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Presentation on National ICT strategy and the Indicators needed to track its progress Federal Democratic Republic of Ethiopia

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ICT Sector in Ethiopia

- The ICT sector in Ethiopia is led by strong involvement from the government side. The government has strong commitment to address the infrastructure development and service expansion throughout the country.
- The national telecommunication services operator, Ethio Telecom provides fixed, mobile and Internet services ranging from 2G up to 4G.
- Ethiopia has also been working towards stimulating the demand for the underlying infrastructure by increasing access to the public sector network.
- The e-government strategy that was approved in 2011 envisages the implementation of 219 e-services comprising of 79 informational and 140 transactional services over a five-year period.







ICT Sector in Ethiopia...

- Implementation of e-services was proposed through 12 priority projects and service delivery was through four primary channels, namely Portals, Call Centers, Mobile devices and Community ICT centers.
- As per the strategy, the e-government service delivery was to be facilitated and strengthened through six core projects, including:
 - The National Payment Gateway,
 - The Enterprise Architecture framework,
 - The Public Key Infrastructure,
 - The National Data Set,
 - The National Enterprise Service Bus and
 - The National Integrated Authentication Framework.







ICT Sector in Ethiopia...

- In addition to the above mentioned projects, common applications that horizontally cut across all ministries has been planned to be implemented.
- These include initiatives like E-Procurement, Human resource Management System, E-Office, E-Mail and Integrated Financial Management Information System (IFMIS).
- Based on the strategy, most of the targets are achieved in the 5 years plan period of the implementation.







ICT Sector in Ethiopia...

- Ethiopia's first information technology park which is named as "Ethio ICT Village" is also inaugurated and started operation recently.
- The park is established on a 200 hectare site. The IT Park is being established with a view of building an Information Technology (IT) village based on close linkage between research, industry and business in IT and IT enabled services and is expected to attract foreign investors as well as local ones.
- The IT Park has several functional zones like business, assembly and warehouse, commercial, administrative and Knowledge Park. The primary focus of the park is to attract IT manufacturing, development of the IT services industry and Business Process Outsourcing (BPO).







ICT Policy

- The Government of Ethiopia has made the development of Information and communications technology one of its strategic plan priorities.
- The Government, recognizing the importance of Information and Communication Technology development has endorsed ICT policy and strategy in 2009.
- The scope of ICT policy covers knowledge and information as a tool for development, and ICT as a sector or industry.
- There is strong belief and commitment that apart from being as enabler of socio-economic development, ICT also supports the country's on-going process of democratization and good governance.







ICT Policy...

- The broad objectives of the ICT policy and strategy are as follows:
 - Build ICT Infrastructure throughout the country and make it accessible.
 - Create the necessary skilled human resources required for the proper development and application of ICT and expand the society's basic knowledge and usage of it.
 - Develop the necessary legal framework for the application of ICT and design and implement appropriate security systems for the prevention of unlawful practices.
 - Promote the use of ICT for modernizing the civil and public services to enhance its efficiency and effectiveness for service delivery; so as to promote good governance and reduce wastage of resources.
 - Expand and strengthen the role of the private sector to ensure the rapid development of ICT.







- Telecommunication service was introduced to Ethiopia in less than two decades of the invention of telephone.
- However, from introduction of the service in the country up to 1991 expansion of telecommunication services were not given much priority and thus penetration level and geographic coverage remained at low level.
- After mid 1991 the Government has given due attention and consideration to telecommunication services expansion and modernization activities.
- Telecommunication infrastructure rehabilitation and installation of new switching in different towns of the country have been conducted vigorously. This has raised the number of switching stations to 498 and the fixed line subscribers to 93,500 at the end of year 1991.







- In 1997 Internet service was introduced and 2 years later, in May 1999, cellular mobile service was launched.
- In addition to this Digital Data Network Service (DDN) was started in 2001, and a Broadband Multimedia service integrating voice, video and data services was launched in 2005.
- It was also in year 2005 that the first 4,000 Km long optical fiber backbone was laid from Addis Ababa to 6 different directions of the country.







- As part of continued effort to expand telecommunication infrastructure and service, a large scale IP-NGN project with a capital outlay of 1.5 Billion USD was launched in year 2008 and the project resulted in creating 23 Million Cellular mobile core network, and 2.4 Million fixed line capacity.
- In general in the last 10 years remarkable advancements in infrastructure and service expansion have been made. In 2005 there was only 0.56 million mobile subscribers, 20,000 Internet service subscribers, and that of fixed line stood at 620,000 subscribers.
- In 2010 the mobile service subscribers reached 6.5 Million, Internet 187,346 and fixed line 1 Million.
- With regard to enabling citizens to benefit from universal telecommunication service access the rural kebeles (villages) who have access to telecommunication service in 5 km radius increased from 13% in 2005 to 62.14% in 2010.







- The WoredaNet the e-government communication backbone developed by the government and the SchoolNet, are also the major enablers for rapid ICT development in the country.
- Another indicator is the completed rollout of more than 17,000 Km of fiber optics backbone across most of the country. The national fiber optic backbone is connecting all major and smaller towns.
- After completion of the IP-NGN project, the government planned and executed a Telecom Expansion Project (TEP) with an investment amount of 1.6 Billion USD.
- The Telecom Expansion project was executed in second half of the first 5 years Growth and Transformation Plan (GTP I). As of June 2015, the country has achieved high subscription levels by raising the number of mobile subscribers to 40 Million, and Internet users to 10 Million.







- The TEP has resulted in Mobile service penetration of 44%, and Internet penetration has also reached 11%.
- The Country's 85% of geographic area has coverage of mobile service. If only habitable areas are considered, this can be taken as 100% coverage.
- The mobile network coverage comprises 3G and 2G services, and 4G LTE technology deployment in the capital Addis Ababa.
- The government has also been working towards improving its international internet gateway capacity/bandwidth through international fiber optic links via neighboring countries Djibouti, Kenya and Sudan.
- The current international bandwidth capacity stands at 27.3 Gbps.







- As a way of addressing the universal access challenges a strategy that was introduced and implemented is the Rural Connectivity Project (RCP).
- The Rural Connectivity Project was originally planned to create rural voice, Public Internet Access Centers (PIACs) and connect them using wireless local loop technology and VSAT.
- Each centre was projected to have a PC, phone, fax and Internet access. Already 15,905 Kebeles have access to telecommunication services showing remarkable achievement of 97% in June 2015.







- The Telecom Network and service expansion activities are taken as one of major component of the second Growth and Transformation Plan (GTP II).
- It is planned that in 2020, Mobile service subscription will reach 103.7 Million, and that of internet and Fixed Line will be 56 Million, and 10 Million, respectively. The Mobile and internet penetration will be 100% and 54%.
- Out of 56 Million Internet subscribers 39 Million will be Broadband Internet Subscribers.
- The International Internet Gateway Capacity will also show a tremendous increase reaching 1,485 Gbps.







E-Government

- In view of using ICT for development and ensuring seamless connectivity throughout the country and using it for better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management, the government has implemented a WoredaNet, which is an e-Government network connecting more than 800 Woredas (Districts), regional and federal government offices across the country.
- WoredaNet is a terrestrial and satellite-based network designed with the primary objective to provide ICT services such as video conferencing, call centers, Email, and Internet connectivity to the Federal, Regional and Woreda level government entities.
- The goal of WoredaNet is to improve Federal and Regional Government administrative efficiency, effectiveness and productivity, as well as information provision and service delivery to the public at large.







E-Government...

- There is a National Data Centre (NDC) which provides reliable ICT Infrastructure and storage facilities to all Government ministries and departments by hosting required hardware, software and applications in a centralized and secure environment.
- Some of the functionalities envisaged at the NDC include Secure Central Data Repository, Core Application Servers, Service Delivery Gateway, and Citizen Information/Services Portal, Government Intranet Portal and Remote Management and Service Integration facility.
- The NDC is equipped to host Web Servers, Application Servers, and Database Servers.







E-Government Services

No.	e-Government Services	June 2015
1	Woredas Connected by WoredaNet	893
2	Woredas Using Video Conference	893
3	Woredas using Internet by ADSL	554
4	Schools with Plasma Service	1903
5	Schools using Internet by ADSL	430
6	Ethiopian Educational Research Network (EthRNet)	19
7	Informational and Transactional electronic Services Implemented	281
8	Mobile Government Services (SMS)	13







E-Government Services...

- As per United Nations E-Government Survey, Ethiopia is showing remarkable improvements. In year 2012 the country was ranked 172nd in E-Government Development Index, and the rank is improved to 157th in 2014.
- Also with online service Index the country was ranked 111th in 2010 and the rank is improved to 80th in 2012.
- As Per the e-government strategy, 16 portals are developed for Federal government Ministries and Agencies, and 281 Informational and Transactional electronic Services are made available to citizens.
- In addition to this, a government financial system, named as Integrated Financial Management Information System (IFMIS) was developed and implemented in all government institutions financial systems.







E-Government Services...

- In the last 5 years, the government has established a total of 17 voice enabled government call centers out of which 10 are providing service at Federal, and 7 at Regional Government levels.
- There are also 13 SMS (short messaging service) based government services.
- An automated Unified Billing System (UBS) called *"Lehulu"* which facilitates collection of 3 different utility bills, namely that of water, electricity, and telecom bills at one center is also introduced and became functional in the Capital city, Addis Ababa. *Lehulu* is a network of centers that provides a Unified Billing System that allows customers to pay all their utility bills in any one of 31 centers throughout Addis Ababa. Preparation is also completed to start service in additional 3 regional Cities.







E-Government Services...

- To create access to information, the government has established 228 community ICT centers throughout the country. The community ICT centers are serving as a Public Internet Access Centre where the public gets access to the internet, photocopy and ICT training services.
- Also 19 local community radio stations are established in selected remote rural areas. The community radio stations are broadcasting local contents with local languages, and are benefiting the society in promoting their culture, and sharing of information on social, political, economic and environmental development issues.







ICT Strategies for 2020 and their Indicators

Indicators	Units	2015	2016	2017	2018	2019	2020
Mobile Subscribers	'000s	40,000.0	52,732.4	65,464.8	78,197.2	90,929.6	103,662.0
Broadband Internet Subscribers	'000s	1,593.2	9,093.4	16,593.6	24,093.7	31,593.9	39,094.0
Narrowband Internet Subscribers	'000s	7,996.3	9,836.0	11,884.1	13,758.8	15,441.0	16,934.9
Fixed Line Subscribers	'000s	3,050.0	4,513.2	5,976.5	7,439.7	8,903.0	10,366.2
Mobile Subscribers per 100 Inhabitants	%	43.9%	56.4%	68.2%	79.4%	90.0%	100.0%
Internet Subscribers per 100 inhabitants	%	10.5%	20.2%	29.7%	38.4%	46.6%	54.0%
Fixed Line Subscribers per 100 inhabitants	%	3.3%	4.8%	6.2%	7.6%	8.8%	10.0%







Additional ICT Strategies for 2020

- Upgrade level of Government electronic services
- Broadband connectivity in all schools, Universities, Government administrations, and Rural Villages
- ICT Skills Development, Capacity Building Trainings, Creation of information and Knowledge based society







Additional ICT Strategies for 2020...

- Establish ICT Research and Innovation centers
- Develop Standards and Legal and Regulatory frameworks for ICT sector Development
- Reinforce ICT industry and their competitiveness, ICT manufacturing, software development industry, cloud computing
- Electronic Commerce
- Improve ICT's contribution to National GDP







Indicators Related Challenges

- Characteristics of good indicators
 - Valid: accurate measure of a behavior, practice, task that is the expected output or outcome of the intervention
 - Reliable: consistently measurable over time, in the same way by different observers
 - Precise: operationally defined in clear terms
 - Measurable: quantifiable using available tools and methods
 - Timely: provides a measurement at time intervals relevant and appropriate in terms of programme goals and activities







Indicators Related Challenges...

- In an ideal world, indicators judged to be the highest quality and most useful would be the ones selected and used to monitor and evaluate program activities.
- However, in the real world many other factors may intervene. Links to program activities, as outlined in monitoring and evaluation frameworks are important, as are the needs of the program for decision-making.
- Many indicators in common use are not well-defined in clear terms, or at least include terminology that could be improved to add greater precision.







Indicators Related Challenges...

- The more defined an indicator, the less room there will be for later confusion or complications.
- Ideal indicators may not be practical; the feasibility of using certain indicators can be constrained by the availability of data and financial and human resources.







Strategies for Monitoring and Tracking Progress

- The existing relationship between MCIT and Ethio Telecom in exchanging statistical data will be maintained and even improved
- The Dataware of Ethio Telecom will be improved so that all required data are readily available as per the ITU Questionnaires
- Statistics in ICT sector will be prioritized among other national indicators







Strategies for Monitoring and Tracking Progress...

• The alignment between the operator, policy maker, Regulator, and NSO will be established

• Capacity Building in ICT indicators data collection, and analysis methodologies







Thank You