ORIGINAL ARTICLE

Analysis of Ethiopia's National ICT Policy and Strategy: Insights into Policy Issues and Policy Goals

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Abstract

Information and communication technologies are enablers for social and economic development. A national ICT policy is important to guide ICT sector. This paper analyzes ICT policy in Ethiopia. It examines whether the ICT policy conforms to the international commitments and benchmarks such as the World Summit for Information Society (WSIS) 2003 declaration of principles and its expanded Action Lines incorporated after WSIS+10 (after WSIS ten years implementation review). The qualitative study covered content analysis of the National ICT policy of Ethiopia and benchmarking with other countries. The review covered analysis of the link between the National ICT Policy and other government policies including National Development Policy, National e-strategy and Sectoral ICT policies. The result indicates that the National ICT Policy and Strategy draws on core policies and it is coherent with government development strategies. ICT is being considered both as an enabler for the different sectors and an economic sector of its own. Moreover, the result revealed that there is coherence between National ICT policy and strategy of Ethiopia and WSIS 2003 Declaration of principles and updated Action Lines set after WSIS+10, except few variations. The trend shows that the national ICT policy need to focus broadly on core and emerging issues that are crucial for ICT ecosystem such as infrastructure, services, applications, universal access, cyber security, social media, and users. Broadband infrastructure development is considered as key intervention in the policy. The study recommends that national ICT policy should be dynamic and broad that allow different sectors to establish ICT policies and strategies that help create a vibrant information society.

Keywords: *National ICT policy, national e-strategies, ICT policy analysis, ICT policy issues, ICT policy goals, Ethiopia, developing countries.*

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INTRODUCTION

Information and Communication Technologies can serve as tools for inclusive and sustainable development. Many countries use ICTs as driver for economic growth, innovation and employment (ITU, 2011). Ethiopia is one of those countries that consider ICTs as key driver of social and economic development and enabler of good governance.

Michiels and Van Crowder (2001) conceptualize ICTs as a range of electronic technologies, and when converged with other technologies it enables to transform organizations and redefine social relations. In essence, ICTs are "leapfrog" technologies, enabling poor countries to close many technology gaps at record speed (Sachs et al, 2015). Mashinini (2008) stressed that ICT policy is a fundamental structure that ensures the proper guidance of different ICT related services and systems.

Ethiopia had already started crafting National ICT policy and strategy almost a decade ago, but it was only ratified in 2009. However, there are no as such studies carried out to analyze the National ICT policy of Ethiopia. Therefore, despite ICT's untold opportunities and crosscutting nature, ICT policies are under study field of areas in Ethiopia. This motivates the researcher to analyze Ethiopia's National ICT policy and strategy, particularly ICT policy issues and ICT policy goal. Put succinctly, the study examine whether the National ICT policy of Ethiopia concurs with the WSIS 2003 common vision, key principles, goals and action lines (including those action lines expanded after WSIS+10, particularly C7: ICT Applications), or not.

METHODOLOGY

The methodology that was applied in this research was qualitative approach, specifically document analysis. Rawland (1996) suggested that ICT policy analysis could be conducted by adopting suitable tools and methods that serve different public policies and disciplines. First, document analysis was carried out to study the relationship between National Development Policies, National e-strategies, National ICT policies and Sectoral ICT policies. The study then compared Ethiopian ICT policy with the WSIS 2003 principles, goals and action lines, and its expanded version published after the ten years implementation review (WSIS+10), (ITU, 2013). WSIS+10, ten years implementation review of 2003 Geneva Declaration of Principles by governments worldwide was organized in 2013 primarily by the World Summit for Information Society and International Communication Union (ITU), and discussions were facilitated by ITU and a plethora of UN agencies. During the review process, WSIS 2003 Action Lines were seen to have expanded in ICT applications and emerging issues in areas such as climate change, e-waste, open data, cyber ethics and cyber security, a social inclusive internet, social media and more.

The documents reviewed in this study are listed in the references section. However, Ethiopia's National ICT policy document, WSIS Forums' Outcome Documents (from 2003 to 2015) published by International Telecommunication Union, research insights in ICT and Sustainable Development Goals (SDGs), and WSIS Action Lines and SDGs Matrix document are the main sources for the analysis.

Ethiopian ICT Policy and the WSIS 2003 Declaration of Principles

Information and Communication Technologies have rapidly established

themselves as a fundamental pillar of developmental strategies. In 2003 and 2005, the international community assembled twice for the World Summit on the Information Society, recognizing the major impact ICTs could have on development (WSIS, 2014). The first phase of WSIS 2003 Geneva declaration of principles set common vision, key principles, goals, action lines and specific targets. The second WSIS 2005 Tunis declaration urged nations to draft National e-strategies and ICT policies. In this regard, ITU (2011) urged governments and partners in implementing the World Summit on the Information Society that they should come up with comprehensive, forward-looking and sustainable national e-strategies, including ICT strategies [National ICT policies] and sectoral e-strategies before 2010. After a decade, 10 years implementation review of WSIS 2003 Geneva Declaration of principles, known as WSIS+10 was conducted and its result was published as 2013 WSIS outcome document (ITU, 2013).

World Summit on Information Society Action Lines have been reviewed and emerging issues are also being identified, discussed and moderated by interactive facilitators and incorporated in the WSIS Action Lines up until 2016. In this regard, Action Line C7- ICT applications expanded significantly by adding more issues such as e-government, e-business, e-learning, e-health, e-employment, e-environment, e-agriculture, and e-science. In addition to these, the WSIS+10, review of ten years implementation status by countries, is a good example that vividly shows the commitment of governments around the globe to formulate ICT policies and implement the same in their respective countries.

Ethiopia ratified its National ICT policy in 2009, before the deadline set by the Tunis WSIS declaration expires. By the first phase of WSIS in 2003, seventeen African countries had developed ICT strategies, but now 46 African countries already developed national ICT policies (ITU, 2011).

The declaration of principles, goals and action lines of the World Summit for Information Society serves as a starting point for assessing ICT policies, because they were agreed by governments around the world to improve countries' progress towards the information society. The WSIS 2003 Geneva Declaration of Principles set common vision, key principles, plan of actions, and goals and specific targets in line with the international development initiatives.

Common vision

The Common Vision of the Information Society declared in the WSIS 2003 is "to build a people-centred, inclusive and development-oriented Information Society".

An analysis of Ethiopia's National ICT Policy and Strategy indicates that the vision of the government is very much in tune with the WSIS common vision of inclusive and people centered as well as development oriented information society. The Vision of Ethiopia's National ICT Policy and Strategy is to ensure that "Every aspect of Ethiopian life is ICT assisted". (p.3). The final goal of the ICT policy is by effective utilization of ICT, to bring about significant development nation-wide in all sectors and in all citizens walks of life (p.26). The ultimate goal is to bring about development and quality of life to citizens. The National ICT policy objectives and goals, which in turn coincides with the National vision are, "To transform Ethiopia

from a country associated with poverty to a middle-income economy and society with deep-rooted participatory democracy and good governance based on the mutual aspirations of its peoples" (p.3). Towards this end, the Government of Ethiopia has already embarked on several initiatives and adopted ICT policy as a framework for the exploitation and application of ICTs in different sectors such as e-government, e-learning, e-business, e-agriculture, and e-health. This is in line with WSIS Action Line C7: ICT Applications. It is evident from the policy document that the ICT policy vision is coherent with the WSIS vision of creating a people centered, inclusive information society.

Similarly, despite expanding ICT applications and incorporating emerging issues in the expanded version of WSIS 2013 outcome document (WSIS+10), common vision set by WSIS 2003 Geneva Declaration of principles and vision set in the WSIS+10 outcome document remains the same. In this regard, Ethiopia's policy makers can learn (policy learning) to in tune consistently with the common vision of the National ICT policy (as long as it is outward and forward looking policy) until it is met, while embracing pertinent emerging issues that are relevant for the local context and ICT ecosystem.

Key Principles and Action Lines

The Geneva Principles were broken down into action lines that provide areas of focus in country's progress towards information society. The WSIS action lines emphasize that government actions and leadership are essential for development of information society. The WSIS 2003 action lines also realize that the development of ICT ecosystem cannot be achieved without improving infrastructure and access, creating an enabling environment, building the capacity and increase access to application and services while protecting security and cultural identity. The drafters of the WSIS action lines were also aware of cultural diversity, therefore a significant attention was paid to the ethical dimension of the information society.

WSIS 2003 Action Lines

(Expanded version of C7 - ICT applications in WSIS 2013 Outcome Document (WSIS+10) is also included).

1. *Action Line C1: The role of governments and all stakeholders in the promotion of ICTs for development.*
2. *Action Line C2: Information and communication infrastructure*
3. *Action Line C3: Access to information and knowledge*
4. *Action Line C4: Capacity building*
5. *Action Line C5: Building confidence and security in the use of ICTs*
6. *Action Line C6: Enabling environment*
7. *Action Line C6: C7: ICT applications — benefits in all aspects of life*
   This action line is expanded significantly in the recent WSIS Outcome Document (2013) and beyond as:
   - *E-government*
   - *E-business*
   - *E-learning*
   - *E-health*
   - *E-employment*
   - *E-environment*
   - *E-agriculture*
   - *E-science*
8. *Action Line C8: Cultural diversity and identity, linguistic diversity and local content*
9. *Action Line C9: Media*
10. *Action Line C10: Ethical dimension of the Information Society*
11. *Action Line C11: International and regional cooperation*

P.S. *Except Action Line C7-ICT applications, which is significantly expanded in the recent WSIS Outcome Document (2013) and beyond, all other Action Lines remained as it is by incorporating emerging issues in their respective areas*

Ethiopia has reviewed its policy in 2009 along these lines.
The strategic focuses of the Ethiopian ICT Policy are: (p.5).

1. *ICT infrastructure development*
2. *Human resource development*
3. *ICT's legal systems and security*
4. *ICT for governance /E-Government/; Especially:*
   a. *ICT in the education sector*
   b. *ICT for improved health*
   c. *ICT for agricultural modernization*
5. *ICT industry and private sector development*
6. *ICT for research and development*

It is evident from the list that most areas, except e-environment, that were addressed by the WSIS action lines were also covered in the Ethiopian National ICT Policy and Strategies, explicitly or implicitly.

Review of WSIS Action Lines and Focus Areas of Ethiopian ICT Policy

The analysis revealed that the strategic focus of National ICT policy of Ethiopia is almost similar to that of WSIS 2003 Declaration of principles and those updated action lines after WSIS+10, except few variations. The WSIS Action Line C1 emphasizes the role of governments and all stakeholders in the promotion of ICTs for development. This is implicitly and explicitly (about implementation, p.23) covered in the Ethiopian ICT policy, because the government has taken the role of developing and implementing ICT policy on itself. Therefore, even if some roles are not explicitly stated in the ICT policy document, the aspirations and commitments expected from the government and all stakeholders in the promotion of ICTs for development is clearly implied in the Ethiopia's National ICT policy document.

Infrastructure

One aspect of coherence between Ethiopian ICT Policy and WSIS action line is their focus on infrastructure development. Infrastructure is central in achieving the goal of digital inclusion, enabling universal, sustainable, ubiquitous and affordable access to ICTs by all (ITU 2005). Particularly, backbone and access infrastructure is critical for in-country and connectivity to international networks (Kelly and Souter, 2014). Debretsion (2012) concurs with the notion that considers infrastructure as one of the major challenges in ICT/e-Government implementation in Ethiopia, thus it needs to be given a top priority. Similarly, Ioana (2014) confirms that the importance of infrastructure and access is reflected by its inclusion as a major goal in all the National ICT Strategies. Therefore, ICT infrastructure development deserves to be considered as one of the strategic focus in the national ICT policy of Ethiopia, as it is crucial to ensure access to information and knowledge.

Human Resources and Capacity

Human resources capacity is another important area of focus of WSIS and the Ethiopian ICT policy. Human Resources Development is considered as strategic policy issues both in the WSIS 2003 action line C4 and Ethiopia's National ICT policy respectively (p.7).

Access to Content

Access to infrastructure by all is another important aspect, because availability of infrastructure does not necessarily lead to affordability and access. Access to information and knowledge is key for the success of individuals, institutions and nations. After all, as far back as 1956, Wiener insightfully asserted that to live effectively is to live with adequate information. Put differently, access to information matters in our lives. However, the aspect of access is not well defined in the National ICT policy of Ethiopia, as in the case of WSIS Action line 3 (Access to information and knowledge), because infrastructure availability was considered as a step towards universality. The ICT policy suggests that "expansion of ICT, [and] other infrastructures and services in Ethiopia shall reinforce the principles of universal access and equitable distribution of ICT" (p. 4). This implies that access to information and knowledge is being

considered as an end (goal) of expansion of infrastructure. It is evident from the policy that Ethiopia did not explicitly define how to achieve universality in its policy.

Furthermore, there has been absence of focus on local content on the Ethiopian ICT policy. The national ICT policy of Ethiopia aspires to ensure access to global information and knowledge, but it says very little with regards to access to local information. Indeed, localization of ICTs, "introducing Character setting and keyboard layout for local language computerization and adopting UNICODE technology" (p.10), is indicated as a strategy that paves the way for visibility of local contents in the Ethiopia's National ICT policy.

A strong and effective ICT policy and regulatory framework is necessary to create an enabling environment that promotes fair competition and inclusive innovation (Heeks et al., 2013). One area of strong diversion between the WSIS action line and the Ethiopian ICT policy is differences in the definition of enabling environment. The enabling environment refers to the national policies, laws, physical infrastructure (roads, electricity, etc.), and other infrastructure (access to education, access to banks, etc.) that need to be in place for people to be able to use ICTs to their advantage. WSIS Action line 6 (enabling environment) aims to promote private sector investment in these areas. While enabling environment in the areas of infrastructure emphasizes state ownership of the communications sector, the legal and regulatory environment in Ethiopia facilitate the domestic and foreign investment for the development of ICT in the country. .

The drafters of the WSIS action plan had also emphasized on the importance of mass media (WSIS Action Line C9) and traditional broadcasting tools as a way of improving access to information. The National ICT Policy of Ethiopia did not dwell very much on the mass media, partly due to focus on the ICT part by the line ministry, the Ministry of Communication and Information Technology. Other policy issues that are not considered in the Ethiopian ICT policy are ethical dimension of the Information Society (WSIS Action Line C10) and e-environment (WSIS Action Line C7: ICT Applications). It is obvious that as ethical issues are critical for the wellbeing of the current and future information and digital societies, one can consider it as a gap in the Ethiopian national ICT policy document. Similarly, the issue of environment deserves to be included in the national ICT policy.

Cultural diversity and identity, linguistic diversity and local content (WSIS Action Line C8) is just indicated as a strategy that implicitly enhances visibility of local contents. In this regard, of course, as a strategy there is a plan to introduce character setting and keyboard layout for local language computerization and adopt UNICODE technology (p.10), which in turn help Ethiopians to appreciate and share their cultural and linguistic diversity, identity, and local contents, at the local, regional and international levels.

International and Regional Cooperation (WSIS Action Line C11) is not indicated independently as one of the strategic focuses, rather it is mentioned as one of the Principles (p.4) in the Ethiopia's National ICT policy. It is essential for exchange of experience and attracting investment in the ICT sector. In this regard, as indicated implicitly and explicitly in the National ICT policy document, international and

regional cooperation is a must to flourish ICT Industry and private sector development in Ethiopia. Equally, it is pointed out as a capacity that enhances research and technology transfer, and implementation of the national ICT policy, to mention few.

Security

The Ethiopian ICT policy considers cyber security and privacy as an important area of focus, therefore the policy pays attention to legal systems and security. This is in line with the WSIS Action Line C5: Building confidence and security in the use of ICTs. The Government has already made a significant progress in this area including adoption of Proclamation on Telecom Fraud offence as cyber legislation in Ethiopia (Proclamation No. 761/2012), and establishment of the Information Network Security Agency (INSA).

E-governance/E-government

The World Summit for Information Society emphasized the use of ICT in government as an important area of focus to improve access to public services to citizen and business and to strengthen governance. ICTs are important to deliver public services to citizens. Equally, ICT is a tool that helps to exercise democracy and strength good governance at local, regional and national levels. ICT for governance /E-Government/ is one of the strategic focuses of the national ICT policy of Ethiopia. The policy also emphasizes the importance of sectoral policies in key sectors like education (e-learning), health (e-health), agriculture (e-agriculture), e-business, e-environment, and e-finance, to mention few.

ICT industry and private sector development

The National ICT policy of Ethiopia recognizes "ICT as a sector or industry" (p.1). It encourages the development of local ICT sector and foreign investment. E-business and E-employment are well addressed in the Ethiopia's National ICT Policy under section, "3.6 - ICT Industry and the Private Sector Development" (p.20). The policy offers special incentives to the private sector to provide ICT services to rural areas. It proposes the construction of ICT parks in order to attract talented professionals, ICT entrepreneurs and foreign investment. The policy also intended to promote ICT as a tool for employment opportunities and entrepreneurial development in small businesses (p.20).

ICT for research and development

The Government of Ethiopia considers investment in Research and Development as a necessary precondition for a sustained development not only of ICT but also for scientific progress (p.21). Hence, one of the WSIS ICT applications (C7), e-science is recognized as one of the investment area in Ethiopia's National ICT Policy. In addition to this, investment in ICT in Ethiopia is made in many and various forms, ranging from developing different ICT applications to different sectors such as e-government, e-learning, e-business, e-agriculture and e-health to localization of ICT and building of ICT Park in Addis Ababa, Ethiopia. The main policy conclusion of Ericson's (2015) reported that governments need to ensure that the entire public sector, including service delivery in health, education, and infrastructure, is fully supported by high-quality ICT infrastructure. Therefore, quality and improved service delivery in all sectors could be considered as return on investment in ICT.

The policy considers investment in ICT research to drive innovation and increase understanding as to how ICT affects businesses and institutions. Hanna (2014) confirms that the ICT revolution has the potential to catalyze a country's innovation, growth and development, and indeed governments can make or break this transformation. Transforming a traditional company into a digital business involves rethinking everything from company culture to strategy, operations, organization, and partnerships (Woetzel et on knowledge, so as to revolutionize the ICT industry in the country.

In sum, the WSIS 2003 Action Lines (and its expanded versions, WSIS+10) and Ethiopian ICT policy and Strategies focus areas are presented in the following table to summarize the comparison and analysis discussed above.

Table 1: Compare WSIS 2003 Action Lines and Ethiopia Nation ICT Policy and Strategies (ENIPS

WSIS 2003 Action Lines (Expanded Action Lines after WSIS+10 are also included under C7)	**Ethiopia Nation ICT Policy** (itemized as 'a' to 'f', p.5)	**Possible remarks:** • Comparable, but adopted considering local context. • Exist in WSIS 2003 Action Lines, but not in ENIPS. • Still included in ENIPS, but not in the way that it exists in WSIS 2003 Action Lines. • Not Exist in WSIS 2003 Action Lines, but it is there in the ENIPS.
Action Line C1: The role of governı	It is not itemized independently as one of the strategic focus areas, but it is substantially stated throughout the National ICT policy of Ethiopia (p.6).	Still included in ENIPS, but not in the way that it exists in WSIS 2003 Action Lines.
Action Line C2: Information & communication infrastructure	a) ICT infrastructure development	Comparable, but adopted considering local context.
Action Line C3: Access to information and knowledge	Access to information & knowledge is stated as goal rather than action lines (p.2).	Still included in ENIPS, but not in the way that it exists in WSIS 2003 Action Lines.
Action Line C4: Capacity building	b) Human resource development	Comparable, but adopted considering local context.
Action Line C5: Building confidence and security in the use of ICTs	c) ICT's legal systems and security	Comparable, but adopted considering local context.
Action Line C6: Enabling environment	It is not indicated as one of the strategic focuses of the national ICT policy, the issue of "enabling environment" is stated under the implementation. (p. 24)	Still included in ENIPS, but not in the way that it exists in WSIS 2003 Action Lines.
Action Line C7: ICT applications -	d) ICT for governance /E-Government/,	Comparable, but adopted considering local

benefits in all aspects of life (E-government, E-business, E-learning, E-health, E-employment, E-environment, E-agriculture, and E-science)	e-learning, e-health, e-agriculture, e-business, and e-employment is indicated in the policy document. E-science is implicitly expressed in the ICT for research and development section. E-environment is not covered in the policy document.	context. E-business, e-employment and e-science - still included in ENIPS, but not in the way that they exist in WSIS 2003 Action Lines. E-environment - exist in WSIS 2003 Action Lines, but not in ENIPS.
Action Line C8: Cultural diversity & identity, linguistic diversity & local content	It is not indicated independently as a policy issue, it just mentioned as a strategy (p.10)	Still included in ENIPS, but not in the way that it exists in WSIS 2003 Action Lines
Action Line C9: Media	- - - - -	Exist in WSIS 2003 Action Lines, but not in ENIPS.
Action Line C10: Ethical dimension of the Information Society	- - - - -	Exist in WSIS 2003 Action Lines, but not in ENIPS.
Action Line C11: International and regional cooperation	It is not indicated independently as one of the strategic focuses, rather it is mentioned as one of the Principles (p.4).	Still included in ENIPS, but not in the way that it exists in WSIS 2003 Action Lines.
- - - - -	e) ICT industry and private sector development	Still included in ENIPS, but not in the way that it exists in WSIS 2003 Action Lines.
- - - - -	f) ICT for research and development	Still included in ENIPS, but not in the way that it exists in WSIS 2003 Action Lines.

Link Between National Development Policies and ICT Policies

The WSIS action plan emphasizes that every country develops its ICT policy in line with its broader development goals. Mansell (2009) stated that ICT related policies are being developed to support a wide range of important goals and aspirations associated with the development agendas of low income countries. Hence, it is necessary for national e-strategies to be integrated into national development strategies (WSIS, 2003). Labelle (2005) also asserted that ICT policies and strategies need to be integrated into broad development concerns and mainstreamed into all aspects of society and of development planning. Ethiopia's national ICT policy is an integral part of the country's larger development goals and objectives (MCIT, 2010). In addition, as ICT is a crosscutting issue, the Ethiopian ICT policy considers the development of sectoral ICT policies, such as in agriculture, health, education and other main sectors so as to synergize the national development. In this regard, Labelle (2005) cautioned that individual policies themselves are rather meaningless when they are not based on an underlying national agenda. The interaction between these policies is shown in Figure1.

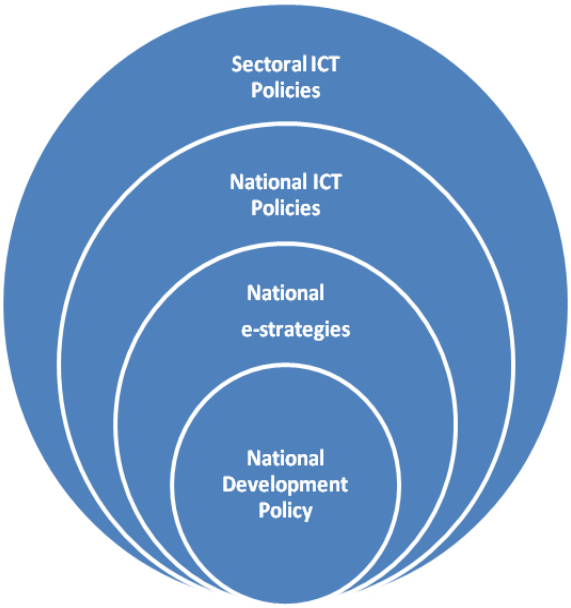

Figure1. *Relationship between development goals and ICT polices*

As depicted in Figure 1, National development policy is a grand national policy that should be supported by national e-development strategies, national ICT policy and different sector-based ICT policies. In other words, ICT policies that are developed at different sectors should ultimately be in line with the national e-strategies and national development goals. Put differently, as ICT is dynamic and distruptive in its very nature, the analysis is

in line with Chini's (2008) opinion that states ICT policy as a fluid with fragmated nature.

In addition to these, ICT is not only considered as enabler to achieve national development goals, but it is also already considered as game changer in an endeavor to attain Sustainable Development Goals (SDGs) set at the international level. In this regard, the WSIS and SDGs matrix map done by ITU (2015) vividly depicts direct linkages of the WSIS Action Lines with the proposed SDGs to continue strengthening the impact of Information and Communication Technologies (ICTs) for sustainable development. Therefore, National ICT policies of respective countries should clearly show the linkage between ICTs, national development goals and goals set by SDGs as a country. Equally, there has to be a plan to harmonize it at a national level.

On the whole, the analysis shows that Ethiopia's ICT policy does not only align with the WSIS principles and action plans but also expands the overall vision of integrating ICTs into the national development plans and SDGs as a country.

CONCLUSIONS AND RECOMMENDATIONS

The impact of ICT for national development is more so direct than it is indirect. Therefore, crafting National ICT policy is crucial to stir the ICT sector in the right direction. Ethiopia's National ICT policy and strategy document comprises, inter alias, the policy itself (why), strategies (what should be done to implement), and the implementation plan (how). The vision and goal of Ethiopia's National ICT policy and strategy is in many ways consistent with common vision, key principles, action lines, and goal and specific targets set by WSIS 2003 Geneva Declaration of principles and WSIS+10. Moreover, as emerging issues are being included in the WSIS+10 and beyond outcome documents, it should also be incorporated in the future Ethiopia's National ICT policy.

The National ICT policy is broad and covers most of the aspects that were outlined in the WSIS principles, action plans and goals. The policy prescribes for the development of sectoral policies that provide a more detail goals and target close to the reality. This allows for more structured approach to policy making.

The analysis indicates that the WSIS principles and action plans and the Ethiopian ICT policy intersect in several important areas especially in the aspect of development of infrastructure and ICT applications. Infrastructure is of paramount to enhance access to information and knowledge. Therefore, it is logical to invest more in these strategic issues. Regarding the public service delivery, the National ICT policy should focus on challenging the philosophy behind the public services provision than merely providing access to tools.

Issues like convergence of media, social media, e-environment, e-science and digital inclusion have not been well covered in the National ICT policy. The importance of convergence has now become apparent due to increasing use of social media. Therefore, to seize the digital opportunities effectively, it is important to revise the policy regularly and incorporate emerging issues. After all, ICT policies are meant not only to bridge digital divide, but also it gives opportunity to reap many digital opportunities that leverage every sector of the economy in both developing countries and developed worlds.

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