

ETHIOPIA

Ethiopian Free and Open Source Software Network (EFOSSNet)¹

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Introduction

This report provides a brief overview of the information and communication technology (ICT) situation in Ethiopia and the key stakeholders' roles in the sector, together with a concluding remark on key areas that need to be addressed. The methodology for this report involved mainly desk research, complemented by interviews with individuals in the telecom sector.

The first section describes key areas of progress in the ICT sector in Ethiopia, while the *Participation* section presents the country's ICT policy-making bodies and implementers, including stakeholders that contribute to the development of the ICT sector.

The ICT sector in Ethiopia is still characterised by a low penetration of services, including fixed-line telephones and mobile and internet services. Reasons behind this include the monopoly of the telecommunications incumbent and far from effective regulation. Although governmental agencies have a key role in ICT development plans, private sector companies, donors and civil society organisations have been the main drivers behind ICT development in the country. The high tariffs that inhibit rapid growth in access remain a key challenge. There are signs, however, that ICTs have created an important opportunity for the socioeconomic empowerment of women.

Country situation

Although there have been developments in liberalising and privatising the different sectors of the Ethiopian economy, the telecommunications industry remains under the monopoly of the government. The Ethiopian Telecommunications Corporation (ETC)² is the only provider of telecommunications services, including fixed-line and mobile telephony and internet service.

The number of fixed-line telephone subscribers more than doubled from 105,985 in 1987-1988 to 283,683 in 2000-2001, reaching 725,046 by June 2006. This means that 70.9% of all exchanges are in use (the capacity of the fixed-telephone exchange grew to 1,022,399 by the end of June 2006) (ETC, 2006a).

The effective teledensity reached 1.39% (including mobile phones), still a very low figure compared to the sub-Saharan Africa average of 2.68% (2003). Residential subscribers represent 71.2% of the total fixed-line subscribers, business 15.8%, government 7.2%, and other customers, including international organisations, 1.1%.

However, international, business and government customers contribute to the incumbent's revenue substantially. By the end of June 2006, the number of waiting subscribers for fixed telephone lines reached 56,023.

The mobile sector is growing fast. In June 2006, the number of subscribers reached 866,700, more than double the total of 410,630 in 2005. Out of the total number of subscribers, 358,052 were pre-paid subscribers. ETC offers value-added services such as international roaming, SMS, voicemail, general packet radio service (GPRS) and satellite mobile service. Ethiopia is registered as a GSM-user country.

The internet market is poorly developed compared to the potential demand and size of the population. This is mainly due to the incumbent's monopoly as the sole internet service provider (ISP). Although internet charges have been revised a number of times in the past to encourage more users, the number of subscribers remains low. Usage has, however, more than doubled in two years. ETC had 10,465 subscribers in 2003, of which the majority were business and non-profit organisations. This figure grew by 14% to 12,155 in 2004 – still a small number compared to the population size of over 70 million. In May 2006, the number of internet subscribers reached 26,642.

A major change occurred in 2001, with the start of the government's broadband roll-out project. This project introduced a dedicated digital data network (DDN) service that provides a broadband infrastructure with a frame relay connection of up to 2 Mbps (although the maximum speed that is available for subscription is 512 Kbps). Both internet and satellite broadband services are offered. In May 2006, subscribers to the DDN and its multimedia services reached 628 (ETC, 2006b).

In recent years, the government of Ethiopia has tried to take advantage of ICTs in a bid to accelerate the rate of economic growth. To this end, it is conducting multi-sectoral projects.³ The objective of these projects is to deliver IP⁴-based services through the use of broadband terrestrial and VSAT⁵ (satellite) infrastructure. In 2004 ETC made its infrastructure available to all *woreda* (district level administrations) and secondary schools. This connected the schools with eight-channel satellite television for educational purposes; some 550 secondary schools have been connected so far. The broadband roll-out also aims to provide access to rural communities, agricultural research institutions, corporate organisations and financial institutions. A total of 600 districts, around 5,000 rural communities (or *kebele*) and 34 agricultural research institutions have already been connected.

The number of local websites has increased over the past five years. However, many feel that government websites do not contain information that is useful to the general public or institutional customers, since no applications or enquiries can be submitted online. A few private companies have developed e-commerce websites, selling goods and services.

According to International Telecommunication Union (ITU) (2002, cited by Demeke and Biru, 2002) estimates, there were 75,000 computers in Ethiopia in 2001 and 367,000 TV sets in 2000. Only 2.8% of all households have access to TV sets. The distribution of TV sets is concentrated in the major urban centres, where more people can afford the cost and electricity is available. The national survey of 1999-2000 also showed that 18.4% of the population owns radios.

3 Among them, the SchoolNet and WoredaNet projects.

4 Internet protocol.

5 Very small aperture terminal, a ground station used in satellite communications of data, voice and video signals.

1 <www.efossnet.org>.

2 <www.telecom.net.et>.

TV and radio stations in Ethiopia belong to the state. The government TV station used to have a single channel, Ethiopian TV, until the Addis Ababa Television channel was introduced three years ago. Addis Ababa Television is available only in Addis Ababa and its suburbs.

The federal government owns two radio stations, the most important being Radio Ethiopia, which has two channels. The second radio station, Education by Radio, covers most of the country and provides educational radio programming to primary schools and distance education to adults. The Ethiopian Broadcasting Agency recently issued an FM radio licence to a private company. The slow licensing process is not encouraging for the many who were initially enthusiastic about the potential new business opportunities that this would bring.

There is considerable interest in free and open source software (FOSS) in Ethiopia, and a network of over 300 ICT specialists promoting FOSS has been formed under the banner of the Ethiopian Free and Open Source Software Network (EFOSSNet). Apart from a few high-profile representatives, the government has been slow to wake up to the potential of FOSS. Little is also being done to promote FOSS in higher education.

Like many other developing countries, ICT skills in Ethiopia are in short supply in many sectors of the economy. However, there are several institutions offering tertiary training, run both by the private sector and the government. Currently there are more than 20 emerging higher education institutions that have started to train at a diploma and degree level. Studies also show that there are more than 150 private computer training centres in the country, although 82% of them are in the capital. These centres offer courses on Microsoft Office packages, database systems, various programming languages, and specialised software packages, among others.

Participation

There has been increased 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 programme aimed at accelerating development and reducing the level of poverty by improving public and private services in the health, agriculture and education sectors, among others. The vision for the programme is to “[d]evelop and exploit ICTs as an accelerator for the attainment of national development objectives and global competitiveness.”⁶ The programme is embedded in a decentralisation 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.

We have identified ten major ICT players in Ethiopia:

The **Digital Opportunity Trust (DOT)** (<www.dotrust.org>) is a Canadian-based non-profit organisation that promotes locally driven social and economic development through the use of ICTs. Its flagship programme, Global NetCorps, is in operation in five countries: Jordan, Lebanon, Egypt, Kenya and Ethiopia.

The **Ethiopian Free and Open Source Software Network (EFOSSNet)** (<www.efossnet.org>) is a non-governmental professional network established by a group of interested ICT professionals and individuals in February 2005. The vision of EFOSSNet is to see FOSS contribute to the development of Ethiopia. EFOSSNet is committed to research and development in the area of FOSS, and to awareness-raising through training and fostering partnerships with the private, non-profit and public sectors.

The **Ethiopian ICT Development Agency (EICTDA)** (<www.eictda.gov.et>) is an autonomous federal government public office coordinating ICT-related development in Ethiopia and advising the government on ICT policy issues. EICTDA is also responsible for the development and implementation of ICT activities approved by the government. The agency is the main executing organ for the ICT-Assisted Development Project, which aims to help communities improve their livelihood through the use of appropriate ICTs that facilitate increased access to markets, development information and public services.⁷

The **Ethiopian Telecommunications Agency (ETA)** (<www.eta.gov.et>) is the country's telecommunications regulator.

The **Ethiopian Telecommunications Corporation (ETC)** is the state-owned monopoly provider of telecommunication services in Ethiopia. According to its website, ETC's vision is to see the entire country connected with state-of-the-art ICT infrastructure that provides high quality, reliable and secure communication service at affordable prices, while its mission is to introduce ICT infrastructure across the nation to support voice, data and video services.

The **Graduate School of Telecommunications and Information Technology (GSTIT)** (<www.gstit.edu.et>) is sponsored by the ETC. GSTIT offers postgraduate programmes intended to fill the gap for high-level professionals demanded in the ICT sector, both in Ethiopia and in the region. GSTIT provides forums for sharing knowledge and exchanging information on new technologies and management tools and practices.

The **School of Information Studies in Africa (SISA)**, now called the **Faculty of Informatics, Addis Ababa University**, was established in 1990 with the assistance of the International Development Research Centre (IDRC) and UNESCO (see below). It offers graduate as well as short-term training programmes and refresher courses in ICTs.

The **United Nations Development Programme (UNDP)** (<www.et.undp.org>) provides technical advice to the ETC. It also supports the local SchoolNet project which is being implemented in collaboration with the EICTDA. The project delivered the first batch of 1,500 computers to the Ministry of Education in 2004 as part of efforts to bring ICTs to more than 160 secondary schools across the country.

6 <www.iactadethiopia.org>.

7 For more information see: <www.iactadethiopia.org>.

The **United Nations Economic Commission for Africa** (UNECA) (<www.uneca.org>) plays a key role in the development of ICTs, particularly in enabling countries to develop and implement their National Information and Communication Infrastructure (NICI) plans.

The **United Nations Educational, Scientific and Cultural Organisation** (UNESCO) (<www.unesco.org>) supports ICT initiatives and development in Ethiopia. This includes establishing telecentres (it launched the sixth telecentre in Ethiopia in August 2005) and supporting FOSS development, as well as initiatives assisting visually impaired people, among others.

Conclusions

Although the situation is improving (from a very low baseline), the ICT sector in Ethiopia is still characterised by a low penetration of fixed-line, mobile and internet services, a state monopoly, and far from effective regulation.

The establishment of an ICT coordinating body (the EICTDA) is expected to promote the sector's growth. But although governmental agencies have a key role in developing ICT strategies, private sector companies, donors and civil society organisations have been the main drivers behind the development of ICTs in the country.

The government actively participated in the World Summit on the Information Society (WSIS) process, and a national consultative workshop with ICT stakeholders was organised by the ETA in collaboration with UNECA in February 2003. However, this was largely invisible to the public.

The monopoly of the telecommunications environment in Ethiopia poses a number of challenges. The policy environment needs to be opened up to encourage private sector investment and to improve the quality of services by introducing competitive pricing for services.

As stated in its website, the ETC's "vision" is to connect the country with state-of-the-art ICT infrastructure at affordable prices. However, this is unlikely to be realised if the market is not liberalised. A liberalised market will also make the existing regulator more effective in developing and implementing standards that encourage service providers to meet their service level agreements and respond to customers' needs.

Billing problems and affordability are regarded as the major constraints in utilising fixed phones effectively. The low level of internet penetration reflects an expensive but slow and low-quality service.

While there is still a scarcity of fixed lines, there has been an increase in the use of public access points, such as private kiosks, telecentres and public phones. Tariffs should be revised to allow those in rural areas to make calls, and effective strategies need to be put in place to sort out billing problems.

There remains a significant gender gap in accessing communication services in Ethiopia. However, there are also signs of improvement, such as the growing access to prepaid mobile phones and public access points run by women. There has also been a significant increase in the number of women operating telecentres, following the liberalisation of public call services in 2003. This is expected to improve women's access to ICTs more generally. ■

References

- Admassie, A. (2002). *Information and Communication Needs in Selected Woredas (Districts) in Ethiopia: a Pilot Study* [online]. Addis Ababa: UNECA. Available from: <www.uneca.org/aisi/nici/Documents/Woreda%20-%20ICT%20Report%20Final.pdf>.
- EICTDA (Ethiopian Information and Communications Technology Development Agency) (2006). *Information and Communication Technology Assisted Development (ICTAD) Project* [online]. Available from: <www.ictadethiopia.org>.
- ETC (Ethiopian Telecommunications Corporation) (2006a). *Company Profile*. Available from: <www.etc.net.et/index.php?option=com_content&task=view&id=17&Itemid=29>.
- ETC (2006b). *Statistical Bulletin – Subscription, Traffic and Related Data 4th Qrt. 2006*. Addis Ababa: ETC.
- ESTC (Ethiopian Science and Technology Commission) (2000). *Ethiopian ICT Policy*. Addis Ababa: ESTC. Available from: <www.estc.gov.et>.
- Bekele, D., Atnafu, S., Mequanint, D. (2005). *ICT for Local Governance: Needs Analysis and Research Priorities for Addis Ababa City Government. A Research Report Submitted for LOG-IN Africa Pre-Project Workshop* [online]. Addis Ababa: Department of Computer Science, Addis Ababa University. Available from: <unpan1.un.org/intradoc/groups/public/documents/CAFRAD/UNPAN021407.pdf>.
- Woldehanna, F., Bekele, G., Ayele, H., Atnafu, S. and Ayalew, J. (2004). *Proposal for the Establishment of Centre of Excellence in ICT, by, September 2004; A report submitted to the Ministry of Capacity Building, ICT Development Agency*. Addis Ababa: Ministry of Capacity Building, Federal Democratic Republic of Ethiopia.
- Demeke, M. and Biru, T. (2002). *ICT Penetration and Usage in Ethiopia: Baseline Study. The Sane-ICT Project* [online]. Addis Ababa: Addis Ababa University. Available from: <www.idrc.ca/uploads/user-S/10850603191scan-ethiopia-report_edited.doc>.