Drivers of Change in Ethiopia – Growing the IT/BPO sector through leveraging ICT

The changing landscape of IT/BPO industry has led to the emergence of new locations in Africa. Among many African nations, Ethiopia is growing at the rate of more than 10% per annum and is likely to attain the middle-income status by 2025. Leveraging ICT with a focus on capacity building is catalyzing economic prosperity and creating sustainable employment opportunity in the country.

Ethiopia, the landlocked country with a rich historical past, has embarked on a path of economic and social transformation, catalyzed by technology. With economic growth rate of more than 10% per annum, the country of over 91 million (2012 estimates) is expected to attain the middle-income status by 2025, according to projections of the World Bank. With the progressive macroeconomic management, stable government and burgeoning privatization, information and communications technology (ICT) is helping the country to become a significant growth economy in Africa, drawing keen attention from international business community.

The ICT landscape in Africa is being shaped by the multi-stakeholder partnership, the growing convergence of communication and information technology and a mobile revolution resulting in extensive rollout of mobile technology. First commercial LTE 4G networks has already been launched in Angola, Mauritius, Namibia and Tanzania. This network will soon be launched in countries like Egypt, Kenya, Nigeria, and South Africa. According to a GSMA report (2013), mobile telephony is expected to generate 6.6 million jobs by 2020 in the continent and is considered a major economic growth driver. Sub-Saharan Africa has been proactive in growing its ICT infrastructure, mobile network along with broadband access and leveraging the investment for socio-economic transformation. Countries in North Africa have been less successful in this regard. There have been few challenges in widespread rollout and absorption of ICT, due to high cost of ICT infrastructure, gap in availability of technical skills and lack of entrepreneurial and innovation friendly business and economic climate. Progressive governments in the region have been putting in place initiatives to address these challenges and work towards achieving economic prosperity for its inhabitants.

Ethiopia as compared to other countries in Sub-Sahara Africa has been a relatively slow starter to embrace ICT. The ICT services sector contributes close to 7% of its GDP. However, as the size of IT market is Ethiopia is large compared to those in countries like Ghana and Uganda, the sector has potential to contribute a large share to the GDP.
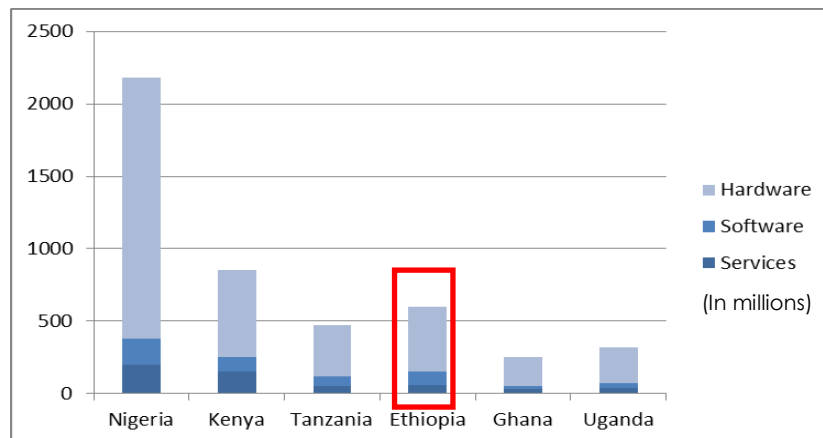

Fig1: IT Market Size 2011
Source: IDC Country Blackbook

The World Economic Forum Report 2013-14 ranks Ethiopia 127/140 on Global Competiveness and gives it a lower rank 139/140 on technology readiness factor. However, the ranking on security and enrolment for primary education are better than Sub-Saharan counterparts. Ethiopia has

geared up to increase its spending on ICT for the period 2011-2015 and ensure a more favorable competitive assessment.
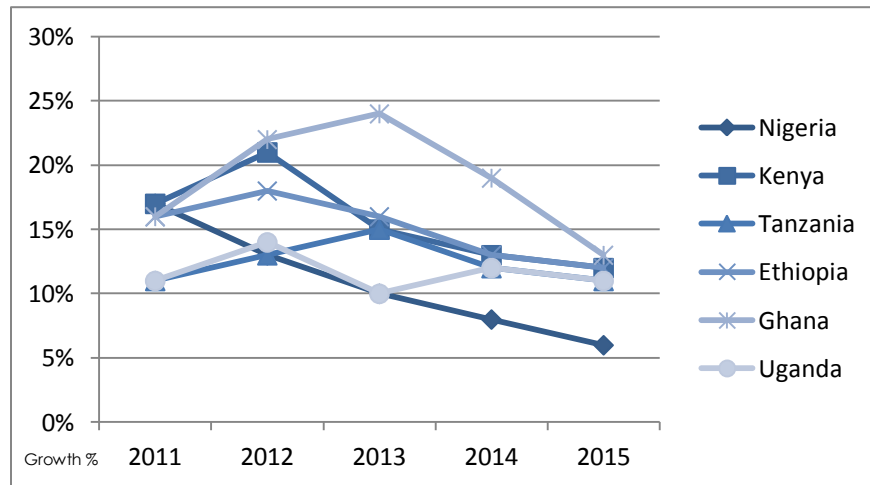

Fig 2: IT Spending Growth 2011-2015
Source: IDC Country Blackbook, IDC Telecom Services Database, EIU

Future Trends of ICT in Ethiopia

With a GDP per capita of $410, Ethiopia is one of the poorest countries in the world. More than 85% of the population is dependent on agriculture. However, with the implementation of Global Transformation Plan – its five-year development plan (2011 – 2015), Ethiopia is gearing itself to address its developmental challenges by strengthening its existing ICT infrastructure. The early signs of liberalization in the telecommunications sectors are visible. In a monopolistic sector reserved for Ethiopia Telecommunications Corporation (ETC), appointment of French partner "France Telecom" to   assist in the management and operations of ETC is a positive step towards creating investment   opportunities in the sector. Ethiopia is working towards upgrading its mobile and broadband network to improve its quality of   service and enhance ICT penetration in the country. Simultaneously, In-frastructure development is   expected to receive a major boost with the green signal by Ministry of Com-munications and Information Tech-nology (MoCIT) to develop the ETHIO ICT PARK at an estimated cost of $270 million on 2 hectares of land in Bole district. Major Service Providers

ICT Infrastructures	Subscriptions
Land line penetration	< 10,00,000
Mobile phone penetration	20,500,000
Internet penetration	1,352,259
Internet users	960, 331
Broadband availability / coverage	38,000
Internet speed	1.1 Mbps (Download) / 804 kbps (upload)
Private owned telecom/ government	Ethiopian Telecommunication Corporation (Government owned)

Table 1: ICT Infrastructure Overview in Ethiopia
Source: International Telecommunications Union, 2012-2013

including ZTE and Security Innovation Network (SINET), have each acquired 25,000 sqm of area to develop incubation centers as well as setup their manufacturing units. ICT-ET has also been setup in 2010 to act as the main nodal ICT Association formed in 2010, in Ethiopia, to   facilitate investment and growth in the industry. The association aims to cater to the needs of three sec-tors information technology, communications technology and broadcast technology.

Telecommunications: The liberalization of the telecommunications sector in the country will open the market for competition in the mobile segment and bring down costs. The number of fixed line subscribers is expected to leapfrog to 4.4 million in 2014, growing at a rate of 38% per annum. It is expected that number of mobile subscriber will catapult to 20 million at a rate of 43% per year by 2014. However, the overall teledensity in 2014 is expected to be less than 25%, indicating opportunities for further growth. Continuing with its strategy of opening up the sector for private investments, the government has entered into a $1.6 billion agreement with Huawei and ZTE, China's two leading telecom-equipment manufacturers, to upgrade its network an improve quality of services. Ethio Telecom (ETC) has also entered into an $800 million agreement with ZTE to increase access to 3G internet and expand the number of mobile subscribers to a target level of 50 million by 2015. Under the on Growth and Transformation Plan, the ongoing Universal Telecommunication Access Program is being extended to social services to augment its role in the execution of development strategies in the country. Ethiopia is taking steps to improve the sectoral regulatory framework, develop human resources for effective implementation of the policies, and ensure they match global standards.

Internet: Ethio Telecom data indicates that in 2012 total number of internet and data subscribers in Ethiopia was 221,000 while 2.4 million subscribers were connected to data services via GPRS. The internet subscriber base in Ethiopia is expected to touch 12 million subscribers by 2014, as a result of liberalization. With only 1% of its population connected to the internet at present, Ethiopia has a lot of catching up to do with its counterparts in East Africa. Realizing challenges due to lack of bandwidth, suitable infrastructure along with its landlocked position, Ethiopia is speeding up its internet infrastructure and securing international bandwidth access through cross-border optic fiber connectivity. Ethio Telecom is the only provider in the Ethiopian market. Due to exorbitant tariff of internet services, it is still beyond the reach of many in the country. However, with the expansion of it ADSL (Asymmetric Digital Subscriber Line) and mobile data network, Ethio Telecom will be reducing its internet tariffs, thereby increasing the accessibility.

E-Transformation in Ethiopia

Agriculture: Agriculture is the main economic activity in Ethiopia contributing 46% (2011) to the GDP of the country. More than 85% of the population in Ethiopia lives in rural areas and are dependent on agriculture for their sustenance. The five-year "Global Transformation" initiative of the Government lays emphasis on developing the agriculture sector through the use of ICT. Ethiopia Commodity Exchange (ECX) is also a success story which has brought transparency in pricing of agricultural products and better coordination between buyers and sellers. GSMA (Groupe Speciale Mobile Association), which protects the interests of mobile operators globally, along with the Bill & Melinda Gates Foundation, has championed the mFarmer Initiative Fund. The fund stimulates the development, deployment and dissemination of information and advisory services for agriculture using the mobile network. A livestock traceability systems using RFID tags and visual ear tags for identification of cattle is a target application for deployment in the country.

Education: The five-year developmental plan aims to focus on investing in the sector to de-velop knowledge capital in the country, which will lead the country to the realization of its

middle-income economy status by 2025. In order to augment this, the government is promoting Technical and Vocational Education Training (TVET), which will serve as a channel for technology transfer through building occupational standards, accreditation of competencies and strengthening of the curriculum standards. ICT is critical for the country for development of education and to reach out to majority of its population living in remote areas, for inclusive growth. Ministry of Education has executed one of the biggest ICT related investments in education sector by connecting all 21 public universities in a project named EthERnet (Ethiopia Education and Research Network), which facilitates e-learning and e-library across the universities.

E-Government:

SchoolNET: Ethiopian Information and Communication Technology Development Authority (EICTDA) has undertaken commendable work with massive investments in ICT infrastructure. EICTDA along with the Ministry of Capacity Building and the Ministry of Education has worked to connect more than 600 high schools and elementary level teachers training institutes through satellite TV broadcasting. This initiative at an estimated spend of more than $80 million is enhancing the ubiquity of education to remote corners of the country, through VSAT.

WoredaNet: Is an e-government initiative, which connects more than 700 Woredas (smallest administrative unit of government in Ethiopia) through VSAT and terrestrial links. As part of the Public Sector Capacity Building Program (PSCAP), this aims to encourage uninterrupted flow of information between Woredas, state and federal forms of governments in the country. The capital-intensive project is estimated spend of $20 million is helping in bringing the government machinery closer to work as a unit.

Besides SchoolNet and WoredaNet, EICTDA along with the ministries has also undertaken several innovative initiatives as under.

Project	Objectives	Implementation Partners & Organization
SchoolNET	To connect more than 600 high schools using VSAT for distance education delivery	ETC, Ministry of Education, Ministry of Education, Ministry of Capacity Building, World Bank and UNDP
WoredaNET	To connect more than 700 Woredas through internet for smooth exchange of information between governments at all levels	ETC, Ministry of Capacity Building
AgriNET	To connect more than 60 agricultural research institutes in the country through internet	ETC, Ethiopian Agriculture Research Center
HealthNET	To allow healthcare practitioners to access information relevant to their healthcare	ETC, SatelLife (NGO), Addis Ababa University, UNECA
EtheRNet	To connect 36 public universities across the country for e-learning	ETC, Ministry of Education
RevenueNET	To connect all inland revenue and custom offices across the country to support relevant data exchange	ETC, Ministry of Finance & Revenue

Table2: ICT 4 Development: e-government initiatives in Ethiopia
Source: Bekele et al. 2005; Cisco Systems 2006; Getu 2001; Kinde 2007

Healthcare: The government of Ethiopia has initiated various healthcare initiatives to strengthen and scale up the healthcare practices in the country. This includes the application of ICT towards increasing the accessibility of healthcare to all its citizens. Below is the list of e-health initiatives adopted by the Government of Ethiopia.

E-Health Initiatives	Objectives
Journey of Life Radio Show	Roadshow on radio intended to prevent HIV/AIDS
Wegen AIDS Talkline	Toll free phone service providing counseling on life threatening and communicable diseases
eLearning	Online initiatives where Health Extension Workers are taught basic computer skills for accessing healthcare information
Health Management Information System (HMIS):	Digital medical health record system
Supply Chain Management (SCM):	Increase access to essential healthcare products, medicines and enhance distribution of necessary medicine in the country
RapidSMS	Launched to manage supply chain during famine in Ethiopia

Table 3: E-Health Initiatives, Ethiopia
Source: e-Transform Ethiopia- The World Bank Report 2012

Building the IT/BPO Industry in Ethiopia

Countries who have invested in building capacity to support the IT/BPO sector appear to be ahead of the curve to achieve social and economic goals as against the countries that have not. There is a strong correlation between investing in the IT/BPO sector and a positive impact on the social and economic sustainability. Past data show that investments in IT/BPO have helped countries increase their GDP by 0.6% to 0.7% on an annual basis for every 10% increase in broadband penetration. Furthermore, the employment generation through the IT/BPO sector in countries like India has transformed the lives of many people. The growth of the industry from simple call centers to high end BPO and later KPO has created multiplier effects to boost the economy of many countries.
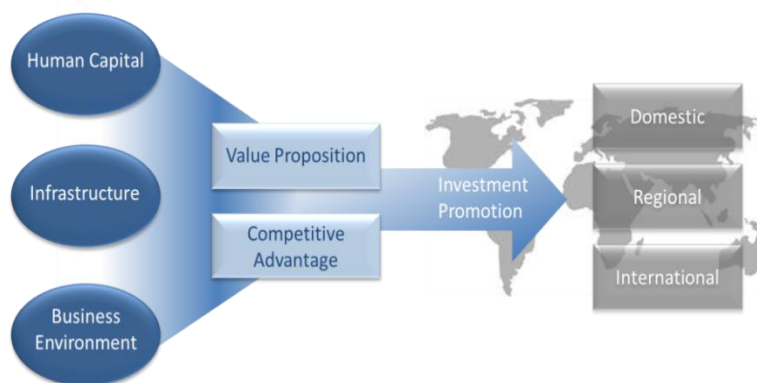
Adopting a planned road-map to build the ICT infrastructure, talent pool and improving the business and economic environment helps to nurture a vibrant IT/BPO industry and promote sustainable growth. A roadmap to building capacity in the IT/BPO sector should adopt a holistic approach to achieving economic goals by focusing on following:

1. Efficiency and Effectiveness of socio-economic development
2. Poverty reduction through employment generation in the IT/BPO sector
3. Ensuring inclusive growth

4. Reducing gap between demand and supply of IT/BPO talent

Building the IT/BPO industry requires a two pronged approach – building capacity internally while embarking on a sustained investment promotion drive to attract investment in the sector attract business. Ethiopia has all the building blocks to create a sustainable IT/BPO industry in the form of low wage structure, good English speaking skills, abundant human capital, improving infrastructure and government's acknowledgment of the fact that ICT is an important pillar for the overall development of the country. The focus should be around understanding its strengths, identifying areas of opportunity and building a competitive strategy with a clear value proposition for attracting investment into the sector.

Building the capacity to Support IT/BPO sector

Human Capital – As per the UN, the youth unemployment in Ethiopia is high and is estimated to be more than 50%. With 90 million population, the country is the second most populous in Africa, producing over 150,000 graduates each year. One of the primary focuses of the government has been to generate employment for the youth. Official data shows that in both formal and   informal sectors, over 1.4 million jobs were created between 2006 and 2010, and over 1.2 million between 2011 and 2012. Many of those hired were young people. The Education and Training Policy of the Government of Ethiopia, established in 1994, outlined the prescribed medium of instruction for primary, secondary, and tertiary education in Ethiopia. At the primary level (grades 1-8), the medium of instruction is the mother tongue (Amharic, Oromifa, Tigrinya, etc.), with English being taught as a subject. At the secondary level, the medium of instruction shifts to English, which continues as the primary medium of instruction at tertiary levels. An English Language Improvement Program (ELIP) was established from which more than 150,000 teachers have already benefitted, while English Language Improvement Centers were set up at most teacher training colleges and universities. As part of the new ELIP, 45,000 English teachers will be provided with tailor-made trainings to improve their English proficiency. Ethiopia also faces an acute shortage of Computer Science teachers. The government along with participation from the private sector, Donor Organization and Universities will need to right skill the youth to take up knowledge intensive jobs.

Infrastructure – Ethiopia in the past few years has taken many steps to develop the infrastructure. Though there has been a considerable improvement in the mobile telephony, fixed lines and broadband internet still have a lot if catching up to do. In 2005, ETC installed a national fiber optic backbone comprising 4000 kilometers radiating out in six major directions from the capital (to Dire Dawa,

Market Penetration	
Mobile	25%
Fixed	0.90%
Internet	1.20%

Fig 3: Market Penetration rate in Ethiopia Telecom Sector, 2013
Source: BuddeComm

Djibouti, Dessie-Mekele, Bahir Dar-Nekemte, Jimma and Awassa), laying a foundation for delivering current and future services including digital radio, TV, Internet, data and other multimedia services. In order to increase the service capacity, reliability, quality, speed, and size of data transfer, ETC transferred from narrowband to broadband service in January 2005. The introduction and installation of broadband Internet, broadband VSAT, and broadband multi-media infrastructure are among the major achievements of the past 12 years. About 1300 submarine gateway circuits connect Ethiopia with the rest of the world. However, Ethiopia's

mobile penetration though higher than fixed line & Internet, remains one of the lowest in the world. Ethiopian government plans to boost mobile subscription in the country by 20 million in its five-year plan, as per the Growth & Transformation Plan (GTP), ending in 2014/15. The number of internet subscribers is projected to rise to 3.69 million.

The Ministry of Communications & Information Technology (MoCIT) is also to start the construction of an ICT Park, called Ethio ICT, with a total financial outlay of USD 45 Million. The Park aims at boosting information technology services and offer reliable mobile broadband infrastructure in the country. The government, which has a state monopoly on telecommunications, plans to provide Internet speeds of as much as 40 gigabytes over this infrastructure and attract businesses including call-centers and computer hardware assembly plants to the park.
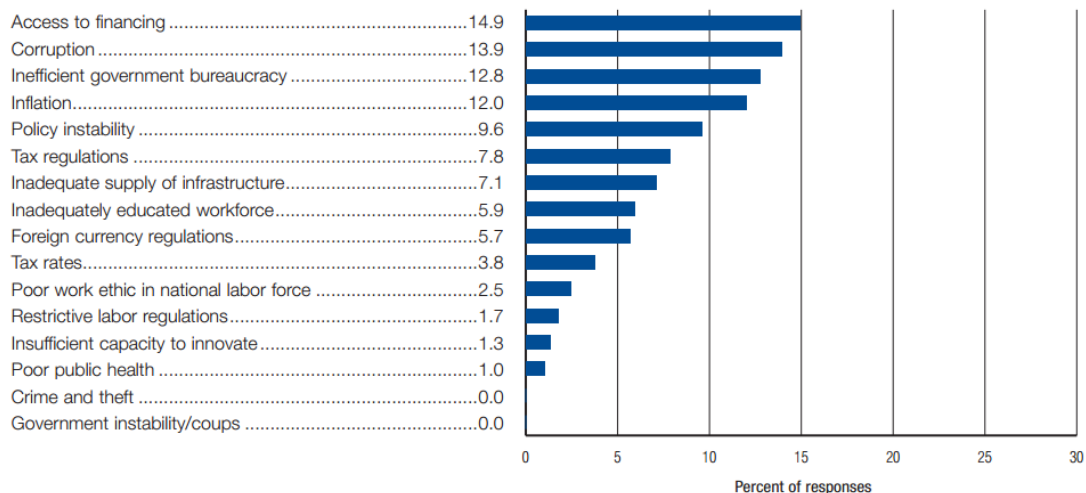
It is expected that with the right ICT infrastructure in place the country will be able to instill confidence in investors, the service provider community, and the buyer community to look at Ethiopia as a potential destination for IT & BPO work. The monopoly of the ETC (Ethio Telecom) in providing telecom services in Ethiopia, however, can be a hindrance to investments. States of other infrastructure initiatives, which are critical for the growth of the sector, are as below.

	Achievements	Challenges
Air transport	One of top three African carriers Major regional air hub	Improving air traffic control at Addis Ababa Bole International Airport Developing domestic air transportation
ICT	The government is constructing an ICT park "Technopolis" in Addis Ababa	Modernize regulatory framework Award a second mobile license Rebalance ICT tariffs in line with costs
Power		Undertake huge investment program Address underpricing of power
Surface transport	Major investment in trunk network Sound Road Fund in place	Improve rural accessibility Concession railway
Water and sanitation	Rapid expansion of coverage	Address utility inefficiencies

Fig 4: Infrastructure Achievements and Challenges in Ethiopia
Source: African Development Bank, Country Strategy Paper (2011-2015)

Business Environment

Business Environment - Even though Ethiopia is among the top fast growing economies in the world, according to Global Competitive Index of World Economic Forum, its ranking on "ease of doing business" has been eroding in the last two years. From being ranked 104th out of 144 nations in 2011, its ranking has slipped to 127th. Overall, Ethiopia is ranked 121 of the 144 countries ranked. It ranks at 87 for Labor Market Efficiency and 140 for technological readiness. Services sector contribute to 38% of the Ethiopia's GDP.

The most problematic factors for doing business

Factor	Percent
Access to financing	14.9
Corruption	13.9
Inefficient government bureaucracy	12.8
Inflation	12.0
Policy instability	9.6
Tax regulations	7.8
Inadequate supply of infrastructure	7.1
Inadequately educated workforce	5.9
Foreign currency regulations	5.7
Tax rates	3.8
Poor work ethic in national labor force	2.5
Restrictive labor regulations	1.7
Insufficient capacity to innovate	1.3
Poor public health	1.0
Crime and theft	0.0
Government instability/coups	0.0

Percent of responses

Note: From the list of factors above, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Fig 5: Ease of Doing Business, Global Competitive Index, World Economic Forum

The following bodies have a strong influence on influencing the growth of ICT sector in the country –

Organization/Association	Description
ICT-ET	ICT-ET, formed by a few private companies, was formally established on November 25, 2010 with the Charities and Societies Agency (License #2055) to EXPOSE, ENGAGE and ENABLE the private sector within the ICT industry in Ethiopia. The association has three sectors within its scope, namely Information Technology, Communication Technology and Broadcasting Technology
Ethio Telecom (Ethiopian Telecommunications Corporation)	The Government owned Ethio Telecom focus is to bring about a paradigm shift in the development of the telecom sector to support the steady growth of Ethiopia.
Ethiopian Investment Agency	The Ethiopian Investment Agency (EIA) is a government agency established in 1992 to promote private investment, primarily foreign direct investment. The overall activities of the Agency is supervised and followed up by an Investment Board, which is chaired by the Minister of Trade and Industry. A director general who is also a member of the Board heads the EIA.
MCIT – Ministry of Communication and Information Technology	The Ethiopian government established Ministry of Communication and Information Technology (MCIT) in 2010, recognizing the critical role of information and communication technology (ICT) in the national development. The ministry is an apex institution, which spearheads the ICT development of the nation by way of developing policy instruments, designing various programs, mobilizing resources, guiding and monitoring implementation.

Some of the ICT organizations currently having operations in Ethiopia are - eVentive LLC, Altech Star BPO, Techno Brain and Praxis International.

Investment Promotion - One of the steps taken by the government to enhance investment in Ethiopia is the incorporation of provisions regarding Investment Incentives. Incentives such as tax holidays between 2 to 7 years and investment guarantees have been formulated to

attract investment. Ethiopia still has not developed specific policies to enhance the investment environment in the ICT sector. Along with policies, Ethiopia will also need to look at the key target audience and develop investment promotion channels to address these specific areas.

Concluding Remarks

Although there have been developments in liberalizing and privatizing the different sectors of the Ethiopian economy, the telecommunications industry remains under the monopoly of the government. The Ethiopian Telecommunications Corporation (ETC) is the only provider of telecommunications services, including fixed-line and mobile telephony and internet service. The use of VoIP in Ethiopia has been a bone of contention with press reports suggesting an almost complete ban on VoIP such as Skype, Google talk etc.; however, the government has denied this ban and has clarified that the new law mainly intends to control the growing number of telecom related offences.

There has been increased and coordinated involvement by all stakeholders in the development of the ICT sector in Ethiopia, over the past five years. The Ethiopian government has embarked on a wide-ranging national ICT capacity-building program aimed at accelerating development and reducing the level of poverty by improving public and private services in the health, agriculture, and education sectors. The vision for the program is to "develop and exploit ICTs as an accelerator for the attainment of national development objectives and global competitiveness." The program is embedded in a decentralization policy entrusting regions and woredas with the task of responding to local needs. It has four strategic aims:

- Establishing a national ICT policy, advocacy and coordination body to facilitate the mainstreaming of ICTs for socio-economic development
- Creating an enabling policy, regulatory and legal environment for the growth of ICTs and establishing locally adapted ICT industry standards
- Developing the necessary ICT human resources and infrastructure, facilitating rural access, and promoting diversified content
- Facilitating the use of appropriate technologies for the development of applications and content in various sectors to support rural development, good governance, and service delivery in priority sectors.

As a next step in its journey, Ethiopia will need to develop a concrete plan with a roadmap to build the ICT sector. This roadmap should look at various ICT industry types such as IT, Communication, and ITES (BPO) industry. Each of these sub sections needs to be carefully studied. The roadmap should include all key facets such as plan to develop the human capital, plan to develop infrastructure, plan to improve the business environment, growth projections and investment plans.

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