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I. Preface

This telecom statistical bulletin of Ethiopian Telecommunication Agency, which is the 3rd issue of this kind, is prepared with the intention of providing any relevant information on the Ethiopian telecom service expansion status and statistics that illustrates the development of telecommunications sector in the country. This issue, alike the previous issues, has covered elements to be used in making regulatory decisions on forecasting of telecommunication growth and analyzing the time series data on level of digitization, productivity & telecom density.

This bulletin is organized to include data on telephone lines and subscriptions, public telephone stations, telephone utilizations, telecom traffic, personnel and financial situations of the Operator and the Regulator. The tables and graphs in the publication refer to year 1993/94-2004/05 (1986-1997 EFY) for ETC data and year 1998/99 - 2004/05 (1991-1997 EFY) for the selected Sub-Saharan African Countries excluding South Africa.

The compilation of these data and its trend analysis is based on:

-  Telecommunication data of ETC & ETA and
-  Telecommunication data of selected Sub-Saharan African countries.

The sources of the data are Ethiopian Telecommunications Corporation (ETC) annual report and annual statistical bulletin, International Telecommunication Union (ITU's) World Telecommunication Indicators Database 2005, World Telecommunication Development report 2003 and Ethiopian Telecommunication Agency's (ETA's) annual report. However, due to a problem to access up-to-date data for some of the indicators from ITU's World Telecommunication Indicators Database 2005, the analysis is restricted to the available parameters and the publication of this telecom statistical bulletin is designed to incorporate only basic information. The bar charts on the later pages also depict only the highest, the lowest and average performance of selected Sub-Saharan African countries including Ethiopia.

1. General telecom development trend analysis

1.1 Public Switched Telecommunication Network (PSTN)

1.1.1 Subscriber lines and Tele density

The country's telecom penetration (Tele-density or number of telephone subscribers per 100 inhabitants) has increased from 0.68 in 2003/04 to 0.83 in 2004/05. If mobile telephone subscription is included, the penetration figure shall raise from 0.90 in 2003/04 to 1.39 in 2004/05.

According to ETC's 2004/05 annual statistical bulletin, 243 towns are the beneficiaries of fixed telephone lines. Of the total telephone line subscription 50.28% is subscribed in Addis Ababa, 20.29% in Oromia, 11.12% in Amhara, 7.31% in SNNP, 5.16% in Tigray, 2.47% in Diredawa, 1.33% in Harari and the remaining regions totally have 1.12%.

In year 1997 EFY, the above indicated number of towns have a total number of 2,585 public telephone lines. Among these towns, Addis Ababa has a share of 1,613 (62.40%) public telephone lines, Nazreth 96 (3.71%), Bahirdar 94 (3.64%), Diredawa 91 (3.52%), Debrezeit 56 (2.17%), Nekemte 52 (2.01%), Gonder 40 (1.55%) and the remaining towns totally have 543 (21.0%). As compared to year 1996 EFY, payphone service in 1997 EFY has increased by 772 (42.58%) which is unsatisfactory as compared to the very high demand for the service.

As far as growth of public stations is concerned, the total number of public stations in year 1997 EFY has reached 867 out of which 243 (28.03%) are Digital Automatic Telephone Exchanges, 368 (42.45%) are Pay Stations & Rural Radio Communication (RRC), 17 (1.96%) are manual exchanges and the remaining 239 (27.56%) are semi-automatic.

Regional distribution of the National public stations shows that Oromia Administrative Region has 41.98% share out of which 30.77% automatic, 32.69% manual, 36.26% pay station & 0.27% rural radio call; Amhara Administrative Region has 20.53% share out of which 32.58% automatic, 42.70% manual, 24.72% pay station; SNNP has 15.11% share out of which 24.43% automatic 36.64% manual 38.17% Pay station and 0.76% rural radio call; Tigray Administrative Region has 10.27% share out of which 13.48% automatic 5.62% manual, 79.78% pay station and 1.12% rural radio call; Afar region has 4.27% share out of which 27.03% automatic, 13.51% manual & 59.46% pay station and Somali Administrative

Region has 4.04% share out of which 34.29% automatic 51.43% pay station and 14.29% rural radio call. The remaining regions totally have 3.80% share out of which 21.21% automatic, 9.09% manual and 69.70% pay station.

It is known that the existing strategy of the government, Agricultural Development Led Industrialization (ADLI) strategy, requires the telecom sector to focus on universal access of telecom services at the regional, woreda, other towns and kebele level. This expanded and improved telecommunication net work will provide more effective means for the dissemination and exchange of ideas and information and for administration of government programs. However, as can be seen from the above percentage shares, even if the government focuses on telecommunication access to rural areas, the telecom services are still highly skewed in the big towns like Addis Ababa, Nazreth, Bahirdar, Diredawa and Others.

1.1.2 Comparison with selected sub - Saharan African countries

According to ITU's World Telecommunication Indicators Database 2005, the number of main telephone line subscribers registered by year 2004 was 1,028,899 in Sudan, 1,027,519 in Nigeria, 610,347 in Ethiopia and 317,000 in Zimbabwe. In the same year, C.A.R has registered 10,000, Djibouti 11,103 and Chad 13, 000 subscribers.

The highest main telephone line per 100 inhabitants (fixed telephone density) is registered in Botswana which was 7.60% followed by Namibia 6.36%, Sudan 2.98% and Gabon 2.86%. On the other hand, the lowest main telephone line densities registered were 0.15% in Chad, 0.19% in Niger and 0.26% in CAR. Main telephone line density of Ethiopia in year 2004 was 0.83% which is below the average telephone density (1.77%) for the selected Sub-Saharan African countries.

Regarding total telephone line (fixed and mobile) subscribers in year 2004, Nigeria has registered 10,174,730, Kenya 2,845,410, Sudan 2,077,460 and Ethiopia 1,020,977. In the same year, CAR has registered 70,000, Chad 136,000 and Niger 172,420.

1.1.3 Level of digitization

Fixed telephone line consists of manual, automatic, digital, analogue, semi automatic, Rural Radio Calls (RRC) and Public Switch. In year 2004/05 installed capacity of ETC on the fixed telephone network reached 872,228 lines out of which 857,374 (98.30%) are automatic telephone lines and 14,854 (1.70%) are manual telephone lines. The telephone subscription under all categories of customers i.e. residential, business, government and others has reached 610,347 which is only 69.98% of the installed capacity. The number of main telephone line subscribers in year 2004/05 as compared to that of the previous year has increased by 26.01%. From the total main telephone lines, automatic exchanges cover 604,525 (99.05%) and the rest 5,822 (0.95%) are manual exchanges. Out of the total fixed telephone lines, 74.14% are residential, 16.44% Business, 8.11% government & 1.31% goes to Others (i.e. Embassies & International Organizations).

1.1.4 DEL's per employee and waiting list

As compared to the performance of the previous year (2003/04), in year 2004/05 telephone lines per employee, installed capacity, and number of subscribers grew by 19.44%, 20.72%, and 26.01%, respectively. As far as expressed demand is concerned, the number of expressed demand in year 2004/05 has reached 669,102 which shows an increase by 27,771(4.33%) as compared to the previous year. From the above statistical data it is observed that the number of subscribers of main telephone lines has been increasing at a higher rate (26.01%) than the growth rate of fixed telephone lines installed exchange capacity which is 20.72%.

1.2 Mobile Telephone

1.2.1 Subscriber lines and waiting list

In 1997 EFY, mobile telephone subscription under all categories of customers i.e. individuals, business, government and others has reached 410,630. The number of subscribers in year 2004/05 as compared to that of year 2003/04 has increased by 255,096 (164.01%) but the mobile density of the country is only 0.56%.

1.2.2 Comparison with selected sub Saharan African countries

According to ITU's World Telecommunication Indicators Database 2005, by year 2004, Nigeria has registered 9,147,209 subscribers; Kenya 2,546,157, Ghana 1,695,000, Tanzania 1,640,000, Cameroon 1,536,594 and Ethiopia had only 410,630 mobile subscribers. In the same year, CAR has registered 60,000, Chad 123,000 and Niger 148,300 mobile subscribers. In terms of growth rate between year 2003 and 2004 mobile subscribers in Nigeria has increased by 190.44%, Angola by 182.45%, Ethiopia by 164.01%, Ghana by 113.07%, Sudan by 98.88% and Niger by 93.62%. By year 2004 the highest number of cellular mobile subscriber per 100 inhabitant was registered in Gabon (36.20%) followed by Botswana (31.41%), Namibia (14.23%), Senegal (9.94%) and Cameroon (9.43%). On the other hand, countries with the lowest number of mobile subscribers per 100 inhabitants were Ethiopia 0.56%, Niger 1.19%, Chad 1.39% and CAR 1.53%. This figure shows that by year 2004 the mobile density of Ethiopia was the least as compared to that of selected sub Saharan African countries. During the last seven years (1998-2004) the average mobile subscribers per 100 inhabitants was 18.65% in Botswana, 14.75% in Gabon, 6.83% in Namibia, 4.89% in Coted'ivore and 4.18% in Gambia. Countries with least average mobile subscribers per 100 inhabitants are Niger 0.29%, Burundi 0.39% and Chad 0.50%.

The average mobile subscriber per 100 inhabitants in Ethiopia for the last seven years since its inauguration in 1999 is only 0.14%. This figure also shows that the annual average mobile density growth rate of the country is the least as compared to that of the countries under consideration.

1.3 Internet Service

1.3.1 Number of Subscribers

Internet service has started in Ethiopia since 1989 EFY. In the year 1989 EFY, the number of internet subscribers was not more than 1000. One year later the number of subscribers rose by 98.5% and reached 2,068 subscribers. By year 1997EFY, the number of Internet subscriber has reached 17,710 which have a growth of 5,555(45.70%) over that of the previous year /12,155/.

1.3.2 Comparison with selected sub Saharan African countries

Regarding internet users of selected Sub-Saharan African Countries by the year 2004, Nigeria has registered 1,770,000, Kenya 1,500,000, Sudan 1,140,000, Zimbabwe 820,000 and Coted'ivore 240,000. In contrast, countries like C.A.R, and Djibouti registered the least number of internet service users which was not more than 9,000. In the same period, the number of internet users in Ethiopia reached only 113,000. As compared to year 2003, internet users in 2004 has increased by 136% in Nigeria, 114% in Senegal, 110% in Zambia, 105% in Angola and also a slight change 51% in Ethiopia (75,000 in year 2003 & 113,000 in year 2004).

According to ITU's World Telecommunication Indicators Database 2005, number of internet hosts by year 2004 was 10,016 in Kenya, 8,055 in Zimbabwe, 7,167 in Mozambique, 5,908 in Tanzania and 3,801 in Coted'ivore. Where as the least number of Internet hosts registered was 6 in C.A.R. and 12 in Chad. In the same period, Ethiopia has 38 Internet hosts and thus categorized with those who have low number of internet hosts.

As compared to the previous year the highest growth rate in internet hosts by year 2004 are 2,371% in Angola, 605% in Burundi, 322% in Ethiopia, 261% in Malawi and 121% in Mozambique. Countries such as Burkina Faso, Cameroon, Chad, Gabon, Ghana, Nigeria and Togo are the countries where a decline in internet hosts is observed.

Regarding personal computer in year 2004, Zimbabwe has regestered 1,000,000, Nigeria 867,000, Sudan 606,000, Kenya 441,000 and Ethiopia had 225,000 personal computers.

As compared to year 2003 number of personal computers in year 2004 has increased by 162% in Burundi, 74% in Sudan, 68% in Mali and 50% in Ethiopia.

1.4 Main Telephone Lines, Mobile and Internet Traffic

For the last six consecutive years, a boost on metered calls has been observed making a big difference. Hence the registered metered traffic for the year under review (2004/05) is 2,342.00 million pulses. This figure shows a 5.25% growth over that of the previous year's metered traffic, which was 2,225.10 million pulses. In year 2004/05 out of the total international traffic in minutes, incoming traffic was 90.63% and outgoing traffic was only

9.37%. International outgoing and incoming telephone calls traffic in minutes for the year under review have shown a 16.33% and 48.95% improvement over the previous year, respectively.

According to World Telecommunication Indicators Database 2005, by year 2003, Nigeria, Ghana, Coted'ivore, Namibia, Senegal, Botswana and Zimbabwe registered above 50 million outgoing telephone traffic in minutes. On the other hand, Djibouti, Burundi, Chad, C.A.R., Uganda, Tanzania, Ethiopia, Gambia, Guinea, Zambia, Togo and Niger registered below 20 million out going telephone traffic. The growth rate of outgoing traffic in year 2003 as compared to the previous year has shown an increase of 55% in Benin, 49% in Burkina Faso, 28% in Sudan and 23% in Ethiopia. On the other hand, the outgoing traffic has decreased by 50% in Uganda, 19% in Zambia, 5% in Coted'ivore, 3% in Mozambique and 1% in Madagascar.

1.5 Telecom Revenue & Investment

Telecom revenue and investment in the sector are key indicators of level of development of the telecom sector. In the year 2003, Nigeria, Kenya, Cameroon, Senegal and Sudan each of them have invested approximately above 100 million USD on telecommunication development. Similarly, Burkina Faso, Gabon, Ghana, Mozambique, Togo and Zambia each of them have invested above 25 million USD. On the other hand, countries like Guinea, Djibouti, Madagascar and Zimbabwe have made small investment which is not more than 15 million USD. Where as Ethiopia has invested 35 million USD in the same period which indicates that the investment in the telecom sector in Ethiopia was lower than the average investment of the selected Sub-Saharan African countries which was 304 million USD.

Regarding telecom revenue, the average annual telecom revenue of the countries under consideration was not more than 191 million USD. However, countries like Nigeria, Kenya and Coted'ivore are the only Sub-Saharan African Countries with annual telecom revenue that exceeded 500 million USD. Botswana, Namibia, Sudan, Tanzania and Uganda have also registered relatively higher amount of annual telecom revenue which exceeded the average revenue for the countries under consideration. In contrast, countries like C.A.R, Burundi, Togo, Niger, Guinea, Gambia, Djibouti & Chad have registered a small amount of

revenue which is less than 50 million USD. Where as Ethiopia has earned 121 million USD in the same period which indicates that the revenue from the sector in the country is far below the average amount of revenue of the countries under consideration.

It is observed that telecom investment, telecom revenue and GDP (Gross Domestic Product) have a strong positive correlation. In other words, the higher the investment in the sector the more the revenue that will be earned from the service. This means a change in telecommunication investment results in an analogous change in revenue from the service and GDP. In this regard, countries like Sudan, Kenya, Botswana, Cotid'ivore and Burkina Faso, countries with a relatively high GDP, have registered a higher amount of investment in the telecom sector and as a result a relatively higher amount of revenue is earned from the sector in the year 2003.

According to ITU's World Telecommunication Indicators Database 2005, the percentage share of telecom revenue with regard to GDP (Gross Domestic Product) registered in year 2003 was 11.01% in Madagascar, 4.53% in Kenya, 4.33% in Uganda, 3.17% in Botswana, 2.39% in Burkina Faso and 2.24% in Sudan. Telecom revenue share as % of GDP for Ethiopia by year 2002 was 1.70%¹ which is lower than the average amount of low income countries (1.8%) for the period under review (year 2002).

1.6 Financial Analysis

1.6.1 Financial analysis of the Operator (ETC)

In 1996 EFY and 1997 E.F.Y. the gross revenue of ETC was Birr 1,238,723,929 and 1,631,843,160 respectively. The 1997 budget year revenue has increased from that of 1996 by 31.71%. Regarding expenditure, in 1996 and 1997 budget year the expenditure of ETC were Birr 660,420,000 and 1,037,530,000, respectively. The 1997 budget year expenditure has increased from that of year 1996 EFY by 57.10%. The above statistical data shows that the annual expenditure of ETC by year 1997 EFY has reached 63.58% of the total revenue in the same year. Similarly, gross profit of the operator (ETC) by year 1997 has reached birr 594,310,000 which shows an increase of Birr 22,440,000 (3.92%) over the previous year.

¹ Source World Telecommunication Development report, 2003

1.6.2 Financial analysis of the regulator (ETA)

Ethiopian Telecommunication Agency has been collecting revenue from the services it has been providing. The annual recurrent and capital budget to undertake its regulatory activities has been allocated by MOFED. ETA's revenue comes from four major categories:-

- ⇒ Type approval of Telecommunication equipment,
- ⇒ Radio communication equipment, TVRO and telecommunication services license and annual license renewal fee,
- ⇒ License fee of telecommunication service resale, cabling and telecom equipment maintenance and renewal fee,
- ⇒ Frequency assignment and radio programming fee etc.

Accordingly, in the budget years 2003/04 (1996EFY) and 2004/05 (1997EFY) ETA has collected Birr 8,647,668.71 and 3,264,654.73 respectively. The figure shows that revenue collected in 1997 budget year has decreased by birr 5,383,013.98 (62.25%) as compared to that of the previous budget year.

Such a huge decline in revenue of the Agency is clearly due to the fact that the implementation of the new license fee since January 1st 2005 and the amendments made on mobile apparatus type approval, which had been contributing the lions share for the total revenue of the Agency.

Regarding recurrent budget utilization of ETA, the recurrent budget allocated in year 1996EFY and 1997EFY were 3,028,300.00 and 2,859,066.00 and the corresponding budget utilized were 2,651,194.82 (88%) and 2,461,833.70 (86%), respectively. As compared to that of 1996 EFY, the recurrent budget allocated in 1997 EFY has decreased by birr 169,234 (5.59%). Similarly, the recurrent budget utilized has decreased by birr 189,361(7.14%).

Since 1993 EFY, ETA has been proposing essential capital projects for MOFED. Accordingly, in 1995 EFY MOFED has allocated Birr 5,000,000 for the purchase of Radio Frequency Monitoring Equipment and hence the equipment had been purchased and is being utilized. Similarly, in 1996 EFY Birr 59,000 is allocated for the purchase of books,

journals, periodicals and any other electronic copies for enrichment of the library. The books are purchased in the same year and the library has started its service since the beginning of 1997EFY. In 1997EFY Birr 3,157,054.51 is allocated for the purchase of one Transportable Microwave Monitoring Equipment. Accordingly, the equipment is under way to be delivered to the Agency.