

Telecommunications in Ethiopia:  
Past, Present, and Future

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**TELECOMMUNICATIONS IN ETHIOPIA  
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By

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## 1. THE HISTORY OF TELECOMMUNICATIONS DEVELOPMENT IN ETHIOPIA

Available historical sources indicate that the introduction of telecommunications services in Ethiopia as early as 1894 was realized as a result of the struggle for assertion of sovereignty and consolidation of central government on the part of Ethiopia and an effort of "peaceful penetration" on the part of foreign powers colonizing neighboring lands.

### Assertion of Sovereignty

Article XVII of the Italian version of the famous Wuchale Treaty signed on May 2, 1889 between Ethiopia and the Italian government stated that Ethiopia could make diplomatic contacts with other countries only through the Italian government offices. The emperor, realizing the distortion of the provision in the Treaty repudiated the agreement as of Feb. 1893 and soon applied for membership to the Universal Postal Union (UPU) as a sovereign state.

The request which was made in February 1893 to UPU office in Berne, was rejected on the grounds that the country did not as yet have modern postal services and also because of Art XVII of the Wuchale Treaty. The Emperor then gave orders to be issued on March 9, 1894 proclaiming the introduction of post, telegraph and telephone services in the country. He soon helped establish a company and gave concession to his advisor the Swiss engineer Ilg and a French entrepreneur Mr. Chefneux for the construction of a railway line joining Addis Ababa and the Port of Djibouti. Art. VI of this concession stated that the company could establish along the railway line, a telegraph line to be used free of charge by the Ethiopian government for messages of state affairs while other users would pay for the services.

Emperor Menelik had earlier tried to prove his Country's sovereignty by having stamps printed with his own effigy on them in 1893. Although he was not given international recognition, he went on using them for domestic postal services. The emperor, incidentally, was exposed to the use of the telephone as early as

1889 in his palace compound and nearby residences of dignitaries. This happened because Ras Makonnen, the Duke of Harrarghe and the father of the late Emperor Haile Sellassie I, had brought the telephone equipment, which he received as a gift from the Italian government, on his return from his diplomatic mission.

Dealing directly with the French government and introducing telecommunications system into Ethiopia may have delivered Menelik's clear message of independence to the Italian government and cleared the way to international recognition, but the technology was found by the emperor even more precious in his effort of nation building and consolidating the powers of the central government. Many boarder towns and centres of little kingdoms in the hinterland were linked primarily to enable the emperor control his subjects and guide them.

### "Peaceful Penetration"

The other aspect of the introduction of communications services into the country resulted from the political developments which took place in the horn of Africa at the turn of the 19th century. The British colony stretched south from Egypt to the Sudan and Kenya and the British Somaliland in the east thus almost encircling Ethiopia. The Italians had colonized Eritrea in the north and had part of Somaliland. The French had the French Somaliland (what is now Djibouti) in the east. These powers were interested in "peaceful penetration" to Ethiopia not only to aggrandize their respective shares of the continent but also to keep each other in check.

The Italians saw Menelik's friendship with the French as a threat and alleged the emperor to have broken the Treaty of Wuchale and advanced south. War was eminent. The famous battle of Adwa was fought and the Italians were defeated on March 1st 1896. This victory aroused such slogans as Viva " Menelik! Via del 'Africa!" in many countries of Europe and Ethiopia's position as a sovereign state was getting stronger than ever before. After the war the Italians approached Menelik and signed the Peace Treaty of Oct. 26, 1896 in which was stipulated, as war

compensation, that the Italian government shall link Asmara with Addis Ababa by a telephone line - a distance of about 861 kilometers altogether.

Menelik promised to provide labor, food and wooden poles. The insulators, batteries, apparatus, wires and other equipment were provided by the Italians. Work began on April 30, 1901 and was completed three years later.

A convention which was well trimmed to the colonial desires was drafted in Rome and Menelik was to cosign it with the colonial representative in Asmara. Menelik could not accept this and finally to the dismay of the Italians it was redrafted according to the mutual interests of both countries and was signed by the rightful authorities. The line linked Addis with Asmara and Massawa and was found to handle even more important traffic of international nature.

The Italian Government's intention was to use the project as a pretext in their effort of "peaceful penetration" into Ethiopia. Menelik outsmarted them. He not only forced the redrafting of the convention but succeeded in the Ethiopianization scheme despite the resistance of the Italians, who were forced to give in believing that the Ethiopians will never learn the technology beyond the level of its simple operation. A telegraph school, the first of its kind in the whole continent was opened in Addis Ababa, in 1903 with only 11 trainees. By 1904 the trainees were using the Amharic language morse code in Latin alphabet incomprehensible to the Italian supervisors.

Expansion work took place in all directions in a relatively short period of time. The service was managed by a director in the Emperor's palace first by an expatriate, A.J. Medial and later by the Ethiopian Lij Beyene Yimer who took over power in 1907.

## 2. Most Important Laws Affecting Telecommunications Sector.

The most important laws which have direct implications to the telecommunications sector are those governing investment,

institutional powers, labor relations, tax, import dues and other financial transactions.

Investment laws have changed dramatically over the past two decades. Before 1975 the market was the most important force in investment decisions. Between 1975 and 1991 investment decisions were made within a centrally-planned economic framework. Since late 1991, a wider scope has been given to market forces following the announcement of a new economic policy by the Transitional Government of Ethiopia.

The Proclamation (No. 131 of 1952) establishing the Imperial Board of Telecommunications of Ethiopia (currently ETA) is another government act which has determined the way telecommunications should be run during the past four decades. This issue has been discussed at some length in the section dealing with "Telecom Operators".

The labor law issued in 1975 has been the basis for all collective agreements signed between labor and the employer in every small and large enterprise in the country. This law, issued at the time the labor movement was at its peak in the country, has a number of articles favoring labor. In one of the articles of Labor Proclamation No 64 of 1975, for instance, the following is stated:

"For canceling a contract of employment on the grounds that the worker does not show in carrying out his work, the technical knowledge, conscientiousness, reliability or speed which could reasonably be expected of him...the burden of proof shall lie on the undertaking".

Referring to this article and others, many employers complain that the labor proclamation is strongly labor-biased.

Finance - related laws, mainly dealing with import dues, taxes, management of net earnings and other government levies are discussed in the section where "Financial Arrangements" between the state and ETA are outlined. In summary, like all other

public enterprises (i.e state owned enterprises) the following charges apply to ETA today:-

Income tax	-	50 percent of taxable income
Capital charge	-	5 percent of capital plus general reserve
Residual surplus	-	90 percent of income after income tax
Import levy	-	24 percent of the value of imported goods

### 3. ETA's Policy Making Process

Various policies of telecommunications services are processed in one or two or both ways i.e by the government and/or by ETA authorities depending on the kind and nature of the policies to be adopted. In its tasks of preparing the national economic development plan and upkeeping the standard of living of the people through improving social and economic services, the government sets targets and apportions resources for telecommunications services and investment funds for expansion and maintenance work. As the service is believed to help accelerate the development of activities in all economic and social sectors the Ministry of Planning and Economic Development ensures that the telecommunications sector interrelates with the overall objectives and policies of the socio-economic development set by the government. The government, through the the Ministry of Transport & Communications and ETA, also adheres to global and regional telecommunications policies and principles. To this effect various studies are made by either the Ministry of Planning and Economic Development which is the arm of the Council of Ministers, or by the Ministry of Transport and Communications through ETA and forwarded to the Prime Minister's Office for consideration or approval.

ETA operates on a profit making basis but is obliged to connect remote areas or strategic border towns to the national network by government policy disregarding the financial returns from these rural stations. The role of telecommunications in relief and rehabilitation efforts in drought-stricken and war-affected areas is crucial and is provided wherever technically possible as a government policy. Respective ministries or commissions play active roles in the process of implementing these policies.

The other direction of processing policies starts in the organization. It may end up within the authority or may be proposed to the ministry after being refined and examined by higher echelon for approval. There is a General Planning Committee comprising members of heads of departments and divisions. The Committee studies and recommends policy issues to the General Manager who approves or, depending on the issue, takes it over to the Board of Directors, the higher executive body chaired by the Minister of Transport & Communications

Such matters as raising the capital or restructuring the organizational set-up or approving the draft development package programme, or change of rates, appointment of the General Manager ...etc are decided by the government. Other less significant issues are handled by the Board of Directors in the Ministry of Transport and Communications. The General Manager is delegated for series of activities and expense authorizations which are reviewed from time to time.

#### 4. Electronic Equipment Manufacturing

The manufacturing sector in Ethiopia is still in its infancy. As indicated in section 3 of our main document, the country's economy is dominated by agriculture, contributing about 44 percent of GDP, whereas manufacturing contributes only about 10 percent.

Electronic equipment manufacturing is virtually non-existent. The only telecommunications network elements made



locally include, copper wires (only drawing and insulating) for the subscriber loop, telephone poles and brackets.

In the Ten Year Perspective Plan drawn up by the previous government, setting up manufacturing facilities for electrical and electronic goods were to be among the 216 industrial projects to be undertaken during the period 1984-93. The most important electrical and electronic products envisaged by the Plan were radio and television receivers, electric motors and electric bulbs. None of these projects has materialized so far.

A new investment law has been issued based on the economic policy announced by the Transitional Government at the end of 1991. This law provides a general guideline for the country's development. The most significant departure of the Transitional Government's economic policy from that of the preceding Government is in its declared intention to move towards a market - oriented economy. According to the stated policy, the state sector will run and develop heavy engineering, fertilizer and chemical producing industries, while at the same time encouraging the private sector to invest and run any industrial enterprise deemed acceptable for the social and economic well being of the people.

#### Major Telecommunications Equipment Suppliers

Telecommunications investment in Ethiopia is mainly financed through multilateral and bilateral lending agencies. As the past six telecommunications development programmes show, major portions of the external funds came from the World Bank, which contributed to all the six programmes. The African Development Bank as well as the Governments of Italy and Sweden contributed to the financing of only the last (sixth) development programme. These lenders have strongly influenced the procurement practices of ETA. Where the World Bank and the ADB require international competitive bidding as the basis for the choice of equipment suppliers, the bilateral sources allow only limited tender.

Despite the fact that international competitive bidding attracts a large number of suppliers, only very few suppliers have dominant roles in the Ethiopian telecommunications network. In the switching field, Ericsson of Sweden, Fujitsu and NEC of Japan and Alcatel of France have strong positions; and in the transmission area (including microwave and satellite systems), NEC of Japan, Itacom of Italy and Alcatel have supplied a major portion of the transmission network. Siemens of Germany is another important supplier of telex and transmission equipment.

In general, although choice of suppliers is dependent on the mode of financing, technical factors (equipment performance reliability, compatibility, etc.), price and after-sales support remain the most important criteria for the selection of suppliers.

## 5. Tariff Structure

The Ethiopian Telecommunications Authority (ETA) follows the policies and principles of CCITT in its tariff structure for the various types of services it provides. The basic objective is to cover cost and raise fund to ensure sustainable development. The rates of charges for the types of services i.e. interurban telephone calls, urban calls, international calls, initial (installation) charges, subscription charges etc are structured on per unit cost of service production basis but flexible enough to set certain rates below cost which can be accommodated in the general return from operation. There is a cross-subsidy concept in the general structure as we shall see a little later on. A brief glance at some of the services and the guiding principles behind the setting of rates might help to have a general idea of ETA's tariff structure.

### A. Inter-urban Telephone Calls

Interurban telephone calls are transmitted by open wire, radio or microwave and recently via domestic satellite services. Despite the mode and quality of services, most of these calls are charged on the basis of airline distance. They appear to be

equitable but it is not hard to see that efficient and more qualitative calls are charged equally with those hardly audible rural distant calls. Prior to the application of this principle interurban calls were charged based on the concept of only "Rate Zones" - calling for arithmetical work for every call being transmitted through various rate zones. The customer is subjected to more charges simply because of the distance of the routes instead of the distance of the place called. This deficiency is being rectified by applying airline distance principle.

#### B. S.T.D Calls

Whereas the operator-handled interurban calls are charged on a 3-minute minimum basis, the calls handled by Subscriber Trunk Dialing (S.T.D) system are charged only for the duration of the traffic. The pulse intervals are, however, adjusted slightly to make up for the loss from calls lasting less than 3-minutes. For distant calls by S.T.D the intervals are made even shorter.

#### C. Urban Calls

The charge for urban calls where automatic exchanges are available is US\$ 0.06 per call and free in places where manual exchanges are installed. There is no pulse interval arrangement for urban calls.

Apart from subscriber services, there are public telephone services made available using coins. The charge per call is US\$ 0.10 - a charge meant to cover the costs of equipment, maintenance, coin collection etc..

#### D. Access

ETA tries to recover the investment costs on equipment, training, installation and upkeep of facilities etc.. by applying access charges which is the payment made to have access to communication facilities. This includes initial subscription charge which is about US\$55.56 - per line and a monthly

subscription fee which is about US\$ 2.41. These charges do not in any way match the investment cost but are payments for partial coverage. There are additional rates for extension lines and extra apparatus and different rates for PBX equipment, which varies according to their respective capacities and types (manual or automatic).

#### E. Telegram

Telegrams, with minimum of 10 words, are charged on the basis of flat rates of US\$0.05 per word, irrespective of distance, for ordinary telegrams and double as much for urgent ones. This rate does not at all cover the cost but it is expected to be covered by charges on other services like international telephone calls for instance. Telegram traffic is generally on the decrease but the low tariff is expected to encourage local traffic.

#### F. Telex

Telex traffic both domestic and international is handled by automatic exchange equipment. Subscribers pay initial subscription charges and monthly rentals. As for the traffic charges there are two different rates for local as well as international telex calls. Generally the charge for telex calls per unit of time is about three-fourth that of the telephone charge. However, international rates are subject to bilateral negotiations. In few cases the telex rates equal or even exceed the telephone call rates.

#### G. Fax

The rates for fax service are very much similar to the telephone call rates except for the initial subscription and monthly fee for the installation and use of the equipment which is much higher than the telephone subscription rate.

Despite recommendations of CCITT, ETA does not make distinctions between its customers and the value of services when

setting the tariff structure. But this has to change in the near future. A telephone call for a business man and an ordinary customer making a social call of say greetings, should not be evaluated on the same scale. On the other hand urban calls should be charged on time interval basis to encourage efficient use of equipment. The interurban call rates which vary from a minimum of US\$ 0.12 to a maximum of US\$ 2.75 per 3-minute period, depending on distance, should be revised with a view of putting ETA in a better financial position to face the growing demand for the service without affecting the volume of traffic.

#### 6. Direction and Magnitude of Change in Telecommunications Policies

One can discern at least two aspects of changes in telecommunication policies - technological and operational. The technical aspect is in the direction of adopting more private or individual and more intelligent communication network. Such trends include satellite broadcast, paging system, mobile communications network and the like. The pressure comes from big hotels like the Hilton or international organizations. The magnitude of the demand for such services at present is not very significant but there are growing indications of increasing demands.

Another issue pertains to the future of the service operations. There is an increasing pressure to partially deregulate and liberalize the services. This can be done in a number of ways. Certain customers terminal equipment whose technical standard is approved by ETA, could be sold, rented or maintained by private individuals or companies. The internal installation of a big building complex can be sub-contracted to the private sector. Local area networks may be handled by individuals or private companies including collection of bills. To this end a series of studies are being made and the likelihood is that they will soon be implemented. These changes and trends are made or planned to respond to demands for services originating from all directions. As such there are no particular

pressure groups that caused any change as far as telecommunications is concerned.

## 7. Financial arrangements

According to proclamation No. 163 of 1979 dealing with regulation and co-ordination of Public Financial Operations, the following provisions are currently applicable regarding the financial arrangements between ETA and the State.

### Art.5 State Capital

- 1) The government shall have state capital in every public enterprise or financial agency.

### Art. 6 General Reserve Fund

Each public enterprise shall annually put 10 percent of its surplus into the general reserve fund until such reserve fund equals 60 percent of the state capital.

### Art. 10 Annual Capital Charge

Any public enterprise or financial agency shall annually pay to the government ... capital charge the amount of which shall be five percent of the state capital plus the general reserve fund as shown on the balance sheet at the end of the previous fiscal year.

### Art. 15 Payment of Residual Surplus

Each public enterprise or financial agency shall pay to the Government its residual surplus (90 percent of net income after income tax) within seven months following the end of its fiscal year.

### Art. 16 Financial objectives

- 1) Every public enterprise or financial agency shall

plan and conduct its financial operation in such manner as its income is sufficient to cover:

- a) all expenses and other items properly chargeable to current operations including depreciation;
- b) annual capital charge;
- c) interest on loans;
- d) tax liabilities;
- e) appropriation to the general reserve fund;
- a) amortisation of any fixed debt due and other debts; and
- g) residual surplus.

#### Art. 26 State Annual Financial Plans

The Minister (of Finance) and the Secretary General (of the National Revolutionary Development Campaign and Central Planning Supreme Council established by Proclamation No. 156 (1978) shall submit to the Council of Ministers currently with the government draft budget:

- 1) a draft annual investment programme of the government, public agencies, public enterprises and financial agencies and the estimates of resources necessary for financing thereof;
- 2) a draft state annual financial plan which shall comprise the following:
  - a) the investment programme of the Government, public enterprises, public agencies and financial agencies;

- b) any revenue of the Government available for investment;
- c) transfers from residual surpluses of public enterprises and financial agencies;
- d) borrowing from domestic sources;
- e) foreign sources of financing.

ETA which is a public enterprise as defined by Proclamation No. 163 of 1979, is required to transfer funds to the governments general budget in the following ways.

1. Capital Charge:- As ETA is wholly owned by the state, it is required to pay to the government an annual capital charge amounting to 5 percent of its total capital plus the general reserve fund.

2. Income Tax:- The country's prevailing tax law requires ETA to pay to the government income tax amounting 50 percent of its taxable income, i.e. income remaining after all operating expenses, annual capital charge and interest on loans are deducted from revenues.

3. Residual Surplus:- This amounts to 90 percent of the net income after income tax of every public enterprise. Proclamation No. 163 of 1979 requires every public enterprise to transfer the amount designated as residual surplus to the government annually. This, in effect, amounts to transferring nearly all the earnings of public enterprises to the government.

The Proclamation was issued at the time when the Government in power then was embarking on a centrally - planned economy whereby investment expenditures of all public enterprises were allocated by the Central Planning Supreme Council. This meant that a public enterprise such as ETA financed its capital projects from its own funds (drawing on its depreciation and general reserve funds), government treasury and external loans.



Although Proclamation No 163 of 1979 is still effective, it is clear now that it has out lived its purpose. Today, there is no longer a centrally - planned economy in the country. In fact, a new economic policy with strong emphasis on the market to guide economic activities has been announced and new laws are being issued and drafted. Among the new laws that have already been issued, the investment law is the most significant to telecommunications development. This aspect has been discussed in greater detail elsewhere.

#### 8. Telecom Operators

Proclamation No 131 of 1952, issued by the Ethiopian Government to establish the Imperial Board of Telecommunications of Ethiopia in 1952, gave the following mandate to the Board.

##### Art. 3

The Board shall have the exclusive right to engage in the construction, operation and maintenance of telecommunication other than military telecommunications; provided that the Board may in its discretion enter into arrangement with other persons, public or private for the operation of specified telecommunication facilities.

The Proclamation (Article 3 of which is quoted herein above) which is still in force, gives ETA the right to be the sole operator of non-military, public telecommunications in Ethiopia. ETA has indeed exercised the right to be the sole provider of public telecommunications services for over four decades without major challenges to its authority.

The only concession, with regard to point-to-point communication, that ETA has made so far is in licensing private operators to use private radio telephone systems for the exclusive use of the licensee. These private radio telephone systems are stand-alone systems which have no interaction with the public-switched network operated by ETA. The radio

monitoring station run by ETA ensures that unlicensed radio communications are not undertaken.

From time to time ETA has been approached by users to be permitted to access ETA's network with their own terminal equipment such as telephone apparatus, PBX etc. ETA's response to such requests is generally discouraging to users. On a few occasions, ETA's customers were permitted to import and install PBX's of their choice, but ownership of the PBX's was transferred to ETA with a partial reimbursement of the value of the PBX's.

According to current views of officials responsible for telecommunications, except for some relaxation in the provision of customer premises equipment, no major change in the provision of basic telecommunications services is envisaged in the near future.

#### 9. ETA's Basic Network Architecture

The basic telecommunications network consists of:-

- 1) Subscriber premises equipment
- 2) Subscriber Lines
- 3) Switching Centres
- 4) Transmission Network

##### 1) Subscriber Premises Equipment

The main components of the subscriber premises facilities, include PBXs, telephone apparatus, teleprinters, fax-machines. These instruments are a mixture of the analogue and the digital type.

##### 2) Subscriber Lines

This includes the subscriber line pairs - secondary and primary cables-to the switching offices.

### 3) Switching offices

The switching facilities currently in operation range from the manually-operated rural switches and electromechanical exchanges to the digital stored-program-controlled systems. The degree of digitalization of the network is discussed in the main document.

### 4) Transmission Equipment

The transmission network consists of open wire lines, symmetrical pair cable, radio-relay links and satellite systems. Open-wire lines, with or without carrier systems are widely used carrying traffic among the majority of rural towns. VHF systems ranging from 1 to 24 Channels as well as UHF Systems with 60 and 120 channels serve several routes. The main, long-distance transmission network linking all the regional cities and other principal towns consists of 300-960 channels analogue microwave systems. These routes are targeted for replacement with digital radio relay systems during the STDP.

Satellite systems are used for domestic and international services. Domestic satellite systems are a recent addition to the network, currently linking two cities. The main application of satellite systems in Ethiopia is in linking the country with the rest of the world. In June 1991, Ethiopia had direct satellite links with 17 countries.

## 10 Programme Implementation

According to the Sixth Telecommunications Development Programme the following were to be realized by 1988.

1. Raise the country's telephone exchange capacity from 123,900 lines at the beginning of 1984 to 195,000 lines in June 1988.
2. Raise telephone subscription from 89,544 in 1984 to 140,000 DELs in June 1988.

3. Expand automatic switching service to bring the percentage of subscribers connected to automatic exchanges to 95.
4. Extend the telephone service to an additional 150 rural towns
5. Raise telex subscription to 890 in 1988

Furthermore, it was planned that all additional exchange capacity was to be based on digital switching systems.

Examination of the status of the network by the end of 1988 reveals a significant gap between planned and actual figures. In June 1988 the total exchange capacity was only 125,665 lines. This was up only by 1765 lines as against 71,100 lines of planned expansion.

As a consequence of the slow progress in putting up the planned digital switches, the percentage of subscribers connected to automatic exchanges stood at only 83 percent, 12 percentage points below the planned target.

By 1988 there were only 492 telephone offices, an addition of only 82 over that of 1984, which is 78 below the planned figure. Telex subscription was also below the planned target by 74 subscribers.

As the above comparison clearly shows, the expansion and modernization programme of ETA did not progress as planned. In fact the SXTDP, which was scheduled for completion in 1988, is still under implementation at the time of writing this paper - a programme envisaged for five years has been stretched to cover nine years!

#### 11. Changes in Telecommunications In The Next Ten Years

The country's development policy, customer needs, technological development - among other factors - will determine

the pace and direction of change in the telecommunications sector in Ethiopia.

Demand for basic telecommunications services has grown at a rate much faster than ETA could cope with. The single most important task of any service provider (be it ETA or any other telecom operator that might be setup during the next ten years) will be bridging the gap between the huge demand for basic telecommunications services and the supply. No less important is the rapidly growing demand for new telecommunications services, such as data communication, fax and mobile services.

Barring a technological break through, the services mentioned above will remain the area of focus for the country's telecommunications needs.

In this connection, the Ethiopian telecommunications network, given a healthy economic growth, is expected to experience a major overhaul. Side by side with the expansion of the network, the most significant portion of the network will have been converted to digital systems by the end of the decade. During this period the introduction of ISDN is expected to appear on the agenda of development discussions.

Liberalization and privatization will no doubt emerge as key policy issues in the field of telecommunications. Although limited liberalization is in sight, privatization of the telecommunications network will call for a persistent push from the protagonists of the privatization policy. In any event, the monopoly role of ETA is unlikely to remain as it is in the coming ten years.

Another important area of change is in the manufacturing industry. The development of local capacity in the manufacturing of telecommunications equipment has been on the list of development programmes of the country for some years now. Given the current optimism of the private sector, telecommunication equipment manufacturing plants will be among the numerous factories that will be established during the coming ten years.

## 12. Effect of Global Trends

For the last 17 years, Ethiopia heavily depended on the former USSR for military and technical assistance. The country was hard hit by at least two major droughts and famine (1974, 1985), and was war-ravaged for over thirty years. Over 60 percent of its people are living below the poverty-line.

Ethiopia's leaning too much towards the socialist camp, her settlement and villagization programmes, collectivization in agriculture...etc. were strongly criticized by some observers. Her poverty was alleged to have been largely the result of socialism. In general the west was rather reluctant to rescue the country from the political turmoil. The over extended civil war frustrated the government forces and crippled the economy until defeat by opposing forces (EPRDF) was eminent. The former president Mengistu Haile Mariam fled the country in May 1991 and soon after a Transitional Government, a temporary alliance of various parties and organizations, was established with the EPRDF playing the dominant role.

Even though the country was socialist-oriented previously, telecommunications development programmes have always been funded by western loans. The new economic policy of the Transitional Government is basically a mixed economy policy. The private sector is encouraged and assisted by the government to participate in all economic sectors hitherto monopolized by the state except in a few sectors. This places immediate pressure on the supply side of telecommunication services, already too scarce.

### Population

The first census ever conducted in the country in 1984 showed that the population has reached 42.2 million including Eritrea. With an estimated 2.9 percent annual growth rate it would have reached 49.9 million by the end of 1990. 90 percent of the population is rural-engaged in agriculture. Out of which 3 percent lives in the lowlands mainly by cattle raising. The

urban population which is concentrated in few towns (31.4 percent living in Addis Ababa) grows at an annual average of 4.2 percent. Forty-six percent of the population of Ethiopia is under 15 years of age. The total fertility rate is about 7.5 while the death rate is estimated to be around 15.2 per thousand population (1984). Life expectancy at birth was about 51.9 years based on the Central Statistics Office report of 1984.

13. A telecommunication network map of Ethiopia has been attached with the letter sent separately.

#### 14. INTRODUCTION

##### The Country

Ethiopia is located in the eastern part of Africa stretching from 3° N-18°N and from 33°E to 48°E, bounded by the Sudan in the west and north-west, the Red Sea in the north-east, Djibouti and Somalia in the east and Kenya in the south. With an area of 1,223,600 sq.km its features are characterized by a rugged terrain and major deep and precipitous valleys containing such big rivers as the Blue Nile (Abay), Tekeze, Mereb, Baro, Omo, Awash, Genalle and Wabbi Shabelle which drain their waters to the neighboring areas except river Awash.

##### The Economy

The country's basic economy is agriculture which contributes over 44 percent of GDP. The main produces are grains, coffee, sugar, fruit, vegetables and livestock. The manufacturing sector consisting of mainly food, textiles, beverages, leather and shoes and non-metallic products including handicrafts mining and construction, contribute only about 16 percent of GDP. The service sector comprising mainly trade, public administration transport and communications contributed about 40 percent of GDP at current factor cost as at end of 1991.

## Resources

The country's physical resource base potential for agricultural production and its large livestock population (the largest in Africa and contributing about 40 percent to the value of agricultural output) are the most promising potentials. Little exploited hydroelectric power potential, newly discovered natural gas resource in the Ogaden region, minerals, particularly primary gold, soda ash, tantalum, marble, potash and base metals are also available important resources.

### 15. Source for table 1

- 1) In our copy of the diskette, we have indicated as the source of table 1: ETA's statistical Bulletins (1987-1991) and ONCCP plan documents (1985-1991).
- 2) The right column Telecom. contribution (% of GDP) is derived from the ratio of operating revenues from telecommunications services to GDP expressed as a percentage.

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17. Government Change And Telecomm. Policy

May 1991 witnessed two major events in Ethiopian politics. Having achieved military victory over the Ethiopian Government which had been in power since 1974, the Eriterean People's Liberation Front (EPLF) formed the Provisional Government of Eriterea based in what used to be the Autonomous Region of Eriterea under the preceding government of Ethiopia. Just about the same time, the Ethiopian People's Revolutionary Democratic Front (EPRDF) formed a provisional government in the rest of

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Ethiopia (i.e. excluding the Autonomous Region of Eriterea). Later, in July 1991, the Transitional Government of Ethiopia was established by a coalition of EPRDF and more than twenty other political organizations.

According to the resolution passed by the July 1991 conference which established the Transitional Government of Ethiopia, a referendum to decide the future of Eriterea will be held in two-years time.

The most significant change with regard to telecommunications administration since the establishment of the Provisional Government of Eriterea is the fact that ETA no longer manages and operates the telecommunications network in Eriterea. The Provisional Government there has taken over its administration. After eleven months of total absence of telecommunications services between Ethiopia and Eriterea, services have resumed since May 1992.

At the time the Provisional Government of Eriterea was formed in May 1991, about 15 percent of Ethiopia's total telephone exchange capacity was in Eriterea, whereas Eriterea's population was 6 percent of the total population of Ethiopia.

Since Asmara was the second largest city in Ethiopia, the Addis Ababa - Asmara Microwave Link carried the highest traffic density. In addition, Asmara was the source and destination of a significant portion of the international telephone traffic.

Although it is too early to assess the political status of Eriterea in relation to the rest of Ethiopia, the most extreme case would be an independent Eriterea with Ethiopia using the sea ports of Massawa and Assb as outlets to the sea. This scenario, in itself assuming a low level of economic and social ties, offers ample opportunities for the expansion of telecommunications services between the two governments. A more

likely scenario would be very close economic and social ties between the two geographic entities, no matter what political status Eriterea assumes.

Regarding the implications of the changes of government in Ethiopia to telecommunications, it suffices to mention the new economic policy announced by the Transitional Government of Ethiopia in December 1991. This policy states that the market will have a greater role to decide the country's economic activities. While this statement has created great expectations among the business community, the Economic Policy has highlighted that some economic activities will remain under state control. The Economic Policy issued in December 1991 states the following in relation to telecommunications and posts:

" Since posts and telecommunications provide essential social and economic services, they will remain under state ownership. However, forms of private capital participation in these activities will be studied and legislated"

The implications of this policy statement in the way ETA is to be re-organized and the role of the private sector as telecommunications service provider is yet to be elaborated. According to the Government policy statement quoted herein above, decision on whether the private sector should be authorized to engage in telecommunications as operator, is to be based on a study which is yet to be conducted. It will, therefore, be sometime (a year perhaps, with an optimistic estimate) before a new telecommunications policy evolves.

