents are neutral and the rest 22 percent disagreed or strongly disagreed about the question as the challenge for e-government program.

When we see the management approach for programs from some literatures what makes it different from project management is; it expects uncertainty as the world changes and impacts an organization. And also it embraces change to future works to maximize the benefits while maintaining stability for current projects. On the other hand Project management seeks certainty before commencing execution and seeks to minimize unnecessary change.

4.4.2. Program Governance of e-government

To assess the limitations on program governance of e-government program of the country the respondents of the questionnaire are asked to select from the list of five options ranging from strongly agree to strongly disagree for each of six items under program governance category. The interviewees are asked to express their opinion about the challenges in the area.

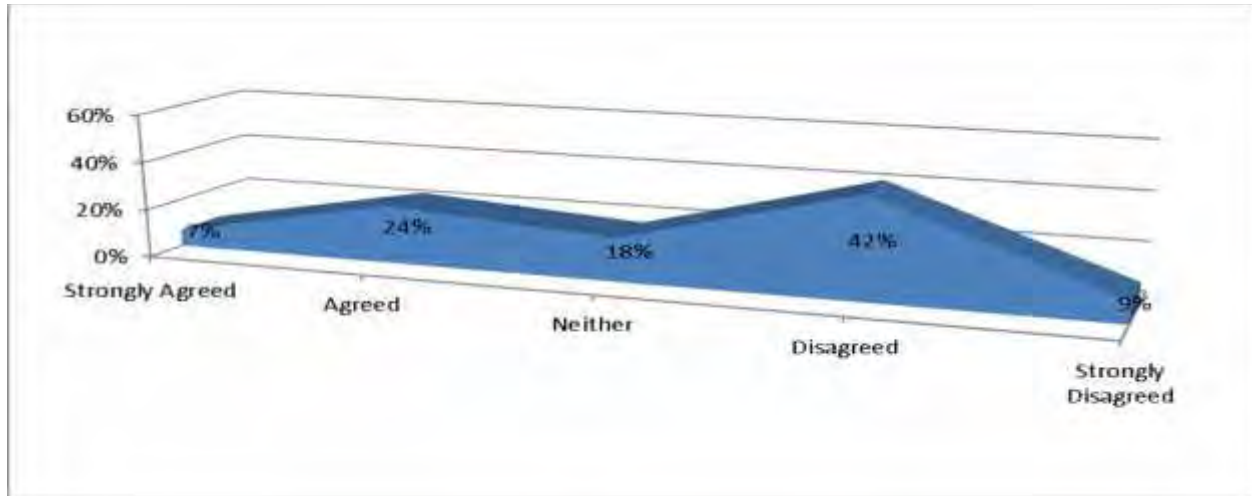
Table 4.6: Response rate of limitations on program Governance

		Items						Total	Percentage
		Lack of clear Program Organizational structure	Lack of A well-defined Program Architecture	Poor cross functional communication	Inadequate Program/ Project management skill	Absence of defined success metrics	Misaligned stakeholder expectations		
Strongly Agree	Frequency	6	6	19	7	7	3	48	9.8%
	Percentage	7%	7%	23%	8.5%	8.5%	4%		
Agree	Frequency	20	24	33	39	36	34	186	37.8%
	Percentage	24%	29%	40%	47.5%	44%	41.5%		
Neither	Frequency	15	25	14	23	24	25	126	25.6%
	Percentage	18%	31%	17%	28%	29%	30.5%		
Disagree	Frequency	34	23	16	10	15	20	118	24%
	Percentage	42%	28%	20%	12%	18%	24%		
Strongly Disagree	Frequency	7	4	0	3	0	0	14	2.8%
	Percentage	9%	5%	0.0%	4%	0.0%	0.0%		
Total		82	82	82	82	82	82	492	
%age		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		100.0%

Source: SPSS survey, 2014

a. Lack of clear program organizational structure

Figure 4.9: Opinion survey towards lack of clear Program Organizational structure



Both table 4.6 and Figure 4.9 above shows that 51 percent of the respondents disagreed or strongly disagreed with the view that lack of clear program organizational structure as a challenge for program governance. An explanation from interview opinion their agreement includes that there is clearly stated program structure in strategy document. But these groups argue as current program structure is not fully in place and that is a challenge not absence of program structure totally.

The argument from respondents is correct from their perspective as it is not a matter of structure existence on paper rather applicability. So, the missing point here is as discussed in the prior section, there is lack of understanding program complexity as well project integration. E-government strategy (2010), clearly states the program governance but it is not applicable accordingly. The only thing is e-government directorate is serving as PMO. The basic challenge is lack of understanding e-government by the stakeholders. Only the program owner (MCIT) is trying to address the issues of the program which makes it inefficient. According to Adeboye, T.O. (1995) quoted by Heeks, (2001a), many developing countries do not have governance that even approximates to a normative framework which is true in our case. The structure is on shelf

and program projects are being implemented in fragmented manner just simply in traditional project management and implementation.

On the other hand 18 percent of the respondents are neutral and the rest 31 percent agreed or strongly agreed about the question as the limitation on program structure is a challenge for e-government program. Their explanation from interview is that the current organizational structure has been revisited even though it is still unsatisfactory. On top of this they add the experience from other countries as there is e-government council which consists higher government officials. According to the respondents, this council provides directives to institutions/implementers.

The council considered to be formed will be in place of high committee in current strategy document which was assumed to be chaired by Minister of MCIT. Strategy document assumed Key ministries as members of high committee. The same is true for the council to be established. Even best effort was not made so far to implement. Still overlapping government duties at individual level may affect the proposal unless it is handled by substituting officials to be effective and come up with expected out comes. Thus, awareness creation and testing the existing/recommended structures (from e-government strategy validated by government) is helpful even to have lessons on new actions. Unless it is recommended to bring in place the council in earliest time possible to bridge the gaps being observed.

b. Lack of A well-defined Program Architecture / Roadmap

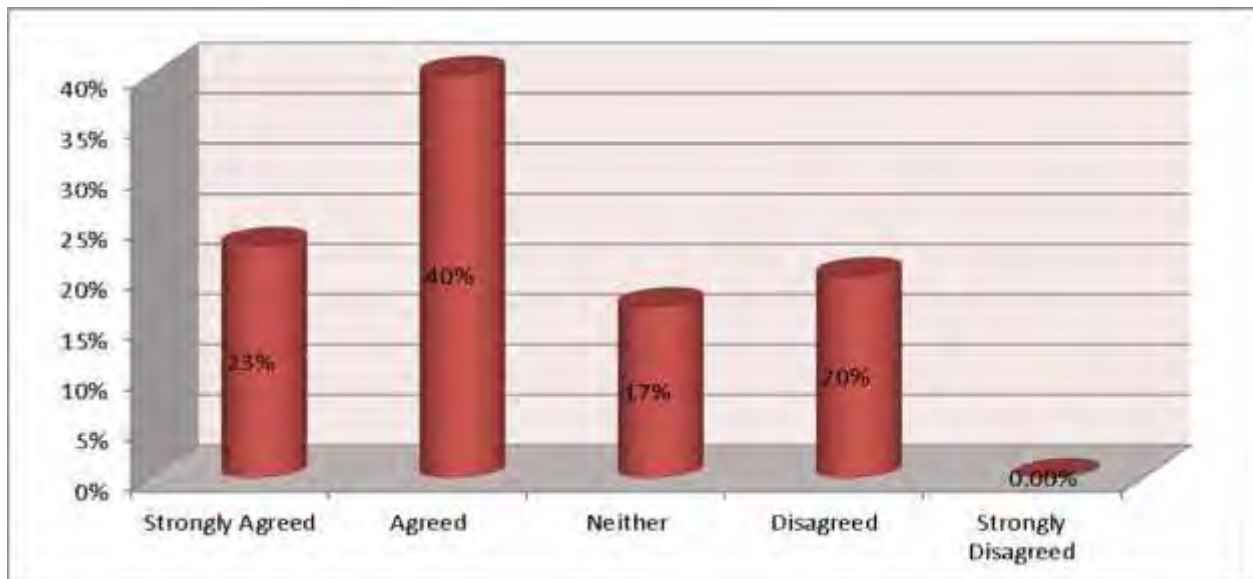
Table 4.6 above depicts that 36 percent of the respondents agreed or strongly agreed that lack of well-defined program architecture is a limitation for program governance of e-government. Out of the total respondents, 31 percent views as neutral. Disagreed and strongly disagreed accounts 33 percent of the total response. Thus, the opinion of the respondents reveals that lack of well-defined program architecture is not as such a challenge for e-government program governance.

In the literature review part of this study, it is stated as program architecture is the roadmap of the program from design to outcome stage and suggests: defining programs within projects, ensuring benefits of the projects and defining high level dependencies among projects. In one or other way, the gaps discussed in the program structure above are reflected in program architecture.

The researcher learnt from the observation that there are many different ICT projects considered as e-government but there is no interdependence among projects and even implementing institutions are not aware of it either the projects under their domain are part of e-government or not. Even some are not aware of what is e-government by itself and some who know the concept are not aware as e-government program is launched. Thus, government has to focus on awareness creation and has to push on establishing common seat with stakeholders to create common understanding and create high interdependency and integration among projects.

c. Poor cross functional communication

Figure 4.10: Opinion survey towards poor cross functional communication



According to IBM, 2006:13; developing and managing all communications and information originating from the program as a critical function of PMO. The discussions in program structure

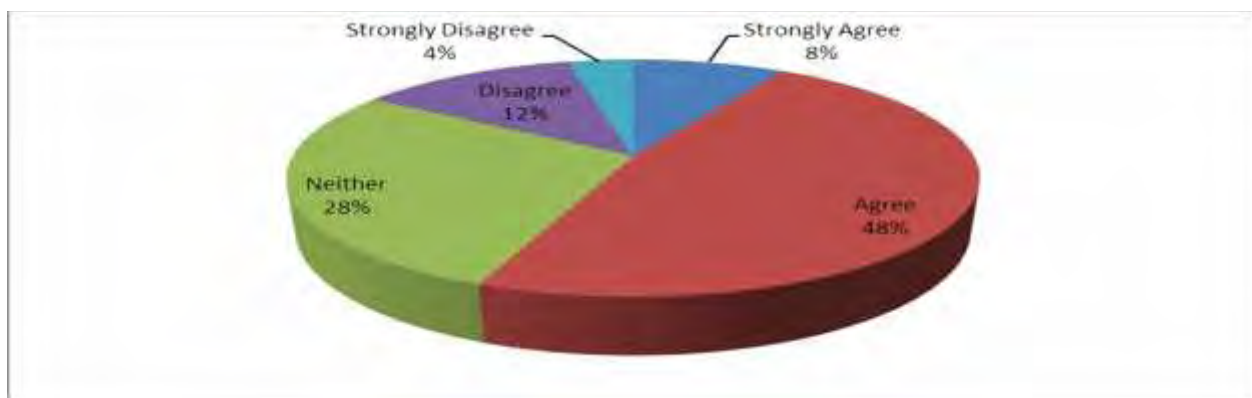
and project integration sections shows as there are gaps. With these all gaps it is difficult to bring smooth cross functional communication at program level. As result the PMO is unable to do so as the failure is at beginning that failing to implement program structure and defined program architecture.

In addition to the table 4.6, figure 4.10 shows graphical presentation of Poor cross functional communication to make the readers it clearly understandable. As we can observe from the figure also depicts the same argument with the above discussion that, 63 percent of the respondents view towards the question regarding the existence of poor cross functional communication under e-government program are agreed or strongly agreed.

Even the explanation of the respondents from questionnaire and interview is that there shall be e-government units in each institution which will be responsible to e-government projects under each institution and also use as advisor to higher officials of respective institutions. In addition awareness creation approaches has to be done both for implementing institution and the beneficiaries. Thus, it is recommendable primarily to put in place clear governance structure with common understanding of all stakeholders as researcher understands from observation in addition to the survey responses. Then there will be clear communication channel with clear chain of command.

d. Inadequate program management skill

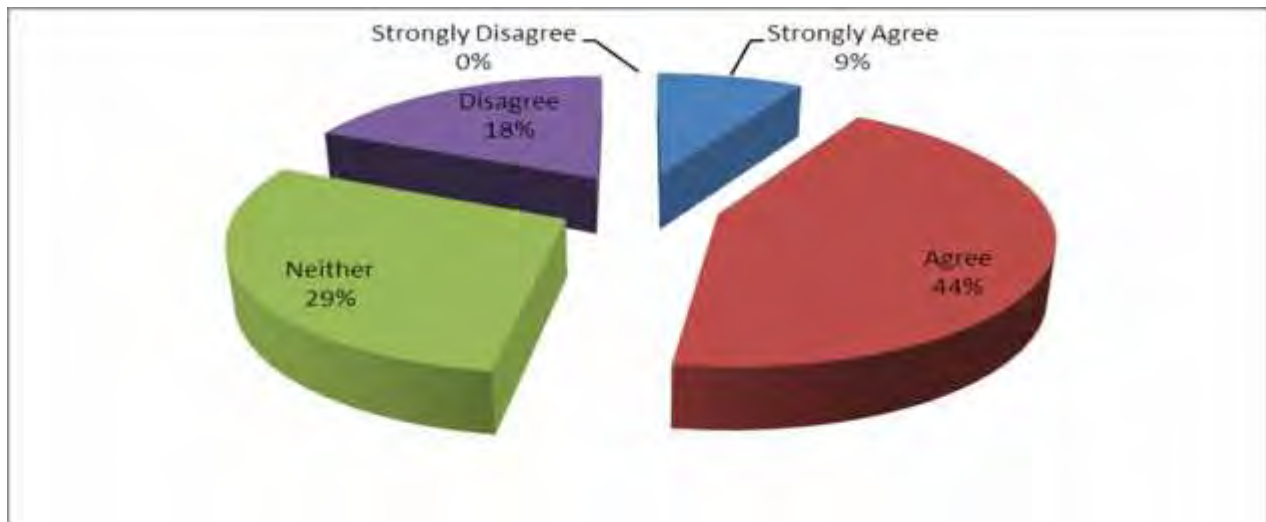
Figure 4.11: Opinion survey on inadequate program management skill



As table 4.6 and Figure 4.11 shows, 56 percent of the respondents agreed or strongly agreed with the view that inadequate program management skill is limitation for program governance which results in challenging e-government program. On top of the above, the respondents add on their explanation, project management skill should be matured enough to implement the projects and commission on time. Most IT and other projects could not be commissioned in most institutions in Ethiopia due to lack of project management skill. To sum up, the explanations are concluded by recommending to have project management institute and project management certifications nationally especially for project managers. The remaining percentages go to neutral and disagree respectively.

e. Absence of defined success metrics

Figure 4.12: opinion survey on absence of defined success metrics



According to 2012/2013 GTP evaluative report of MCIT, FDRE government had a target to enhance the e-government services delivery to the citizens by improving the countries ranking in UN index. The output was improving the UN index ranking of the country by 50 levels from the current state which is 111th and 135th both by web measure and e-participation respectively in 2010. A country ranking in UN index is undertaken by two year interval. As per the study done

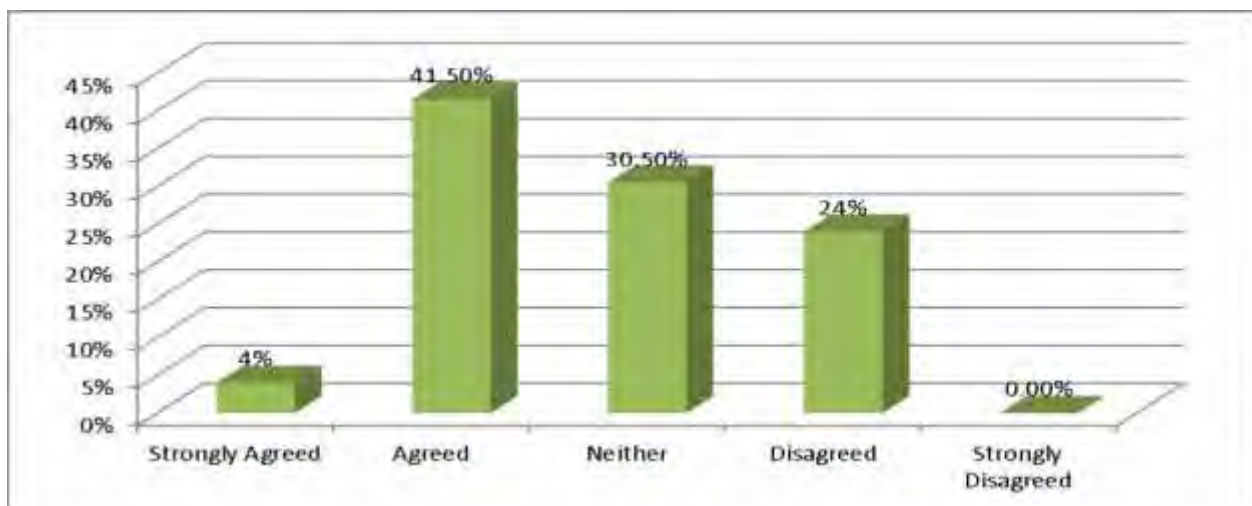
in 2011/12, Ethiopia has improved in web measure from 111th to 80th and in E-participation from 135th to 19th.

As it could be observed from table 4.7 and Figure 4.12 above; 53 percent of the respondents agreed or strongly agreed with the view that absence of defined success metrics is limitation for program governance which results in challenging e-government program. An explanation from interview opinion, their agreement includes that the focus has been done on quick wins.

From observation of the researcher and document references, even most of e-government program projects are not evenly distributed. Most of them are concentrated in urban areas and literacy based. On the other hand 23 percent of the respondents are neutral and the rest 15 percent disagreed and no one responded as strongly disagreed about the question as the limitation on lack of a well-defined success metrics is a challenge for e-government program.

f. Misaligned Stakeholders Expectation

Figure 4.13: Opinion Survey towards Misaligned stakeholders’ expectation



As stated in literature review; Heeks, (2002), stated that first, most African countries have undertaken only a limited number of e-government projects. Second, most African e-government

projects fail in some way. So that it is difficult to align stakeholder expectation in such environment. As we can learn from the discussions made in this study, the number of projects being implemented by Ethiopian government is limited. Table 3.6 and figure 3.13 above, shows that; 45.5 percent of the respondents agreed or strongly agreed with the view that misaligned stakeholder expectation is limitation for program governance which results in challenging e-government program. And 30.5 percent of the respondents are neutral and the rest 24 percent disagreed or strongly disagreed about the question as the challenge for e-government program.

On top of it stakeholder awareness about the program is very low. 82 percent of the respondents perceive as there is a gap in promoting the program to the public/stakeholders. Participation both in design and implementation phase is still at infant stage. As discussed in the beginning of this chapter 77 percent and 63 percent of the respondents agreed as there is limitation in participating in design and implementation respectively. Even the culture of developing electronic services in Ethiopia is still at infant even it shows progress. According to the respondents opinion 82 percent perceive as it is yet require effort. Given these all gaps; it is difficult to align the stakeholder expectations. Thus government has to improve on the gaps stated here to meet the required target.

4.4.3. Strategic readiness for e-governance

Many researchers like Zammit (2000) and West (2001) cited in Heeks (2002) stated as African governments have fewer e-government initiatives than industrialized countries taking financial limitation as a major explanation. But it is not the only reason. The greater lack of strategic e-readiness for e-government in Africa is another big challenge. According to Bridges.org 2001, McConnell international 2001 cited in Heeks 2002 justifies that e-readiness has become sufficiently widespread as a concept to offspring a number of variants like Legal infrastructure, institutional infrastructure readiness, human infrastructure readiness, technological infrastructure readiness and leadership and strategic thinking.

Taking some variants which are considered as suitable to the study area by the researcher is discussed in this part. To assess the limitations on strategic e-readiness for e-governance of e-government program of the country, the respondents of the questionnaire are asked to select from the list of five options ranging from strongly agree to strongly disagree for each items provided. Seven interviewees are asked to express their opinion about the challenges in the area.

a. Institutional infrastructure, central e-governance & diffusion of e-government

Table 4.7: Response statistics on institutional infrastructure, central e-governance & diffusion of e-government

No.	Item	Frequency	Percentage	
1	Lack of institutional infrastructure readiness	Strongly Agree	10	12%
		Agree	32	39%
		Neither	7	8.5%
		Disagree	21	25.5%
		Strongly Disagree	12	15%
		Total	82	
2	Weakness of central e-governance units	Strongly Agree	10	12%
		Agree	43	53%
		Neither	15	18%
		Disagree	10	12%
		Strongly Disagree	4	5%
		Total	82	
3	Slow diffusion of e-government	Strongly Agree	14	17%
		Agree	38	46%
		Neither	18	22%
		Disagree	8	10%
		Strongly Disagree	4	5%
		Total	82	

Source: SPSS survey, 2014

Following the evolution of e-government, governments around the world including Ethiopia are implementing it by incorporating in their national ICT policy (Bailur, 2006). Even if incorporating in national ICT policy is the one step ahead, it is mandatory to make sure as there

is institutional infrastructure readiness unless it will remain on shelf. In the absence of institutional infrastructure readiness, it is difficult to put in place strong central e-governance units. In the table 4.7 three items depicted and each of them is discussed briefly as follows. As the three items are integrated and interdependent, the researcher merges them together to show the impact of a single variable on the e-readiness aspect as a whole as well to make it easily understandable to readers. As it is observed from the table; 51 percent of the respondents are strongly agreed or agreed on lack of institutional infrastructure readiness impacts the program.

Lack of institutional infrastructure readiness is called by owner of the program as “operational challenges”. The explanation from interview opinion supports this idea as there are no guidelines/manuals and working procedures in place since it is newly structured. As result producing the manuals/procedures and e-government deployment is being implemented side by side. The opinion of the respondents in the table above shows that 65 percent of the respondents strongly agreed and agreed with the question as central e-governance unit is weak even which is limited to the program owner. According to Heeks 2002, central e-governance units are a necessary part of the e-government process to act as a focal point both nationally and internationally. It will be difficult to push initiatives being implemented within or by individual ministries and agencies.

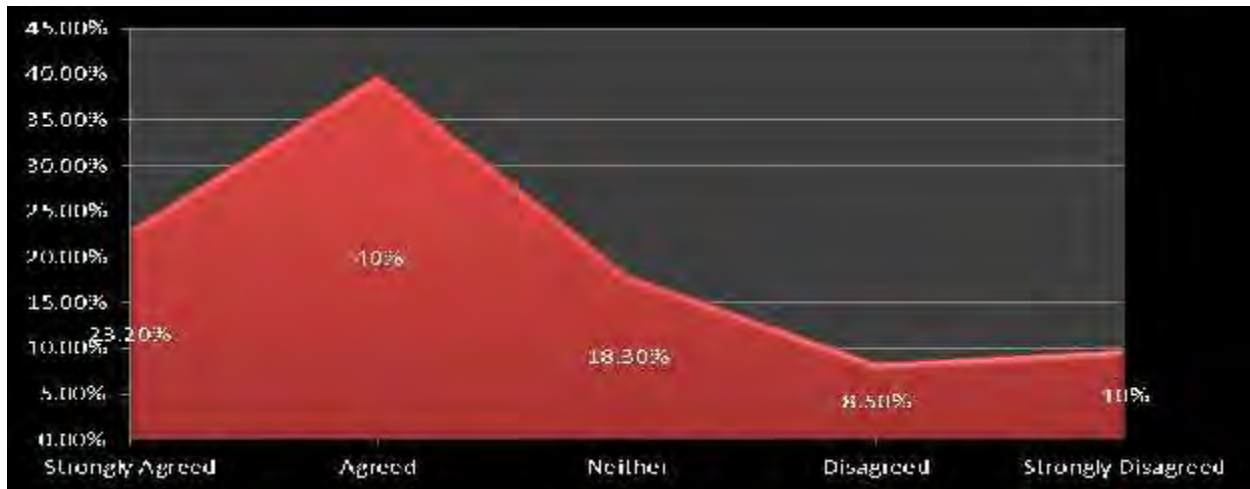
Even the explanation from questionnaire survey states that except the structure in the e-government strategy document (which is discussed in program governance section); there are no e-governance units in each e-government program project implementing institutions. On top of their explanation, they add weakness comes from existing/established operation. Currently no e-governance units created except at Ministry of communication and information technology. Even the projects are done by operational IT team which has no awareness about the national initiative. In addition trainings are not provided well for more awareness creation. High level officials even have no awareness about e-government unless they feel the project implementation will bring operational efficiency.

Within such weak/absence of institutional infrastructure readiness and central e-governance units (only program owner); how could be possible to facilitate diffusion of e-government? As seen in the table above, the view of respondents' shows that 63 percent agreed or strongly agreed as there is slow diffusion of e-government which impacts the program. Strategic e-readiness is fundamental for effective infrastructure deployment and to gain benefits from ICT based service. Since initiation of e-government and even before; by ICT development agency, Ethiopian government has been striving with its best effort to enhance e-services. But the experience of the last two years' (2011/12 and 2012/13), shows that there are strategic readiness problems faced. Establishing system of community information centers in 50 government offices has been planned but 80 centers were not implemented due to delayed procurement process and other pre preparation related problems.

Even establishing community radio centers was also planned but 31.25 percent only was performed. The problem was that organizing the community to administer the centers was not well done according to the plan but two centers in Benishangul Gumuz and Gambella regions are installed. In line with this implementing online unified billing system (which is called as "lehulu") in Addis Ababa and all regional capital cities was planned. Until this research is completed only 33 centers in Adiss ababa are implemented. What we can sense from the discussion is that, all of the three aspects are interdependent. One without the other can't be pillar for the program. Thus, government should establish institutional infrastructure which will enable the central e-governance units to operate smoothly and finally it will create enabling environment for fast diffusion of e-government.

b. Lack of leadership and strategic thinking

Figure 4.14: Opinion Survey towards lack of leadership and strategic thinking



FDRE government has an objective to improve ICT usage of public and government institutions to ensure good governance and increased public participation. The expected output was optimized government information network infrastructure. Unfortunately the cumulative performance for the last two years 2011/12 to 2012/13 was 50%. The justification provided for low performance was time taking bidding process. This is basic task two achieve the three dimensions of e-government stated above (G to G, G to C and G to B). According to the figure 4.14 above, the most hindering factors to the strategic e-readiness of e-government program are lack of leadership & strategic thinking which accounts 63.2 percent of respondents agreed and strongly agreed. An explanation from interview opinion, their agreement includes that the e-government program should be holistic approach. All aspects should be incorporated in the program unless it will be incomplete and affect the outcome.

The aspects should be with Government to Government (G to G), Government to Citizen (G to C) and Government to Business (G to B). As we can see from explanation given at absence of defined success metrics section, the focus was on quick wins; where we can observe the missing part to say it is holistic. On the other hand 18.3 percent responds as neutral and the remaining 18.5 percent perceives the impact of lack of leadership and strategic thinking as minimal. As mosaic project service pty Ltd (2009), program management is strategic, focused on the big

picture and the implementation of the strategy to realize the benefits. Thus, measurement analysis of e-government environment shall be made to realize the gaps and take corrective measures on leadership and strategic thinking.

ITU (2009), referring to Ojo, Janowski, and Estevez, (2007), taking in to consideration both qualitative and quantitative indicators, three measures are identified by their specification for e-government readiness. (1) indicators and indices on general aspects of a state, economy or society; (2) general e-readiness indicators, describing how different sectors of an economy or society are positioned to make use of ICT; and (3) core e-government readiness indicators, which target the thematic more narrow aspect of government using ICTs. On the other way stakeholder management is a far more complex and important issue for program managers as most benefits are only realizable in the future. Njelesani, B.C. (1999) quoted by Heeks, 2001b, stated as a balance must be struck between external and internal interests.

The use of information and communication technologies to improve the activities of public sector organizations brings with it the promise of greater efficiency and effectiveness of public sector operations. Thus, formation of e-government council shall be urged and institutional arrangements in all levels shall be in place to align and lead, follow and take corrective actions on this dynamic area to achieve expected outcome.

c. Lack of human infrastructure readiness

Figure 4.15: Opinion survey towards lack of human infrastructure readiness

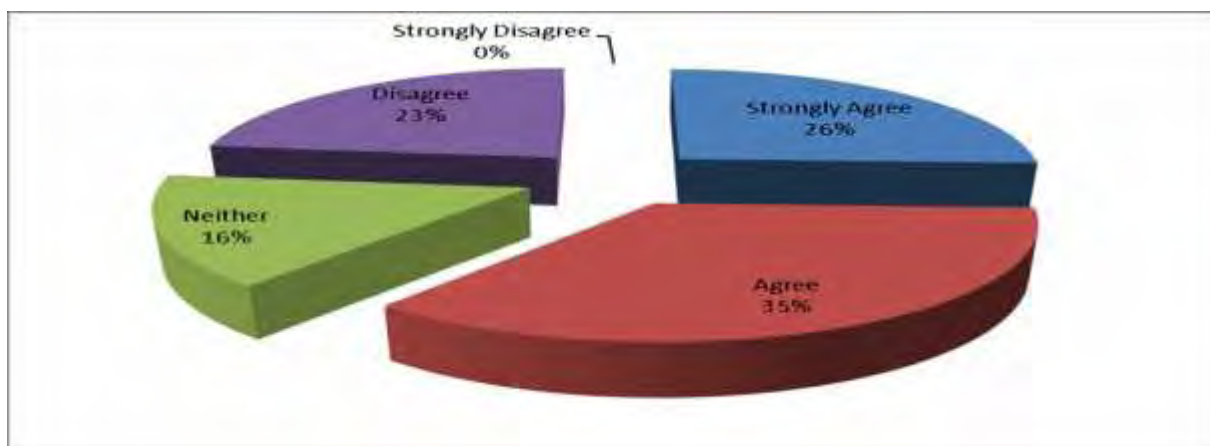


Figure 4.15 shows that 61 percent of the respondents agreed or strongly agreed with the view that lack of human infrastructure readiness is a limitation for strategic e-readiness which results in challenging e-government program. An explanation from interview opinion, their agreement includes that lack of skilled manpower in the market and human attitudinal problem towards technology/automation is a challenge. There is no enough access to trained manpower in the market; it is also too limited in government institutions.

On top of the above, 2011/12 – 2012/13 report from MCIT states employee turnover as a challenge. For this reason; the Ministry office has designed recruitment and on the job training programs even though this is not the ultimate solution. Attitudinal problem is the other challenge related to manpower. In this case traditional/manual operations (ignoring automation) are a challenge. Eg. More than 200 online services are developed but due to manual operation preference most of online services are on shelf.

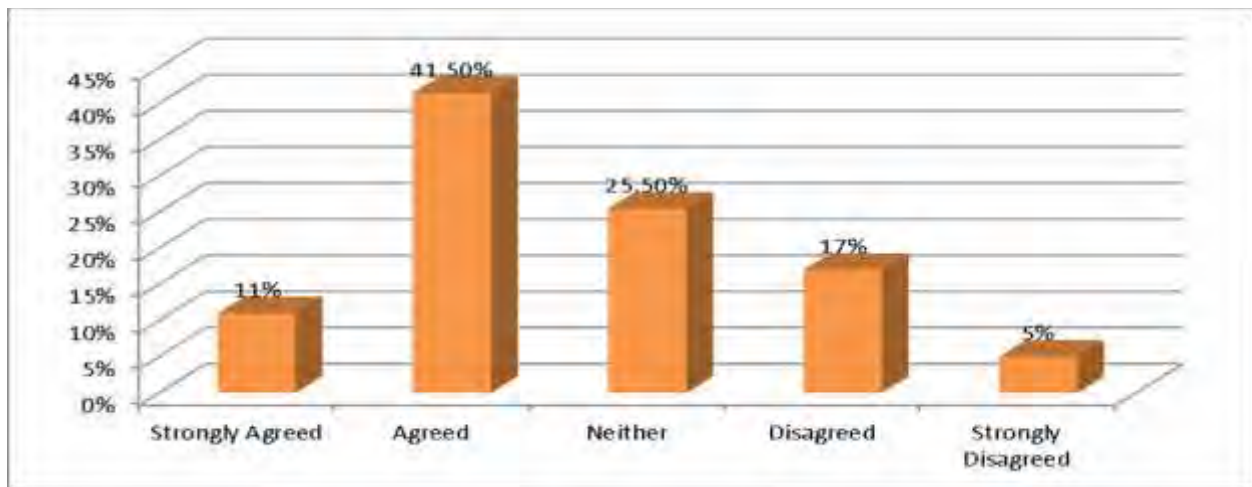
There are also different view group to this idea. This group argumentation is that there is no problem with skilled manpower in the market but in government institution. Outsourced IT projects are being done by local citizens. So that they conclude the challenge is from government officials' weak perception towards local experts. In addition to the perception problem, there is no encouraging benefits package/paying system in government institutions to attract or retain the existing. On top of this there is no willing institution to pay for those experts which they did for foreigners with almost similar skill, even better in some cases.

To make meaningful the second argument, opinions are provided with an example as follows. The e-government strategy has been done by external consultant called PricewaterhouseCoopers. During the strategic document preparation the participation of local citizens especially from domain was limited. As it could be referred from the strategic document, only two local individuals has involved at review stage. "Who is going to implement the strategy/program document unless implementers involved directly during document PID stage?" they asked.

There are also projects directly out sourced. Still the involvement of the project owner staff (who finally expected to take over the operation) is limited; for example; integrated financial management information system (IFMIS) project which is under implementation. They conclude as, involvement of the local citizen specially those who are expected to take over the operation shall involve at each stage of the program/program projects accordingly. This is basic area where critical requires government attention next to the institutional arrangements to be established with the dream of e-government council.

d. Lack of Technological infrastructure readiness

Figure 4.16: Opinion survey towards lack of technological infrastructure readiness



As per figure 4.16 above, 52.5 percent of the respondents agreed or strongly agreed with the view that lack of technological infrastructure readiness is limitation for strategic e-readiness for e-government which results in challenging e-government program. And 25.5 percent of the respondents are neutral and the rest 22 percent disagreed or strongly disagreed about the question as the challenge for e-government program. To tackle this problem, the government launched big telecom expansion project. The source of finance for the project was vender financing scheme which takes a long time. Now it is in place and implementation is ongoing. In the other way, the expansion of the telecom expansion will improve the quality as well accessibility of service which affects e-service.

4.4.4. Risk Management

To assess the limitations on risk management of e-government program of the country, the respondents of the questionnaire are asked to select from the list of five options ranging from strongly agree to strongly disagree for each of five items. The interviewees are asked to express their opinion about the challenges in the area. Based on the response collected from 82 respondents about lack of risk management to e-government program of the country, five thematic areas are identified as shown in the Table 4.8 and discussed in the following sections.

a. Lack of assessing program and project level risks and prioritizing them

There are many risks which e-government faces. Some typical risks that may be experienced in e-government domain can be: uncertain timescale prediction, increased delays and costs, misinformed decisions, reliance on technology, security risks and risks related to the unpredictable nature of the ICTs. Of course such enlisting is far from exhaustive, but it gives a flavor of some common risks of e Government

Table 4.8: Opinion survey towards lack of assessing both program and project level risks and problem on prioritizing risks

No.	Item	Frequency	Percentage	
1	Lack of assessing both program and project level risks	Strongly Agree	13	16%
		Agree	37	45%
		Neither	10	12%
		Disagree	22	27%
		Strongly Disagree	0	0%
		Total	82	
2	Problem in prioritizing risks	Strongly Agree	16	19.5%
		Agree	30	36.5%
		Neither	17	21%
		Disagree	15	18%
		Strongly Disagree	4	5%
		Total	82	

As shown in the table 4.8 above, 61 percent of the respondents agreed or strongly agreed with the view that, lack of assessing both program and project level risks are limitation for strategic e-readiness which results in challenging e-government program risk management. On the other hand 12 percent of the respondents are neutral and the rest 27 percent responds disagreed and no one responds as strongly disagreed about the question as the limitation on lack of assessing both program and project level risks is a challenge for e-government program.

Problem in prioritizing risks is another aspect which opinion survey is made. It is still a limitation in managing risk of e-government program/program projects. As we can see from table 4.8 above, 56 percent of the respondents agreed or strongly agreed as there exist a problem in prioritizing risks. But the remaining share of the respondents goes to neutral which accounts 21 percent and disagreed or strongly disagreed which consists 23 percent of the respondents as no problem in prioritizing risks.

b. Lack of defined response strategies

Figure 4.17: Opinion survey towards lack of defining response strategies for risk management

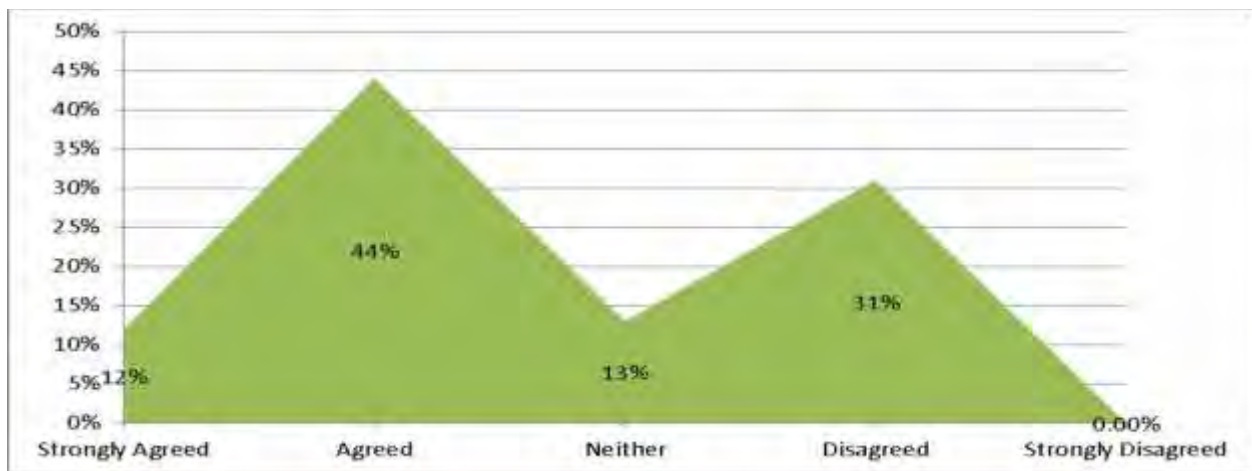


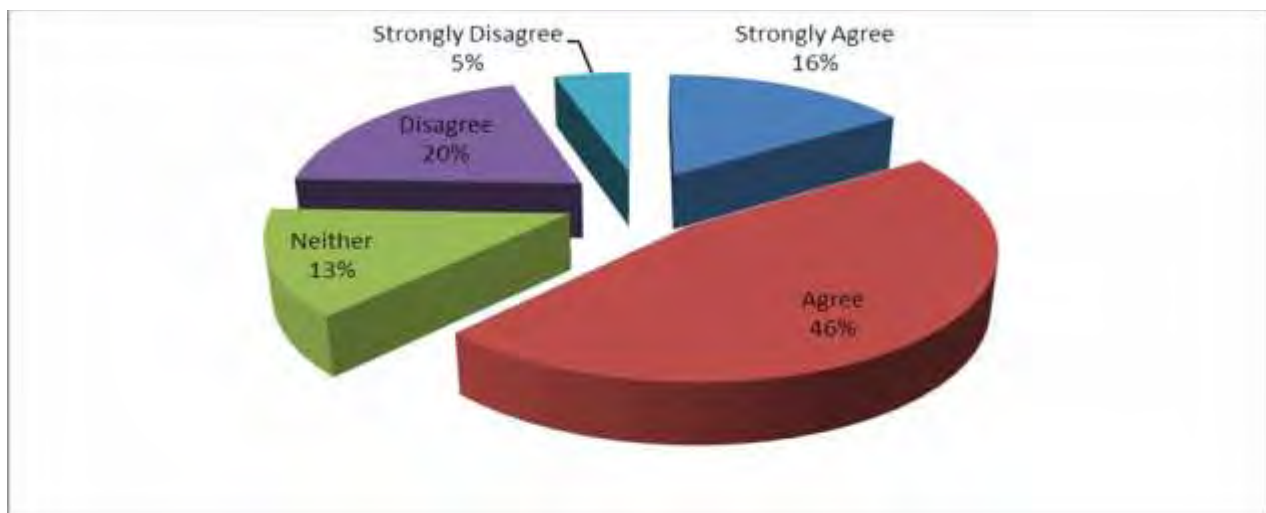
Figure 4.17 above shows that 56 percent of the respondents agreed or strongly agreed with the view that lack of defining response strategies for program/Program projects risk management is a limitation/challenge for e-government program of Ethiopia. On the other hand only 13 percent of

the respondents are neutral and the rest 31 percent responds disagreed and no one responds as strongly disagreed about the question as the limitation on lack of defining response strategies for program/project risk management is a challenge for e-government program of the country.

As we learnt from the above discussion, the opinion survey shows that defining response strategies is a challenge in risk management of the study subject. If there is limitation on defining response strategies, how there could be integration and what to integrate? Thus; it is necessary to set the strategies to overcome both expected and unexpected risks during the program lifecycle.

b. Lack of integrating all response strategies into the work breakdown system

Figure 4.18: Opinion survey towards lack of integrating all strategies into work breakdown system



When we see the opinion survey as presented in figure 4.18 above, 62 percent of the respondents agreed or strongly agreed with the view that there is a limitation on integrating all response strategies in to the work breakdown system. The remaining share of opinion, 13 percent of the respondents remain neutral. The rest share (25 percent) goes to disagree as there is no limitation in integrating risk response strategies in to work break down system in e-government program generally and program projects specifically. There is no opinion reflected as strongly disagree on this specific question.

The opinion of the respondents in organizational capability section, 72 percent of the respondents agreed as there is lack of understanding program complexity and 63 percent of the respondents also view as there is lack of integrated planning within projects and stakeholders. Unless there is clear understanding on program complexity and integrated planning within projects and stakeholders; it is difficult to integrate response strategies to work breakdown system. Even if there is a progressive effort being exerted by government, still it requires improvement putting in place those stated gaps.

c. Lack of allocating risk reserves

Figure 4.19: Opinion survey towards lack of allocating risk reserves in e-government program

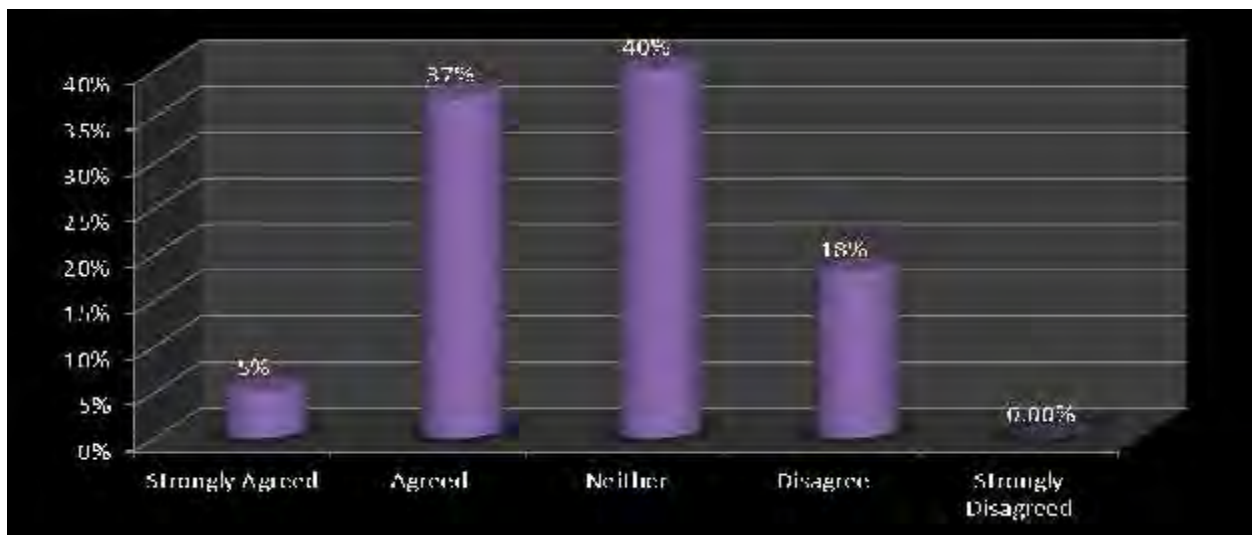


Figure 4.19 above shows that 40 percent of respondents are neutral. 42 percent of the respondents agreed or strongly agreed with the view as there is a limitation on allocating risk reserves in e-government program of Ethiopia. The remaining share (18 percent of the respondents) disagrees as it is not a limitation in risk management of the program. The gaps observed due to limitations on program governance are reflected here. With unclearly defined structure and in the absence of strong central e-governance units, it is difficult to apply allocating risk reserves as it requires specific responsible body in the given structure. Thus the view of the respondents is critical as to improvement requires from government.

4.5. Summary of findings

The main objective of the study was to assess the challenges of managing development programs in public sector in Ethiopia. In achieving this objective, the study attempts to answer the following basic questions.

1. What are the challenges faced by e-government?
2. Why did e-government program face several challenges?
3. How can e-government program overcome the challenges?
4. How can the lessons from e-government program be used for other public sector development programs in Ethiopia?

Descriptive and semi analytical research was used for the purpose of the study. The methods employed by the researcher were conducting survey studies. The researcher purposively selected four Public sector institutions engaged in implementing e-government program/program projects. To collect the necessary information questionnaire, interview, review of documents and observation were employed. The findings of the study are summarized as follows.

1. Knowledge of the program

The knowledge or awareness of the e-government program is low. 82 percent of the respondents' opinion reflects that public promotion of the e-government program is at infant stage.

2. Culture of electronic service development in Ethiopia

Before 1991, the concept of e-government was not familiar in the country. It is a recent phenomenon even after coming of FDRE in power. In this regard, 63 percent of respondents perceive the development of electronic service of the country as good or fair. The remaining 37 percent of the respondents see it as little. Thus, the opinion of the respondents reveals that there is considerable improvement in the area since the coming of FDRE in 1991. The improvement

can be manifested by various measures government has taken to promote development of electronic service. These measures inter alia include:

- Adoption of the FDRE Constitution in [1995], which placed a special emphasis on access to information.
- Adoption of national ICT policy one step forward to enhance the development of the sector in 2002.
- Government commitment in establishing responsible policy implementing institution called Ethiopian ICT Development Authority (EICTDA) in 2003 and also it is upgraded to ministry level in 2010.

3. The extent of User participation

77 percent of the respondents perceive the extent of user participation in the design stage of e-government program/program projects of the country as minimum. In line with this, 63 percent of the respondents believe that the extent of participation of users on implementation stage is minimal. Unless government keeps improvement in this area, it will result in design reality gap where most e-government projects fail.

4. Organizational capability

Best efforts are being done by the government to improve organizational capability. According to the discussion made on organizational capability section, the most hindering factors to the e-government program are lack of understanding program complexity which accounts 72 percent of respondents agreed and strongly agreed. The second and third most hindering factors are failing to balance external and internal interests and lack of integrated planning between stakeholders and program projects. 64 and 63 percent of the respondents' opinion towards balancing external and internal interests and planning shows as it requires improvement respectively.

Out of eighty two respondents, 41 or 50 percent of them sees the impact of limitation on sponsorship in the development of organizational capability as insignificant. It is known as seen

in sponsorship section; e-government program is not at its peak stage. As result it is still operating under financial capacity of 20 percent as compared to the expected funding plan to the program. Suggest shifting the focus towards developing culture of capacity building of program management and awareness creation about the program as priority.

5. Program governance

The survey opinion for program governance concludes that, out of 492 total responses for the whole six items, 234 or 47.6 percent of the respondents agreed or strongly agreed as government shall give emphasis to improve program governance of the e-government program. 25.6 percent of the respondents remain neutral and the rest 26.8 percent of the respondents disagree or strongly disagree with an opinion that, the program governance is in good position. The program structure which is stated in the strategy document is not even used efficiently.

Lack of strong institutional arrangement from federal to regional, zonal and wereda even kebele as required affects the success of the program. The program also lacks E-government council which will support and assumed to provide strategic directions and decisions. Absence of Program and project Management certification institutes is the other major contributor of inefficiency in program and project management. The impact of program governance is also reflected in risk management strategy. Unless the program complexity is not clearly understood, the proper structure is in place and integrated planning within projects and stakeholders is made; it is difficult to implement risk prioritization, to integrate all risk response strategies in to work breakdown and assess program and project level risks.

6. Strategic readiness for e-government

Diffusion of e-government is directly or indirectly related to the central e-governance units and the program structure. In discussion section from page 69 to 71; the program structure and central e-governance units have been criticized as challenges for the program. As result their reflection is seen in diffusion which is affected mainly by these both items. In the absence of strong program structure, central e-governance units can't exist; in the absence of central e-

governance units it is difficult to enhance diffusion of e-government. This also emerges from lack of strategic thinking as discussion made from page 72-73.

According to Heeks, 2003, central to e-government success and failure is the amount of change between 'where we are now' and 'where the e-government project wants to get us'. Unless the program is led with firm leadership and strategic thinking, even it is very difficult to balance internal and external interests which are critical aspect in program management. Thus, here in the discussion the design reality gap is observed.

CHAPTER FIVE

5. CONCLUSIONS AND RECOMMENDATIONS

This chapter has two sections. The first section presents the conclusion of the research and the last section suggests recommendations.

5.1. Conclusions

In light of the findings of the study the following conclusions are drawn.

Governments design a program to achieve the strategic objective of the country or a given organization. With this concern; Ethiopian government has designed programs/initiatives and projects to attain the demand of the public on ICT. One of the areas on which this study focuses is e-government program which is designed to improve service delivery in public sector.

According to Heeks (2003), 35% of e-government projects in developing and transitional countries are total failures and 50% are partial failures. Therefore, assessing and analyzing the achievements recorded and challenges encountered in the process of realization of the ICT development through e-government program/initiative is found to be timely and critical.

The purpose of the study is to assess the achievements in the e-government program, challenges encountered and to indicate possible remedies for the e-government projects specifically or as program/initiative in general.

The method used is qualitative supported by simple quantitative measurements in the form of percentages, tabular illustrations and graphs. The available data is explained, analyzed and utilized to suggest ways and means to improve the situation. Hence, more descriptive method of research is used. During conducting research, both primary through observation, structured interviews of key informants and questionnaires consisting of both closed and open ended questions and secondary data (published and unpublished books, journals, annual reports, technical reports and manuals) were used. To collect primary data; were employed.

Institutional arrangements for e-government program/project implementation at various levels are not clearly defined. There is lack of e-governance units, especially respective Ministries and agencies implementing e-government. Regarding activities of e-government there is lack of integration, strategic e-readiness, organizational capability and program governance, risk mitigation and collaboration among stakeholders at all levels.

Public awareness and stakeholder participation are critical for the implementation of the program/project. The e-government program lacks popularization and needs considerable promotion work to do. The e-government program lacks severe implementation capacity. From current observation and consultation with some resourceful persons, there is no much capacity end to end currently to carry out implementation of the e-government program/projects at all levels. Even the culture of electronic service development in Ethiopia is the recent phenomena not more than a decade and at infancy stage but which is currently showing improvement still with limited stakeholder participation both in design and implementation stages of the program/project projects.

However it is too early to say the extent to which the performance of e-government program is not evenly distributed (holistic) in Ethiopia, it is possible to anticipate potential negative impacts and positive impacts. These potential negative impacts include 84% of citizenry is rural dweller with no telecom infrastructure and commercial power access, restricted level of literacy which hinder use of internet application, limited access/exposure to new technology, high charge in telecom service usage tariff against the users income level, Manual and corrupted operation habit.

Despite these concerns, e-government program has several encouraging features. It promotes transparency, easy access to information, time and cost saving, generally promotes good governance via e-citizen, e-administration and e-business. Thus, the immediate effect of e-government could be resistance on technological acceptance from some public institutions due to manual and corrupted operation trend. On the other hand, the long term effect could be positive as it enhances good governance and institutional efficiency.

5.2. Recommendations

It is very vast area that covers all related to the e-government and future researches should incorporate. However based on the findings and conclusions of research; the following recommendations were forwarded.

- ❖ Promoting e-government program popularization and creating public awareness of the e-government.
- ❖ Even though, the study depicts the improvement in development of electronic service in Ethiopia; government has to make it holistic and keep sustainability.
- ❖ By creating efficient and effective collaboration and integration among users of the program, government has to enhance active stakeholder participation, in particular design and implementation phases of the program or program projects to gain expected outputs/outcomes.
- ❖ Setting-up clear institutional arrangements for e-government program especially office for e-government councils should be opened and the government in a short period shall designate e-government high level council members. This will enable program owner/sponsor to create effective and continuous monitoring and feedback mechanisms during the whole program lifecycle.
- ❖ E-government program/ projects implementation and management require Strategic e-readiness at all levels.

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Appendices

Appendix I

Addis Ababa University

College of Business and Economics

Masters of Public Management and Policy

Questionnaire for Program/Program project owners

Dear Respondents,

This survey is to be conducted as part of a research project which shall be submitted in partial fulfillment of Master of Public Management and Policy (specialization in Development Management).

The overall purpose of the study is to assess the challenges in managing development programs in public sector (case of e-government program). I assure you that all information you will provide to the study will be kept strictly confidential.

There is no need to write your name in the questionnaire. Your honest and sincere response for this questionnaire will highly contribute to the success of the research and sincerely appreciate your cooperation in advance.

Please feel free to contact me at any time for further clarification if any!

Jember Tadele; Cell phone: 0911509787

Email: jember.tadele@ethiotelecom.et / habeshaland@gmail.com

User/implementing Institution _____

I. Basic information of respondent

1. Gender of the respondent

A. Male B. Female

2. Educational background?

A. Elementary school (1-8) B. High school (9-12) C. Diploma D. First Degree

E. Master's degree and above

3. Role of respondent in the program/ Program Project

A. Management

B. Expert

C. Support

D. Other; please Specify _____

4. What is your Professional background? (based on response for Q. 4)

II. Overall project information

5. Which type of project is implemented/under implementation by your institution?

Type of e-government Project	Yes/No
WoredaNet	
Call center	
Rural Connectivity	
SchoolNet	
E-Learning	

Integrated educational information management system	
IBEX	
Integrated financial information management system	

III. Agreement - Disagreement levels

Instructions

15. Read all the items thoroughly and for each of the 33 items, Please put “ ” mark in the space provided under the scale of your choice against each statement based on the following guideline:

1= Strongly Agree (SA) 2= Agree (A) 3= Neither Disagree nor Agree (ND/A)

4= Disagree (D) 5= Strongly Disagree (SDA)

Items	1 S A	2 A	3 ND/A	4 D	5 S D
1. Organizational Capability					
Failing to Balance external and internal interests					
Lack of Understanding program complexity					
Lack of firm leadership & commitment					
Lack of sponsorship					
Lack of resources					
Lack of integrated planning within projects and stakeholders					

Poor requirements management					
Lack of broad change management					
2. Program Governance					
Lack of clear program organizational structure					
Lack of a well-defined Program Architecture					
Poor cross functional communication					
Inadequate program/project management skill					
Absence of defined success metrics					
Misaligned Stakeholder expectations					
3. Strategic e-readiness for e-government					
Lack of data system infrastructure Readiness					
Lack of Legal infrastructure Readiness					
Lack of Institutional Infrastructure Readiness					
Lack of human Infrastructure Readiness					
Lack of Technological Infrastructure Readiness					
Lack of Leadership and Strategic Thinking					
Slow Diffusion of e-government					
Weakness of central e-governance units					
Using old generations of Technologies					
4. Risk Management					
Lack of assessing both program and project level risks					
Problem in prioritizing assessed risks					
Lack of defining response strategies					

Lack of integrating all response strategies in to the work breakdown system					
Lack of allocating risk reserves					
5. Benefits and Requirements					
Un Realistic					
Un clearly articulated					
Un understandable by all stakeholders					
Un acceptable and un signed as viable					
Not supported by a rigorous change management process					

Please put any suggestion or recommendation, -----

Appendix II

Semi Structured interview for generating data on challenges of managing development programs in public sector (case of e-government program)

Common to both Program Owner and user

1. What are the constraints/challenges encountered so far to e-government?
2. What encourage and discourage in order to implement e-government?
3. What are the achievements so far? What should be done to encourage e-government?
4. Do you think the public is satisfied with the service?
5. Does the government plan to improve/increase accessibility of the e-government? If yes how and to what extent?
6. Do the public encouraged to use the service? How?
7. What is the trend of the program/project since the implementation?
8. Do you think the access to e-government is evenly distributed? How?
9. Do you believe that e-government as a tool for service efficiency?
10. What should be done in the future in order to diversify e-government to the public at large? How do you tackle the factors that affect/discourage the program implementation? How do you promote factors encouraging e-government?
11. Who are stakeholders of the program/ Program Project? How is stakeholder communication?

For Program users

12. How is the support from Program sponsor (MCIT) and other stakeholders?

For Program Owner

13. Why is the program important and what does it need to achieve?
14. What is the current state and why does it need to change?
15. What will be the end state look like?

Appendix III

Observation areas for generating data on challenges of managing development programs in public sector (case of e-government program)

1. General program Governance (including support and feedback system).
2. Implementation progress and challenges faced through bi weekly project review made between MCIT and ethio telecom.
3. Handling of the program projects from both user and owner perspective.
4. Infrastructure deployed so far at user, owner and ethio telecom side.
5. Support from ethio telecom for programs/Program Projects and challenges encountered.

Appendix IV

Addis Ababa University

College of Business and Economics

Masters of Public Management and Policy

Questionnaire for Beneficiaries

Dear Respondents,

This survey is to be conducted as part of a research project which shall be submitted in partial fulfillment of Master of Public Management and Policy (specialization in Development Management).

The overall purpose of the study is to assess the challenges in managing development programs in public sector (case of e-government program). I assure you that all information you will provide to the study will be kept strictly confidential.

There is no need to write your name in the questionnaire. Your honest and sincere response for this questionnaire will highly contribute to the success of the research and sincerely appreciate your cooperation in advance.

Please feel free to contact me at any time for further clarification if any!

Jember Tadele ; Cell phone: 0911509787

Email: jember.tadele@ethiotelecom.et / habeshaland@gmail.com

User _____

I. Basic information of respondent

1. Educational background?

- B. Elementary school (1-8) B. High school (9-12) C. Diploma D. First Degree
- E. Master's degree and above

2. Role of respondent in the program/ Program Project

- E. Management
- F. Expert
- G. Support
- H. Teacher
- I. Student
- J. Business Men
- K. Other; please Specify _____

3. What is your Professional background? (based on response for Q. 2)

II. Overall project information

4. Which type of project is implemented/under implementation by your institution?

Type of e-government Project	Yes/No
WoredaNet	
Call center	
Rural Connectivity	
SchoolNet	

Integrated educational information management system	
IBEX	
Online services	
Other electronic services	

5. Do you think the implemented e-government program/Project is evenly benefiting the citizens? If so how and if no why?

6. What was extent of your participation during project design?

A. Very little B. Little C. Fair D. Good E. Very Good

Other _____

7. What was extent of your participation during project implementation?

A. Very little B. Little C. Fair D. Good E. Very Good

Other _____

8. Is there any supporting unit around when required? A. Yes B. No

If yes how? _____

III. Level of Program Awareness

9. To what extent do you know about e-government?

A. Very little B. Little C. Fair D. Good E. Very Good

Other _____

10. How is the culture of electronic services development in Ethiopia?

A. Very little B. Little C. Fair D. Good E. Very Good

11. What is the extent of your electronic service usage?

A. Very little B. Little C. Fair D. Good E. Very Good

12. How do you judge the contribution of electronic government in your day to day activity?

A. Very little B. Little C. Fair D. Good E. Very Good

13. Are you encouraged to use the services by government? A. Yes B. No

Please justify in both cases _____

14. Are there discouraging factors to use the services? **A. Yes** **B. No**

If yes, what are they? _____

15. Instances e- government benefits the public

A. Yes **B. No** **C. Do not Know**

16. Challenges faced by the beneficiaries (you can choose more than one)

A. Cost of the service **B. Lack of Awareness** **C. Lack of Service taste** **D. User unfriendly technology**
E. Infrastructure problem **F. Lack of skill** **G. Lack of access to technology** **H. Language Barrier**

IV. Agreement - Disagreement levels

Instructions (It is only to be filled by Institution Beneficiaries not individuals)

16. Read all the items thoroughly and for each of the 33 items, Please put “ ” mark in the space provided under the scale of your choice against each statement based on the following guideline:

1= Strongly Agree (SA) 2= Agree (A) 3= Neither Disagree nor Agree (ND/A)
 4= Disagree (D) 5= Strongly Disagree (SDA)

Items	1	2	3	4	5
	S A	A	ND/A	D	S D
1. Organizational Capability					
Lack of firm leadership & commitment					
Lack of sponsorship					
Lack of resources					

Lack of broad change management					
2. Program Governance					
Poor cross functional communication					
Inadequate program/project management skill					
Absence of defined success metrics					
Misaligned Stakeholder expectations					
3. Strategic e-readiness for e-government					
Lack of data system infrastructure Readiness					
Lack of Legal infrastructure Readiness					
Lack of Institutional Infrastructure Readiness					
Lack of human Infrastructure Readiness					
Lack of Technological Infrastructure Readiness					
Lack of Leadership and Strategic Thinking					
Slow Diffusion of e-government					
Weakness of central e-governance units					
Using old generations of Technologies					
4. Risk Management					
Lack of assessing risks					
Problem in prioritizing assessed risks					
Lack of defining response strategies					
Lack of integrating all response strategies in to the work breakdown					

system					
Lack of allocating risk reserves					
5. Benefits and Requirements					
Un Realistic					
Un clearly articulated					
Un understandable by all stakeholders					
Un acceptable and un signed as viable					

Please put any suggestion or recommendation, -----

