

CHAPTER 15 RECOMMENDATIONS

15.1 Recommendations on Technical Matters

15.1.1 Follow-up of Master Plan

The Master Plan intends to build the program to develop the telecommunication sector of Ethiopia in 3 implementation terms (short, middle, long) by the year 2020.

The plan gives the emphasis on, and intends to, implement in the short term of;

- Solution to the imbalanced facility of the fixed-phone network (idle capacity of switch)
- Enhancement of mobile-phone and data service network expansion considering the current worldwide trend
- Extension of “tele-access” convenience (rural telecommunications service by PCO)
- Improvement of Operation and Maintenance Quality and efficiency as well as the management capability

However, the Plan was made based on the many assumptions and also unclear data of ETC, and accordingly shall be carefully reviewed and rectified timely, especially prior to the middle-term plan.

15.1.2 Network Capacity Expansion

(1) Network Capacity Expansion

The priority shall be given to the investment for the expansion of the subscriber access network and/or re-location of the subscriber cards of the switching system in order to effectively use the currently idle switching line units of around 260,000 l.u.

(2) Integrated Management of the Capital Investment

The M/P has placed the huge capital investment plan over the wide-range fields, and most efficient return shall be received from the investment.

The projects implementation shall be exactly managed focusing the earliest return of the following:

- New subscriber connections
- Improvement of QoS
- Others

Considering the above, the periodic monitoring meetings (monthly or semi-monthly) shall be held for finding the problem area as well as placing the action plans.

(3) Reinforcement of Planning/Design Function

Currently, planning for switching, local access and transmission system is running independently, and give the idle capacity and/or shortage/congestion of the network.

In order to avoid the mismatching of the plan, following confirmation shall be mutually made periodically or at least prior to the tendering:

- 1) Switch capacity shall be confirmed by the basic design of the local access network, on which the result of the micro demand survey is summarized.
- 2) Traffic measurement/management shall be more active to re-arrange the network or to place the plan for capacity increase.

(4) Update of the Civil Work Standard

- 1) Duct system standard
- 2) New building standard for small digital switch, VoIP nodes, etc.

Both shall be re-studied and be replaced with the more economical size/standard because a) application standard of duct system is changed due to use of the bent PVC duct, and

b) equipment size of digital/VoIP becomes much smaller than those of analog era.

(5) Network Expansion Policy

Considering the current world-wide trend of the demand growth /variation,

- 1) The facility expansion of the fixed-phone network is recommended to be compressed to 75% level of the forecast demand.
- 2) The facility expansion of the mobile-phone and the data networks is recommended to be enhanced beyond the forecast demand.

15.1.3 Capacity Building for Operation and Maintenance

(1) Separation of O/M Body

Master Plan has recommended to establish the semi-autonomy departments for 3 independent services;

- Fixed-phone service
- Mobile-phone service
- Internet/data service

Transmission and common facilities are to be maintained by Fixed-phone service department, however.

(2) Improvement of Day-to-Day Maintenance and Operation

- 1) Reporting system for early decision making

Currently, the reporting system/format is incomplete, and the site information is not efficiently used for the action plan as well as the annual business plan.

Site information shall be reported by the uniform format with the action requirement

SW: Line/processing capacity, current occupation, in-coming/out-going traffic, number of trunks of each route, call loss situation, fault/recovery record, etc., daily maintenance log

- OSP: Plant record/pair account record, connected pairs (MDF-CCC-DP, telephone number), fault/recovery record, etc. and daily maintenance log
- TR: Transmission capacity/alive channel, BER quality, fault/fault recovery, channel/E1 rearrangement, etc.
- PW: Power consumption record for each category, fault/fault recovery record, etc. and daily maintenance log

Periodic (monthly or semi-monthly) meeting shall be held to address the ad-hoc action plans on the site problems.

2) Reinforcement of trouble shooting/recovery system (OSP)

In order to encourage the OSP maintenance, following shortage shall be satisfied:

- Spare parts
- Measuring equipment/maintenance tools
- Vehicles

(3) Improvement of the Quality of Services (QoS)

One of the key objectives of the telecom carrier is to keep the high quality of the services, and to receive the customers' appreciation and satisfaction. Depending on the evaluation of the current facilities

- Fault rate of OSP is very high
- Fault recovery duration is very long
- Call completion rate is very low

1) Fault rate and fault recovery time of OSP

The extremely high fault rate and long recovery time will be caused by the widely existing obsolete paper-insulated lead-sheathed cables, which would be used beyond their lifetime.

The M/P put the budget for the replacement of the obsolete cables, but will not take care the other OSP component, such as CCC, DP, service wire, internal wire, and terminal station and its protector (open to air), which are usually the most risky point of faults.

OSP O&M shall take clear fault data, especially the change of trend before and after the cable rehabilitation, and make efforts to achieve the following target of the indicator.

QoS indicator	2001	2005	2010	2015	2020
Fault Rate/year	145	30	18	15	12
Fault recovery w/in 24h	N/A	60%	75%	85%	90%

2) Call completion rate

The current call completion rate was not found in the data, but was assumed to be less than 40%. Call loss will be originated in many points as follows:

Calling party side: subscriber behavior (repeat call, dial interruption, hooking)
 Called party side: line/terminal fault, busy, non-response, etc.
 Switching equipment: no ringer sending, network congestion, processor overflow, trunk busy, power fault, other fault, etc.

Exact analysis shall be made to find the exact point of loss for placing the adequate countermeasures.

Tentatively, the loss at the called party side will be improved by the following measures:

- i) Reduction of cable faults due to cable rehabilitation
- ii) More hunting system introduction to key customers through the effort of marketing division

Actions for switching system and subscriber behaviors shall be taken upon the exact analysis of the call loss points, and the QoS indicator shall be satisfied.

QoS indicator	Current assumed	2005	2010	2015	2020
Call completion rate	40	50	65	70	70

(4) Improvement of the Productivity

The current productivity (number of staff per 1,000 DEL) is 40, which is very large when compared with the world standard.

This productivity will be **automatically improved to the same extent** through the implementation of M/P:

- 1) Rehabilitation of obsolete facilities (OSP, SW, Tr)
- 2) Decrease of manual switch
- 3) Out-sourcing for new connection & OSP maintenance
- 4) Introduction of OPMC
- 5) Introduction of CIMIS

However, further efforts shall be paid through the staff training, careful re-structuring/separation of the organization for enhancing mobile and IP service field.

Target of the productivity is given below

	2001	2005	2010	2015	2020
DEL (fixed-phone)	291 K	616 K	841 K		1,341 K
DEL (mobile-phone)	28 K	317 K	510 K		946 K
DEL (IP service)	4.1 K	76 K	172 K	246 K	365 K
Number of Staff		7,700	8,500		10,000
Productivity		8.2	6.3		4.4
(Staff per 1,000 fix DEL)	(25.1)	(12.5)	(10.1)		(7.5)

After 2005, 70% of the staff will be engaged in the fixed-phone business.

(5) Reinforcement of Training Center Function

Considering the rapid increase of the facility volume as well as the new technology introduction, the training on the existing staff and the new staff will be inevitable.

Training facility shall be available for

- Fixed-phone (transmission, switch, VoIP, OSP)
- Mobile-phone (transmission, MSC, BSC, mobile terminal)
- Data net (gate, router, server, etc.)
- Network

R&D function for IP service contents and so on shall be added on the training center.

The training center is recommended to accept the trainees from the local contractors other than ETC staff.

(6) Administration of Plant Records

Majority of the Plant Records or As-built drawings are stored in the head-quarter.

Master Plan proposes to distribute a copy of such drawings to each O/M site so as to;

- 1) maintain/up-date the plant records.
- 2) Make ease the maintenance / operation work by giving the detailed information of the objective facilities.
- 3) Make ease the planning / engineering/designing work at site, especially for ad-hoc recovery plan.

15.1.4 Capacity Building for Local Telecommunication Sector Industry

(1) Out-Sourcing

Considering the limited resource of ETC (or telecom sector), the out-sourcing, especially of the OSP portion, is strongly recommended.

The current capacity of the new subscriber connection will be less than 20,000 per annum.

The over-flowed work shall be carried out by the out-sourcing.

New subscriber connection

Part of OSP maintenance

In order to enable the out-sourcing, MTC shall give the convenience to the local market:

- 1) Open the training center facilities/lecture/training to the public
- 2) Define the reasonable unit prices for the objective out-sourcing items
- 3) Steady and continuous order shall be placed
- 4) Reinforce the monitoring/evaluation task force for the out-sourcing works

(2) Encouragement of the Local Industry

In addition to item (1) above, current and new local industry shall be encouraged by giving the steady/continuous (well planned) orders:

- 1) Current industry
 - PVC duct
 - Concrete/wooden poles
 - Pre-cast man holes/hand holes
 - DP box (Quality is to be improved)
 - Cabinet housing (Quality is to be improved)
- 2) Expected industry

The wide local demands other than the telecom sector will be increasing on:

- PE tube extrude
- Solar power system assembly

15.1.5 Reinforcement of Marketing Activities

(1) Cultivation of the Demand for New Services

Master Plan recommends to cultivate the demands for

- Call waiting service
- Collect call service
- Free dial service (Tariff paid by called party)
- Call transfer service
- Etc. Including ICT service contents

(2) Provision of Reliable/Wide Band Service to the Key Customers

The plan improve the services to the key customers are recommended to be envisaged. Example; To install the O/F SDH ring (s) for the key customers.

(3) Management/Updating of Waiting Applicant Lists

Management of the waiting applicant lists shall be improved by the help of CIMIS.

Demand surveillance shall be carried out periodically (once a year) in order to up-date the waiting applicant list.

15.1.6 Reinforcement of Management Capacity

(1) Stream-line of the Organization

Master Plan proposes;

- 1) To establish the service oriented semi-autonomy department for

- Fixed-phone service
- Mobile-phone service
- Internet/Data service

2) To decentralize the O/M functions to regions

(2) Establishment of CIMIS

ETC has commenced the introduction of CIMIS aiming at the management of ;

- a) Accounting
 - b) Budget control
 - c) Customer service including billing
 - d) Project implementation
 - e) Quality of service
 - f) Operation and maintenance
 - g) New subscriber connections
 - h) Human resource
- etc.

(3) Reinforcement of Marketing Activities

More attention shall be paid:

- 1) Management/updating of waiting lists
- 2) Service improvement for key customers
- 3) Application/marketing for new services including ICT service contents

15.2 Recommendation on Organization Management and Human Resource Development

Among various plans and programs recommended in Chapter 13, the followings might be most important or essential for the development of the telecommunication sector.

(1) Objective Oriented Management of ETC

ETC has expanded to a large corporation with more than 7 thousand employees and will grow further to a corporation of huge scale. Coordination among departments and divisions has become and will become more and more important to achieve the objectives of the corporation, or corporate plan of every year. Objective oriented management is proposed to achieve the coordination. The coordination has to be attained explicitly with documentation whose example is given in the chapter.

All divisions of ETC are organized as a part of the corporation with respective functions, like all kinds of organizations must be. No single division alone cannot produce services of the corporation, and responsibility allocation is necessary every year to attain the objectives of the corporation of each year. Objectives of each division can be attained only with supports or

attainment of objectives of other divisions. These relations should be clearly identified at the time of planning and well documented. Substantial coordinating activities are to be carried out by the planning division or department managers at the time of annual planning.

Coordination in objective oriented management is different from a system of central plan-order-control-report. Interactive processes of objective distribution and self-planning are necessary between the upper and lower organs. The planning division and upper organs have to allocate broken down objectives to assure the achievement of the corporation and to attain efficient achievement, considering optimal human and financial resource allocation in cooperation with the human resource development department and the financial department. Self-planning does not mean setting easy objectives. Divisions or lower organs should formulate implementation plans to assure the attainment of the assigned objectives and of allotted profit.

(2) Human Resource Development

Career development program (CDP) is the base for human resource development. CDP can be formulated after assessing present and future requirement of human resource for the corporation and for each department/region and division. For this assessment, classification of employees are to be review and revised and each employees has to be re-evaluated according to the revised classification. After defining CDP of corporation and department/region-divisions, CDP for each employee has to be developed. Training needs can be identified according to the CDP. CDP of the corporation and department/region-divisions and methods and forms for development of individual CDP should be documented and circulated. The document has to be reviewed and revised according to the change in business environment.

On-the-job training (OJT) has to be the main part for human resources development since self-development is the key for human resource development, especially for employees of higher level. Supports and encouragement by the superiors is necessary to attain effective and efficient OJT, using schemes and formats recommended in the chapter.

Off-JTs offered by the training institute are also important to achieve the CDP since courses suitable for the sector are quite limited outside of ETC. Out of Off-JT management training should be enhanced further. For the management training, Off-JT can only be supplemental to OJT or self-development. Follow-up courses are important to support application of methods learned in Off-JT courses.

Off-JT for specialists of information and communication technology (ICT) and for up-grading technicians to assistant engineers or engineers is inevitable corresponding to changes in business environment. For trainings of ICT specialists, substantial permanent courses have to be prepared. Development of curriculum and teaching materials as well as training of trainers, including participation to foreign training courses, should start immediately. For immediate needs, technical transfer from consultants and contractors during the implementation of projects which involves new technology have to be encouraged as recommended in the feasibility study report.

(3) Strengthening of Regulatory Functions

With expansion of private participation to the sector, roles of the regulator will become more important for the sound development of the sector, while the private sector or companies, in principal, pursue profits. There may increase evading activities of laws and regulations, whether intentional or unintentional. Regulations to avoid technical problems in public switched network as well as to protect customers will become more important. The regulator should fully take the vital roles with enhanced capability for collection and analysis of information.

The role of the regulator has two aspects. The one is to achieve government policy for the sector by regulating the operators and related entities. The other is to draft the sector policy and propose to the Ministry or the government according to socio-economic development policy of the federal government and regional governments. Since the regulator, as a public sector, has and should have the most volume of information of the sector, drafting practical and feasible policy has to be done by the regulator. Strengthening Planning and Research Service will be imperative.

15.3 Recommendation of Financial Matter

It would be no exaggeration to say that ETC profitability has to date been sustained by international telecommunications. However, the proportion of total ETC revenue accounted for by international telecommunications has fallen, from 60% in 1996 to 40% in 2000, suggesting changes in the ETC operating environment. ETC itself is already aware of the reasons for this falling share: a decline in international traffic and a lower international settlement rate.

First of all, Study Team would like to present a review of the ETC revenue structure to date. Although it is impossible to draw any definite conclusions as ETC operating expenses do not tally with the items listed under revenue, it does appear that ETC profitability is not sustained by domestic services alone and that the company has been relying on its income from international telecommunications to cross-subsidize its domestic services. This has allowed ETC to set low domestic charges. The effect of cross-subsidizing is not confined to keeping down charges; in particular it is certain that without cross subsidies, rural development would not be possible.

However, there is no guarantee whatsoever that ETC can continue running its operations with this excessive reliance on international telecommunications. The international settlement rate is likely to drop further, while the introduction of Internet telephony and the consequent shift of international voice traffic to data traffic will also have a major impact on ETC operations.

In light of these developments, what form should any management strategy for ETC take?

ETC is charged with providing a universal service within Ethiopia. A management strategy without cross subsidies is out of the question if the company is to carry out rural development and improve tele-access.

How, then, can these cross subsidies be maintained?

If no further growth can be expected in international telecommunications, which until now have formed the basis of cross subsidies, earnings from mobile-phone and Internet must become the financial foundation for ETC operations, with cross-subsidizing between mobile + Internet and fixed-phone + rural development. This makes mobile subscribers and Internet users key customers for ETC and makes capturing these customers' business a key corporate strategy for ETC. The same applies to the private operators who will be entering the Ethiopian market in the near future once the telecom sector is opened up to them—there will be keen competition for these customers.

What measures then does ETC need to take?

(1) Establishment of Key Subscriber Unit (key customer unit)

Close attention must be paid to the usage trends of key customers, as these have a direct affect on ETC business. As shown by the evaluation results described in the Master Plan, it is no exaggeration to say that the present healthy business situation of ETC is maintained by these customers. It is vital to prevent revenue shrinkage by analyzing the effects on key customers before planning changes to charges or the business model in the future.

ETC must pinpoint its key customers. No strategy can be devised without a defined target. In order to do this, a key subscriber unit needs to be set up as quickly as possible.

The role of this key subscriber unit would encompass the following:

- 1) Retaining potential key subscribers currently on the waiting list (people waiting for telephone installation). This means identifying subscriber attributes and giving priority to processing key subscriber applications for service.
- 2) Providing value-added services to key subscribers
- 3) Analyzing information about key subscribers

This will involve obtaining information about key subscribers, analyzing this information, and working with the marketing section to improve customer service.

Next, ETC needs to start marketing its services to these target key customers at the earliest practical stage. If possible the company should examine options such as giving these customers priority when assigning lines and offering value-added services for those who subscribe early. Providing mobile-phone terminals at low cost is also an effective way to capture these key customers.

(2) Rebalancing of the Tariff

The ETC tariff system is structured such that a monopoly is continued where international calls those are substantially in the black compensate for deficit local services that make up the infrastructure.

One means of improving this situation is to have another look at a tariff system with a balanced cost structure where the tariffs for international calls are lowered and the tariffs for services that are in the red are raised. It should be noted here that the Ethiopian telecommunications sector is still in the development stage.

In Ethiopia where the communications infrastructure is underdeveloped, there is the stance that earnings made in urban areas should be moved around for the development of other areas (internal compensation structure). This structure cannot be changed until the foundations of a communications infrastructure are in place. However, it is necessary to rebalance the tariff system while balancing customer tendencies with the internal compensation structure.

(3) Reevaluation of International Call Tariffs

Regarding advancement of the introduction of VoIP, etc., key customers that often make expensive international calls may use VoIP services. It can therefore be considered likely that the total amount of international call traffic will be dramatically reduced as a result.

It should therefore be heeded that the current situation where key customer traffic is relied upon is an era that is coming to an end. It is difficult to envision the total number of key customers increasing from now which means that the only way is to increase the international traffic is to encourage general subscribers to make international calls. It is therefore necessary to lower the international call tariffs to bring about an environment that makes it easier for general subscribers to make international calls.

(4) Conducting Customer Analysis and Strengthening Marketing.

Customer analysis pertaining to key customers (mainly business users) is also lagging behind.

This is one business activity and includes the implications of market research. Assuming that competition will occur for each type of service, it will be necessary in the future to reconsider the tariff system in line with movements in the market. This will require the installation of key customer units.

(5) Maintaining Cash Flow Analysis for Each Service

In order to maintain appropriate tariff levels, it is necessary to carry out analysis of each type of service, and fundamental data analysis is required in order to review the lowering of tariff levels for International call that are in the black and the raising of tariff levels for local and Interurban calls that are in the red. In the future, ETC will be spun off, and the opportunity to give consideration to a business strategy for when the communications sector is open to competition cannot be missed. Regarding the government, when preparing information relating to this analysis, this is divided into fields where market theory is taken into account, and fields where profitability cannot be achieved merely by taking market theory into account. The latter is either carried out by the government or private sector that provide incentives that support stimulation of the private sector are necessary providing that they advance stimulation of the private sector.

(6) Bad Debtor Analysis

From ETC's viewpoint, procuring revenue is the most important business concern. With an increase in subscribers and increased percentage of general subscribers, it is predicted that the number of bad debtors will also increase. The number of subscribers in 2008/09 will be more than four times the current number. ETC currently achieves a revenue collection rate of 90%, and so its sense of concern for bad debtors may be lower than in other African countries. Revenue collection rates of less than 50% are experienced in Zambia and Uganda, with sometimes only 30% collected in bad years. In order to avoid situations like this in the future, ETC must keep records of bad debtors systematically by category, and investigate the causes.

ETC can resort to disconnecting subscribers, but it is vital that subscribers are made aware that they will be disconnected immediately if they fall behind in payments. In other words, they must be made aware of their moral obligations. Publicity campaigns at an early stage are an important and effective way of achieving this. Likewise efforts should be actively directed toward publicity campaigns aimed at spreading the use of pre-paid mobile-phones and automatic bank transfers for payment by key customers.

(7) Rural Funds

In Chapter 8: Sector Business Strategy, it was suggested that rural funds be established. ETC staff themselves recognize that the profitability of rural development is poor and that development is progressing only slowly. In the Master Plan, PCOs are suggested as a strategic means of tackling the problem of rural development. As mentioned in Chapter 14, the Master Plan estimates that the level of funding needed to finance the rural development would be in excess of US\$ 386 million. Although this would have the benefit of raising tele-access to 87%, the amount of money involved is certainly not small. For this reason, the Master Plan proposes setting up rural funds on the basis that users who enjoy the benefits of the telecommunications service are beneficiaries who should support some of this rural development.

Table 15.3-1 shows the amount expected to be raised each year through rural funds and the total amount needed for rural development. As the calculations show, only 26% of the total needed is covered by the rural funds. This clearly shows that the support for rural development provided by rural funds is far from insignificant.

Table 15.3-1 Rural Funds

FY	Rural Funds	Rural Investment	C.Ratio
2003/04	1,626	18,238	9%
2004/05	2,800	18,238	15%
2005/06	3,924	18,238	22%
2006/07	4,442	22,376	20%
2007/08	4,807	22,376	21%
2008/09	5,417	22,376	24%
2009/10	6,026	22,376	27%
2010/11	6,105	22,376	27%
2011/12	6,758	21,974	31%
2012/13	7,397	21,974	34%
2013/14	8,041	21,974	37%
2014/15	8,691	21,974	40%
2015/16	9,303	21,974	42%
2016/17	9,915	21,974	45%
2017/18	9,907	21,974	45%
2018/19	10,482	21,974	48%
2019/20	11,085	21,974	50%
2020/21	11,691	21,974	53%
	128,419	386,334	33%

(8) Dividends Policy

Until 2001/02, ETC did not pay a dividend to its shareholder, the Ethiopian government. This situation, which has continued based on a tacit understanding between the parties involved, means that not once has a dividend been paid. However, in 2002/03, when the final decision was made to go ahead with an equity partnership, the government demanded that ETC pay it a dividend. The payment of a dividend to its shareholders is one of the duties and responsibilities of a corporation. Accordingly, there are no problems with the payment of the dividend itself. ETC is still in the black, and the financial indicators show its management is sound. So where does the problem lie? It lies with the makeup of the dividend. The government is demanding that ETC pay a dividend equivalent to 100% of net profit.

Talk of siphoning off a dividend equivalent to 100% of net profit is reckless.

A trial calculation made using the Master Plan financial statements indicated that the implementation of the Master Plan would be impossible if a 100% dividend were paid. If the proposed project were implemented, the result could hardly be worse, in that there would be a funds shortfall would occur as soon as repayments of the long-term loans commence. As the results of the Master Plan evaluation indicate, rural development is a liability exerting pressure on the management of ETC. Any more pressure on ETC would be enough to bankrupt its entire business.

If its intention is to continue the sustainable development of the Ethiopian telecommunications sector, the Ethiopian government must refrain from pushing ahead with the plan to collect an annual dividend equivalent to 100% of ETC's net profit.

15.4 Recommendations on Environment of Telecom Sector

(1) Strategic Equity Partnership

In the first half of 2003, a strategic partner will be chosen to become ETC's (Ethiopia Telecommunication Corporation) equity partner and engage in management contract of ETC.

Critics in various circles who point to the need for privatization have highlighted the poor management efficiency within ETC as just one of the negative aspects common to all state-owned companies. As well as bringing in private capital, the introduction of the Strategic Equity Partnership will also herald a change in the way ETC is managed as the first step on the road to the full privatization of the telecommunications sector.

In the Master Plan, Study Team consider a Business Plan on the basis of participation by a strategic partner in 2003. Study Team present a new business model in which the goal for 2005/06 is the transfer of modern management techniques and know-how based on the experience of the strategic partner leading to the reform of ETC into an efficient, customer-oriented business entity.

Central to the new business model is the introduction of a divisional structure for the various services within ETC. Each division will have its own budget and be responsible for managing its own projects and providing its customers with the appropriate levels of service. Once the divisional system for the various services has been put in place, it is vital that the profitability of the structure is once again confirmed by implementing a range of independent financial indicators. Each division will have the responsibility of setting its own connection fees, and while at first this will take the form of cost settlement between different divisions of the same company, Study Team have proposed that this process be undertaken as though each division were dealing with a separate company. The Study Team believes that such a trial will help prepare ETC to cope in the event that the telecommunications sector is fully privatized.

In addition, introducing a performance-based salary and reward system along with the divisional system should encourage competition between the divisions and awaken the dormant sense of competition among the staff.

However, the existence of cross-subsidies must not be overlooked. For example, the same performance standards must not be applied to employees implementing less profitable projects, such as rural development projects, and employees in the profitable mobile-phone division, for example. The Study Team advised ETC to set different targets for each division and assessing performance based on the degree to which these targets have been achieved.

(2) Monopolistic Environment Created by ETC

The Ethiopian telecommunications sector currently operates as a monopoly in which ETC provides all the services (fixed-phone service, mobile-phone service, Internet service, public data service).

In 2002, the ETA (Ethiopia Telecommunications Agency) granted ETC a 15-year Telecom

Operator license. However, as the ETA's ultimate aim is to introduce market principles by having a number of actors coexisting in the telecommunications sector, this should not be interpreted as an approval of the indefinite existence of monopoly.

At the same time, Study Team believe that in order for the EPA (Ethiopia Privatization Agency) to enlist and attract the aid of a suitable strategic partner for ETC, it must guarantee that the existing monopoly will continue for a considerable period of time.

In the Master Plan, Study Team have set the period in which ETC retains a monopoly at until 2007/08 (5 years from now), after which Study Team envisage a number of operators entering the mobile-phone service and ISP (Internet Service Provider) sectors, thereby creating a competitive environment. On the basis of examples of other African nations, Study Team have assumed that a second operator will not enter the fixed-phone service sector even after 2008/09. This is shown in Business Model 2 (Scenario 2).

(3) Heavy & Unrealistic Roll-out Targets

When the ETA licensed ETC as a telecommunications operator, roll-out targets were set. Operators who are granted a license automatically assume the responsibility of achieving these roll-out targets. Considerable penalties are levied on operators who fail to achieve the set targets.

This master plan indicates that some targets will be achievable, but others will not. For example, the master plan's analysis shows that a roll-out target of 22,000 lines set for PCO by February 2001 is not likely to be achieved. Moreover, construction capacity 420,000 l.u. of switching equipment is too huge considering the current 580,000 l.u. with 260,000 idle capacity. Although high targets can be set, failure to achieve them undermines their binding power, and also reduces the morale of the staff members involved.

The ETA should review the roll-out targets, based on the results of the Master Plan.

(4) Lack of a Clear Division of Responsibilities Between the Public and Private Sectors

Even after the introduction of strategic equity partner, which allowed the private sector to hold shares, ETC will maintain its monopoly and thus continue to assume the role of a public corporation. Even if the Ethiopian government's intent is on pursuing a policy of maintaining a monopoly in the telecommunications sector for the time being, two scenarios are prepared in the master plan.

The master plan recommends that from 2008/09 onward private operators should assume the leadership in providing such telecommunications services as mobile-phones and ISP that are expected to be profitable and can attract investors. The plan also suggests that ETC as a public corporation should take the initiative in providing rural development and fixed-phone services, which are not expected to be profitable. In principle, only a market expected to be profitable provide a place where private investors can play an active role.

As shown in Business Model (Scenario 2), from 2008/09 onward ETC-HQ (as a public corporation) will provide the following five services: fixed-phone service, international call service, rural development, national backbone service, and leased circuit service.

Possessing the national backbone and international gateway, ETC has the potential to create a new business model in which interconnection charges form the main source of its revenue, conduct business operations as a public corporation, and maintain national security.

(5) Existence of a Digital Divide in Ethiopia (inadequate rural development projects)

Development in rural areas of Ethiopia is showing signs of progressing slowly. The development of rural Ethiopia, which is home to 85% of the population, is one of the major themes of the National Plan. Population gravitation towards the cities, and the development of regional centers progressing at a rapid pace are also a sources of concern. In particular, as of 2002/03 there is an upsurge in investment in Mekele, Bahir Dar, and Nazareth. In order to provide lateral support for this development trend, the Master Plan includes a plan for the penetration of mobile-phones into 13 regional cities.

As of 2002, those citizens who are able to enjoy the benefits of the telecommunications service are in a minority of less than 5% of the total population. Moreover, this service is limited to urban and surrounding areas. If one accepts that the telecommunications service is a public utility, then it stands to reason that the entire population should be able to enjoy its benefits.

In the Master Plan, “tele-access” is used as an indicator to help solve this problem. It is also suggested that, as a public utility, one of the roles of the telecommunications service is to provide every citizen with access to a telephone. Users in rural areas may use a telephone only once a month or several times a year, but this still represents a demand.

In order to meet this demand, the Master Plan proposes establishing public call offices (PCO) in some 5,000 locations around the country. If this plan is implemented, tele-access should increase to 87% by 2020/21.

The priority projects included in the feasibility study are designed to incorporate the rural sector. They also serve a purpose as pilot rural projects and technology transfer.

(6) Interconnectivity Between New and Existing Telecom Operators

The Master Plan employs a scenario in which the monopolistic environment currently enjoyed by ETC continues until 2007/08, after which a number of private operators become involved in the mobile-phone and ISP sectors. One of the problems that will arise as a result of the entrance of these private operators is that of interconnectivity between the different carriers.

In the case of a private operator applying for interconnectivity to the ETA, it will be the responsibility of the ETA to ensure that ETC complies. ETC must not adopt a conservative approach and attempt to protect its market share by foolishly refusing to grant interconnectivity.

One unfortunate example is that of Bangladesh, where problems with interconnectivity between the state-owned and private carriers has led to dual investment, with each carrier building its own separate network. In spite of the fact that the networks overlap, as of 2002 it is still impossible to connect between the mobile-phone (GrameenPhone) and fixed-line telephone systems.

Interconnectivity between carriers that are essentially different leads to an increase in traffic, which in turn leads to an increase in revenue. Traffic is indeed money, which is one reason why monopolistic business entities tend to ignore this problem. Interconnectivity is a problem in other developing countries, the most striking example being that of Bangladesh mentioned above. There, a number of different networks have been established, but without any interconnectivity between fixed-phone and mobile-phone services. Such a phenomenon is common in developed countries, but in developing countries it leads to investment inefficiency by wasting valuable investment resources. The Ethiopian telecommunications sector must not follow this path.

As shown in numerous examples overseas, interconnectivity is good news for private businesses as it leads to increased traffic. For this reason, ETC must not commit the blunder of refusing to allow interconnectivity. Although this is a potential problem of the future, under no circumstances must it be entertained.

The Master Plan envisages the establishment of some 1 million mobile-phone connections, with private operators accounting for around half of these, or 500,000. A situation in which these 500,000 mobile-phone users were unable to interconnect with the 1.1 million fixed-phones and 500,000 mobile-phones provided by the ETC Group would be a source of continual inconvenience for these users.

In addition, any lack of interconnectivity between ETC, which operates the majority of telecommunication services in Addis Ababa and around the country, and private operators would only lead to an extension of the digital divide between urban and rural Ethiopia. It would not be an overstatement to say that such a move would hinder the development of the rural sector, which is one of the aims of the Ethiopian government.

In the event that ETC fails to establish interconnectivity, the government must immediately exercise administrative guidance, and if ETC fails to comply, it should revoke its license. Such a move should be the responsibility of the ETA.

The Master Plan has been prepared on the premise that interconnectivity has been successfully implemented.

(7) Legalization of VoIP

The legalization of VoIP is the subject of debate not only in developed countries, but also in developing countries as well. Japan and Malaysia were both quick to legalize VoIP, while among neighboring countries, Uganda has legalized VoIP.

Addis Ababa is full of unlicensed business centers offering Internet telephony at bargain basement

prices. The going rate for calls between Ethiopia and the U.S. is 5 birrs per minute. The line quality is poor, but considering the price difference compared to international calls provided by ETC, it is not surprising that many Ethiopians chose Internet telephony for their international calls. The same situation applies in most developing countries. It must be accepted that as soon as the ICT revolution occurs, practices and standards that were previously taken for granted in the telecommunications sector will change.

Along with the growth in use of the Internet comes growth in the use of VoIP. One must not harbor the illusion that it is possible to restrict this growth to the Internet alone and this is impossible. Such a function is already included in Windows XP.

In Ethiopia, too, the debate over the legalization of VoIP has already begun. However, taking into account the fact that private ISPs have already entered the market as well as the rapid rate at which technological advances are occurring, and judging from similar examples in developed countries, it is considered that the legalization of VoIP is not far away. Accordingly, the Master Plan has been prepared on the premise that VoIP will be legal in 2010.

(8) Presence of Private ISPs

One of the shortcuts to encouraging the expansion of the Internet service is to introduce private ISPs at an early stage of the development process. At present there is sufficient capacity on dedicated lines, so there is no problem in renting these lines to private ISPs.

The initial investment involved in setting up an ISP is not that great. A private ISP can be set up relatively easily simply by providing a PC server and other equipment. Accordingly, the ISP sector is ideal for local industries making use of local capital, and the emergence of multiple ISPs will have the effect of contributing to the stimulation of the Ethiopian economy.

In addition, these private ISPs need not be located in the capital Addis Ababa, but can be set up in various provincial cities. In the future, it would be advantageous to have an ISP established in each of the provincial cities. In Bangladesh, which has a population of more than 100 million, more than 110 ISPs were originally set up, with around 60 of these still operating. In around 2010, it is possible that Ethiopia will have some 20 ISPs. The Master Plan has been prepared on the premise that several ISPs will be in operation after 2010.

(9) Segregation of Telecommunications and ICT Sectors

Until the end of the 20th century, ICT existed as a sector within the telecommunications industry. However, the rapid expansion of the Internet and other developments in the 21st century have bolstered ICT-related infrastructures to the point where telecommunications now exists as a sector within the ICT industry. In Ethiopia, because ETC provides both telecommunications and Internet services as part of an integrated service, awareness of this shift is low. However, the sectors are controlled by different government bodies, with telecommunications controlled by the Ministry of Infrastructure, and ICT controlled by the Science and Technology Commission. In addition,

because each has its own regulatory authority, the area of licensing is a potential source of problems. In other words, private telecommunications operators using VoIP, who are expected to be operating in the market post-2010, may potentially face the problem of having to choose which regulatory authority to approach to obtain their operating license.

This means that even if the monopoly in the telecommunications sector continues or if the number of telecommunications operators is restricted, it will be impossible to prevent the entry into the ICT sector of private telecommunications operators using VoIP. Government agencies must be aware that such problems exist and take adequate account of them when carrying out deregulation or law changes in the telecommunications sector in the future.

The definitions of telecommunications and ICT are expected to be of considerable importance in any law changes resulting from the enactment of the ICT law, in the regulation of private operators, and in the deregulation of the telecommunications sector. For this reason, the terms must be clearly defined by the relevant organizations.

In the Master Plan, ICT is regarded as encompassing both information technology and telecommunications technology. More specifically, the definition of ICT incorporates telephony (the public telephone network), the Internet, satellite communications, optical communications, broadcasting, and postal services, along with storage media such as CD-ROMs and DVDs, and various applications.

(10) Use of ODA Funding

Whether or not ETC qualifies for ODA funding depends on the policies of the individual contributing countries. There would be no problem in the case of a 100% state-owned company, but it is planned to inject 30% of private capital into ETC from 2003. The majority of the capital structure will still be held by the Ethiopian government as before, and responsibility for rural development will also lie with ETC. This is at least how the situation was explained in newspaper reports in August 2002.

As examined in the Master Plan, new investment required to achieve the rollout target has poor profitability, with the exception of the mobile-phone business, and some of the benefits that should be generated by the existing network are being diverted into new investment projects. In particular, there will be insufficient investment funding in the first three years of the Master Plan, forming a high percentage of long-term loans.

The Ethiopian government does not have any plans to use additional investment in the telecommunications sector. It is basically operating the sector with private resources, but the projects proposed in the Master Plan include many with low profitability. This is because improving tele-access is ranked as an important goal in the Master Plan.

At present, it is not clear what kind of strategic partner will participate in ETC operations, but will it be possible to procure large loans for low-profitability rural projects without guarantees from the

Ethiopian government?

If the use of ODA funding is possible for this portion with support from the Ethiopian government, the feasibility of achieving the Master Plan targets increases. It is predicted that approx. 2 million subscribers will be achieved by 2020/21, generating a cash flow of US\$ 373 million, as shown in the evaluation results. In conclusion, it is shown that if ETC is willing to carry out rural development and is working towards achieving the rollout target, ODA funding used for ETC will be benefiting the Ethiopian population.

The study team comes to the conclusion that using ODA funding for ETC is appropriate from the standpoint of achieving the Master Plan.