

E-Government Practice, Challenges and Future Prospects in Developing Countries: the Case of Ethiopia

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ABSTRACT

This article explored the status of E-Government initiative in developing countries by taking the case of Ethiopia. The study had analyzed the practice, challenges and the future prospect of the E-Government initiative in the country. The paper had used both secondary and primary sources of data. In identifying the practice and future prospects of the E-Government initiative, related works in the area were reviewed and appraised. In ascertaining the major challenges, structured and semi-structured interviews were carried out with selected stakeholders from the government office and the private sector. The result of the study had shown that the country had registered a promising progress in E-Government index in the past four years ranking at 157th in the year 2014, which was standing at 172nd in the year 2012. Above all, high-level political commitment and the design of specific actions plans that are linked to the national sustainable development priorities were the key success factors. Nevertheless, there are still enormous challenges that have to be tackled for citizens to drive the benefits arising from the implementation of E-Government initiative. The study had identified limited cross-sectoral connectivity, lack of intra-organizational connectivity, low human resource capacity, language barrier, lack of awareness and absence of appropriate legal and regulatory framework as major challenges. Finally, the study forwarded constructive suggestion that can be adopted in the way forward of the E-Government initiative.

Keywords E-Government, Cross-sectoral connectivity, Intra-organizational Connectivity, Digital Divide

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1. Introduction

The revolution of the information communication technology commonly known as the digital revolution has brought significant impact on the daily activities of individuals around the globe. The digital revolution redefined the relationship and interaction government has with citizens, business and any concerned stakeholders (Al-Naimat, 2011). In particular, E-Government has proven to be an efficient ICT tool that can enhance government performance as it improves the quality and process of services delivered by the government. Beyond the benefits it provides in administrative matters, E-Government promotes good governance, transparency and ensures the participation of citizens in decision-making (Nkohkwo & Islam, 2013).

Information Telecommunication Union (2008) defined E-Government as the application of information communication in government setting to facilitate government services, to improve the administrative matters and to promote democratic participation of citizens in the path to building a knowledge society. Fang (2002) also defined it as the effort of the government towards adopting the most innovative and cost-effective aspect of information communication technology to provide citizens and business convenient access to government information and services.

Throughout countries in the world, the application of E-Government services had gained considerable attention. Governments around the globe have been implementing and introducing E-government with the aim of putting an end to the bureaucratic and frustrating procedures of government departments, which often leads to dispute between citizens and government (Nkwe, 2012). Indeed, its implementation conveyed positive outcomes by reducing costs, improving services, saving time and increasing effectiveness and efficiency in the public sector. Furthermore, the introduction of E-Government has paved a way for government to build relationship and partnership with civil society and businesses (Drew, 2010).

Following the success stories of developed countries, many developing countries have adopted E-Government strategies to address a wide range of economic, social, technological, infrastructural, legal and educational issues. The experience in countries like Brazil, India and Chile in the implementation of E-government has shown the possibility for developing countries to effectively exploit the benefits arising from the application ICT tools if applied in the right context (Ndou, 2008). However, in spite of the relentless effort of governments, the implementation of E-Government in many developing countries has fallen short. As study finds it, ranging from 60% to 80% the attempt of developing countries in implementing E-Government is subjected to failure (Choi, Park, Rho, & Zo, 2016). A similar study conducted by Heeks (2003), indicated that 85% of E-government initiative projects had failed to attain the initially intended objectives. Out of the 85%, those that were reported to be total failure constitute 35%, while the rest 50% are categorized

under partial failure. The E-Government initiative is considered as a failure either when the intended project was not at all implemented or when it immediately abounded right after implementation.

The effective implementation of E-Government principles and function requires the collection of well-articulated standards, guidelines, rules, policies and legislative, which most developing countries fall to attain. Moreover, issues such as leadership, planning, infrastructure development, cooperation and partnership, capacity building and organizational capabilities are recorded as fairly contributing factors for the stagnant development E-Government in most developing countries (Ndou, 2008). The problem can actually be viewed from two sides; on one hand, the fact that the application of E-Government initiative is multifaceted and complex makes it challenging. On the other hand, diverse and differing contexts of (regulatory frameworks, political environments, and sociocultural backgrounds) of developing countries are contributing factors (Choi, Park, Rho, & Zo, 2016).

Likewise, bearing in mind all the positive achievements, Ethiopia is also encountering multiple challenges in the process of implementing and expanding the E-Government initiative. Indeed, the country has shown improvements in the past four years, the country has ranked 157th in E-Government index in the year 2014, showing a considerable improvement from the year 2012 where the ranking stood at 172nd (UN, 2014). Still, the current ranking lags behind the world average and the wide-ranging of plans and strategies set by the government towards the development and expansion of the E-Government initiative is encountering multiple challenges (Belachew, 2010). Therefore, a depth approach that takes into account the context of a specific country is required to identify the major obstacles and to forward noble recommendations its effective implementation.

The above-mentioned works and related studies conducted concerning the performance of E-Government initiative in developing countries had underlined the necessity of designing projects following a holistic (general and in-depth perspective) approach. The implementation of the E-Government initiative requires country-specific analysis and contextualized application tools that greatly recognize the characteristics, needs and contemporary condition of one's country.

Accordingly, the aim of this paper is to explore the performance of E-Government initiative implementation in Ethiopia; practices so far, major achievements, challenges, and future prospects. Section two, literature review, made an extensive review of pioneer works aiming to present a border perspective about the subject understudied. Section three elaborates the methodology employed by the study to address the subject matter. In sector four, results of the study are briefly discussed. Here, the practice and challenges of E-Government initiative in the country is

throughout discussed part by part. Furthermore, the study made an effort to drive out recommendations that can contribute to the betterment of the E-Government project.

2. Literature Review

The initiatives of the public sector to develop ICT tools, applications, internet and mobile devices to better manage the affairs of economic, political and administrations is known as E-Government. The central element of E-Government is ICT tools, to reinvent the public sector by transforming its internal and external way of doing things as well as its interrelationship with customers and the business world. E-Government stimulates good governance; strengthen the relationship between government and citizens by providing faster access to government services with low costs. It promotes good governance as it corresponding increase in the transparency and accountability of government activities (Basu, 2004).

E-Government incorporates four main groups: citizens, businesses, governments, and employees. The Government to Citizens (G2C) category highlights the relationship and interaction between government and citizens. This category allows government agencies to talk, listen, relate and continuously communicate with its citizens, supporting accountability, democracy and improvements to public services. The second type, Government to Business (G2B) focuses on the relationship between government agencies and private businesses. It allows e-transaction initiatives such as E-Procurement and the development of an electronic marketplace for the government. The third, Government-to-Government (G2G) consist of the interaction between certain government organizations, for instance, the relationship and interaction between national, regional and local governmental organizations, or with other foreign government organizations. The fourth, usually categorized under G2G, the Government to Employees (G2E) refers to the relationship government and employees. G2E is an effective way to provide E-learning, bring employees together and to promote knowledge sharing among them (Ndou, 2008).

As a remarkable reinvention in the public sector, E-Government has gained attention all over the world. As a result, many countries had taken responsive measures by devoting a considerable amount of resource and effort towards implementing it. Nevertheless, given all the achievements, the implementation E-Government in developing countries has not been a simple task. The diverse nature of the countries, the different level of basic infrastructure, institution, legal and human capital frameworks had resulted in uneven outcomes. As developing countries have in general a poor context in comparison to developed countries the adaptation of E-Government initiative application developed within the context of knowledge-based economies confront challenges

(Al-Naimat, 2011).

A study conducted in 15 developing countries (Argentina, Brazil, Chile, China, Colombia, Guatemala, India, Jamaica, and the Philippines) by Nodu (2008) had identified the major challenges and opportunities that encountered through implementing e-Government initiative. The study highlighted the possibility for developing countries to drive the similar benefits as developed countries if they manage to implement well-articulated designed E-Government initiative. Nevertheless, the ability of developing countries to reap the full benefits of E-Government is limited and is largely hampered by the existence of many political, social and economic hindrances. ICT infrastructure, policy issues, human capital development, change management, partnership and collaboration, strategy and leadership were identified as the seven fundamental factors influencing the effectiveness implementation of E-Government initiative.

Similarly, Choi, Park, Rho, & Zoo (2016), proposed an assessment method (strategy, technology, organization, people, and environment, STOPE) for E-Government strategy implementation in developing countries to enable both ex-ante and ex-post evaluations that apply to entire e-government systems and to subsystem projects. After, implementing the proposed model in Indonesia the study highlighted the need to (1) build out an ICT infrastructure that has a crosscutting effect throughout the country, (2) create an environment with stronger e-government legislation and cyber laws, (3) initiate leadership through efficient IT governance, and (4) manage changes and business process interoperation by incorporating best practices with a standardized enterprise architecture standard.

In the same manner, Basu (2004) highlighted the impact of investing in communication infrastructures and in training and learning to increase the competitiveness of the public sector in developing countries. The study noted the importance of intranet and networking for successful implementation of the E-Government initiative. In addition, the study underlined the necessity of designing the E-Government initiative framework in a very careful, analytical and dynamic manner in order for it to convey transparency and accountability.

The implementation of E-Government has been a challenging and complex task in many developing countries. The solution to the encountered challenge goes beyond the application of gadgets and newly developed software. Most countries face challenges as the newly developed apps are not compatible with the existing organizational structure, human capital, forms of leadership and public-private partnership (Ndou, 2008). Similarly, Titah and Barki (2006) had indicated the significant influence of individual and citizens beliefs in the adaptation of e-Government services.

In most cases, developing countries tend to adopt the initiatives that were developed in

developed countries mostly based on their own theories and experiences. This has been subjected to failure as many of the countries are not yet equipped to embrace the extended applications, given their limited infrastructures (Al-Naimat, 2011). Finance is also a gigantic factor that hinders the effective and integrated implementation of E-Government initiative in developing countries. The central government is the main source of fund for most of the activities in secondary regions, which mostly fall short to cover all the extended and complicated tasks to the E-Government initiative (Nkohkwo & Islam, 2013). Ndou (2004) identified e-readiness, computer literacy, telecommunication equipment as issues that need to be addressed urgently in improving E-Government initiatives in developing countries. At the junction, the impact of the digital divide was highlighted as a major hindering factor.

Correspondingly, E-Government offers a great opportunity for Ethiopia to improve the structure of governance and the satisfaction of citizens. However, the country has faced enormous challenges on the path to introducing E-Government initiative. Belachew, (2010) in his study identified limited/inadequate infrastructure, lack of qualified human resource, lack of appropriate standards, guidelines, and legal issues, low leadership commitment, low level working culture, high resistance to the technology, weak ICT private sector, low level collaboration/partnership between private and public sector were identified as major factors hindering the performance of E-Government initiatives.

3. Research Methodology

In the past ten years, the E-Government initiative has gained a considerable attention in Ethiopia. The government has been devoting a considerable amount of fund for the development of hardware and software expansion projects that can contribute to the well-functioning of the E-Government initiative (Gebremichael, 2012). Despite the effort, the E-Government initiative has not yet warmed and benefited the lives of citizens in the level expected. So far, the reviews (literature) conducted concerning the status of E-Government in Ethiopia focused on the practice and achievement of the initiatives. Similarly, the government, the sole provider of the internet and telecommunication services has designed additional plans and strategies as well as projects and plans ahead, hoping to strengthen the future prospects of the E-Government initiative (Reba, 2015). However, not many studies had been carried out regarding the encountered challenges in the process of implementing the E-Government initiative, indicating the need for further investigation.

The study is an explorative study, as the aim is to identify the general framework and the status of E-Government in Ethiopia. Atieno (2009), suggest that the exploration study provides an

opportunity to expand the level of knowledge and information about certain phenomena. The study employed both primary and secondary source of data. In assessing the practice and prospects of the E-Government initiative in the country, the study used secondary sources of data. Here, Online and offline publications, articles, reports journals and newspapers will be used to apprehend the status of developing countries concerning the implementation of the E-Government initiative.

In addition, annual, semi-annual and quarter reports of concerned government offices will be assessed to determine the level of practice and achievement of the E-government initiative. With the aim of following an inclusive approach, the study will also use international statistic reports indicating Ethiopia's performance concerning the subject matter.

Primary source of data, structured and semi-structured interview techniques were employed to identify the major challenges that have been hindering the effectiveness of the initiative in the country. Structured and semi-structured indirect interviews (depth telephone interviews) were carried out with selected stakeholders responsible for the operation of E-Government in Ethiopia. Structured and semi-structure interviews provide an opportunity to generate reliable and rich data (Newton, 2010). Particularly, in countries like Ethiopia where documentation of data is not properly done the approach present a great chance to extract tacit knowledge from people who are an expert in the area. Non-probability sampling technique (purposive sampling) was used in selecting interviewees both from the government office and the private sector.

Combinations of inductive and deductive approaches were used to analyze the interview response of the study. In doing so, concepts and ideas gained from the interview were gathered and organized in a categorical manner (examples and quotes). Subsequently, concepts were analyzed in order to find commonalities, i.e. patterns, structures, and differences. Afterward, a set of themes was created and was being associated with literature. The interviews were then broken down into chunks of data (sentences and paragraphs). At the junction, each theme and sub-themes were related to each other. Finally, narrations were constructed from the interviews and quotes to support ideas and to identify the relationships between ideas (Schulz, 2015).

4. Results and Discussion

4.1 The Practice of E-Government in Ethiopia

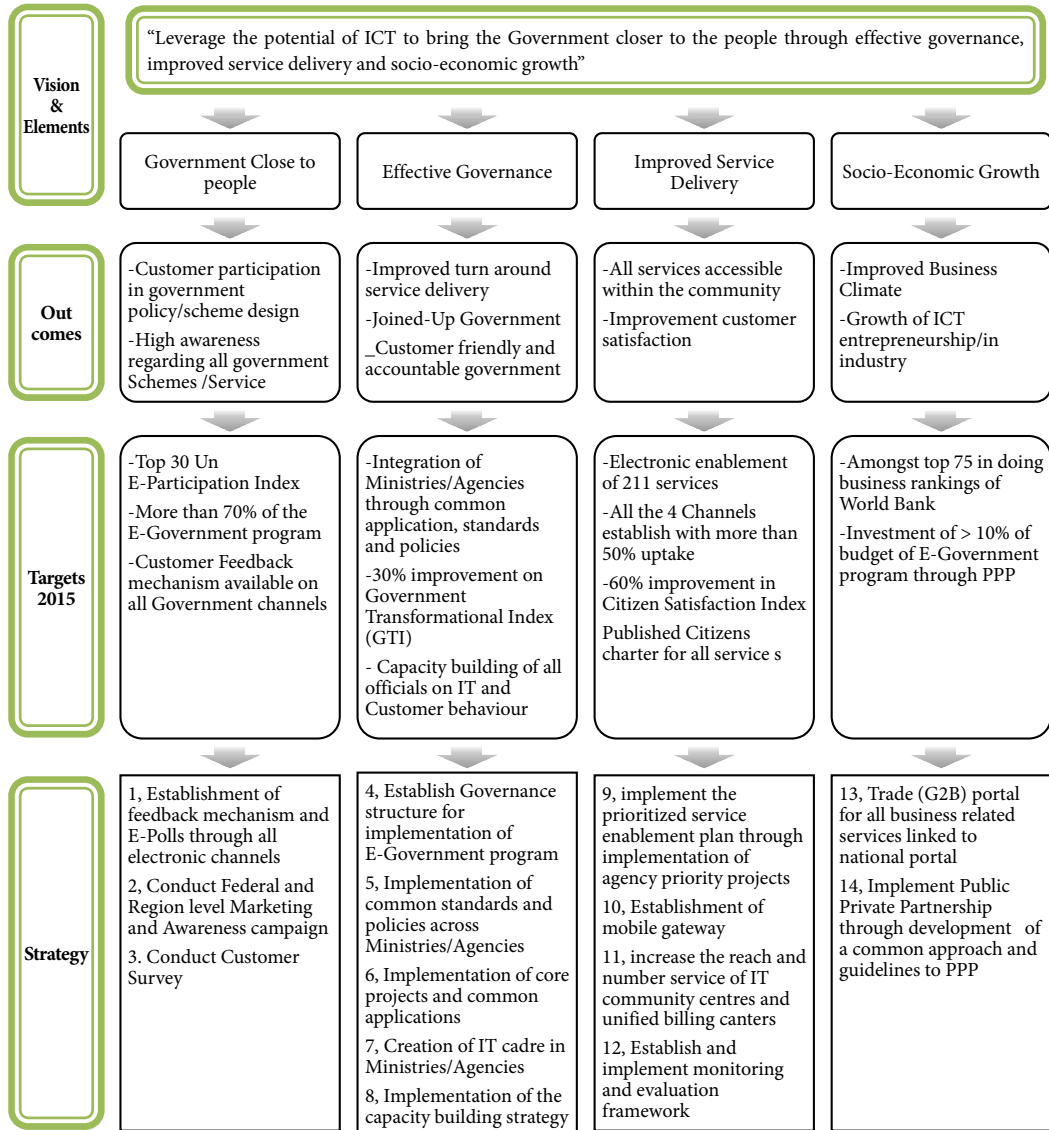
The E-Government initiative project was first launched in the year 2011 in Ethiopia. The strategy of the E-government initiative envisages towards the implementation of 219 e-services. Of this seventy-seven are devoted to information and the rest hundred thirty-four are transactional services. The implementation of the above projects was planned to be carried out through twelve

priority projects. The service delivery was proposed by four main channels; portal, call centers, mobile devices and common service centers. Simultaneously, the delivery was expected to be facilitated and strengthened through six core projects, which are National Payment Gateway, Enterprise Architecture framework, Public Key Infrastructure, National Data Set, National Enterprise Service Bus and National integrated Authentication (MCIT, 2013). The figure below illustrates the main strategies and goals stated by MICT towards the implementation of the E-Government initiative.

The various components of the E-Government initiative strategies were intended to be supported by five key enablers namely; (1) common standards and policies, (2) capacity building activities, (3) marketing and awareness, (4) monitoring and evaluation and Public Private Partnership. The overall estimated budget for the implementation of the project was 201.46 million USD. With its entire component, the E-Government strategy was planned to be implemented over five year period of time. A conventional source of finance (from the government annual budget) was expected to cover 20 percent of the project. On the other hand, international funding agencies and Public Private Partnership were expected to contribute 20 percent each (MCIT, 2013).

The E-government strategy was built with the aim of creating SMART (Simple Moral Accountable, Responsive, and Transparent) government, promoting e-citizen and e-democracy, transforming the process service delivery, building networked and integrated government along with providing multi-channeled delivery of public services. In addition, providing convenient access to information to all, improving service access & delivery and the inclusion of Private Sector in public service delivery were at the heart of the strategy (ibid).

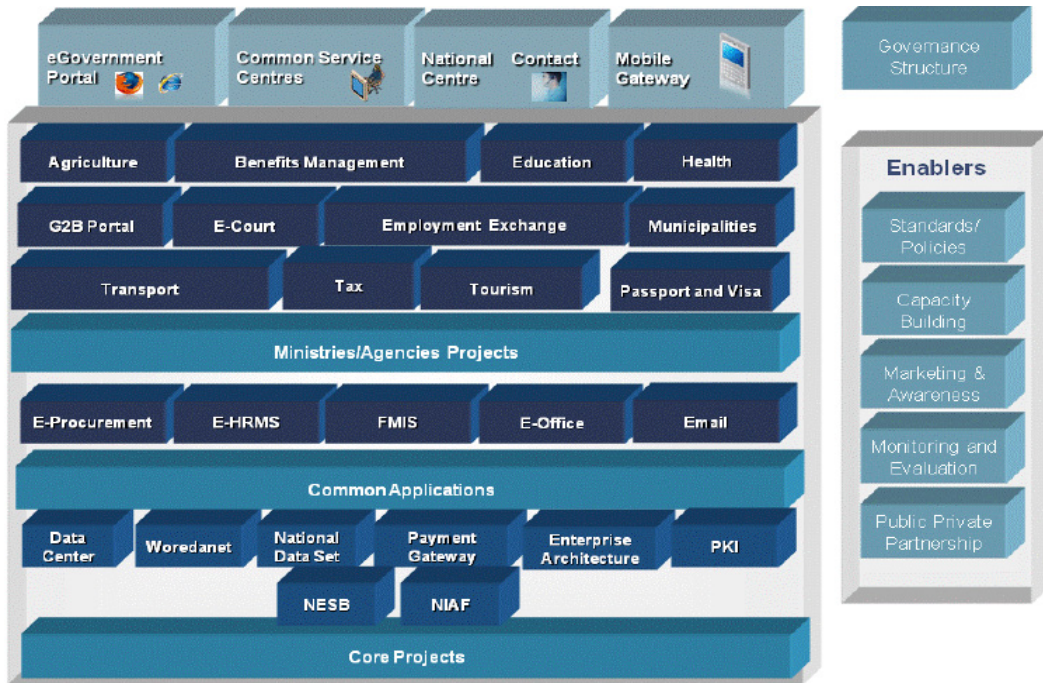
The Council of Ministries under the Ethiopia prime Ministries was the main responsible body for the implementation of the program. The Ministry of Communication and Information Technology (MCIT) was the main assistance for the monitoring, coordination and direct follow up for the effective implementation of the project. Here, the PMO (Prime Minister Office) ensures that the program was receiving sufficient support, which is necessary to ensure the success of the



Note: Adopted from http://unctad.org/meetings/en/Presentation/CSTD_2013_WSIS_Ethiopia_E-Gov_Strategy.pdf Copyright Ministry of Communication and Information Technology

Figure 1 E-Government Strategy and Goals

Program taking into consideration the size and nature of the change to take place. The high committee that was chaired by the MCIT included eleven ministries and representatives of the PMO along with Director General of the social security agency (Alehegne, 2014). The services provided by the different ministries can be observed from the figure below.



Note: Adopted from http://unctad.org/meetings/en/Presentation/CSTD_2013_WSIS_Ethiopia_E-Gov_Strategy.pdf Copyright Ministry of Communication and Information Technology

Figure 2 Key Strategies

The implementation the E-Government initiative in the past five years reflected that government has recognized the impact of ICT on the transformation and prosperity of the country. The report of the United Nation Department of Economic and Social Affairs applauded Ethiopia’s progress for the progress the country has made in the E-Government Development Index. The country was recorded as one of the best performing LDCs in online service delivery even better than some European countries. The country received between 0.25 and 0.5 (middle-level) in E-Government development indexing. In terms of online service index the country received 0.4567 and was ranked 72nd among 183 nations around the world. Ethiopia was recorded as one of the best performers among landlocked developing countries having a progress from 172nd to 157 in E-Government Development Index (United Nation, 2014).

As the report highlighted, apart from income level, high-level political support, e-government leadership within the national administration, ICT infrastructure, and education, as well as institutional capacity for online service development, public accountability, and citizen engagement are identified as crucial factors that influence the effective implementation of E-Government.

Following the intended E-government initiative strategy, the government implemented 28 transactional services. Bearing in mind the shortcoming, customers are now able to request public services through filling out of electronic forms and attaching scanned versions of all necessary supporting documents from anywhere and anytime. Amongst, the most effective projects are the SchoolNet and the WoredaNet. The SchoolNet a project that provides educational satellite television broadcasting to 1,710 high schools in Ethiopia via a total of 15,600 Plasma TVs. Correspondingly, the WoredaNet provides terrestrial and satellite-based network linking 950 districts. The project was designed with aim of providing ICT services such as video conferencing, directory services, messaging, Voice over IP, and Internet connectivity to the Federal, Regional, and Woreda level government administrative units across the country (Alehegne, 2014).

In summary, Ethiopia's positive progress in the implementation of the E-Government initiative in the past three or two years is the reflection of the approval of the integrated and coordinated online service as well as the considerable amount of investment towards its development . In opposite to the pattern, the government has been following (acting as the sole provider of all basic infrastructures) citizen-centric involvement mechanism that promotes the participation of different stakeholders was followed. Most of all, as mentioned by the United Nation Department of Economic and Social Affairs report, the combination of the high-level political commitment and the design of the specific actions plans that are linked to the national sustainable development priorities are the key successes factors.

4.2 Challenges of E-Government Initiative

Indeed the E-Government initiative had shown a remarkable start, however, there are many challenges to be tackled. To begin with, interconnectivity/cross-sectoral connectivity is still at an infant stage. Common service centers are (CSCs) are concentrated only in cities leaving the majority (85% of the population). Though increased nearly by half from the year 2012, mobile service penetration in the country still stands at 44%, which is below the Sub-Saharan average of 53%. Telecommunication service in general and internet service, in particular, are expensive to most of the population. According to the International Telecommunications Union (ITU) report, internet penetration stood at a mere 1.9 percent in 2013, up from 1.5 percent in 2012. Meanwhile, less than 5 percent of the population has a mobile broadband subscription. The prohibitively expensive mobile data packages still pose a significant financial obstacle for the majority of the society, making the country one of the countries with high digital divide.

Considerable numbers of expertise believe that the monopolistic nature of the sector (solely controlled by the government) is partly the reason for its underdevelopment. Interviewees in the

private sector claimed that their limited operation in the ICT sector is mainly due to the government's steeper encouraging attitude towards foreign investors. The main investors in Ethiopia's telecommunication sector are Zhongxing Telecommunication Corporation (ZTE) and Huawei, who are working towards the upgrading of 4G in Addis Ababa and expansion of the 3G across the country. There are claims concerning the assistance given by these companies to the government towards developing the ICT censorship and surveillance capabilities (Dalton, 2014). At the junction, the ability of the E-Government initiative to bringing about good governance and accountability pose doubt from the public and private sector point of view.

Intra-organizational connectivity is another critical issue. Ethiopia has implemented 168 services on the national portal. However, all the services are provided by different government offices lacking integration. Lack of integration between the organizations has resulted in inefficient service delivery, as a certain customer had to visit different government offices to get one/related service. This adds another layer of complexity to the already existing bureaucratic system majority of the government organizations has. At current, the Ministry of Communication information Technology (MICT) is functioning as a coordinator agency between ministries but has no oversight on proposals. Ministries executing projects based on their individual priorities without alignment to strategic goals (KPMG¹, 2016).

The problems related to human capital can be viewed from two angles. The first is the low technical ability utilizes existing infrastructure application. Here, the knowledge transfers between the aforementioned foreign companies and local human capital is worth mentioning. In most cases, the foreign companies initially will demand the installation of their own equipment instead of building upon what was already built. Here, had there been qualified/capable human resource that can analyze the specifications and details of the new technologies to be installed it would have been possible to prevent waste of resource and budget. During the installation, the knowledge transfer from the foreign organization to the local human capital is very much limited, as it requires high technological capability and capacity, skilled and experienced human capital, effort, investment, and learning process by the recipient due to the tacit character of the new technologies (Sonmez, 2013). In addition, the foreign company's protective attitude towards preventing the diffusion to knowledge and technologies to the local organization is another factor.

The second problem in this matter is the mobility of human capital both within the country (from rural to urban areas and from public to private institutions) and outside the country. Internally, the movement is mainly from the government offices, where most of the E-Government projects are carried out, to private companies searching for better salaries and privileges.

1) Klynveld Peat Marwick Goerdeler

Simultaneously, the migration of ICT personnel from rural to urban areas highly contributes to the existence of high digital divide between urban and rural areas. Brain drain, because of the movement of qualified professional to developed countries is another common feature. In addition to that, there is a lack of hybrid human capacities: technological, commercial and management. Most of the professional are only interested in technical aspect and lack interest to engage in policy and regulatory sides.

Certainly, the high level of political commitment was the main driving force behind the remarkable progress of the ICT sector. However, not only in highly level leadership, commitment is needed in all level of administrations. In overcoming barriers of resistance and in fostering the penetration of the service delivered. Here, government organization where the E-Government framework is being developed must strive to build healthy working environment, as internal structure (organizational behavior) greatly affects the success of the projects.

Ethiopia is a country that has more than 80 different languages and ethnic group. Five ethnic groups make up more than three-quarters (75%) of the population. The diversity of the population has been the main barrier to the expansion of E-Government services in the different region of the society. The diversity creates complexity in the implementation of the E-Government initiative. This calls for additional budgets as machine translation (MT) technologies are mandatory to expand the service and to increase its acceptance.

Lack of awareness of the E-Government initiative is the major cause of low uptake of the services. The promotional works carried out in advertising the existing services are minimal. There are no incentives that encouraging the use of ICT tools for delivering and requesting services, likewise, no mechanisms that discouraging the manual way of delivering and requesting services.

Absence of up to date legal and regulatory frameworks that can go in line with new technological advancement and expansion of infrastructure are the other hindering factor. Ethiopia is one of the countries that do not have a digital law. This affects the acceptability and use of online service delivery that requires sealed documents. In addition, guidelines and standards concerning interoperability, integration of services, use of public infrastructures and capacity building and human resource strategy are still not available.

4.3 Future Prospect

Adding up on the positive progress, the government has set out an ambitious five-year strategic plan for further development the E-Government initiative. The strategy is expected to explore and propose possible paths toward organization, renovation, and development of resources, tools, and services. This is through the driving principles of greater efficiency, effectiveness, and accessibility

of government services to the public. The vision 2020 of MCIT is, “To Realize the economic growth of Ethiopia and provide Affordable & quality services to all Stakeholders thereby Delivering effective ,efficient and transparent governance, through Innovation in everything we do, creating a culture of entrepreneurship, Affecting the life of all Ethiopians and Leveraging SMART government initiatives” (MCIT,2016). The vision is allied to the national Growth Transformation Plan II. IT envisages to build nationwide strategies, 39 nationwide programs, 40 ministry/agency level initiatives with 320 e-services.

In the upcoming years, the government must give due consideration to enhance the penetration of internet, provision of affordable connection and devices. Efforts must be made to improve the number of CSCs that are currently concentrated only in cities and this makes them inaccessible to most of the population. Moreover, the adaptation of innovative ways of implementing E-Government can be considered as prominent solutions. The use of SMAC for WEB 2.O and eGOV 2.O are front standing examples (KPMG 2016).

On contrary to the goal of E-Government, which is delivering service in a better way or alternate ways, thereby creating effective use of available resources for better outcomes, the adoption of E-Government in many institutions in Ethiopia can partly be considered as duplication of effort and waste of resource. For E-Government to replace manual activities and to guarantee quicker disbursement of services there must be coordination between the multiple ministries and departments. As indicated by KPMG (2016), there is a high need that demands integrated applications and shared data between departments that can track workflows and provide automated notifications.

E-Government must serve as an intermediary solution to reconcile the distorted relationship between the private sector and the government. Improved and effective E-Government system can improve and ease the business environment in Ethiopia. The ability of the government to provide simplified online services that can enable registration and starting of business as well as support services can inculcate the culture of entrepreneurship. The E-Government PPP model should lean towards promoting the participation of the local firms that are operating in ICT sector. Indeed, the firms might not be qualified as the MNCs (Multi-National Corporation) but the government must create a room for them to increase their capacities through learning by doing.

Short-term and long-term capacity building program are required to enhance the human capital engaged in the sector. The packages of the training should adopt holistic approach: technical, regulatory and legal, marketing and management angles of the E-Government initiative. In line with training, government offices should highly focus on improving working environment and salary and benefit packages. Here, revision of national education system/ must be taken into account as a prominent long-term solution to the existing inefficiencies.

More focus is required on marketing and communication to create awareness about

E-Government initiatives. The ability to drive the benefit arising from E-Government lies on the existence of smart citizens. As a result, education and empowerment programs must be launched to the public to enable them translate the benefits arising from the services. The expansion of social, mobile, analytics and cloud technologies provides the government to improve its operations and reach out to the public with reduced overhead and expanded reach. By leveraging these technologies, government need not spend large amount of money to support information sharing, communication and collaboration (KPMG, 2016).

Finally, attention should be given to the adoption of appropriate standards and policies. There is a need to build governance mechanisms that can ensure the creation of enterprises architecture. Furthermore, interoperability framework, human resource development strategies, public key infrastructure (PKI) guideline, e-readiness roadmap, etc are required deliver quality services (Belachew, 2010).

5. Conclusion

It is well known that efficient and effective governance is the main ingredient for sustainable development. At the junction, information communication technology (ICT) plays a central role to achieve good governance. Ethiopia being in the midst economic transition had registered a remarkable progress in online service delivery and E-Government index. The considerable amount of investment to the development of ICT sector, the strategic direction followed and high-level political commitment are key factors among many. However, further improvement and developments are required to enhance efficiencies, reduce operational costs, increase transparency and accountability in delivering services to the public. The study identified limited cross-sectoral connectivity, lack of intra-organizational connectivity, low human resource capacity, language barrier, lack of awareness and absence of appropriate legal and regulatory framework as hindering factors in the path of implementing E-Government initiative in Ethiopia.

The study underlined the necessity of enhancing the penetration and the provision of affordable devices in expanding the service provided by E-Government throughout the country. Employing innovative ways of implementing E-Government are critical for mounting its adaptability. Here, implementing a bottom-up approach can be considered as best to develop citizen-centric systems. E-Government can have a central role in creating a conducive business environment; hence the government should take advantage of it to smoothen the intense relationship it has with the private sector. The E-Government PPP model should lean towards promoting the participation of the local firms with the aim of creating strong ICT firms in the long run.

Capacity building programs that have a holistic nature are important to enhance the human

capital engaged in the E-Government projects. Along with that favorable working environment can best serve to deliver efficient and effective services. Given the limited budget the country has, different ministries/offices must learn to work together through developing integrated frameworks that enable customers to get service from one window. The government should communicate to the public the availability and function of E-Government service to increase their awareness. In addition, incentive mechanisms should be implemented to scale up the activities and expand the reach to larger sections of the society. Finally, attention should be given to the adoption of appropriate standards and policies.

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