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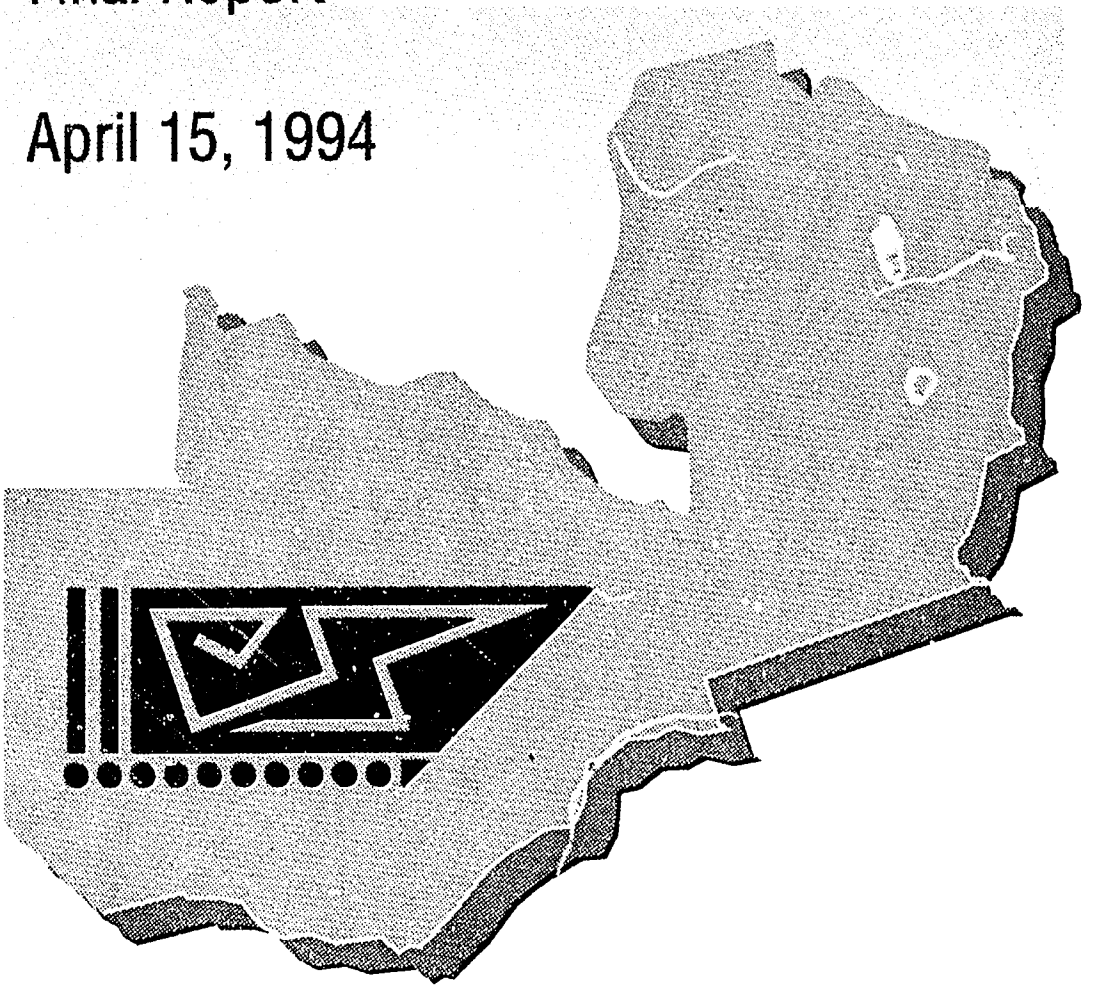
Developing a Telecommunications Sector Policy for the Government of the Republic of Zambia

Final Report

April 15, 1994



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Dear Don,

We are pleased to present a copy of our final report entitled "Developing a Telecommunications Sector Policy for the Government of the Republic of Zambia". The report analyzes current sector structure and draft legislation, and presents guidelines and recommendations for the restructuring of the Posts and Telecommunications Corporation.

We have enjoyed working with USAID/Zimbabwe, the Ministry of Communications and Transport, and the Posts and Telecommunications Corporation and hope to provide additional assistance in the future.

Sincerely,

Jim Waddell
Executive Director
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Executive Summary

I. Introduction

The central objective of this study is to develop a telecommunications sector policy for the Government of the Republic of Zambia (GRZ). A good deal of work has been done by GRZ in defining policy needs and drafting preliminary legislation. Similarly, policy decisions made within the past year have yet to be formalized into the legislative framework and fully implemented in their own rights and should be reviewed in light of an overall sector policy. The two major policy decisions taken during the past year call for restructuring the Zambia Posts and Telecommunications Corporation (PTC) into separate operating entities and the liberalization of customer premises equipment (CPE).

The study included several tasks addressed in this report, including:

- Review of Current Sector Performance and Stakeholder Needs;
- Formulation of Sector Policy/Draft Laws;
- Development of Guidelines for Separation of the Postal and Telecommunications Entities;
- Identification of Next Steps for Sector Development.

II. Review of Current Sector Performance and Stakeholder Needs

The government is the dominant force in the telecommunications sector, as represented by its parastatal PTC, the network operator, and PTC's parent ministry, the Ministry of Communications and Transport (MCT). Other important organizations within the sector include the National Union of Communications Workers and various equipment providers, most notably Horizon, Telecare, Philips, Needs, and Motorola.

Because PTC is the only operator in Zambia, our evaluation of sector performance is equivalent to an evaluation of PTC's performance, relative to both international standards and the needs of the community served by PTC. This section concentrates first on PTC's performance and then discusses needs expressed by various sector stakeholders during a series of interviews held during August 1993.

A. PTC Performance

Our analysis centered on four major areas of PTC operations; physical performance, traffic, financial performance, and tariffs. Because of the interrelationships between these areas, poor performance in any of the areas weakens performance in the others.

The physical network is inadequate to meet the needs of the nation. Insufficient external plant and maintenance of the exchange network has resulted in a telephone density of 0.88 lines per 100 inhabitants and only 54% of total expressed demand being met. Demand for non-basic services such as digital access and mobile services has not been addressed by PTC, leading to development of extensive private networks. Internal fault and fault clearing rates are well below PTC targets, and only 30% of all calls are completed (PTC's target is 50%). The public telephone system has been incapacitated by the loss of coins in circulation due to devaluation of the kwacha (K). The single performance indicator showing improvement is dial tone delay. In 1992, dial tone availability within three seconds was 94%.

International traffic is by far the most important part of the sector, accounting for 76% of total telecommunications revenue. International traffic is highly concentrated, with the top five non-SADC trading partners accounting for nearly 60% of all minutes and SADC accounting for approximately another 20%. The international traffic imbalance has historically been negative, with outgoing minutes exceeding incoming minutes, resulting in a net outpayment of foreign currency in the settlements process. This imbalance has been decreasing since 1990, and net traffic inflows are expected with most major trading partners soon. In the national segment, the number of metered units has grown consistently over the past four years; a recent study funded by the Japanese International Cooperation Agency (JICA) anticipates further growth over the next decade. Telex and Telegraph service, accounting for approximately 8% of total telecommunications revenue, are even more dominated by international traffic (98% of total traffic), but total levels have been declining since 1990.

PTC's financial performance is poor, as reflected in its recent financial statements. The telecommunications division experienced a loss of K8.6 billion in fiscal year 1993, after taxes and exchange losses. This figure compares very unfavorably to the small profits that were made in 1990 and 1991 and a loss of about K650 in 1992. Further, the telecommunications division's liabilities exceeded its assets for the first time during 1993. Liabilities were 15 percent greater than assets at the end of that year. These conditions would force bankruptcy on non-governmental corporations and has left PTC unable to fund needed investments.

The disastrous financial condition of PTC stems from at least three factors. First, PTC borrowed heavily in hard currencies and its debt service in requirements in kwacha have exploded as the exchange rate has deteriorated. Second, PTC's tariff has been adjusted far too slowly to compensate for exchange losses and increases in other costs. Third, PTC's revenue collection record is poor -- the telecommunications division has the equivalent of approximately seven months' billing in its accounts receivable. These factors have combined to produce a return on assets of -18.9 percent in 1993, reflecting a general misuse of PTC resources.

Poor financial performance is related to an inefficient tariff structure. The national tariff currently stands at 13 kwacha per unit, with one unit representing three minutes of local calling and as little as 6 seconds for the longest distance calls. The average international tariff is US $4.20 per minute. The drastic difference between these rates reflects a massive subsidy from international to national service. For example, a three minute call from Lusaka to Livingstone costs approximately 360 kwacha, while a three minute call just over the border to Victoria Falls, Zimbabwe costs US $8.40 or nearly 10 times the cost of the national call. PTC has submitted a proposal to increase the national tariff to 34 kwacha per unit, which appears to be too low to permit PTC to service its debt adequately.

B. Stakeholder Priorities

To obtain a clear perspective on sector performance, various stakeholders were interviewed, including government agencies, PTC suppliers, equipment providers, potential investors, users, and the labor unions. The purpose of interviewing stakeholders was to collect their views on critical issues and to identify priorities for the sector.

The most important issues to stakeholders were service related. Specifically, users who do not currently have service (many in non-urban areas) want service; users who do have service want better service or new services. PTC's weak financial position was attributed to insufficient tariffs, poor collections, fraud, and exchange losses, and was identified as the cause of many system problems, including inadequate salaries for PTC staff and insufficient network investment. Poor maintenance of existing network infrastructure and installation-related problems like vandalism and theft were also frequent complaints.

In general, stakeholders favor PTC restructuring and privatization, although there are substantial union concerns regarding these issues. Strong reservations were expressed, particularly among potential investors, over establishment of a regulatory function within the MCT or a single person regulatory structure. There was general consensus regarding the benefits of a cellular network, although opinions on the adequacy of demand for data services

were mixed. Further, cellular license applicants expressed concern over the lack of response to preliminary license applications submitted in May.

Liberalization of the CPE market was generally applauded, although there was some confusion about the current status of this segment and encouragement for a type approval process to protect the network and consumers. The absence of any local manufacturing or assembly operations was explained based on economic policy conditions.

III. Policy and Draft Laws

In response to the problems in the performance of the sector, several changes have been contemplated by the government. Proposed sector changes are embodied primarily in the following four draft laws and, to a lesser extent, in the draft policy document:

- Draft Communications Administration Act
- Draft Telecommunications Act
- Draft Radio Communications Act
- Draft Postal Services Act

These drafts were submitted to Cabinet and sent back to the MCT for further refinement. An additional law, the draft Radio Interception Act, is currently being prepared.

There are several troublesome aspects of the process employed in drafting these documents. First, the policy statement was drafted after the draft laws and has never been circulated outside of the MCT. This is an unproductive process, since the laws are intended to create an enabling environment for the policy and should therefore be developed after the policy is formally accepted. A second issue pertains to the review process the laws were subjected to prior to being sent to Cabinet. Since the policy and laws ultimately enacted have a broad impact on sector participants, input from a broad audience should be collected and incorporated into the draft policy. We recommend a sequential process, whereby the sector policy statement is drafted, commented on, and ratified before legislation is enacted.

Finally, the lack of discussion of the MCT's proposed sector policy has resulted in potential duplication of efforts. Zambia Industrial and Mining Company (ZIMCO), with World Bank support, is working to establish a utilities oversight commission, whose responsibility would overlap with the functions of the Controller proposed by MCT draft legislation. We do not recommend inclusion of telecommunications in a generic utilities regulation commission, as telecommunications regulators need to understand highly technical issues and the implications of rapidly developing sector changes.

The new policy should be based on a combination of conventional wisdom reflected in international trends in telecommunications, national Zambian policy guidelines, and MCT priorities. International trends in telecommunications tend toward sector liberalization characterized by introduction of competition and privatization of the national carrier. Most privatizations include sale of a substantial holding to a foreign investor, who assumes responsibility for company operations. Zambian national policy includes strong support for commercialization, introduction of competition, and subsequent privatization of the parastatal sector. Additionally, national policy calls for elimination of any government subsidies supporting operations and imposes a dividend requirement on state-owned enterprises equal to ten percent of shareholders' equity.

A. Sector Objectives and Structure

In order for the country's economy to function properly, there needs to be adequate telecommunications service. The central objective for this sector is to ensure that there is sufficient infrastructure to meet the needs of the nation. The proposed sector structure is intended to best satisfy that objective.

1. Regulatory Entity (Controller)

The GRZ will establish an entity to regulate the sector, which will be imposed in the telecommunications law. The regulatory entity will be presided over by a Controller who will be appointed for a fixed term by the President. The term is likely to be 5-7 years and renewable. To ensure independence from the political process, the Controller would not be able to be removed from office except on the grounds of mental or physical incapacity or death. An advisory council will be formed to provide input into the regulatory process. This council will be appointed by the MCT and will include six members; three will represent specified stakeholder groups (e.g., unions, customers, and the GRZ), and three others as seen fit by the MCT. Additionally, there will be 4-5 professionals, assisted by administrative support staff to support the Controller's activities. Use of outside consultants would be required to assist and train staff, at least in the early years, since there is at present insufficient expertise in Zambia in these matters.

The functions and responsibilities will be broadly set out in the Telecommunications Law, and the Controller will have the right to establish specific operating procedures. The Controller will be empowered to require operating companies to furnish financial and operational information as required and on reasonable notice to ensure proper monitoring of the sector. Where exclusive concessions are granted the Controller will establish the price setting mechanism and be required to review all tariffs before implementation and, if

necessary, withhold approval for non-compliance with recommended authorization request procedures. The Controller will be required to publish regular reports of findings, decisions, licenses issued and finances.

Finally, the regulatory entity is intended to be self-funding, through license and royalty fees. The entity will have an annual budget, to be approved by the MCT and the entity's financial management will be subject to audit by the Government Auditor. Surpluses of income over expenditure would be remitted to GRZ.

2. Basic Services Company

A Concession would be granted to a company employing the telecommunications assets and staff of the PTC but with incentives to develop and modernize the national and international transmission and telephone switching network. The concession of at least 25 years would establish service objectives and the price setting mechanism. An initial period of exclusivity would be established, calculated to allow time for sufficient development of the national telecommunications infra-structure. Once the development objectives have been met and prices re-balanced, the Controller will determine the manner in which competition could be applied to ensure further efficiencies.

In the absence of competition, a regulatory rate-setting process will be established to ensure equitable prices to consumers while allowing for revenue sufficiency for the operator. A Price Cap regime, modified to address currency devaluation, is recommended as it provides incentives for the operator to improve cost efficiency, provides adequate funding for network expansion and minimizes the costs of regulation. This mechanism will allow the company to gradually reduce the extent of cross subsidy between international and national calls in a accordance with the formula.

The Basic Service provider will initially be entirely owned by the GRZ, with privatization anticipated within the next three years. As part of the privatization process, an exact breakdown of shareholdings will be defined (i.e., portions to be reserved for GRZ, a strategic investor, employees, and public flotation on the Stock Exchange). In addition to holding some portion of the shares of PTC as an investment, the GRZ is likely to use a Golden Share mechanism to retain some control over the company. This will enable the GRZ to retain control by virtue of its ability to veto, at will, certain actions such as change in type of business conducted, payment of dividends, increase in capital, increase in borrowing beyond certain limits, liquidation of any or all of the assets of the company, or sale of strategic investor holdings.

3. Other Service Providers

The Controller will decide on policies -- including how and when competition will be introduced, licensing procedures, and technical and service standards -- for the development of mobile and value added services, including cellular, paging, private mobile radio networks and trunked radio. Wherever feasible, the Controller will try to license multiple operators for each of these services.

General international experience has shown that licensing two or more operators of paging, trunked radio and private mobile radio systems is feasible as long as frequencies are available in the appropriate bands. If there is much demand, a competitive tendering process can be used. Cellular service tends to be phased in, with initially one, and then at a later date a second, cellular license granted under competitive bidding procedures and against payment of an initial license fee. Value added services such as Packet Switched Data, Information Services, Voice mail and electronic mail, and transaction services are generally open to free competition, simply requiring registration and possible notification of tariffs for the record.

No re-sale of leased lines nor switched voice, will be allowed initially. Interconnection of private networks in such a way that by-passes the public network except for internal communications (within the same company or its subsidiaries, parent or associate companies) will be prohibited both nationally and internationally. Over time, the Controller may decide to authorize this by-pass to initiate competition. All fixed point to point links in private networks, cellular networks and others requiring basic transmission infra-structure will be leased from the PTC or its successor for as long as the exclusivity, granted under its concession, lasts.

B. Policy and Legal Framework

1. Policy Statement

We propose that the GRZ adopt a general statement of policy for the telecommunications sector. More specific regulations and structures can be developed by the regulator and the ministry. At present, principles for guiding the sector should be adopted. We suggest the following:

Growth and Development
Telecommunications is of critical importance in the economic development of a country because it is an important facilitator for the development of efficient enterprise and

employment. Without adequate telecommunications, production enterprises are less efficient and most service enterprises are nearly impossible to operate.

Public Sector Resources
The Government does not wish to continue to allocate government resources to support the Telecommunications sector. The expansion of basic telephone service and its network infrastructure to meet the needs of the population is costly and, in general, beyond the means and ability of government to develop, finance and operate on the scale required. This is witnessed by poor performance to date and the severe financial difficulties in which PTC currently finds itself.

Subsidy with Public Funds
The Government's policy is that it will no longer subsidize government owned enterprises. The massive investment required to implement telecommunications services the nation needs would further increase the Public Sector Borrowing Requirement under a scenario where donors have recommended limits on such increases.

Universal Access
The Government wishes its citizens, including those in rural areas, to have Universal access to service. It is important that all the population have access to basic telephone service whether through public telephone service or service to the home. It is also important that users have the kind of services at fair prices, that they need, when and where they need them.

Response to Market Needs
The Government wishes to make available services that the market needs. The PTC has not ventured into mobile or value added services. Major businesses do not have access to sufficient lines of the right quality to operate efficiently. Rural agriculture and business does not have access to adequate telephone service.

Role of Private Sector
Government policy is to look to the private sector for both financial, technical and managerial resources to create and operate the kind of telecommunications sector the country requires.

Regulation
There is a need to create a framework within which private sector telecommunications services can operate with established rules and procedures. To ensure a fair deal to themselves and their customers, the Government will create a Regulatory Entity.

2. Telecommunications Laws

In order to facilitate implementation of the principles established in the Policy Statement and to begin the process of transferring telecommunications from the Public to the Private Sector it will be necessary to put in place a suitable legal framework by drawing up a new Telecommunications Law.

The most important issues to be covered by the Law will include the following:

- Reflect the revised policy statement;
- Legally facilitate the formation, operation and definition of the role and composition of the Regulatory Entity (Controller), generally outline its responsibilities to customers, operators and Government, and be transparent and publicly accountable for its actions through the Zambian court system;
- Authorize the Regulatory Entity to issue licenses, permits and concessions, monitor and enforce compliance with the terms of licenses permits and concessions, implement tariff setting, approval and notification procedures;
- Legally establish that a Concession can be granted to a privatized telecommunications company to provide services hitherto provided by government. Establish that a stake in the company can be sold to a foreign strategic investor by a transparent public tendering process;
- Provide for competition in the sector and allow for the granting of monopolies for limited periods to ensure proper development of the network;
- Establish the right of the state to intervene in the sector in a time of war or national emergency;
- Establish that communications are private and that there are penalties for unauthorized disclosure of content of communications;
- Establish that fraudulent use of service is a criminal offense;
- Prohibit unauthorized tapping and monitoring of public telecommunications services;

- Establish the right of the private operator of basic service to open up public highways to construct external plant both above and under ground without hinderance or charge provided he restores roadway and sidewalk to its original condition. This includes the right to construct cable chambers and manholes below the roadway and sidewalk;

- Establish an independent regulatory authority in the postal sector, institutionally separate from the telecommunications sector Regulatory Entity (Controller), to avoid conflicts of interest with the Postal Services Corporation;

- Establish MCT's right to manage the national frequency spectrum and to maintain the national frequency register, allocate frequencies, monitor for approved transmission characteristic compliance, and resolve interference issues.

C. Issues Framework

1. Roles of Sector Participants

a. *Public Sector*

The public sector will maintain responsibility for policy making and enforcement in relation to all telecommunications service providers and value added service providers through the Controller.

The GRZ may retain holdings in the privatized telecommunications carrier. To provide for maximum sector efficiency with minimal potential for conflicts of interest, the law should call for separation of policy making, policy enforcement, and operations as follows:

- PTC, or its succeeding telecommunications company, the Basic Services company, will be an operating entity;
- The Controller will be responsible for execution and enforcement of sector policy;
- The MCT will coordinate the GRZ's input to the Controller's policy making functions;
- The Ministry of Finance will hold the GRZ's share holding in the Basic Services Company.

In keeping with widely accepted policy guidelines and to enhance the confidence of potential investors in the integrity of the sector, these four entities will be completely independent of each other.

b. *Private Sector Participation*

Infrastructure development and overall performance will both be enhanced by inclusion of private sector to the greatest extent possible. Private sector operators will be licensed in all areas of the sector with the sole exception of provision of basic service in areas where PTC already operates. Specific targets for expansion of private sector participation are cellular and data networks and public telephones.

c. *PTC*

Long term objectives for PTC and its telecommunications successor are sufficient capitalization to access financial markets for funds, viability in a competitive environment, and adequate staffing policies. While these objectives should be incorporated into the mission statement of the new telecommunications entity, achieving these objectives is the responsibility of PTC management and is not a policy issue. The Law and the Concession should create an environment in which PTC management has sufficient autonomy to move toward these objectives.

Another policy issue regarding PTC is privatization. Privatization of the telecommunications provider is clearly part of the sector policy agenda and should be explicitly stated. Because of the incipient stage of this privatization, specific details of the transaction will need to be established in an implementation plan. The final policy statement should encourage such a plan to be formulated as soon as possible.

d. *Consumers*

The Concession granted to the Basic Services provider will identify specific service quality objectives to be achieved by the year 2000, including telephone penetration rate, national grade of service, digitalization rate, fill ratio, waiting list, and waiting period for service initiation. The Controller will have the right to provide incentives or penalties to encourage the operator to meet service objectives as soon as possible. Additionally, consumers' rights, such as universal access, uninterrupted high quality service, dispute resolution procedures, and the right to connect consumer equipment to the network should be specifically outlined.

2. Regulation and Competition

a. *Regulation*

Establishment of a credible regulatory entity is critical to sector development. Objectives for sector regulation include development of all segments of the market, protection of consumers' welfare in a highly concentrated (e.g., monopolistic or duopolistic) environment, and establishing a "level playing field" where all operators function under the same rules.

The regulatory environment will be established and maintained by the Controller. Transparency in the regulatory process is of critical importance to regulation as well as to privatization, since investors tend to avoid the risks inherent in an unpredictable regulatory environment. To maintain transparency and avoid potential for conflicts of interest, the Controller should be designed to be completely independent from the ministry, self-financing, and empowered to write regulations, so long as requirements to notify sector participants are met.

Regulatory functions should include type approval, tariff setting, collection and dissemination of statistical sector information, interfacing with international organizations such as the ITU, and moderating disputes between carriers and customers, licensing alternative carriers, and establishing and enforcing rules for equal access and interconnection.

Development of the regulatory entity and implementation of the regulatory framework is complicated by current activities of ZIMCO related to establishment of a utility oversight commission. This project is still in very early stages and ZIMCO's plans for inclusion of the telecommunications sector in the jurisdiction of this commission are not known. ZIMCO should, however, be included in telecommunications policy formulation so that efforts are not being duplicated.

b. *Competition*

The long-term objective for the sector is to have the greatest amount of competition possible while protecting the integrity of service provision. Limited monopolies will be available to developers of local cable networks for basic service provision. Much of the limited monopoly will be granted to the national telecommunications entity, which will own the bulk of the cable network. Other operators applying for licenses to develop cable networks interconnected to the national network will be granted similar limited monopolies.

Licenses for non-basic services including cellular, data, and radio paging will be granted on a non-monopoly basis. Accordingly, a minimum of two operators will be licensed for each service, with the exact number of licenses to be determined by the regulatory entity based on anticipated demand, profitability, and affordability of service.

c. *Tariffs*

The Controller will identify which services are subject to price regulation, how tariffs are to be determined and what regulatory mechanism is to be used to govern tariff adjustments. A move towards cost-based tariffs is recommended because of their efficiency in aligning consumer objectives with provider costs. Of all cost-based methodologies available, long-run marginal costs (LRMC) are recommended because this is the only structure which includes in the current tariff planned network expansion.

Tariff adjustment mechanisms should also be addressed in the regulations to be promulgated by the Controller. While specific procedures for tariff changes will be determined by the regulatory entity, the regulatory mechanism is a policy decision. This mechanism will be a price cap, or RPI-X formula, as this mechanism provides incentives for efficient operations.

CPE has been liberalized since January 1, 1993, although customer connection of their own equipment to the network is still prohibited legally. Liberalization was implemented through ministerial decree, and lacks the force of law. This should be established in the new Telecommunications Law through the absence of a prohibition of privately owned equipment. The Law establishing the Controller will require it to issue guidelines for type approval of equipment.

Local assembly of equipment is productive to the economy and should be encouraged through removal of obstacles to local operations. Such obstacles include difficulty of obtaining investment licenses, import duties not distinguishing between assembly kits and finished products, and high sales taxes on local goods. The MCT should work with other relevant ministries to modify this structure. To ensure efficiency of such operations import substitution practices with protective tariffs should not be employed. Only in a few cases will local assembly be effective since most electronics manufacturing is now highly automated and requires a highly skilled professional work force to operate it. All the products likely to be considered are extremely competitive in the world market place.

d. *Spectrum Management*

The radio spectrum is a national resource which should be made available to telecommunications operators according to well established ITU (International Telecommunications Union) guidelines. Accordingly, the law should establish allocation of frequencies as a government function, preferably in the MCT, and should not be performed by any operator within the sector. The frequency management center within PTC should therefore be transferred to the MCT.

3. Network Expansion

a. *Rural Service*

Service to rural areas is a priority of the MCT because of the large population of rural areas (approximately 60% of the overall population) and because of the importance of rural commerce to economic diversification and development. The rural service objective in the first instance is to have public telephone service available at all schools and clinics, since schools and clinics represent population centers. Other objectives will be established in the Concession to be granted to the Basic Services company.

The Controller and the Basic Services Company will study the achievement of rural services and, if necessary, the Controller will be authorized to enter into arrangements that would allow some subsidization of service if it could be shown that the operator was unable to cover the cost of establishing service in these areas. Each of two mechanisms for financial support of rural infrastructure development should be considered as appropriate to different situations. The first mechanism for subsidies is use of private sector funding, whereby private sector license agreements for any service will include some rural service obligation. The second mechanism for rural service development is provision of government grants to fund rural telecommunications projects.

b. *Investment*

The level of telecommunications investment necessary to achieve the service performance objectives set forth in the policy is overwhelming. Investment funds should be directed to plant and equipment for both internal and external plant, public telephone repair and renovation, introduction of new services, repair, regularly scheduled maintenance, spare parts stocks, and staff training.

The Controller should require in license agreements and concessions that operators prepare and submit for regulatory review investment plans, detailing the level of investment, its funding, and how it is to be used. PTC investment should be funded through the tariff and by accessing capital markets.

4. National Security

Preservation of national security is a critical component of telecommunications privatization and should be addressed in both the law and license agreements. The MCT will ensure that sufficient frequency spectrum is available for government national security forces while observing the needs of commercial operators in the normally assigned bands for such services. Un-authorized wire tapping and radio reception will be prohibited by law. Confidentiality of communications carried by all operators will also be assured under law by possible legal sanctions on offenders.

IV. Restructuring Guidelines

The framework for dividing the PTC into two companies, one to handle posts and the other telecommunications, is outlined in Part III of the draft Communications Administration Bill, 1993. It calls for the transfer to a newly created company, to be named the Postal Services Corporation, of all property pertaining to the provision of postal services, including "all ... rights, liabilities and obligations that, immediately before commencement of that Act (i.e., the Postal Services Act), were the property, rights, liabilities and obligations of the company (i.e., PTC)...". In addition, property, rights, liabilities and obligations relating to telecommunications are to be transferred to the Controller, who may sell, lease or otherwise convey them to third parties if authorized by the Telecommunications Act or by the MCT.

The transfers are supposed to be self-executing, that is, all rights and obligations are deemed to have been assigned immediately upon the passage of the Bill, although in some cases the need to record the conveyance in the appropriate registry is contemplated.

In recognition of the need for sector restructuring, the following objectives have been identified for the short term (i.e., the next six months) and the medium term (i.e., the following five years):

<u>Short-Term</u>:

- Restructuring of PTC into separate postal and telecommunications operating entities independent of each other and of current PTC non-operating functions;

- Legislative empowerment and creation of regulatory entity;
- Competition and private sector participation in provision of terminal equipment for connection to the PTC's transmission infra-structure leased lines and the switched telephone network (eg telephones, PBX's, modems, data terminals and computers, multiplexers, bridges, etc).

Medium-Term:

- Commercialization of telecommunications entity and development of privatization plan;
- Implementation of self financing regulatory entity to operate independently of MCT;
- Implementation of guidelines for type approval of equipment;
- Competition within value added, including mobile services, and enhanced services;
- Private participation in all segments of sector.

A. Implementation Issues

The draft policy statement calls for divestiture of non-core operating enterprises, including the Engineering Workshop, the clinics, the Electronic Repair Center, the Billing System, the Frequency Management Center, the Training College, the Vehicle Workshop, PTC Real Estate, and Transport Services, Postbus and Postboats. Additional entities were identified by postal division officials for divestiture. Provisions for ensuring the viability of these enterprises after restructuring or providing the new operating entities with these services have not been made. Such further analysis is imperative, as divestiture of some of these units could be crippling to the basic service operator. For example, the billing system is an integral part of modern telephone operations, as it provides valuable information about customers, revenues, maintenance, etc. The value of the core assets may diminish substantially if the billing function is separated.

Several options have been proposed regarding the non-core enterprises:

- Allocate them to the new telecommunications entity, which is better able to support them than the new postal entity;

- Spin each entity off into its own independent entity to be privatized;

- Create a third entity to be comprised of a collection of profit centers providing these services to the postal and telecommunications entities on a contract basis in the immediate term and privatize or eliminate these functions as their operations stabilize.

A second, related issue pertains to shared facilities and common overhead functions. Shared facilities are those where telecommunications and postal operations share the same premises, such as post offices in rural areas. As part of the restructuring program, these facilities will be allocated to one of the new entities and settlements (i.e., rents) will have to be agreed to. Moreover, some transition period should be identified during which facilities will continue to be shared; after the transition period, either enterprise may be free to terminate the arrangement as determined in the rental agreement. During the transition period, many of the facilities -- those used solely as post offices, for example -- can be assigned immediately to the appropriate division.

Common overheads refer largely to functions currently performed by PTC's Corporate division, such as financial management and reporting, and human resource management. These functions will have to be performed for all of the newly created entities, but the capacity does not exist for them within the divisions. These overhead functions will have to either be duplicated in each entity to be created or the functions will be allocated to one entity and sub-contracted to the other.

Employees should generally be assigned to divisions according to the unit to which they are currently assigned, although some flexibility must be maintained in this regard. Employees recently transferred from one division to another and corporate employees will create potential difficulties. Each division should prepare its staffing plan, with employee input, and any conflicts should be resolved by the MCT.

A fourth area of concern is that no provision is made for implementation of the restructuring. We recommend that a restructuring coordinator, who will assume responsibility for implementation, be named. The coordinator should report to the MCT, have the power to give specific orders to the PTC with respect to matters regarding the separation, and be charged with preparing a detailed plan for the break-up, to be approved by the MCT. Because of the level of detail involved, we would suggest that the Bill not discuss specific aspects of the separation, but rather leave that information to the restructuring plan.

We suggest that assets and liabilities associated with telecommunications be transferred to a newly created corporation and postal assets and liabilities remain with a renamed PTC, rather than vice versa, as currently planned. Because the telecommunications business is likely to be privatized before postal services, the restructuring should produce a non-controversial charter, clean balance sheet, and no hidden liabilities for the telecommunications segment. Given that the liabilities of the telecommunications division far exceeds its assets, it is likely that much -- if not all -- of the liabilities of the division must be retained by GRZ, subject to compliance with the terms of other GRZ debt.

Finally, management of public relations is a critical part of the separation. The Act makes it clear that the rights and benefits of employees are not to be affected by the restructuring, but this has not been communicated to the PTC labor union. Additionally, subscribers will have concerns regarding the continuity of their service. These issues, as well as specific questions to be posed, should be addressed through an information dissemination campaign and interactive forums.

B. Legislative Guidelines

Although the projected split-off of the posts and telecommunications operations of PTC does not appear to create any unusual difficulties, we would suggest the following five steps in order to facilitate the process:

- Describe the transfer with greater detail in the Bill, and identify those PTC divisions that will not be assigned to either of the two operating entities;
- Appoint a restructuring coordinator charged with drafting a restructuring plan to be approved by the MCT and with resolving disputes between the two sectors regarding property and liability allocations. The powers of such coordinator should be set forth in the Bill;
- Identify the debt to be assumed by each sector and to be retained by the government in light of its projected ability to pay and its privatization plans;
- If possible, do not transfer the property relating to postal services from PTC, but change only the company name to make it clear that it no longer provides telecommunications services;
- Unless third-party consents to the proposed assignments can be obtained prior to the enactment of the Bill, modify Sections 7(3) and (4) so that no transfer is effective unless the requisite third party approvals have been received.

C. Financial Guidelines

In large measure, the financial separation of the posts and telecommunications entities was accomplished in 1975, when separate financial accounts were begun. At the time of formal separation of the entities, financial records for the existing divisions will serve as a starting point for each of the new entities. Difficulties will arise in separating additional units (such as the Training College, Engineering Workshops, and other units noted in MCT's draft

Policy Statement) and in separating shared assets and overheads. These difficulties arise because the units do not have separate revenues or budgets and because PTC does not use cost accounting sufficient to state costs by individual units. As a result, new balance sheets should be created, but little underlying information is available for their creation.

Four general steps should be followed to ensure maximum accuracy in developing the opening balances. First, a variety of policy decisions have to be made which will affect opening balance sheet positions. These decisions include the exact assets to be assigned to the new entities, the deployment of staff, the allocation of shared fixed assets and overheads among the entities, and possible GRZ retention of some or all PTC debt.

The second step is to allocate remaining debt, stocks and spares, other assets (e.g., receivables, prepayments, investments) and payables to the relevant enterprises. The primary basis for this allocation should be the asset allocation (e.g., debt should follow the assets it funded) and, where asset-based allocations are not feasible (e.g., investments), the primary entity should keep the asset or liability.

The third step is to allocate cash and liquid assets to the new entities, as they will need some working capital to begin independent operations Cash allocation can be based on assets, employees, or projected working capital requirements, but must be sufficiently flexible to ensure the new entity does not immediately fail. The fourth and final procedure is an asset valuation, in which all assets would be revalued based on their original purchase price, inflation, the age and condition of equipment, and the asset's anticipated remaining useful life.

V. Next Steps for Sector Development

A great deal of work needs to be done to meet these short- and medium-term objectives. Sector restructuring must be done in a way that will aid privatization when implemented, without crippling PTC in the interim. Additionally, while a long-term view is critical to planning a sector that can operate efficiently in a dynamic environment, users' needs are sufficiently important and urgent that short-term capacity expansion and service improvement cannot be delayed.

A. Finalize and Implement Policy Statement and Legislation

The single most urgent step in developing the sector is to implement a sector policy and supporting legislation. Inconsistencies between the legal framework currently in place and sector policies which have been implemented are creating a great deal of confusion for both

consumers and potential investors. Other critical sector activities (such as licensing new operators) rely on the establishment of a clear sector policy and implementation of a consistent legal framework.

The first step is to formulate a policy statement which presents the MCT's view of the sector. This statement should be well circulated to stakeholders, including PTC, MCT, government agencies, union organizations, large users and user groups, service and equipment providers, potential investors, and PTC suppliers. A symposium should be convened to collect and address stakeholder's views regarding the draft policy. After being adjusted to reflect stakeholder views, the policy statement should be sent to Cabinet for approval. Once the policy has been accepted, the legislations should be reviewed to ensure that they are consistent with the policy and that they create the environment envisioned in the policy statement. The legislations should be presented for Cabinet and Parliamentary approval after the policy statement has been ratified.

Implementation of the sector policy will focus largely on establishment of the regulatory entity and authorization of this entity with responsibilities and powers. Development of the entity will include formulation of job descriptions, recruiting and training regulators and staff, and development of an ongoing training program. This will also include writing procedures and developing information systems and other management tools, writing initial regulations, establishing communication links with PTC, and developing information dissemination mechanisms for the public.

B. Formulate and Implement a Comprehensive Restructuring Plan

The second most pressing action to be taken is formulation and implementation of a comprehensive separation plan for PTC. The decision to separate PTC, creating separate government owned operating entities has been taken and this separation is scheduled to become effective April 1, 1994. The posts and telecommunications divisions have maintained separate accounting since 1975, greatly easing the process of separation. Several issues remain outstanding, however, which must be resolved prior to implementing the separation. One such issue is how to deal with non-core enterprises, not typically assigned to either operating division. Another issue is identifying shared facilities and services provided by each operating division to the other and negotiating appropriate settlements for them. Finally, although this separation is supposed to be effective April 1, there is no comprehensive sector restructuring plan, nor has any individual been assigned responsibility for making sure the separation occurs.

In implementing the separation, a restructuring coordinator should be named. The restructuring coordinator must be knowledgeable about each of the sectors but independent from the operations of either one. The coordinator will be responsible for establishing and enforcing action deadlines and coordinating input from critical sector participants. The coordinator will finalize decisions regarding disposition of the non-core enterprises and transfer of government debt. Implementation of the former will require identifying, hiring, and training, leaders for new organizations to be created and coordinating with the Zambia Privatization Agency (ZPA) regarding their eventual privatizations, while the latter will require drafting and approval of appropriate legal documents to transfer debt and removal of the debt from PTC accounts. An additional responsibility for the restructuring coordinator will be to establish an information program (including media notices and seminars) to address union and subscriber concerns.

The restructuring program should not end with the creation of separate entities. After the restructuring (and associated transfer of debt to the government), the telecommunications entity will have a clean balance sheet and a relatively strong financial position. This position must be protected, especially in view of plans to privatize the entity shortly. Two further activities are recommended for improving telecommunications performance: organizational strengthening within PTC and implementation of a more efficient tariff structure.

In order to improve its operational performance, PTC needs to review its structure, policies, procedures, and capital at every level. Such a review would encompass every department within the telecommunications entity and should be sufficiently broad to include functions not currently performed. It should also anticipate needs that will be created with the long-term implementation of the policy, including introduction of regulation, competition, and privatization.

Once the telecommunications division is established as a separate legal entity, a careful tariff rebalancing should be undertaken to implement cost-based tariffs. Tariff rebalancing should be deferred until after separation so that the new tariff may accurately reflect the cost structure of the entity as it is defined. The first step in calculating tariffs is to calculate costs attributable to each service, and forecast the level of demand and demand elasticity for each. Tariff rates can be calculated based on the results of the cost and demand analyses. Procedures for adjusting and implementing the cost based tariffs will be determined as part of the tariff rebalancing program.

PTC should be granted a temporary tariff increase to prevent further losses during the restructuring period. PTC has requested an increase in national tariffs from K13 per unit to K34 per unit to be implemented immediately. It is likely that even this dramatic increase

(161.5%) will not be sufficient to ease PTC's current financial crisis and provide capital for network expansion and improvement. An immediate tariff increase is necessary to meet PTC's immediate needs; in the medium term, cost based tariffs should be determined by PTC and approved by MCT (if the regulatory entity has not yet been formed). The immediate need is to grant PTC relief from a tariff so low as to be causing severe liquidity shortages and a negative equity position.

C. License Cellular Operator

Substantial private sector interest in developing and implementing a Zambian cellular network has been expressed in response to a solicitation from the MCT. Potential investors are concerned about the delay in responding to their proposals. In order to alleviate investor concerns, accelerate service initiation, and introduce private sector operators into Zambia, the MCT should prioritize operator licensing.

The first step in granting a license for cellular service provision is to examine steps already taken or planned in neighboring countries (especially South Africa, Zimbabwe, Zaire, and Tanzania). Where these countries have already decided on which technology system to use (e.g., AMPS, TACS, E-TACS, GSM, etc.), an analysis of the roaming needs of Zambians and visitors to Zambia will determine the most appropriate system to be specified for Zambia. This will facilitate regional roaming of cell phones.

The GRZ should call for bids by competitive public tender for a nationwide license that will be exclusive for five years and require payment of an annual royalty fee based on gross sales. The tender process will require drafting and circulation of a request for proposals, specifying terms of the transaction such as technology type, and bid evaluation criteria). Each bidder will be required to offer an initial license fee amount and a staged service roll-out plan that will culminate in service in all major cities and along key intercity highways, with a tariff for service.

The successful bidder will be required to sign a License Agreement, a sample of which would be included in the tender document, and an interconnection agreement with PTC (or its successor). One issue which must be addressed explicitly in the License Agreement is whether the cellular operator has the right to build infrastructure. In most countries, cellular operators are required to lease lines from the public operator and are prohibited from developing parallel infrastructure.

D. Plan and Execute Privatization

Privatization of the telecommunications entity is an essential component of sector policy and needs to be well planned. Initial stages to be performed by ZPA with input from the MCT as well as the regulatory entity, require planning the privatization. As part of this planning process, options will be explored such as how much of the company will be privatized and what size holdings will be reserved for specific investor groups (e.g., employees, subscribers, public, strategic investors), use of the "golden share" option, investment criteria, and licensing requirements. Other steps in privatization include a diagnostic review and valuation of the company, preparation of bidding documents, investor search, evaluation of proposals, negotiations, and drafting of contract documents. Planning of the privatization of PTC should begin as soon as possible.

I. Introduction

A. Background

The purpose of this project is to assist the Government of the Republic of Zambia (GRZ) in developing a telecommunications sector policy. In order to improve the quantity and quality of telecommunications services in Zambia, the GRZ would like to implement a policy framework conducive to development, increase involvement of the private sector, and encourage competition in the sector. The most immediate tasks are implementing a new legislation and restructuring of the Posts and Telecommunications Corporation (PTC) into separate postal and telecommunications entities with a long-term goal of privatization.

Because of the size and importance of PTC and the telecommunications sector in Zambia's economy, the restructuring of the sector is highly complex and sensitive and involves numerous parties (the GRZ, PTC, the National Union of Communications Workers, the business community, and subscribers). The GRZ's objectives also include network expansion, improved service quality, and promotion of social goals (i.e. rural service).

B. Methodology

Our team worked closely with the Ministry of Communications and Transport (MCT) and the PTC to formulate recommendations appropriate to the Zambian environment. Information was obtained through a review of existing literature, including draft laws and policy, PTC financial statements, national planning documents, and various report as available, and a series of interviews. Interviews were held with key individuals at the PTC as well as numerous stakeholders in the sector. The stakeholders included government agencies, PTC suppliers, equipment providers, potential investors, users and the labor unions.

The tasks to be accomplished included a review and analysis of the current sector environment addressing specifically the sector's performance and draft legislation. Additional tasks were the establishment of guidelines for PTC's restructuring, identification of objectives, and the development of recommendations for sector structure in order to fulfill policy objectives. A final task called for an initial report to address time sensitive sector issues, which is attached as Appendix A.

C. Organization

This study addresses the following critical issues pertaining to sector's restructuring:

- Review of Current Sector Performance and Stakeholder Needs
  Section II addresses PTC's current performance by analyzing four areas of operation; physical performance, traffic, financial performance, and tariffs. Additionally, a series of interviews were held with various stakeholders, and their needs and priorities are discussed as they relate to current and future sector performance;

- Formulation of Sector Policy/Draft Laws
  An assessment of the draft laws and the draft policy are presented in Section III. First, the sector objectives and recommended structure are analyzed to establish the steps necessary for attaining the sector's goal of meeting the needs of the nation. In the second part of the section, proposed legislation and policy is analyzed with an eye toward facilitating GRZ's objectives for the sector;

- Development of Guidelines for Separation of the Postal and Telecommunications Entities
  Section IV presents guidelines for the restructuring of PTC into two entities as they pertain to implementation planning, legal requirements, and the separation of the financial accounts;

- Identification of Next Steps for Sector Development
  The final section (V) examines the necessary steps needed in both the short and long term to attain the goals of the MCT and the PTC. The most urgent issue requires the establishment of policy and legislation, followed by the formulation of a restructuring plan, a cellular licensing program, and a plan for executing the privatization of PTC.

II. Review of Current Sector Performance and Stakeholder Needs

A. PTC Performance

PTC, the Union, and the Ministry

Telecommunications in Zambia is to a large extent provided by the government-owned Posts and Telecommunications Corporation (PTC). PTC's predecessor was the General Post Office (GPO), an official government office. In 1975, the GPO was elevated to parastatal status and given its current name. In 1979, direct ownership of the PTC was transferred from the government to Zambia Industrial and Mining Company (ZIMCO), a holding company owned by the government. In 1987, the PTC Act (1975) establishing the original parastatal was repealed and PTC attained its current status as a limited liability company under the Companies Act, yet remained under ZIMCO. Critical issues facing PTC today include poor revenue collections, fraud and vandalism throughout the network, severe foreign exchange losses, and poorly developed external plant.

The Communications Workers' Union represents PTC employees, as well as employees of Horizon Communications (a private firm) and Zambia National Broadcast Corporation (ZNBC). The Union identifies its primary function as information dissemination, a process that is aided by participation in the Zambia Commercial Trade Unions (ZCTU), an umbrella group for all of the country's unions. Relations between PTC and the Union have always been harmonious; when there have been work stoppages, they have typically lasted less than one hour. The relationship between the Union and the Ministry, however, is somewhat strained, causing potential problems within the sector.

The parent ministry for PTC is the MCT. In the telecommunications sector, MCT's responsibilities include establishing policy and providing the only form of sector regulation outside the company itself. The MCT is currently very interested in sector reform and liberalization, including possible privatization, private sector participation, network expansion, development of value added networks (particularly cellular and data), and liberalization of the terminal equipment market.

Other Telecommunications Providers

There is a great deal of private sector involvement in telecommunications in Zambia, particularly in the equipment market. Equipment providers such as Alcatel, Ericsson, NEC, Philips and Siemens are present in the Zambian market, either directly or through agents. Besides selling terminals, equipment representatives including Philips, Horizon (the Ericsson

representative), and Telecare also provide network solutions using the public switched network for applications such as automatic teller machines.

Another type of service provided within Zambia independently of PTC is radio. These radio systems generally use Motorola equipment distributed by North Com Ltd., the Motorola agent in Zambia. The radio system was originally developed for use by commercial farmers, but has limitations in not interconnecting with the public network or allowing for confidential communications. Most of the local businesses involved in the sector have both interest and access to capital to invest further in the sector. Interest is particularly strong in cellular and data network development.

Regulatory and Legal Constraints

There is no official telecommunications regulator in Zambia, although the PTC and MCT share regulatory functions. Zambia, like most countries in the region, does not distinguish between policy making, regulatory, and operating functions. Accordingly, PTC has traditionally performed such regulatory functions as radio spectrum management and private sector licensing (e.g., type approval). MCT is involved in policy making and to a lesser extent, regulation, particularly in the rate setting arena. Telecommunications tariffs require approval from the PTC board and ratification by the MCT.

Because currently prevailing legislation pertaining to the telecommunications sector is so broadly considered inadequate, and the replacement legislation has not yet been passed by Parliament, there is no explicit definition of rights and obligations within the sector. For example, the old legislation grants PTC monopoly power in provision of telecommunications service. An investors' consortium seeking a cellular license, therefore, applied to PTC for that license. The MCT, however, recognizing the dangers of a structure in which one operating company licenses its potential competitors, intervened and took over the licensing process.

The sector effectively has no legal constraints and regulatory issues are decided on an ad hoc basis. The process of determining who does what impedes progress that might be made on any issue and is frustrating for sector participants, including MCT and PTC staff, potential investors and subscribers.

1. Physical Performance of the Network

This section covers the current performance of the network by providing an overview and assessment of the following areas pertaining to the telecommunications service provided in Zambia.

- Description of the Network
- Performance Indicators
- General Conclusions

a. *Description of the Network*

The Telecommunications network in Zambia covers all nine provinces and provides service to all cities and rural areas except for Kaputa in the north and Sesheke in the south, which are considered to be areas of minor significance.

This network consists of many exchanges of various types, technologies and vintage acquired with the help of donor funding provided by several countries. These exchanges are connected through a network consisting of mostly high capacity microwave radio systems through which domestic long distance service is provided. The international telecommunications service is provided via international gateway exchanges and two earth stations facing the Indian Ocean and Atlantic Ocean satellites. The major components of the network are the switching system, transmission system, external plant, rural telecommunications and the telex network.

(1) *Switching System*

The switching system is comprised of mostly automatic exchanges and a few manual exchanges serving rural areas. These exchanges are categorized by the type of service they provide in the network hierarchy such as local, tandem, toll, and international exchanges.

The following table provides a summary of the local exchanges' number of switching units in place and their capacity. The table indicates the type and respective percentage of technology used, which is a measure of the exchange plant sophistication. As shown in the table below, the current line capacity is 44% digital.

Description	Number	% of Total
Type of Switching Unit		
Digital (NEAX61E, E10B)	20	21%
Analog Electronics (NX1E, MCR)	47	50%
Cross Bar (ARF, ARK, C23)	23	24%
Manual (PLESSEY)	5	5%
Total Switching Units	**95**	**100%**
Subscribers by Type of Exchange		
Digital	54,000	44%
Analog Electronics	35,324	29%
Cross Bar	33,400	27%
Manual	150	0.1%
Total Line Capacity	**122,874**	**100%**

Source: Nippon Telecommunications Consulting Co., Draft Final Report, p. 3-32, March 1993.

The local exchange provides direct service (dial tone) to the telephone subscriber, while the tandem exchanges carry overflow traffic on a direct route between local exchanges. The network includes ten local/tandem exchanges in the urban areas of Lusaka and two in the urban area of Kitwe.

As for toll exchanges, the network includes eleven primary centers located in the capital of each of the nine provinces, in addition to Ndola and Choma. Separate Toll Stage telephone exchanges are provided in these primary centers. However, some of the telephone exchanges also provide Toll and Local Stage service. All inter and intra province calls from local exchanges are connected via both Toll Stage and Toll and Local Stage exchanges.

The international exchanges only carry traffic through dedicated international gateway digital and crossbar exchanges.

The following table provides an inventory of telephone exchange equipment currently in service by:

(1) Stage of service provided, i.e., Local Stage (LS), Toll and Local Stage (TLS), Toll Stage only (TS) and International Stage (INTS).
(2) Type of switching technology, model, supplier, capacity, units in service and year(s) installed.

Stage	Type of Switch	Model	Supplier	Capacity	No. of Units	Install. Year
LS (TLS)	Digital	E10B	Alcatel (France)	23,000	(2) * 9	1987
		NEAX61E	NEC (Japan)	31,000	(5) * 11	1988-1991
	Analog	NX-1E	ITT North (USA)	25,500	(1) * 5	1980-1984
		MCR		9,824	42	1980-1989
	Cross Bar	ARF	Ericsson (Sweden)	26,200	10	1967-1981
		ARK		2,200	8	1979-1981
		C23	Hitachi (Japan)	5,000	5	1980-1991
	Manual	Plessey	Ericsson (Sweden)	150	5	1972
	Total			**122,874**	**95**	
TS	Analog	ARM	Ericsson (Sweden)	2,000	3	1978-1981
INTS	Digital	AXE10	Ericsson (Sweden)	560	1	1985
	Analog/Cross Bar	ARM		800	1	1980
	Total			**1,360**	**2**	

* units of TLS are indicated in parentheses.
Source: JICA Data Book, p. 3-13.

(2) *Transmission System*

The overall transmission system comprises 23 microwave and 28 UHF/VHF links. These links use analog FDM technology with the exception of the four digital links connecting satellite exchanges to the Kitwe main exchange. This transmission system provides national connectivity between all provincial and district centers and is also used for regional transit to Tanzania, Uganda, Kenya, Ethiopia, Zimbabwe, Malawi, Botswana and Zaire via dedicated facilities.

- Microwave Equipment:
  Most of the microwave equipment (18 links) was provided by NEC and was installed as early as 1974 and as recently as 1987. The remainder (5 links) was provided by NERA and commissioned in 1985.

- UHF Equipment:
  The majority of the UHF links (16) was provided by NEC from 1978 to 1991. The remainder was provided by GRANGER, PYETMC, TELECTRON HARRIS and NOKIA from 1980 to 1989.

Through the use of two earth stations, directed towards INTELSAT VI, satellite links were established with other foreign countries as follows:

- Earth Station Mwembeshi I, installed in October, 1974 facing the Indian Ocean satellite, provides access to: Germany, France, Netherlands, India, Japan, Italy, Belgium, Sweden
- Earth Station Mwembeshi II, installed May, 1988 facing the Atlantic Ocean satellite, provides access to: United Kingdom, South Africa, Canada, U.S.A., Lesotho, Angola and Swaziland

(3) *External Plant*

External line plant provides the physical connection between telephone exchanges and the telephone subscribers. For large capacity exchanges, the external plant is composed of large size cables which are laid in duct systems and attached to cabinets (Primary Network). From these cabinets, direct buried cable leads to distribution points (Secondary Network) from where further distribution is made to the subscribers. For small capacity exchanges, direct buried cables and serial cables connect directly with distribution points from where the final connection is made to the subscriber.

The present external plant is in need of rehabilitation to :

- Replace paper insulated cable, which is not pressured or maintained, because it is adversely affected by flood conditions prevalent during the rainy season;
- Provide heavier gauge cable to compensate for long loop cable replacement;
- Continue to replace cable, which has disappeared due to theft.

Because of limited funds, most current external plant construction addresses cable rehabilitation, rather than expansion. As indicated in Appendix A, external plant should be

addressed in a comprehensive, long-term plan. Wireless solutions are likely to play a role in such a plan, but should be considered for long-term and short-term deployment in a way that is cost effective when all costs (including theft and service disruptions) are factored in.

(4) *Rural Telecommunications*

Rural telecommunications in remote, scattered, sparsely populated areas is mostly provided by Multi-Access Radio Systems (MARS) or Radio Subscriber Systems (RSS). These NEC systems have been utilized since 1984 and serve more than 1,300 subscribers. Another system used to serve rural areas from the local exchange is open wire, which is economical but also an easy target for vandalism and natural disasters and is not easy to expand.

(5) *Telex Network*

Telex is a teletypewriter service provided via a telex network utilizing a stored program control (SPC) exchange in Lusaka, acquired from Plessey in 1976. The second telex exchange was installed in Kitwe in 1989 and was purchased from Sagem in France.

The combined total telex exchange capacity is 4,548 lines, as shown in the table below. Connection to the two telex exchanges from big cities is provided via Time Division Muliplex (TDM) equipment while remote areas are connected via Voice Frequency Telegraphy (VTF) circuits.

Stage	Type of Switch	Model	Supplier	Capacity	No. of Unit	Install. Year
Telex	Digital	4660/50	Plessey (UK)	2048	1	1976
	Digital	ELTEX V	Sagem (France)	2500	1	1988-1991
Total				4548	2	

Sources: 1) Nippon Telecommunications Consulting Co., Draft Final Report, p. 3-48.
2) PTC 10 Year Development Plan, "Telex Exchange Equipment and Service", section 1.

(6) *Telecommunication Development Plan*

The currently identified Development Plan is intended to improve and expand the local, trunk and international services to meet the following requirements:

a. To meet the demand for telephone and telex service in urban areas.
b. To provide telecommunications services to all rural areas.
c. To offer mobile radio telephone services.
d. To expand and upgrade microwave links with television broad band capacity.
e. To establish a packet data network.
f. To finalize direct telecommunications links to neighboring countries, i.e., Mozambique, Zaire, Angola and Zimbabwe.

At the conclusion of the above development plan period, which covers a ten year span, the telephone density should double from 0.8 direct exchanges lines (DELs) per hundred population to 1.6 DELs per hundred population.

The following table summarizes the areas of projected expansion and the respective project costs broken down by foreign exchange and local cost components.

Obviously, this ambitious development plan can only be undertaken with financial assistance of donor countries and international financial institutions, i.e., World Bank, African Development Bank, etc.

PROJECT TYPE	PROJECT TITLE	CAPACITY	COST (US $ MILLION)		
			Total	Local	Foreign
Switching	Replacement Telephone Exchange	124,100 (lines)	64.00	19.33	44.67
	Upgrading of E10B Exchanges	40,000 (lines)	13.00	3.80	9.20
	Upgrading of NEAX61 Exchanges	26,300 (lines)	9.20	2.70	6.50
	Upgrading of International Telephone Exchange	2,000 (trunks)	5.60	1.60	4.00
	Telex Exchange	3,000 (lines)	3.50	1.00	2.50
	Packet Switching		2.20	0.70	1.50
External Plant	Cable Distribution Network	130,500 (lines)	104.40	84.40	20.00
Radio & Transmission	Microwave Links	13 (routes)	64.00	22.00	42.00
	Spur Links	18 (routes)	8.20	2.60	5.60
	Multi-access Radio Telephone Systems	4,000 (subs.)	47.00	17.00	30.00
	Mobile Radio Telephone System		12.00	4.00	8.00
	Radio Monitoring Station		5.14	2.04	3.10
Satellite	Satellite Communication		16.50	4.20	12.30
Subscribers' Apparatus	Private Automatic Branch Exchanges (PABX)	250	7.50	2.50	5.00
	Telephone Instruments (Pay phones)	160,000 (400)	7.50	2.50	5.00
	Teleprinters	2,000	5.00	2.00	4.00
	Facsimile Machines	1,000	1.50	0.50	1.00
Others	Main Frame Computer		1.70	0.50	1.20
	Computers		0.75	0.25	0.50
	Transport	900 (vehicles)	13.50	4.50	9.00
Total			**393.19**	**178.12**	**215.07**

b. *Performance Indicators*

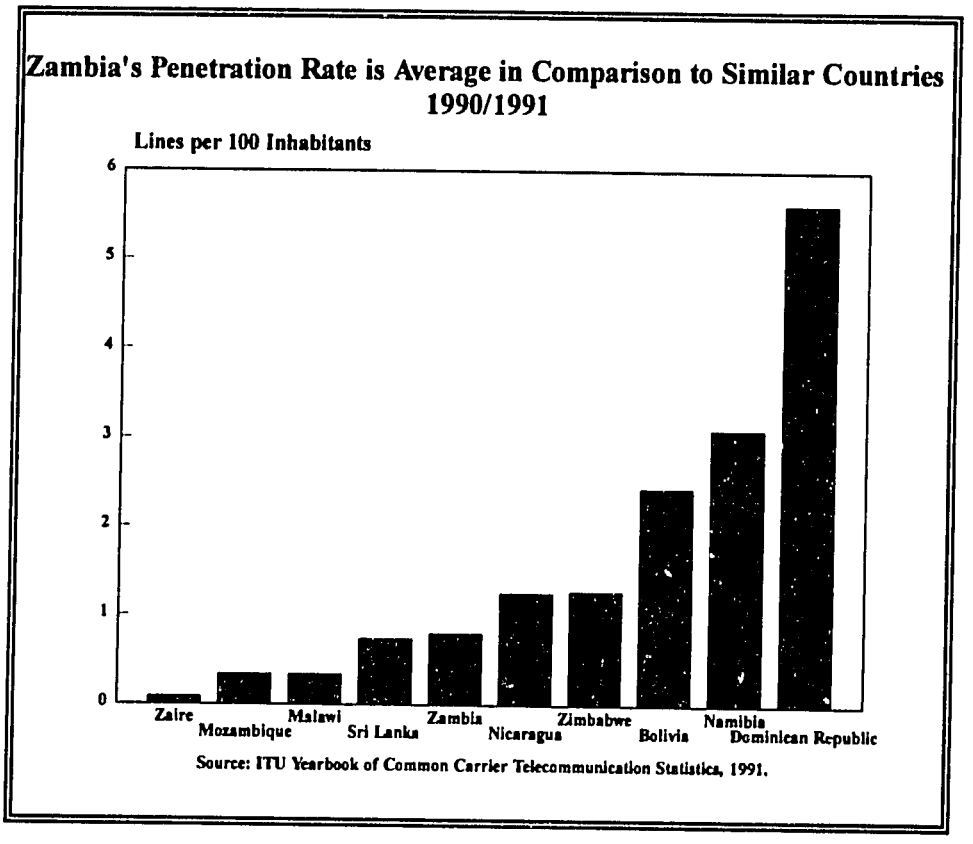
The following performance indicators measure the current telecommunication network and subscriber expectations.

(1) *Lines in Service*

The total exchange capacity is 122,874 lines. The total lines in service is 70,756 lines. This represents 57.6% of the total capacity and at first glance reflects gross under utilization of the exchange plant. However, this can be somewhat tempered by the fact that the installed capacity is not necessarily an indication of the available working exchange capacity. The circuit capacity exceeds the external plant capacity, resulting in an underutilization of the circuits. Since there is a surplus of working circuits, non-working circuits are never repaired, but, rather, the working lines are switched to a working circuit. The lack of maintenance of circuits is further encouraged by the lack of maintenance of outside plant because an increase in non-working lines decreases demand for working circuits. The available working exchange capacity is difficult to determine, although it is much lower than the total exchange capacity figures indicate.

In measuring the exchange lines in service as a percentage of the total population, Zambia has a telephone density of only 0.88 lines per capita. The current target is to achieve a density of one direct line per capita in the next 2 to 3 years.

When compared to neighboring African countries and other countries of similar economic background, Zambia shows a similar penetration rate (lines in service per 100 inhabitants). The chart below shows the ranking of these ten countries by their penetration rates. The neighboring African countries include Mozambique, Malawi, Namibia, Zaire, and Zimbabwe. Outside of Africa, countries that were compared with Zambia had similar population and GDP per capita, such as Sri Lanka, Bolivia, Dominican Republic, and Nicaragua. With the exception of Sri Lanka, all of the countries with a lower penetration rate than Zambia are substantially worse off economically.



(2) *Waiting Lists*

Zambia's waiting list, similar to other developing countries, is high with respect to the number of lines in service. For the most part, this is due to the lack of cables and distribution points. Waiting lists can reflect two levels of demand for service: 1) expressed demand that correlates to the number of submitted requests for service or 2) actual demand that is usually based on population and includes unexpressed demand. The latter category would include subscribers who do not submit a request because they know there are limited lines available or the waiting list extends for many years. The following table shows total expressed demand and the breakdown of met and unmet demand as of September 1992.

Total Expressed Demand	132,624	100.0%
Lines In Service	70,756	53.9%
Installation in Progress	4,608	3.5%
Subscribers Waiting for Service	57,260	43.2%

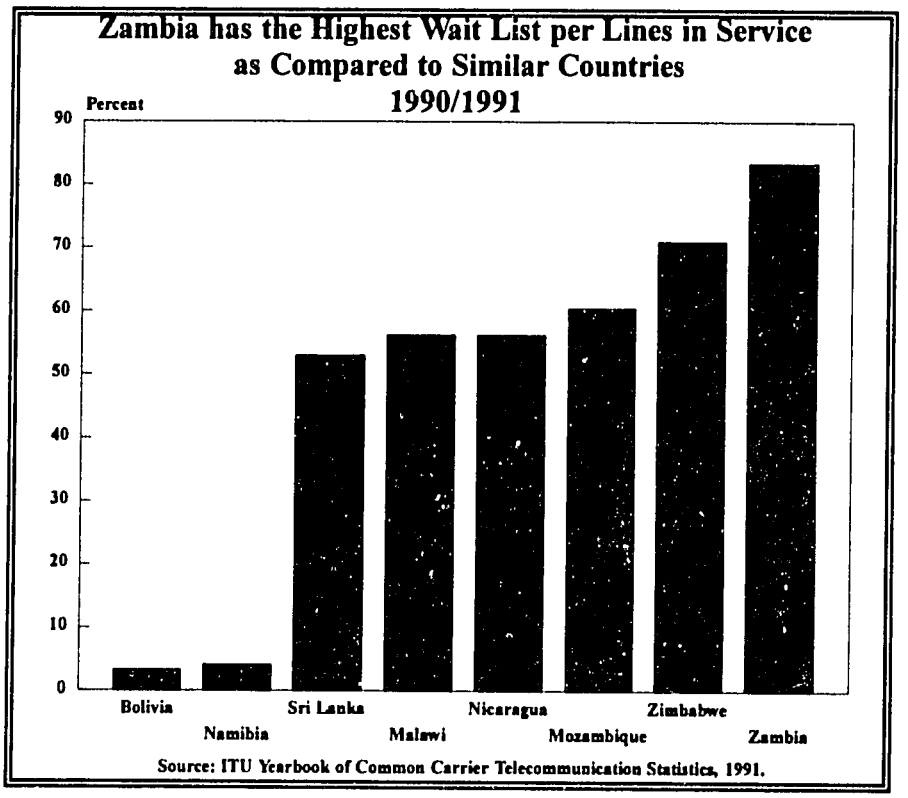
Source: JICA Data Book, p. 3-7.

The cause for the large number of potential subscribers who have not been served is shown in the table below. Insufficient external plant accounts for nearly 50% of the capacity shortage and is the major factor in not meeting the expressed service demand.

No Cable and Distribution Points	26,933	47.0%
Out of Basic Rental Area	4,505	7.9%
Under Survey for Service	16,517	28.8%
No Exchange Lines Available	9,305	16.3%

Source: JICA Data Book, p. 3-7.

The following chart shows the same ten countries as shown in the penetration chart above ranked by waiting list. The waiting list calculation is a ratio of the number of subscribers waiting for service to the number of lines in service. Data for Zaire and Dominican Republic is not available. The countries with the lowest penetration rate generally have the longest waiting lists, yet Zambia's waiting list is the highest of all the countries. The waiting list represents expressed demand only; Zambia's ranking for total (expressed and unexpressed) demand may be quite different.



(3) *Fault Rates and Clearance Times*

The fault/line/year increased from 0.80 in 1991 to 0.96 in 1992. However, this is better than the present target established by PTC of 1.5 fault/line/year and is also better than the 1.0 target recommended by the ITU.

Meanwhile, the Fault Clearing rates for the 24 hour and 48 hour periods was improved as follows:

Faults cleared in 24 hours	24.1% in 1991 to 31.7% in 1992 = +7%.
Faults cleared in 48 hours	43.7% in 1991 to 51.3% in 1992 = +17%.

However, these 24 hours and 48 hours fault clearance rates are both still below the respective 50% and 70% targets and well below the 70% and 90% generally expected in developed countries.

(4) *Dial Tone Delay*

Dial tone availability within three seconds showed a steady improvement in the third quarter reports of the past three years. The percent of attempted calls that receive a dial tone within 3 seconds were 71.6% in 1990, 88.4% in 1991 and 94.0% in 1992. This is quickly approaching PTC's 100% target.

(5) *Call Completion Rates*

The average call completion for local, trunk (national) and international calls is approximately 30% (37% for international incoming; 18.6% for international outgoing). Although the call completion rate for all traffic is not available for comparable countries, the rate for just local calls is recorded in some cases. For instance, in 1992 Lesotho had a local call completion rate of 89%, Madagascar had 35%, Nicaragua had 56% and Rwanda had 58%. Even though the local call completion rate is not available for Zambia, the overall rate of 30% can serve as a general guideline. Low call completion rates can be due to a number of factors. The most likely are:

- Switched network congestion due to insufficient trunks between exchanges
- Switch congestion caused by overloaded or badly maintained exchanges
- Insufficient lines particularly for large facilities such as hotels that should have at least 25 lines
- High percentage of subscriber lines out of order
- Low answer rate measuring the number of attempted calls that are answered (unanswered calls are considered incomplete attempts)

Improvement of the low call completion rate could generate more revenues, especially foreign exchange generated by incoming international call completion. With better balanced telecommunications facilities, an average call completion rate of 80% for national calls and 50% to 60% for international calls should be achieved within the next 10 years.

(6) *Signaling*

Some switching systems in the network including the C23 Cross Bar Exchanges do not provide MFC (Multi Frequency Compelled) signaling needed to provide ANI (Automatic Number Identification).

For that reason, these exchanges do not allow for automatic subscriber toll dialing or automatic international direct dialing. Their obsolete signaling capability should make these exchanges targets for early replacement.

(7) *Route Diversity*

The current transmission network architecture is based on a star configuration without any provision for route diversity. Therefore, no alternate routing can be provided when transmission failure or traffic congestion occurs.

To alleviate such problems and to enhance the transmission network reliability, alternate transmission paths should be introduced.

(8) *Public Call Offices*

Public Call Offices (PCO) or public telephones, provide public accessibility to the telecommunications network via coin telephones. Unfortunately, their effectiveness is hampered by a shortage of coins in circulation, vandalism and maintenance problems.

To alleviate the coin problem, tokens will be introduced in two different denominations to facilitate local and long distance calling. Serious consideration should be given to the introduction of debit card and, eventually, credit card telephones. This telephone system will be less vulnerable to vandalism due to their payment principle, and will provide important cash flow benefits because debit cards are pre-paid.

The "Bi-Annual Telephone and Telex Exchanges Utilisation Statistics Report" dated September 1992, indicates a total of 421 PCOs in service. The following table shows the current exchanges in the southern and northern regions and the number of PCOs they serve.

SOUTHERN REGION		NORTHERN REGION	
Exchange	**P.C.O. Lines**	**Exchange**	**P.C.O. Lines**
Airport Int.	5	Chambeshi	1
Chadiza	-	Chibombo	3
Chama	2	Chililabombwe	4
Chelston	5	Chingola	14
Chilanga	5	Chinsali	2
Chinika	-	Isoka	2
Chipata Arf	13	Itimpi	-
Chipata Hitachi	-	Kabompo	1
Chirundu	-	Kabwe	15
Chisamba	-	Kalulushi	5
Choma Arf	8	Kapiri Mposhi	4
Choma Hitachi	-	Kasama	12
Chongwe	-	Kasempa	1
Emmasdale	1	Kawambwa	1
Gwembe	1	Kitwe Arf	6
Itezhi-Tezhi	2	Kitwe NEAX-61E	28
Kafue	7	Luanshya	13
Kalabo	1	Luwingu	3
Kalomo	3	Mansa	9
Kaoma	2	Masaiti	-
Katete	1	Mkushi	2
Livingstone	25	Mpepetwe	-
Luangwa	-	Mpika	3
Lukulu	1	Mporokoso	1
Lundazi	3	Mpulungu	3
Lusaka NEAX-61E	23	Mufulira	15
Lusaka NX-1E	-	Mufumbwe	1
Maamba	3	Mungwi	3
Makeni	-	Mwense	3
Mazabuka	7	Mwinilunga	1
Mfuwe	2	Nakonde	3
Mongu	6	Nchelenge	3
Monze	5	Ndola Main	35
Mumbwa	4	Ndola Ind North	2
Namalundu G	3	Ndola Ind South	1
Nampundwe	-	Ndola Kabushi	-
Namwala	-	Ndola Kansenshi	10
Nyimba	1	Ndola Northrise	4
Pemba	2	Ndola Pamodzi	-
Petauke	2	Samfya	3
Ridgewa	-	Serenje	1
Roma	5	Solwezi	7
Senanga	2	Zambezi	1
Siavonga	7	Chalata	-
Sinda	1	Kanona	-
Woodlands	35		
Limulunga	1		
Sesheke	-		
Zimba	1		
Total	**195**	**Total**	**226**

GRAND TOTAL P.C.O.'s SOUTHERN AND NORTHERN REGIONS = 421

c. *General Conclusions*

Although a national maintenance plan is in place, its effectiveness does not meet required service standards, which can be attributed to:

- Insufficient skilled technical staff
- Lack of maintenance material, i.e., spare parts, tools, instruments, etc.
- Lack of more efficient computerized tracking of supplies to maintain sufficient inventory for efficient maintenance operations

To improve the current telephone density and provide enhanced services, the network infrastructure should be expanded and modernized. For a relatively small expense, initial improvements should include correcting some of the most obvious exchange and line plant mismatches.

For expansion and modernization of the entire network, substantial funding will be needed, which can be acquired through improved revenue generation or privatization and liberalization of the sector. An inadequate network adversely affects the financial status of PTC for several reasons. Since incoming international calls are the main source of revenue for PTC, when there is difficulty in receiving these calls the revenue generated is lower. Additionally, the high percentage of national traffic that is uncollectible results in lower receipts as well.

2. Traffic Volumes and Patterns

While PTC has made an effort to increase the exchange capacity, especially with the installation of a new digital switch in 1991, demand for phone service continues to exceed the growth in supply. Concurrently, the existing network is in need of rehabilitation in order to maintain the current capacity, rather than lose capacity and, thus, worsen the penetration rate. Every province and most areas of Zambia are covered by local and toll service, accompanied by gateway exchanges and two earth stations for international traffic. Businesses and government offices often use dedicated leased lines for voice and data transmission as well as dial-up service for just data. Terminal equipment available through the PTC or private suppliers are handsets, PABX systems, facsimile machines and modems.

Currently there are no dedicated conditioned analog data lines in Zambia, thus most businesses transmit data on either dial-up or voice lines leased from PTC. While this system is sufficient, it is not optimal because the data transmission is slower than if high speed data lines on a digital infrastructure were used, less efficient than if packet switching were used,

and the national network is unreliable. Banks, ZCCM, and other large users have expressed an interest in high speed data lines to improve their operations. For example, with more reliable and faster transmission of data, Barclays Bank would be able to expand their services by offering direct banking away from the home branch office.

Zambia's traffic patterns parallel those of their neighbors in that the dominant source of traffic volume and revenue comes from international traffic. The volume of both national and international telephone traffic has been increasing in the last four years and, especially with the expected improvements to the network, this trend should continue. Zambia's international traffic is highly concentrated with a few partners. Historically, Zambia's traffic imbalance with major traffic partners has been negative, although this imbalance is narrowing as incoming traffic grows faster than outgoing traffic.

Consistent with worldwide trends, telex and telegraph traffic has shown a steady decline in usage since 1989. Radio usage has increased, in particular, among rural subscribers (i.e. farmers) who were without traditional phone service. This radio service uses the MARS system connected with the PSTN.

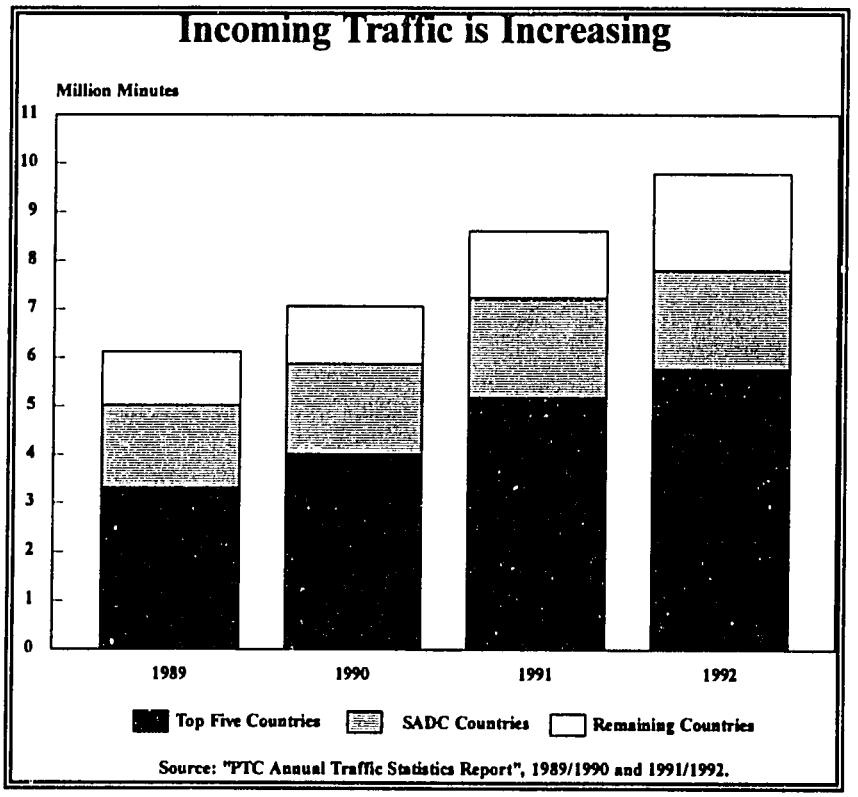
a. *International Telephone Service*

In measuring international traffic patterns, the countries have been divided into three categories: Top Five, SADC, and Remaining countries and examined over the time period FY 1989 to FY 1992. The Top Five countries, which vary depending on the direction of traffic flow, exclude the SADC countries since they do not contribute to the settlement process (because of SADC's Sender Keep All arrangement). Incoming, outgoing, and transit traffic were analyzed separately to attain a better understanding of the traffic flows. A review of traffic imbalance shows that Zambia has a persistent negative imbalance in international traffic, although this trend is gradually becoming more positive.

Zambia's international traffic is dominated by three countries (South Africa, Great Britain, and the United States) which account for approximately one-half of total traffic followed by four other countries (Kenya, India, Canada and Germany). The SADC region makes up a substantial portion of the remaining amount of approximately 20% for both incoming and outgoing traffic. The Remaining countries account for approximately 20% of total traffic, although this amount has been growing for both traffic directions.

(1) *Incoming Traffic*

Since 1989, incoming traffic has steadily increased by an average of 17% per year. The chart below shows the concentration of traffic, where the Top Five countries account for approximately 57% of total traffic, SADC countries comprise approximately 25%, and the rest of the world accounts for the remaining 18%.



The Top Five countries for incoming traffic are South Africa, Great Britain, the United States, Canada, and Germany. Traffic from these countries has grown on average 24% per year. Other non-SADC countries with high growth in traffic to Zambia include Holland, Belgium, India and Denmark.

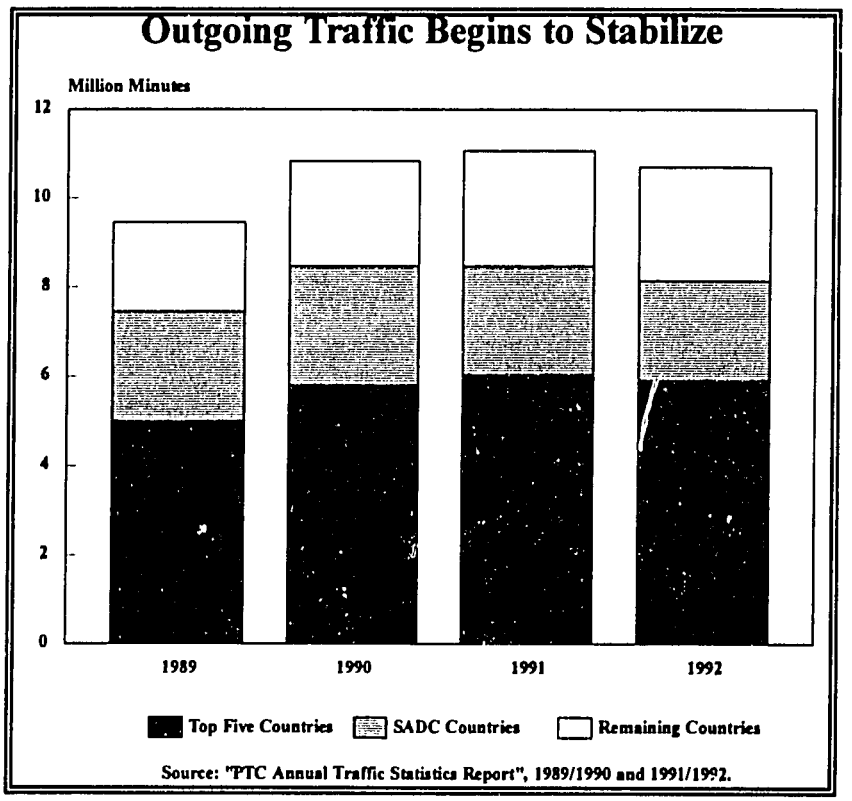
Incoming traffic from SADC accounted for 28% of total traffic in 1989 and has slowly declined to 21% in 1992. In absolute figures, though, incoming traffic from the SADC countries has grown by 18% in total between 1989 and 1992. A large part of this growth can be attributed to Zimbabwe, Namibia, and Lesotho where the latter two have almost doubled their incoming traffic since 1989. On the contrary, significant decreases of one-half

or greater have occurred from Tanzania and Angola with a drop to zero traffic from Mozambique and Swaziland. These significant changes in traffic may be caused by improper reporting, perhaps due to civil strife in the country of origin or other reporting factors. Traffic for Mozambique and Swaziland has most likely dropped to zero since both countries participate in SADC's Sender-Keep-All (SKA) arrangement and it is no longer reported. It has been forecast by Japanese International Cooperation Agency (JICA) that SADC will eventually grow to represent 35% of Zambia's total traffic by 1997 and will sustain this portion through 2012.

(2) *Outgoing Traffic*

Following a large increase from 1989 to 1990, outgoing traffic appears to be leveling off and declined by 3% from 1991 to 1992. The chart below shows the breakdown of total outgoing traffic as composed by the Top Five, SADC, and the Remaining countries. Similar to incoming traffic, the Top Five countries for outgoing traffic (Great Britain, South Africa, the United States, Kenya, and India) account for approximately 54% of total traffic, SADC countries represent 24% and the rest of the world constitutes 22%. Outgoing traffic has remained fairly constant, in contrast to incoming traffic, resulting in a reduced settlements outpayment for Zambia. Growth in outgoing traffic has been suppressed by the introduction of "country direct" programs (such programs are in place between Zambia and the U.S.A., the U.K., Italy, Sweden, and Canada) and fraud reduction programs.

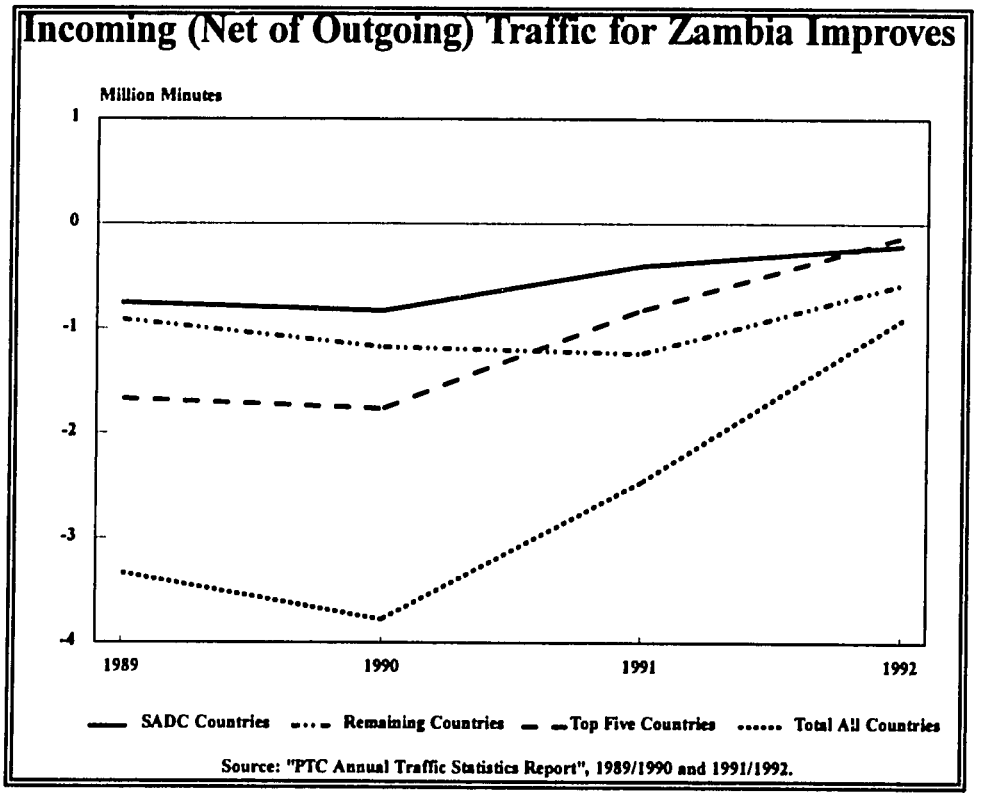
In 1988, traffic with SADC accounted for 26% of total traffic and has slowly declined to 21%. In terms of paid minutes, outgoing traffic to SADC countries declined from 2,462,835 to 2,236,943 minutes. While tremendous growth was seen to Namibia, the largest declines were seen in traffic to Malawi, Lesotho, and Mozambique. It is unclear why traffic from some countries, such as Lesotho, is growing in opposite directions (i.e., incoming traffic is increasing and outgoing traffic is decreasing). It can be speculated that this may be a result of changes in network configuration, or Lesotho may serve as a transit point for traffic originating from its region, both situations could result in more incoming calls to Zambia.



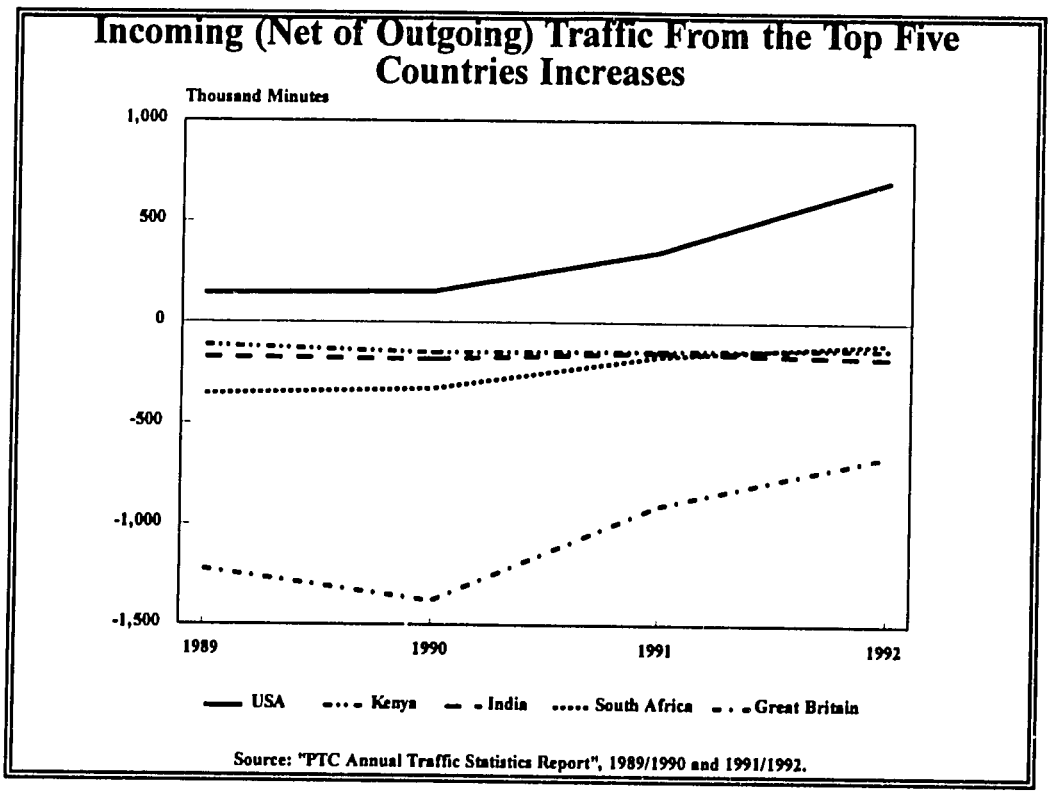
(3) *Traffic Imbalance*

Zambia has historically had a large traffic imbalance, although this trend is improving. A traffic imbalance occurs when incoming traffic is less than outgoing traffic. For international traffic, the sending country pays a settlement rate based on the excess number of minutes of outgoing traffic. For Zambia, this means that they are predominantly paying foreign countries for the excess of outgoing calls.

The following charts show the traffic imbalances between Zambia and their traffic partners based on paid minutes. As shown in the chart below, the traffic imbalance for Total traffic and the Top Five, SADC, and the Remaining countries is dominantly negative, although this trend is gradually reversing.



Similarly, the chart below shows that the traffic imbalance for the Top Five countries has turned around significantly since 1989. In particular, the imbalance with the United States and Great Britain has improved by 485% and 54%, respectively. Between 1991 and 1992 this positive balance realized an inpayment of $524,861 from the United States or an increase of $261,793 from the previous year. During the same period, Zambia's payments to Great Britain decreased by $198,716 to an outpayment of $536,746. Together these shifts in payments represent an improvement in Zambia's foreign exchange by $450,509.



Several factors contribute to Zambia's traffic imbalance. Zambia's low call completion rate contributes to the traffic imbalance because Zambians are more willing to make multiple attempts to try to reach someone than are foreigners, especially those calling from developed countries. Another factor contributing to the negative traffic imbalance is fraud. Working lines are re-routed to non-paying fraudulent users. The incentives for the fraudulent user to receive international calls are minimal, thus increasing the volume of outgoing traffic.

The reversal of Zambia's negative traffic imbalance can be attributed, in part, to the reduction of fraud and the introduction of "Country Direct" programs such as USA Direct and UK Direct.

(4) *Transit Traffic*

Zambia has direct traffic arrangements with 21 countries, 16 of which are Non-SADC countries. Numerous countries with direct agreements with Zambia serve as gateways for traffic to and from their regions of the world. These gateway countries carry substantial

portions of Zambian traffic to neighboring countries that do not have direct transit agreements.

Traffic to Europe primarily travels through Italy, Great Britain, and Germany. Countries that are served include Albania, Australia, and Switzerland, for example. In comparison to other European gateways, Great Britain has the largest amount of traffic in Europe, although its transit traffic accounts for only 9% of incoming traffic and 15% of outgoing traffic. In contrast, approximately 70% of incoming traffic from Italy and France is transit. Cross-Atlantic traffic tends to travel through the United States to South America for countries like Brazil. Canada and the U.S. have relatively small amounts of transit traffic with 0.6% and 8%, respectively. Japan serves as the gateway to the Far East by transitting 14% of its traffic.

There are a number of countries with which Zambia trades traffic both directly and via transit arrangements with other countries. For example, although Belgium, Norway, and Finland all have direct links with Zambia, more than 25% of the traffic to these countries transits Germany, Italy, or another European gateway. It is likely that this is caused by mechanical difficulties with switches resulting in improper routing or congested direct links. Additionally, some countries which do not have direct agreements (most notable Switzerland, Senegal, and Australia) may have sufficient traffic to warrant a direct link.

Direct links are beneficial to both Zambia and trading partners because they have a more favorable settlement rate. For example, for a direct call between Zambia and Belgium, the terminating administration receives $US 0.62, whereas if the call transits Germany, the terminating administration receives only $US 0.56, while the originating administration pays out a total of $US 0.86. PTC should therefore consider increasing utilization of direct links where traffic volumes and settlement differentials are sufficient to justify the administrative costs associated with negotiating and administering the settlement process.

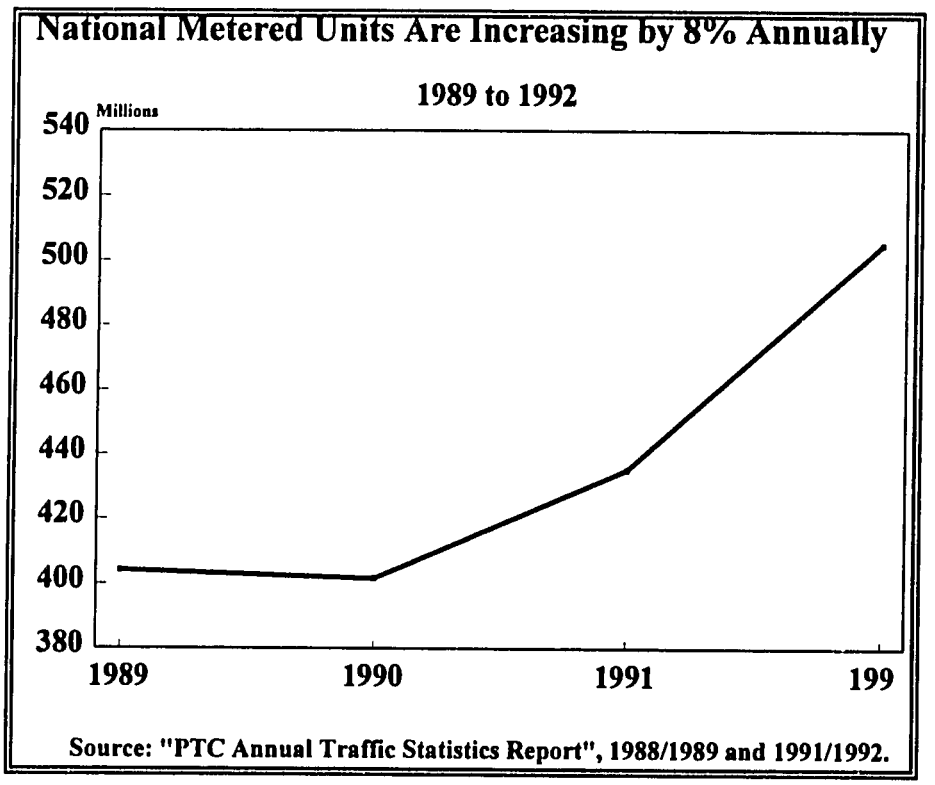
b. *National Telephone Service*

The waiting list for phone service currently exceeds lines available, although the business sector's waiting list is shorter than that for residential. Since the business sector is primarily located in urban areas, they have greater access to working lines which may account for the shorter waiting list. Additionally, business lines have a higher installation fee and monthly rate, so PTC may place a higher priority on this sector's demand.

The two primary user categories are Business and Residential, each of which can be further disaggregated into Government, Parastatal, and Private. Residential lines for both

government and parastatal appear to be lines financed by either of these organizations for employee usage while at home. As of September 30, 1992, businesses had 33,680 subscriber lines, whereas the Residential sector had slightly more with 38,974 lines. Of both of these sectors combined, Government and Parastatal lines account for 14% and 23%, respectively, with Private subscriber lines accounting for the remaining 64% of the lines.

As shown by the chart below, national traffic has been growing over time.



The JICA Study projects continued growth in total subscriber demand at an average rate of 35% from 161,452 subscribers in 1992 to 418,853 in 2012. The forecast ratio of residential to business subscribers is 2 to 1, although it is projected that average growth in residential subscribers of 43% will outpace growth in the business sector of 19%.

A breakdown of the same total subscribers shows that the 4 to 1 ratio of urban to rural subscribers will remain relatively constant, although the rural sector, aided by the expected introduction of rural radio, will have a higher growth rate of 44% while urban subscribers will grow at 33%.

c. *Telex and Telegraph Service*

Similar to a trend occurring in most countries, demand for telex and telegraph machines in Zambia has been dropping progressively due to the increasing availability of facsimile machines and the improvement of phone service to remote areas. Although usage of telex and telegraph will continue even as these replacement services become more prevalent, demand is expected to continue to fall.

National telex traffic peaked at 3,291,817 minutes in 1989 and has decreased by an average 15% each year to 1,810,922 in 1992. National telegraph traffic increased between 1989 and 1991 to 26 million words, then dropped 12 % to 23 million words in 1992.

The table below shows international traffic for both telex and telegraph in minutes and words, respectively. Telex and telegraph traffic is nearly as concentrated as voice traffic, with the Top Five countries and SADC together accounting for approximately 70% of total international traffic.

Telex and Telegraph Traffic for Fiscal Year 1992

	TELEX (minutes)			TELEGRAPH (words)		
Top Five Countries:	In	Out	Imbal.	In	Out	Imbal.
South Africa	376,585	108,908		63,850	108,444	
Great Britain	469,661	128,132		27,628	141,336	
United States	62,799	63,545		69,400	86,830	
Germany	43,883	23,083			45,307	
Nigeria	39,159					
Kenya				20,593		
India		16,096		48,931	105,157	
Top Five Subtotal	992,087	339,764	652,323	230,402	487,074	(256,672)
Top Five % of Ttl	68.6%	51.5%		43.1%	43.2%	
SADC Subtotal	123,367	148,915	(25,548)	123,150	312,125	(188,975)
SADC % of Ttl	8.5%	22.6%		23.0%	27.7%	
Total	1,445,748	659,501	786,247	534,443	1,128,608	(594,165)

Source: "PTC Annual Traffic Statistics Report", 1988/1989 and 1991/1992.

The traffic imbalances for telex and telegraph are, for the most part, opposite. While incoming traffic for telex has consistently been much stronger than outgoing, incoming telegraph traffic has been approximately one-half of its outgoing traffic. This has resulted in a positive imbalance for telex and a negative imbalance for telegraph. These traffic imbalances are consistent with behavior patterns for customers in the developed world who are communicating with less developed countries. When telephone (and, therefore, fax) service is not available, consumers in developed countries typically use telex service as a substitute, rarely using telegraph at all. This explains the large volume of incoming telex versus incoming telegraph.

3. Financial Performance Evaluation

a. *Overall Financial Performance of PTC*

PTC's 1993 financial performance, as reflected in its (unaudited) financial statements, was poor. Overall, PTC lost K8.8 billion in fiscal year ending March 1993, 98% of which was attributable to the Telecommunications Division. This represents a loss of 5% of turnover after exchange losses and taxes. By the end of the fiscal year, PTC's liabilities exceeded its assets by 13%, with current liabilities leading current assets by nearly 75%, rendering PTC incapable of paying its obligations. This combination would have triggered bankruptcy in a private company.

The 1993 financial statements reflect continuation of a downward trend in PTC profitability as after tax income fell between 1990 and 1993. Income statements for the telecommunications and postal divisions and consolidated PTC are discussed more thoroughly later in Exhibit II-5, and are summarized in the table below:

	Profits (Mill Kwacha)	Profits (Mill Dollars)	Taxes Paid (Mill Kwacha)	Dividend Paid (Mill Kwacha)
1990	321.7	9.75	36.0	25.0
1991	195.8	3.01	85.5	65.0
1992	(393.4)	(2.52)	195.8	----
1993	(9,062.1)	(19.7)	682.8	148.8

Source: PTC Financial Statements.

It is interesting to note that, with the exception of dividend payments in 1992, taxes and dividends are accrued even during loss making years.

The 1993/94 budget projects a change in this trend, anticipating an after tax profit of K6.4 billion on gross turnover of K65.9 billion. This gross turnover projection is 2.6 times higher than the forecast turnover from 1992/93, and the profit margin (approximately 10%) is substantially different from the -11.0% profit margin for the earlier period. Moreover, in view of the actual performance of PTC relative to the budget for 1992/93 (period losses were nearly three times the magnitude of budgeted profits), this budget appears optimistic. The attached Exhibits II-1, II-2, and II-3 show the ratio analysis for Consolidated PTC, the Telecommunications Division, and the Postal Division.

CONSOLIDATED PTC RATIO ANALYSIS

Fiscal Years Ending March 31

		1990	1991	1992	1993	MEAN**	STD DEV** OF THE MEAN	BUDGETED 1994	MINIMUM 1994	MAXIMUM 1994
LIQUIDITY RATIO										
CURRENT RATIO	CUR ASST/CUR LIAB	1.31	1.03	0.82	0.57	0.93	0.27	0.72	0.66	1.21
EFFICIENCY RATIOS										
AVG RECEIVABLES OUTSTANDING	ACCT REC*365 / TURNOVER	202.33	222.20	260.75	233.97	229.81	21.14	184.30	208.67	250.95
INVENTORY TURNOVER	TURNOVER / INVENTORY	9.73	15.60	16.56	35.90	19.45	9.85	44.85	9.59	29.30
FIXED ASSET TURNOVER	TURNOVER / FIXED ASSET	1.34	1.55	2.03	3.45	2.09	0.82	2.56	1.27	2.92
TOTAL ASSET TURNOVER	TURNOVER / TOTAL ASSET	0.44	0.44	0.42	0.45	0.44	0.01	0.61	0.42	0.45
LEVERAGE										
DEBT RATIO	TOT LIAB/TOT ASST	0.77	0.84	0.93	1.13	0.92	0.14	0.86	0.78	1.05
PROFITABILITY										
PROFIT MARGIN BEFORE EXCH LOSSES	PROFIT BEFORE EXCH LOSSES / TURNOVER	0.35	0.30	0.20	0.25	0.27	0.06	0.39	0.22	0.33
NET PROFIT MARGIN (POST-TAX)	NET PROFIT / TURNOVER	0.18	0.06	−0.05	−0.40	−0.05	0.22	0.11	−0.27	0.16

* Ratios in this table are calculated from their consolidated components as indicated by the formulas in the second column.

** the Mean Share is the average of each ratio (1990–93). The Standard Deviation measures the likely range given the historical data.

TELECOM DIVISION RATIO ANALYSIS

Fiscal Years Ending March 31

		1990	1991	1992	1993	MEAN*	STD DEV* OF THE MEAN	BUDGETED 1994	MINIMUM 1994	MAXIMUM 1994
LIQUIDITY RATIO										
CURRENT RATIO	CUR ASST/CUR LIAB	1.27	0.97	0.74	0.51	0.87	0.28	0.69	0.59	1.15
EFFICIENCY RATIOS										
AVG RECEIVABLES OUTSTANDING	ACCT RBC*365 / TURNOVER	189.23	212.72	240.86	214.17	214.24	18.28	185.82	195.97	232.52
INVENTORY TURNOVER	TURNOVER / INVENTORY	9.28	15.60	16.02	36.12	19.26	10.10	43.23	9.16	29.35
FIXED ASSET TURNOVER	TURNOVER / FIXED ASSET	1.24	1.43	1.91	3.05	1.91	0.70	2.81	1.20	2.61
TOTAL ASSET TURNOVER	TURNOVER / TOTAL ASSET	0.43	0.42	0.40	0.43	0.42	0.01	0.60	0.41	0.43
LEVERAGE										
DEBT RATIO	TOT LIAB/TOT ASST	0.77	0.85	0.95	1.15	0.93	0.14	0.90	0.79	1.07
PROFITABILITY										
PROFIT MARGIN BEFORE EXCH GAINS	PROFIT BEFORE EXCH GAINS / TURNOVER	0.37	0.34	0.22	0.29	0.31	0.06	0.42	0.25	0.36
NET PROFIT MARGIN (POST–TAX)	NET PROFIT / TURNOVER	0.16	0.04	–0.10	–0.43	–0.08	0.22	0.11	–0.30	0.14

* the Mean Share is the average of each ratio (1990–93). The Standard Deviation measures the likely range given the historical data.

Source: PTC Financial Statements.

POSTAL DIVISION RATIO ANALYSIS

Fiscal Years Ending March 31

		1990	1991	1992	1993	MEAN*	STD DEV* OF THE MEAN	BUDGETED 1994	MINIMUM 1994	MAXIMUM 1994
LIQUIDITY RATIO										
CURRENT RATIO	CUR ASST/CUR LIAB	1.53	1.41	1.87	1.64	1.61	0.17	1.62	1.44	1.78
EFFICIENCY RATIOS										
AVG RECEIVABLES OUTSTANDING	ACCT REC*365 / TURNOVER	299.42	283.28	430.18	515.72	382.15	95.87	165.50	286.28	478.02
INVENTORY TURNOVER	TURNOVER / INVENTORY	15.25	15.57	23.06	33.05	21.73	7.24	83.90	14.49	28.98
FIXED ASSET TURNOVER	TURNOVER / FIXED ASSET	3.18	3.53	4.31	5.64	4.17	0.95	1.03	3.22	5.11
TOTAL ASSET TURNOVER	TURNOVER / TOTAL ASSET	0.55	0.72	0.62	0.57	0.62	0.07	0.69	0.55	0.68
LEVERAGE										
DEBT RATIO	TOT LIAB/TOT ASST	0.69	0.73	0.66	0.82	0.72	0.06	0.31	0.66	0.78
PROFITABILITY										
PROFIT MARGIN BEFORE EXCH GAINS	PROFIT BEFORE EXCH GAINS / TURNOVER	0.17	0.03	−0.00	−0.36	−0.04	0.20	0.03	−0.24	0.16
NET PROFIT MARGIN (POST–TAX)	NET PROFIT / TURNOVER	0.33	0.15	0.33	0.02	0.21	0.13	0.26	0.08	0.34

* the Mean Share is the average of each ratio (1990–93). The Standard Deviation measures the likely range given the historical data.

Source: PTC Financial Statements.

(1) *Foreign Exchange Implications*

Unlike many telephone companies -- including other government owned telephone companies -- PTC is not a net generator of foreign exchange. The 1991/92 foreign exchange shortfall was more than $4.1 million; this has grown to a budgeted $11.5 million for 1993/94. The shortfall for the Telecommunications Division is actually greater than the aggregate PTC shortfall due to a positive inflow of foreign exchange from the Postal Division.

The primary cause for the foreign exchange shortfall is the negative imbalance of international telecommunications traffic, as discussed above. Many developing countries have a sufficient inflow of foreign exchange from settlements to fund investment programs as well. The trend toward a net inflow of traffic will both increase receipts and decrease expenditures of foreign exchange, improving the Telecommunications Division's ability to fund its requirements.

(2) *Subsidies*

Information regarding subsidies was collected from interviews with managers at the Ministry of Finance, ZIMCO, the MCT, and PTC. Conditions of the World Bank loan require that no government subsidies be used to support operations of parastatals, including PTC. This is generally the case, and, although PTC still has loans which were originated with a government guarantee, the GRZ will no longer provide such a guarantee for parastatal loans.

The financial statements for PTC reflect a 1993 loan from the Telecommunications Division to the Postal Division, presumably to support postal payment of its obligations, as well as a current account, through which the Telecommunications Division is able to provide support to the Postal Division on a strictly internal basis. This represents an internal subsidy and is likely to be very important to the Postal Division.

b. *Causes of Poor Performance*

PTC faces several problems which contribute to its poor financial performance. This section addresses those factors, including foreign denominated debt, slow tariff adjustments, fraud, slower than normal revenue collection, dividend payout requirements independent of profits, and the postal subsidy.

(1) *Foreign Denominated Debt*

Foreign denominated debt has a drastic effect on the financial health of PTC because of the extent of fluctuations in the Kwacha exchange rate. The payments PTC is required to make on foreign denominated debt are fixed in foreign currency. When the Kwacha depreciates relative to the currency of the debt, debt payments become more expensive in Kwacha terms. Although the PTC is permitted to control small amounts of foreign currency maintained in foreign accounts, the bulk of its foreign currency transactions are completed through the Bank off Zambia (BOZ). PTC maintains a kwacha account, which is credited for the kwacha equivalent of foreign currency payments made by the BOZ on behalf of the PTC. Thus, PTC is unable to hedge its foreign debt risk through holding foreign currency and is exposed to high exchange losses.

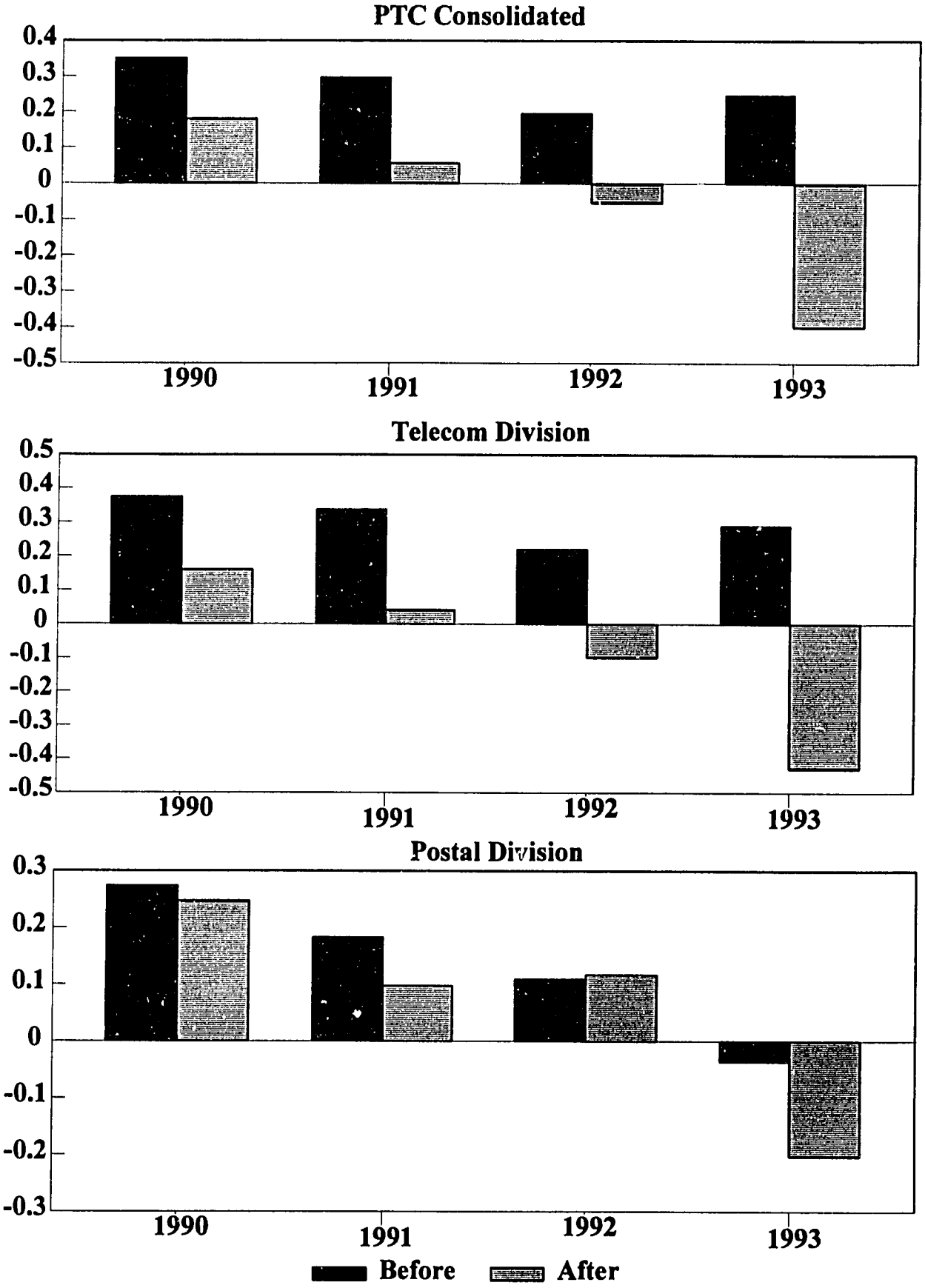
Total telecommunications division long-term debt for 1992 is K8 billion, of which approximately K800 million is local debt and K7.2 billion is foreign. Comparable figures for the postal division are K900,000 long-term debt, of which only K15 million are locally denominated and approximately K885,000 is foreign debt. The following table shows the total exchange losses for the PTC, while the charts presented in Exhibit II-4 show the effect of debt-related exchange losses on the profitability (and therefore cash flow) of the PTC in aggregate as well as on the profitability of each division.

	Kwacha/Dollar Rate (average)	PTC Exchange Losses
1990	32.89	991.3
1991	64.64	2,197.5
1992	156.25	5,651.7
1993	460	NA

Source: PTC Financial Statements.

It should be noted that since exchange rates would affect any foreign-exchange denominated transactions, there may also be some adverse impact on international settlements as long as the balance of settlements is a net outpayment to foreign administrations. Because the Telecommunications Division bills customers every two weeks for international calls (i.e., more frequently than it settles with international operators), the only settlement-related exchange loss to arise would occur if a customer was exceedingly late in paying their bill,

Financial Performance Evaluation
Profit Margins Before and After Foreign Exchange Losses



ote: Profits have been declining at PTC, mostly because of sharp foreign exchange losses in the Telecom Division.
ource: PTC Financial Report for the Quarters Ended March 31, 1991, 1992, 1993.

especially if inflation is high. This is considered to be a loss associated with revenue collection, rather than included with the debt-related exchange losses.

(2) *Slow Tariff Adjustments*

PTC telecommunications tariffs have not kept pace with either national inflation or exchange fluctuations. The tariff was increased from K1.7 to K13 in December 1992. Although this increase was more than 750%, the tariff is still very low by world standards. Postal tariffs were not reviewed, but anecdotal evidence suggests that they are similarly low. The financial condition of the PTC is linked to the failure of tariff adjustments to keep pace with rising costs, including exchange losses, of the company. The specific financial impact of this problem depends on the magnitude of the tariff increase contemplated, the delay in timing of the increase, and the amount of traffic carried during the delay period. A discussion of the factors contributing to PTC's adverse financial situation is presented below.

PTC's telephone tariffs are structured to provide a subsidy from international calls to national calls by maintaining very high international rates and very low national rates. High international calling rates are likely to be under cut as competition for international minutes --currently presented by "Country Direct" programs -- intensifies. In the meantime, the national traffic is substantially underpriced. The national tariff is based on metered units, which come at different rates for different distance bands. Since the tariff is presently set at K13 per unit, national traffic varies between K13 per minute for local calls and K130 per minute for distance band E calls.

Unfortunately, this rate does not even cover operating costs and is nowhere near meeting PTC's total revenue requirement. As part of a recent study to review the national tariff, cost and traffic information was compiled for the fourteen months from April 1992 to May 1993. The average operating cost for these months attributable to national traffic (using PTC's assumption that 90% of operating costs should be recovered through the national tariff) was K1,160, while traffic averaged 45,000,000 metered units. The implicit minimum national tariff to fund operating expenses only is K25.8, while the tariff in place during this period was K1.7 for the first eight months and K13 for the final six months.

In addition to funding operating expenses, the tariff should provide some mechanism for recovery of debt service, non-debt funded investment and a return to shareholders. Financial distress was an inevitable consequence of the inadequate national tariff. While the impact of this was deferred for some time because of the subsidy from international traffic, the prolonged period of insufficient national tariffs is presently presenting severe difficulties to the PTC.

(3) *Slower than Normal Revenue Collection*

Slow revenue collection and a high level of uncollectibles are major PTC problems on the telecommunications side. Revenue collection is not an important issue within the postal division because a large portion of postal service is provided on a pre-paid basis. Although no statistics are maintained regarding the level of uncollectible revenue, it is estimated to be between 30% and 50% of turnover. The recent JICA study estimated uncollectibles to be as high as 56%. We estimate that a 10% improvement in telecommunications revenue collection would lead to an improvement in pre-tax revenue of nearly 15%, while a 50% improvement in revenue collection would lead to a 79% improvement in pre-tax revenue.

Several reasons have been offered for why revenue collection is so poor, including fraud (see Section 4), late bills associated with billing system problems, and time value of money associated with late billing and late payments (particularly costly because of the high interest rates and exchange fluctuations). There are several actions PTC could take (and have begun) to improve revenue collection. First, strict enforcement of a policy of disconnecting delinquent customers should be implemented. Second, revenue to be written off should be analyzed to determine what the cause of the uncollectible charges are. This will help isolate incidents of fraud and support a fraud reduction program. Finally, alternative payment arrangement for marginal customers should be considered, including service deposits and debit-type accounts.

(4) *Fraud*

Fraud is presumed to affect the telecommunications division disproportionately to the postal division. Few records are maintained regarding the level of fraudulent activity, however, so it is impossible to quantify the impact of fraud on the company's financial performance. Much of the company's fraud is associated with uncollectible revenues. Examples of this type of fraud are expensive international calls billed to lines which are out-of-service at the time the call is made or lines not connected to the billing system at all. Additionally, high costs associated with outside plant development are frequently attributed to possible employee theft of cable. Finally, there are suspicions that there may be fraudulent activities in the procurement process, also adding to network investment costs.

As of September, 1993, evidence of fraud and related cost impacts was largely anecdotal, as very little data was collected and reviewed relating to these issues. We understand that since that time, fraud reduction programs have been implemented, with some degree of success, Improved management information (e.g., analysis of uncollectible revenue by reason and geography, competitive information on solicitations) would provide greater basis for both

identifying the impact of fraud on PTC finances and reducing the level of fraud within the organization.

(5) *Tax and Dividend Payout Requirements*

Taxes are calculated based on gross revenue, rather than on net income. This is detrimental to the PTC's income and financial accounting for several reasons. First, taxes are assessed even during years when PTC operates at a loss, further exacerbating the problems of funding losses. Second, there are no loss carry-forwards, so that taxes paid in loss years cannot be recovered in subsequent years. Finally, depreciation tends to be understated, creating a substantial discrepancy between book and actual asset values.

Dividend payments do not affect net income, but do impede cash flow, specifically retained earnings. PTC pays dividends to ZIMCO, which collects the dividends paid by all of the parastatals as its revenue, and, in turn, pays a dividend to the Ministry of Finance. ZIMCO has recently changed its policy regarding parastatal dividends to require an annual dividend in the amount of 10% of its equity holding.

Taxes and dividends are paid by PTC at the divisional level. Tax payments result in a reduction of overall net income, while dividends limit cash flow, and, in fact suppress retained earnings (see discussion in Section c. Impact of Poor Financial Performance). Data in the following table is taken from the divisional Income Statements (included as Exhibit II-5) and summarizes the magnitude of tax and dividend payments.

	Telecommunications Division	Posts Division	PTC Total
1993 Net Income	-8,594.4	34.0	-8,560.4
1993 Taxes	682.8	0.0	682.8
1993 Dividend	138.8	10.0	148.8

Source: PTC Financial Statements.

(6) *Postal Subsidies*

Discussion of subsidies from the telecommunications division to the postal division tends to be somewhat convoluted, as there are widely different perceptions of this issue. The financial records are equally confused on this issue. Certain invisible subsidies, such as telecom division payment of debt service relative to common facilities, cannot be evaluated

CONSOLIDATED PTC INCOME STATEMENT

In Millions of Kwacha
Unadjusted for Inflation

Fiscal Years Ending March 31

	1990	1991	1992	1993	BUDGETED 1994
TURNOVER (OPERATING INCOME)	1769.6	3385.9	7306.4	21394.1	56986.8
PROFIT BEFORE FOR EXCH GAINS	620.5	1002.7	1441.0	5280.4	22101.8
FOREIGN EXCHANGE LOSSES	−259.8	−721.4	−1638.5	−13158.0	−12093.0
NET PROFIT BEFORE TAXATION	360.7	281.3	−197.5	−7877.6	10008.8
TAXATION	−36.1	−85.5	−195.7	−682.8	−3552.3
NET PROFIT AFTER TAXATION	324.6	195.8	−393.2	−8560.4	6456.5
DIVIDEND	−25.0	−65.0	0.0	−148.8	−311.1
PROFIT FOR YEAR	299.6	130.8	−393.2	−8709.2	6145.4

TELECOM DIVISION INCOME STATEMENT

In Millions of Kwacha
Unadjusted for Inflation

Fiscal Years Ending March 31

	1990	1991	1992	1993	BUDGETED 1994
TURNOVER (OPERATING INCOME)	1559.2	2931.2	6538.6	19989.3	52733.2
PROFIT BEFORE FOR EXCH GAINS	584.0	989.5	1442.0	5787.3	21965.2
FOREIGN EXCHANGE LOSSES	−300.7	−788.3	−1895.0	−13698.9	−12764.9
NET PROFIT BEFORE TAXATION	283.3	201.2	−453.0	−7911.6	9200.3
TAXATION	−32.0	−74.8	−195.7	−682.8	−3240.5
NET PROFIT AFTER TAXATION	251.3	126.4	−648.7	−8594.4	5959.8
DIVIDEND	−25.0	−50.0	0.0	−138.8	−300.0
PROFIT FOR YEAR	226.3	76.4	−648.7	−8733.2	5659.8

POSTAL DIVISION INCOME STATEMENT

In Millions of Kwacha
Unadjusted for Inflation

Fiscal Years Ending March 31

	1990	1991	1992	1993	BUDGETED 1994
TURNOVER (OPERATING INCOME)	210	455	768	1405	4254
PROFIT BEFORE FOREIGN EXCH GAINS	37	13	−1	−507	137
FOREIGN EXCHANGE LOSSES	41	67	257	541	672
NET PROFIT BEFORE TAXATION	74	80	256	34	809
TAXATION	−4	−11	0	0	312
NET PROFIT AFTER TAXATION	70	69	256	34	1120
DIVIDEND	0	−15	0	−10	−11
PROFIT FOR YEAR	70	54	256	24	1109

Source: PTC Financial Statements.

from financial records. Similarly, there is no billing between the two divisions for services rendered to each other.

The financial statements, however, reflect a postal division current account and a separate postal liability to the telecommunications division. It is believed that these represent explicit loans from the telecommunications division to the postal division. While these balances will have an impact on divisional cash flow (cash out of telecommunications division; cash in to postal division), they balance out to zero cash flow impact on the PTC.

c. *Impact of Poor Financial Performance*

The most important implication of PTC's poor financial performance is that PTC has been unable to fund an investment program to maintain or expand telecommunications infrastructure. The high level of debt in PTC's capital structure leaves PTC unable to service its debt and makes the option of financing investment through borrowing unlikely, particularly without government guarantees. Internal funding of investment would be financed through retained profits, which has declined substantially over the past several years, reaching a negative number in the year ending 1992. In fact, it is lack of retained profit that has eroded the government's equity position on the balance sheet, indicating that debt funding is now necessary to finance operations.

As shown in the following table, the compound annual drop in (cumulative) retained profits over the past four years was 138% in dollar terms and close to 300% in kwacha terms. Besides factors contributing to overall losses (i.e., exchange losses, poor revenue collections, and an insufficient tariff), other factors have depressed profit retention. These include the payment of taxes and dividends during years with negative net income. A private operator would not be obligated or permitted to make such payments during years in which losses are incurred.

	Retained Profits (Million Kwacha)	Retained Profits (Million Dollars)
1990	296	8.97
1991	130	2.00
1992	(393)	(2.52)
1993	(8,709)	(19.30)

Source: PTC Financial Statements.

4. Tariffs

Zambia's prevailing tariff structure conforms to the tariff structure of most developing countries, combining low domestic rates with high international rates (overall international traffic accounts for approximately 76% of telecommunications revenue), encouraging inefficient use of the network. Consumers tend to use more domestic service (national and local) than they would if tariffs were economically efficient, resulting in switch congestion and poor service quality. The switches become congested because they are designed with certain calling characteristics in mind. Free, non-duration based rates or rates that are grossly under cost will lead to switch congestion due to greater than expected use. Conversely, funds generated by high international tariffs are used to subsidize local traffic instead of being reinvested in network quality improvements. In the meantime, a poor collection rate and high exchange losses are financially crippling the PTC.

The PTC has submitted a proposal to raise national tariffs and to implement a mechanism whereby it can automatically adjust rates to recover exchange losses.

a. *Telecommunications Tariffs*

Telephone service is extremely important, as it accounts for approximately 92% of telecommunications revenues. Of the projected K18 billion telephone revenue in FY 1992/3, 24.5% was attributable to national service with the rest coming from international. Telephone tariffs have three major components: usage or traffic sensitive charges (i.e., charges per call), non-traffic-sensitive recurring charges (i.e., monthly service charges), and non-recurring charges (i.e., installation or specific services).

National telephone tariffs in Zambia are based on a fixed charge of K13 per calling units. For local calls, a calling unit is three minutes, while for long distance national calls, the number of units per minute changes based on distance. International calls are billed based on fixed rates per minute quoted in U.S. dollars and translated into kwacha at the time of billing. The current international tariff has been in place since 1986 and features rates ranging between $2.80 and $7.50 depending on the country (the average tariff rate is $4.20). A 25% discount is offered for international calls placed during non-peak times (evenings).

Residential customers pay recurring charges of approximately K1,280 per quarter, comprising a line charge of K800 and an equipment rental charge of K480. The installation charge for residential customers is K2,500. Charges for business customers are somewhat higher, and vary based on the type of equipment used.

Telex traffic accounts for approximately 7.4% of telecommunications division revenue, of which 1.9% is domestic and 98.1% is international traffic. Telex charges include quarterly recurring charges of K800 for lines, between K1,200 and K3,000 for equipment, and an installation fee of K2,500.

b. *New Tariff and Automatic Tariff Adjustment Mechanism Proposal*

In a proposal dated June 28, 1993, PTC requests several modifications to the current tariff process, including:

- Increasing the national tariff to K34 per unit or US$0.06 per unit;
- In the event that the K34 per unit tariff is adopted, imposing an "Automatic Tariff Adjustment Mechanism", whereby losses based on exchange fluctuations are recovered through the tariff on a monthly basis;
- Increasing recurring and non-recurring charges and distinguishing more between business and residential customers.

It is interesting to note that the new tariff structure proposes maintaining the prevailing international tariffs and their associated subsidies to the network "in line with international practice". While this is historically true, most recent telecommunications restructuring around the world have sought to eliminate such subsidies in the long run.

Overall, this tariff does not go far enough to funding PTC operations, but in view of the current liquidity crisis of the PTC (as described in Section II), it is a step in the right direction. In the spirit of commercialization, PTC should convert to a true cost-based tariff, requiring more dramatic increases in the national calling rate and reductions in the international rate. In implementing such a program, PTC should examine the recent experience of Zambia Electricity Supply Corporation (ZESCO), who recently increased their rates by approximately 500% to determine the potential benefits and risks of phased-in tariff increases. We recommend, therefore, that the new tariff proposal be implemented on a provisional basis until PTC can conduct a cost study and propose an implementation plan for cost-based tariffs. This is described in greater detail in section V.

These recommendations are made with the assumption that tariffs, tariff adjustment mechanisms, tariff policies, and tariff updating procedures will be carefully reviewed and subject to modification whenever there is major change within the sector. In the near future, this will occur at least twice, once when a regulator is empowered and a regulatory regime imposed, and again when the telecommunications entity is privatized.

(1) *Proposed New Tariff (K34 or US$0.06)*

Having analyzed the level of the new tariff, it is less than it should be. Several theoretical or computational errors either inflate or depress the tariff calculation, but the greatest in magnitude tend to depress the tariff. Specifically, as shown in Exhibit II-6, the tariff calculation is basically a five step process:

1. Calculate the portion of Operating Expenses attributable to the national network based on 15% (since national telephone represents 15% of turnover).

2. Calculate the portion of Exchange Losses attributable to the national network based on 75% of total exchange losses (including foreign administration settlements).

3. Add national network portion of Operating Expenses and Exchange Losses to determine Recoverable Costs (through national network).

4. Gross up Recoverable Costs by 15% (presumed cost of capital) to estimate Revenue Requirement.

5. Divide by the number of units and take the average. This average is translated into US$ at an implicit rate of 560 Kwacha/$ to calculate the US$ denominated tariff.

The major problems with this process include:

- There is no mechanism to recover debt service (except that portion of debt service represented by exchange losses). Since it is estimated that 90% of all network infrastructure supports national service, 90% of debt service requirements should be included in the national tariff calculation;

- The 15% return should not be applied to exchange losses to be recovered (i.e., the 15% should only be applied to operating expenses and debt service; exchange losses should just be passed through to the customer base);

- The number of units over which the revenue requirement is spread is the number of units billed. No adjustment is made for uncollectible revenue;

- The average is calculated incorrectly (the sum of fourteen data points divided by 13).

PTC Proposed Tariff Calculation

		Apr–92	May–92	Jun–92	Jul–92	Aug–92	Sep–92	Oct–92	Nov–92	Dec–92	Jan–93	Feb–93	Mar–93	Apr–93	May–93
1. Total Operating Expenses		562	509	530	1493	995	655	1261	929	1437	1203	1299	3329	2005	1840
Total Op Expenses for Tariff	15%	84	76	80	224	149	98	189	139	216	180	195	499	301	276
2. Total Exchange Losses		280	274	115	270	278	285	1,120	1,350	3,285	2,227	2,009	2,206	1,619	2,077
Total Exch Losses for Tariff	75%	210	206	86	203	209	214	840	1,013	2,464	1,670	1,507	1,655	1,214	1,558
3. Op Expenses Plus Exch Losses		294	282	166	427	358	312	1,029	1,152	2,680	1,850	1,702	2,154	1,515	1,834
4. Return:															
On Op Expenses	15%	13	11	12	34	22	15	28	21	32	27	29	75	45	41
On Exch Losses	15%	32	31	13	30	31	32	126	152	370	251	226	248	182	234
Total Return		44	42	25	64	54	47	154	173	402	278	255	323	227	275
Total Revenue Requirement		338	324	191	491	412	359	1,183	1,325	3,082	2,128	1,957	2,477	1,742	2,109
4. Number of Units (000,000)		47	43	41	49	44	42	69	67	44	36	40	33	35	39
Recommended Tariff		7.3	7.6	4.6	10.0	9.4	8.5	17.1	19.8	70.0	59.2	49.0	75.1	49.8	54.1
5. Total Revenue Requirement (14 months)			441.5												
Average Revenue Requirement (Divided by 14)			31.5												
Average Revenue Requirement (Divided by 13)			34.0												
Tariff in US $ (360 K/US $)			0.1												
6. Tariff Decomposition															
Operating Expenses per Unit		1.8	1.8	1.9	4.6	3.4	2.3	2.7	2.1	4.9	5.0	4.9	15.1	8.6	7.1
Exchange Losses per Unit		4.5	4.8	2.1	4.1	4.8	5.1	12.2	15.1	56.0	46.4	37.7	50.2	34.7	39.9
Return on Operating Expenses		0.3	0.3	0.3	0.7	0.5	0.3	0.4	0.3	0.7	0.8	0.7	2.3	1.3	1.1
Return on Exchange Losses		0.7	0.7	0.3	0.6	0.7	0.8	1.8	2.3	8.4	7.0	5.7	7.5	5.2	6.0

Averages	Divided by 14	Divided by 13
Operating Expenses per Unit	4.7	5.1
Exchange Losses per Unit	22.7	24.4
Return on Operating Expenses	0.7	0.8
Return on Exchange Losses	3.4	3.7
	31.5	34.0

Source: Price Waterhouse.

(2) *Proposed Automatic Tariff Adjustment Mechanism*

The proposed tariff adjustment mechanism calls for exchange losses per unit to be calculated as total exchange losses during month divided by the number of national units. The result of this calculation is then added to the base tariff rate to enable PTC to recover exchange losses. The ultimate tariff calculation is expressed in the proposal as follows:

$$\text{National Billing Tariff} = \frac{\text{Exchange losses During Month}}{\text{Number of National Units}} + \text{Base Rate}$$

This formula is not consistent with the assumptions used in calculating the K34 tariff. One of the key assumptions in that calculation is that the composition of exchange losses is:

Attributable to foreign administrations	15%
Attributable to debt service	85%

The 85% attributable to debt service is further decomposed into 10% for the international network and 75% for the national network (this is close to the results of applying the 90%/10% national/international investment to the 85% debt service). Accordingly, only 75% of exchange losses should be recoverable through the national tariff.

Further, the base rate has included some adjustment to account for exchange losses. Specifically, K24.4 of the K34 tariff is attributable to exchange losses and another K3.7 is attributable to the 15% return on exchange losses, which should be used as a buffer if it were to be included in the tariff proposal. Accordingly, the proposed adjustment applied to the K34 tariff double counts the impact of exchange losses included in the K34 tariff calculation.

Finally, the proposed formula provides for recovering exchange losses but does not address exchange gains. Inclusion of exchange losses in the base rate shifts the relevant baseline against which losses would be calculated from the prevalent exchange rate under which debt was originally incurred to the prevalent exchange rate at the time the base tariff was calculated (i.e., June 1993). The Kwacha/Dollar rate at that time was a local high, implying that the magnitude of exchange losses decreased subsequently. Relative to June 1993, therefore, August 1993 would have represented an exchange gain. This proposal provides no mechanism by which such a gain (or reduced loss) would be passed on to consumers.

Automatic tariff adjustment is an excellent idea for Zambia, and should be considered not only to cover losses brought about by fluctuations in the exchange rates but also to address inflation of operating costs. Because of benchmarking difficulties, however, simply adding a

flat adjustment factor makes miscalculation likely. Other options for automatic adjustments include calculating a tariff denominated in a more stable currency and converting back into kwacha, as is done with international calls, as well as in other sectors, such as airline and hotel rates. Another option is to calculate the tariff as the sum of explicitly defined tariff components (operating costs, debt service, non-debt funding of investment separated into local and foreign denominated requirements, return to equity holders) and adjust the relevant portions of the tariffs for economic changes from tariff calculation assumptions. For example, if the tariff calculation assumed an exchange rate of 500 K/$ and two months later, the prevailing exchange rate were 550 K/$, the debt service and foreign-denominated investment cost tariff components would be increased by 10% (550/500-1).

B. Stakeholder Priorities

There are numerous stakeholders who share an interest in the progression and reorganization of PTC. Such groups include the following:

- Government agencies who see telecommunications as a development tool and an income generator;
- PTC and sector equipment suppliers who rely on the PTC for their income;
- Potential investors who are interested in possible opportunities following restructuring and, perhaps, privatization;
- Various users who are concerned about the quality and variety of service provided by the PTC.

Representatives from each of these categories were contacted in order to understand their concerns and expectations from PTC's reorganization. The major issues that were discussed are summarized in this section.

1. Separation of Postal and Telecommunications Divisions

The restructuring of PTC involves the separation of the Postal and Telecommunications Divisions and the long-term goal of privatization. While most stakeholders were supportive of the restructuring of PTC, two perspectives were expressed in general. The first perspective came from the majority of stakeholders who support the separation of the Postal Division from the Telecom Division in order to encourage modernization and efficiency and move closer to privatization. This perspective was also expressed by stakeholders who are knowledgeable of the current situation at PTC.

The second perspective, voiced by the Union, was supportive of restructuring, but tempered with concerns about employee benefits, job security, and the role of the Union. Some of the stakeholders would like to see the employee benefits (e.g., transportation, clinics, housing) become semi-autonomous from the functions of the PTC. The National Union of Communications Workers is concerned, though, that their constituents will not be served if outside parties manage these employee benefits. Furthermore, with the separation of the two divisions, the Unions is concerned that the Postal division workers will join the government workers union, thus decreasing the Telecommunications workers leverage and involvement.

2. Privatization's Effect on Employment and the Union

Pertaining to the GRZ's long-term goals for the PTC, some government agencies and numerous suppliers are in favor of privatization because they feel it would improve PTC's efficiency, the quality of the network, and expand the services available. The Union, while not opposed to the privatization of PTC, was concerned with the potential ramifications of private ownership on employment. The Union fears that private ownership would result in the loss of numerous jobs and nepotism in management positions. This sentiment was echoed by suppliers and users alike who acknowledged that retrenchment may be unavoidable and will require substantial funds, even though most would not be personally affected by retrenchment. To counter these effect's of privatization, the Union and ZIMCO would like to see systematic retraining of employees as well as requirements that private owners hire a minimum percentage of current employees. In response to the high costs of retrenchment, ZIMCO explained that proceeds from subcontracts or the sale of the company could cover the costs incurred.

In addition to retrenchment, the Union is concerned that the privatization of PTC will jeopardize the Union's role with PTC. They fear that private operators of the Telecommunications division will not include the Union in key discussions, thus they will be unable to serve their members.

3. Funding for PTC

Suppliers, users and government agencies cited lack of funding as a principal constraint for PTC's management plans and indicated they would prefer to eliminate or change certain aspects of PTC's funding structure. Two government agencies explained that two factors are causing the lack of funds: (1) a national tariff that is well below an adequate economic level necessary to recover costs, and (2) a poor collection rate leading to late bills and high interest rates. Although PTC has historically received subsidies to ease this shortage, government policy now prohibits subsidies to parastatals. Despite the insufficiency of funds collected,

PTC must maintain certain financial obligations. Meanwhile, PTC's financial burden is quite high and the company is required to provide dividends to the government.

As a result of the lack of funds, the salaries offered by PTC are not competitive with those offered by ZCCM or ZESCO, for example, thus PTC is not able to attract or retain enough qualified employees. It was suggested by one supplier that if PTC improved their collection and raised their tariff, they could raise salaries, attract more qualified employees, and commit some funding to research and development.

4. Regulatory Framework

The sector, the government and many stakeholders agree that the establishment of a consistent and predictable regulatory framework is a priority. The equipment suppliers, except for one, explained they would like to see more defined equipment licensing requirements. The potential cellular operators would like to have clear guidelines for frequency allocation and licensing. Also, many stakeholders knowledgeable of the current situation at PTC would like a more closely regulated tariff that reflects PTC's actual costs.

This regulating body would oversee spectrum management, type approval, licensing, tariffs, and contracts with the Electronic Repair Center (ERC). Since most of these items are politically sensitive, suppliers expressed a lack of confidence in a single regulator. They would prefer to establish a Board of Regulators, for example, that is independent of both Ministerial interference and operating functions.

5. Liberalization of the CPE Market

In January 1993, the customer premises equipment (CPE) market was completely liberalized, although no equipment approval mechanism has been implemented. This change enabled numerous stakeholders, such as Needs Communications, Horizon, Philips and Telecare to market handsets, PABX systems, and fax machines, for example. Consequently, there is a growing variety of products on the market that range in quality, features, and prices. ZIMCO pointed out that many consumers do not realize they can purchase and connect their own equipment and that, since the liberalization was accomplished without legislative change, connection of customer-owned equipment is technically illegal (the legislative change has since been implemented).

When the sector was liberalized, it rendered any previous equipment standards obsolete, thus exposing the market to a variety of quality products, including imports. The CPE available currently on the market falls into three categories: (1) CPE that have been available for

numerous years and were type approved prior to liberalization of the market (e.g., Philips), (2) new entrants into the market that are high integrity products, but need type approval (e.g., Needs Communications, Horizon/Ericsson), and (3) low quality, inexpensive CPE that is imported in large quantities.

Two suppliers support implementation of type approval to protect them from fierce price competition from low quality products that are dumped in Zambia (primarily handsets from Asian countries, such as South Korea). They also argue that type approval will protect the consumers from purchasing poor quality equipment that may not be compatible with the network and will protect the network from damage from inappropriate technology. Some suppliers are in favor of implementing sector standards to limit the supply of imports and, in particular, low quality, inexpensive imports. One government agency expressed concern that many of the inexpensive products are highly subsidized by their home countries to the detriment of the local Zambian producers. In addition, as explained by a supplier, the low labor costs in Asian countries do not outweigh Zambia's high import duties. Therefore, they support an increase in import tariffs in order to encourage local assembly and production of CPE.

6. Fraud, Theft and Vandalism

Unfortunately, PTC's financial situation is further aggravated by the high frequency of fraud, theft and vandalism. Numerous stories were recounted indicating fraudulent use of the switches and lines. One common scenario involved routing expensive international calls over out-of-service subscriber lines. When the resulting bill was received, the subscriber protested, and the call charges were written off as bad debt. Additionally, one of the main problems for the network, as cited by users and suppliers, is the high rate of theft of copper cable due to its resale value. Many stakeholders, such as one government agency, perceive that the restructuring of PTC will bring about improvements in bill collection and minimization of fraud. PTC has already begun to tighten control on fraud by enforcing a strict policy of firing employees who are caught.

7. Maintenance

The PTC network has not been maintained due to lack of funding, lack of training on donor-funded equipment, inventory shortages, and inefficient use of the working portions of the network (e.g. excess capacity). Most stakeholders, especially the Electronic Repair Center (ERC), would like to see maintenance become a priority, accompanied by sufficient training on foreign equipment and adequate provision of replacement parts. Currently, the ERC does not have control over stocking procedures for spare parts which often leads to inventory

shortages. In some instances, spare parts have taken up to 2 years to arrive, thus impeding maintenance efforts.

One of the hindering factors for maintenance is that the network's sophisticated equipment (e.g., switches and circuits) is imported from overseas and is technically complicated. As a result, repairs become difficult because the equipment must either be transported to the originating country or a technician from the represented company must travel to Zambia. Often, minor repairs are disregarded due to these long distance factors leading to the ultimate degradation of the equipment beyond repair. The creation of the ERC has shortened repair delays for switches, handsets, telex machines and PCs, but they are not able to keep up with requests for service.

Maintenance of locally sourced products, such as external plant, also needs to be attended to more closely. Given the current excess exchange capacity, there is little incentive for PTC technicians to repair the circuits and exchanges. When a line is not working the technicians will simply switch the line from a non-operating circuit to one of the extra circuits.

When equipment is not maintained, it eventually deteriorates beyond repair. PTC currently spends funds inefficiently, purchasing new equipment to replace poorly maintained equipment, rather than purchasing equipment to expand the existing infrastructure.

8. Data Service

Among the numerous services requested by users were the availability of data transmission capabilities with a high speed data network and packet switching system. The larger companies, such as Barclays Bank and ZCCM, explained that data lines would improve their efficiency substantially. The banks, in particular, would like to offer more extensive ATM service, but without data lines they are limited to inter-city and, at times, main branch service only. ZCCM's internal network has primarily data lines and terminals, and they are currently developing the capacity to transmit video images on their network. Suppliers indicated that they are interested in installing data capacity, yet there has been no response to the bids recently submitted to the Government.

9. Public Phones

Working payphones in both urban and rural areas is another service requested by both industry and government stakeholders. In particular the farming and rural communities see a great need for improved public phone service. Since public service has been a long standing request, the Electronic Repair Center is already preparing to modify all the payphones to

accept tokens given that coins are scarce in Zambia. There is also some discussion of converting to card phones for the public and many stakeholders, including the ERC, explained that they would prefer this system to tokens, but are implementing a token-based system because of availability of donor financing.

10. Rural Service

The Government, the Zambia National Farmers' Union, potential cellular operators and several suppliers cited the rural community as the primary consumer group in need of access to phone service. Outside of the urban areas, the quality and availability of phone service diminishes rapidly. Installation of a wireless local network was a popular option, particularly among potential cellular operators, for addressing this community. A wireless system is appealing for these remote communities because it is easy to maintain and it replaces the copper cable wiring that is expensive and vulnerable to theft.

The farmers' union explained that the lack of phone service is severely hindering productivity, especially when a farmer makes the long trip to town only to find that the machinery part he needed was not in stock. In circumstances such as this, public phones for the farmers could substitute for the lack of adequate phone service. The farmers have established a radio communications system, yet it is often congested and not as private as a telephone network.

11. Cellular Network

The installation of a cellular network for both urban and rural areas is of interest to users, suppliers, and PTC. Submission of an unsolicited proposal to develop a cellular network by one stakeholder raised questions concerning the bidding and approval process, the distribution of frequency, the division of provision between multiple providers either geographically or functionally, and the provision of service to the non-profitable, remote communities. MCT's solicitation of cellular bids resulted in the receipt of numerous proposals showing there is a keen interest by Zambians to participate in the sector. These proposals ranged from two page letters of intent to fully developed proposals including exhibits and confirmed source of funding. Since the MCT has not responded to any of the bids, there is much concern among potential investors.

12. User Cooperation and Support

Certain user groups (e.g., banks) could benefit from closer cooperation with the PTC and other users with similar needs in order to facilitate cooperation between users. For instance,

one bank was unaware that Reuters might have excess satellite capacity on which the bank might rent service for international credit card data transfers. Furthermore, a service that is not cost effective individually may be cost effective with group participation.

13. Supplier Relationships

In addition to cooperation among user groups, the sector would benefit from closer interaction between PTC and its private suppliers. One supplier explained that, in the past, suppliers have provided and installed phone lines for PTC. Upon completion, the lines were handed over to PTC to maintain. Similarly, ZCCM has expressed an interest in eventually using the PTC network for its internal needs, so ZCCM can re-focus resources currently dedicated to the internal network. With the liberalization of the CPE market, a supplier also suggested that PTC provide phone lines to the destination and from there allow private companies provide the equipment, installation and maintenance. This would not only enable PTC to focus its resources on the provision of lines and expansion of the network, but also it would increase the level of competition in the sector, thus improving customer service and maintenance by equipment suppliers. Proposals for dividing the country by region or type of service may allow for further competition among the private enterprises.

14. Private Sector Participation and Local Operations

Although stakeholders, in particular one government agency, would like to see greater opportunities for use of local labor and resources, there is not currently an enabling environment for such participation. A ministry representative explained that economic conditions, including the structure of import duties, extremely low wages (which encourage pilferage), and lack of reliable power/transportation, discourage employment of local resources.

III. Policy and Draft Laws

A. Background

1. International Trends

Around the world, telecommunications sectors have been undergoing massive restructuring with an eye toward becoming more market driven. The 1984, break-up of AT&T in the US and privatization of BT in the UK signalled changes in the conventional wisdom of telecommunications.

First, the view of telecommunications as a natural monopoly was challenged by potential competitors such as MCI in the US and Mercury in the UK. While the potential for competition within the long distance and international segments was accepted early on, the possibility of competition in providing local service is only now beginning to be explored. Second, technological development (e.g., smart networks, cellular networks) has provided increased market opportunities for participants other than national telephone companies. Third, political and economic reforms around the world have led to an appreciation of the role of the private sector in developing national infrastructure, and finally, increased competitive pressures in home markets have led carriers to seek cross-border business opportunities.

These changes in business and regulatory practices have led to numerous successful telecommunications privatizations in both the developing and developed worlds. The success of these privatizations is based largely on the profitability of telecommunications (many national telecommunications companies have been profitable even before commercialization; those that are not typically lose small amounts and are relatively easy to improve), the foreign exchange generating capability of international telecommunications, and the strong capitalization of international buyers like Cable and Wireless, Telefonica of Spain, GTE, and the U.S. Regional Bell Operating Companies (RBOCs).

The major objectives of telecommunications privatizations are to introduce private sector capital to improve and expand the network (particularly in rural areas), to introduce private sector expertise to improve company operations (such as planning and billing and collections), and to demonstrate the government's commitment to privatization through a high visibility, high value transaction. Additionally, telecommunications privatizations, when accomplished through an initial public offering, can strengthen local stock markets. Potential obstacles to privatization include union reservations, national security concerns, and government desire to retain telecommunications generated revenue and foreign exchange.

2. Zambian National Policy

The Zambian telecommunications sector is currently dominated by PTC with regulatory functions divided between PTC and the MCT. Private participation is kept to a minimum, although the recent liberalization of the equipment market has provided a new opportunity for private sector interaction with end users. Competition exists in the equipment segment, but is suppressed by confusion regarding the status of privately owned equipment, particularly among residential consumers.

Overall GRZ economic and financial policies provide little telecommunications-specific guidance. In general, GRZ financial and economic policies call for the private sector to take a more aggressive role in economic development. This policy has been strengthened with the passage of the Privatization Act (1992), the creation of Zambia Privatization Agency, and the initiation of the Privatization Program.

PTC's presence on the list of enterprises to be considered for privatization reflects the government's inclusion of the telecommunications sector in the private sector mandate. This, however, does not indicate a GRZ commitment to privatizing PTC. Each entity must be approved for privatization by Cabinet; failure to obtain such approval may halt privatization efforts. The privatization issue should be addressed explicitly in the Telecommunications Sector Policy, and should be consistent with overall GRZ policies.

A second policy issues addressed at the national level with implications for the telecommunications sector is parastatal reform. The GRZ has decided to commercialize parastatals in preparation for privatization as well as to improve government revenues before all privatizations have been completed. The major components of the parastatal reform program are a mandatory dividend to be paid directly to government of 10% of shareholder funds (based on revalued assets) and elimination of all subsidies supporting parastatal operations. The GRZ will, however, fund financial restructuring programs for public utilities as needed.

The parastatal reform program has several implications for PTC and, therefore, on the telecommunications sector. Most notably, it has provided the impetus for separation of the postal and telecommunications functions. This restructuring is planned to take effect as of April 1, to correspond with PTC fiscal years. Parastatal reform also increases the importance of responsible financial management within PTC, since revenue shortfalls will not be made up by the government.

A third aspect of GRZ policy addresses competition. The privatization program calls for greater involvement of the private sector and the parastatal reform program calls for the elimination of "...any special advantages for parastatals that may inhibit private competition...". Specific provision is made for the implementation of public utility regulation where competitive activity is not adequate to control prices, and reduction of interference by the GRZ (through the relevant ministry) in day to day operations of public utility companies is mandated.

Paragraph 35 of the Economic and Financial Policy Framework, 1992-1994 states:

> "Public utilities not immediately on the privatisation list will have their services commercialised. In the past, rates of ZESCO, Zambia Railways, and other utilities were restrained by Government without regard to the financial viability of the enterprises. This will no longer be the case. Utilities will be free of day-to-day interference in their management and will no longer receive governmental subventions to offset operating losses. Because they will not be subject to competitive forces that serve to restrain prices and contain costs, however, there will need to be some oversight mechanism for approving prices. During the coming year, the Government will examine alternative mechanisms for setting public utility prices at levels that will provide a fair return on capital and facilitate a sound level of performance, efficiency and investment."

For PTC, this means increased autonomy in operations and in price setting. It also means that PTC will face competition in some markets and regulation in others. PTC will have to establish a rapport with a new regulatory entity and will have to formulate internal infrastructure to manage the reporting requirements and policy enforcement activities of the regulator. The major impact will be on rate setting, which will have to be conformed to externally imposed requirements. These requirements may be established to provide service incentives (e.g., PTC may be permitted to charge higher rates if performance indicators such as the penetration rate increases by 100% than if the increase is only 10%). Conversely, as service levels increase, telephone usage is likely to increase, enabling PTC to generate more revenue at lower rates.

3. Zambian Telecommunications Policy To Date

In response to the problems in sector performance, the Government has passed new telecommunications legislation during the first quarter of 1994. The final version of this

legislation was not provided for our review, however an earlier set of draft laws (see Appendix B) is discussed in this section. The laws reviewed are:

- Draft Communications Administration Act
- Draft Telecommunications Act
- Draft Radio Communications Act
- Draft Postal Services Act

One additional law, the draft Interception of Communications Act, is still under development.

Although the Communications Administration Act was eliminated from the laws eventually passed, its contents were merged into the Telecommunications Act. In this section, we present comments on the Draft Communications Administration Act, since this was the vehicle for some content ultimately included in the enacted legislation.

There are several troublesome aspects of the process employed in drafting these documents. First, the policy statement was drafted after the draft laws and has never been circulated outside of the MCT. This is an unproductive process, since the laws are intended to create an enabling environment for the policy and should therefore be developed after the policy is formally accepted. A second issue pertains to the review process the laws were subjected to prior to being sent to Cabinet. Since the policy and laws ultimately enacted have a broad impact on sector participants, input from a broad audience should be collected and incorporated into the draft policy. We recommend a sequential process, whereby the sector policy statement is drafted, commented on, and ratified before legislation is enacted.

Finally, the lack of discussion of the MCT's proposed sector policy has resulted in potential duplication of efforts. ZIMCO, with World Bank support, is working to establish a utilities oversight commission, whose responsibility would overlap with the functions of the Controller proposed in MCT draft legislation. Other options include the American model (i.e., FCC) of combining telecommunications with broadcast regulation or the British model (i.e., OFTEL) of a telecommunications-only regulator. Due to the technical nature of telecommunications regulatory issues (i.e., technical performance evaluation, interconnnection, new products) and the implications of rapidly changing technology, we recommend a telecommunications-only style of regulatory agency.

The new policy should be based on a combination of conventional wisdom reflected in international trends in telecommunications, national Zambian policy guidelines, and MCT priorities. International trends in telecommunications tend toward sector liberalization characterized by introduction of competition and privatization of the national carrier. Most

privatizations include sale of a substantial holding to a foreign investor, who assumes responsibility for company operations. Zambian national policy includes strong support from commercialization, introduction of competition, and subsequent privatization of the parastatal sector. Additionally, national policy calls for elimination of any government subsidies supporting operations and imposes a dividend requirement on state-owned enterprises equal to ten percent of shareholders' equity.

B. Sector Objectives and Structure

In order for the country's economy to function properly, there needs to be adequate telecommunications service. The central objective for this sector is to ensure that there is sufficient infrastructure to meet the needs of the nation. The proposed sector structure is intended to best satisfy that objective.

1. Regulatory Entity (Controller)

The GRZ will establish an entity to regulate the sector, which will be imposed in the telecommunications law. The regulatory entity will be presided over by a Controller who will be appointed for a fixed term by the President. The term is likely to be 5-7 years and renewable. To ensure independence from the political process, the Controller would not be able to be removed from office except on the grounds of mental or physical incapacity or death. Although a single person regulatory entity has potential for corruption, it is recommended for Zambia because a more streamlined decision making process is expected to be more effective in taking action.

An advisory council will be formed to provide input into the regulatory process. This council will be appointed by the MCT and will include six members; three will represent specified stakeholder groups (e.g., unions, customers, and the GRZ), and three others as seen fit by the MCT. Advisors will be available on a regular basis to guide the Controller. Sitting fees are anticipated to compensate the advisors for time taken away from their full-time jobs. Additionally, there will be 4-5 professionals, assisted by administrative support staff to support the Controller's activities. Use of outside consultants would be required to assist and train staff, at least in the early years, since there is at present insufficient expertise in Zambia in these matters.

The functions and responsibilities will be broadly set out in the Telecommunications Law, and the Controller will have the right to establish specific operating procedures and time frames for responses. The Controller will be empowered to require operating companies to furnish financial and operational information as required and on reasonable notice to ensure

proper monitoring of the sector. Where exclusive concessions are granted the Controller will establish the price setting mechanism and be required to review all tariffs before implementation and, if necessary, withhold approval for non-compliance with recommended authorization request procedures. The Controller will be required to publish regular reports of findings, decisions, licenses issued and finances. Regulatory decisions and activities may be disputed through the court system.

Finally, the regulatory entity is intended to be self-funding, through license and royalty (per call) fees. The license fee from the cellular operator should provide adequate start-up financing for the Controller, since cellular license fees in the area of $500,000 are not uncommon. The entity will have an annual budget, to be approved by the MCT and the entity's financial management will be subject to audit by the Government Auditor. Surpluses of income over expenditure would be remitted to GRZ.

2. Basic Services Company

A Concession would be granted to a company employing the telecommunications assets and staff of the PTC but with incentives to develop and modernize the national and international transmission and telephone switching network. The concession of at least 25 years will represent a mutual long-term commitment and will transcend political cycles. It would also establish service objectives and the price setting mechanism. An initial period of exclusivity would be established, calculated to allow time for sufficient development of the national telecommunications infra-structure. Once the development objectives have been met and prices re-balanced, the Controller will determine the manner in which competition could be applied to ensure further efficiencies.

In the absence of competition, a regulatory rate-setting process will be established to ensure equitable prices to consumers while allowing for revenue sufficiency for the operator. A Price Cap regime, modified to address currency devaluation, is recommended as it provides incentives for the operator to improve cost efficiency, provides adequate funding for network expansion and minimizes the costs of regulation. This mechanism will allow the company to gradually reduce the extent of cross subsidy between international and national calls in a accordance with the formula.

The Basic Service provider will initially be entirely owned by the GRZ, with privatization anticipated within the next three years. As part of the privatization process, an exact breakdown of shareholdings will be defined (i.e., portions to be reserved for GRZ, a strategic investor, employees, and public floatation on the Stock Exchange). In addition to holding some portion of the shares of PTC as an investment, the GRZ is likely to use a

Golden Share mechanism to retain some control over the company. This will enable the GRZ to retain control by virtue of its ability to veto, at will, certain actions such as change in type of business conducted, payment of dividends, increase in capital, increase in borrowing beyond certain limits, liquidation of any or all of the assets of the company, or sale of strategic investor holdings.

3. Other Service Providers

The Controller will decide on policies -- including how and when competition will be introduced, licensing procedures, and technical and service standards -- for the development of mobile and value added services, including cellular, paging, private mobile radio networks and trunked radio. Wherever feasible, the Controller will try to license multiple operators for each of these services.

General international experience has shown that licensing two or more operators of paging, trunked radio and private mobile radio systems is feasible as long as frequencies are available in the appropriate bands. If there is much demand, a competitive tendering process can be used. Cellular service tends to be phased in, with initially one, and then at a later date a second, cellular license granted under competitive bidding procedures and against payment of an initial license fee. Value added services such as Packet Switched Data, Information Services, Voice mail and electronic mail, and transaction services are generally open to free competition, simply requiring registration and possible notification of tariffs for the record.

No re-sale of leased lines nor switched voice, will be allowed initially. Interconnection of private networks in such a way that by-passes the public network except for internal communications (within the same company or its subsidiaries, parent or associate companies) will be prohibited both nationally and internationally. Over time, the Controller may decide to authorize this by-pass to initiate competition. All fixed point to point links in private networks, cellular networks and others requiring basic transmission infra-structure will be leased from the PTC if possible; duplicate infrastructure may only be developed if PTC cannot or will not provide the dedicated service necessary.

C. Policy and Legal Framework

1. Policy Statement

We propose that the GRZ adopt a general statement of policy for the telecommunications sector. Although the draft policy statement is kept very general, an annex is included reflecting recommended positions on policy issues. These are intended to provide the basis

for discussion only and should not be incorporated into a formal policy statement. Specific regulations and structures will be developed by the regulator and the ministry as the sector develops.

At present, principles for guiding the sector should be adopted. We suggest the following:

Growth and Development
Telecommunications is of critical importance in the economic development of a country because it is an important facilitator for the development of efficient enterprise and employment. Without adequate telecommunications production enterprises are less efficient and most service enterprises are nearly impossible to operate.

Public Sector Resources
The Government does not wish to continue to allocate government resources to support the Telecommunications sector. The expansion of the basic telephone service and its network infra-structure to meet the needs of the population is costly and, in general, beyond the means and ability of government to develop, finance and operate on the scale required. This is witnessed by poor performance to date and the severe financial difficulties in which PTC currently finds itself. The Government will retain sufficient control to ensure optimal use of national telecommunications resources, such as the radio spectrum.

Subsidy with Public Funds
The Government's policy is that it will no longer subsidize government owned enterprises. The massive investment required to implement telecommunications services the nation needs would further increase the Public Sector Borrowing Requirement under a scenario where donors have recommended limits on further increases.

Universal Access
The Government wishes its citizens, including those in rural areas, to have Universal access to service. It is important that all the population have access to basic telephone service whether through public telephone service or service to the home. It is also important that users have the kind of services at fair prices, that they need, when and where they need them. Universal access requires that all citizens are sufficiently near a telephone to use it when necessary (i.e., public or community phone service). The more aggressive objective of universal service (i.e., service to the home) is not as critical as universal access at this time.

Response to Market Needs
The Government wishes to make available services that the market needs. The PTC has not ventured into mobile or value added services. Major businesses do not have access to

sufficient lines of the right quality to operate efficiently. Rural agriculture and business does not have access to adequate telephone service.

Role of Private Sector
Government policy is to look to the private sector for both financial, technical and managerial expertise to create and operate the kind of telecommunications sector the country requires.

Regulation
There is a need to create a framework within which private sector telecommunications services can operate with established rules and procedures. To ensure a fair deal to themselves and their customers, the Government will create a Regulatory Entity.

2. Draft Telecommunications Laws

a. *Review of Draft Sector Legislation and the Privatization Act*

The Zambian privatization process in general, and especially as it relates to posts and telecommunications, is at a very early stage. According to officials at the ZPA, PTC's privatization has been scheduled for at least three years away. As a result, many of the policy issues that need to be resolved prior to drafting the necessary regulations have not been posed, much less answered, and are not addressed by the draft legislation. Nevertheless, the documents reviewed in this Memorandum were already considered -- and rejected -- by the Zambian Cabinet, and will be submitted again in a revised form in September or October.[1]

Because of the long lead time for the sale of PTC, MCT officials apparently have decided to focus on licensing additional operators now in order to upgrade the sector. In reviewing the proposed legislation, both the short and long term goals of the MCT must be kept in mind.

(1) *Draft Communications Administration Act*

The draft Communications Administration Act establishes the office of the Controller of Communications (the "Controller") and outlines his duties. In addition, it provides the

[1] Approval by Zambia's Executive Branch is required before a bill is submitted to Parliament. Despite recent defections, the government party seems to enjoy a comfortable majority in the country's legislature.

framework for the division of the Postal and Telecommunications sectors of PTC.[2] Some of its clauses overlap with the draft Telecommunications Act, and we suggest that for the sake of clarity both acts be merged.

(a) *Authority of the Controller*

The Act makes the Controller the principal regulator of both the telecommunications and postal sectors. Given the different expertise required for these two areas, however, the government should consider limiting the duties of the Controller to one or the other. Such a distinction has been adopted in most countries, including the United States and the United Kingdom, as well as in developing countries in Latin America.

While recommending that the duties of the Controller should be limited to telecommunications, we believe that within this field the Controller's powers should be broader. As drafted, the Act limits the duties of the Controller to "the administration of the communications legislation". For the office of the Controller to be meaningful, however, its duties should move beyond administration to the granting of licenses, the regulation thereof, and the enforcement of the draft Telecommunications Act and related legislation. We understand that such powers were originally included in this bill, but were deleted at the request of the MCT, which felt that the earlier draft encroached into its jurisdiction. Nevertheless, since the foreign operators expected to invest in the Zambian telecommunications sector will -- at least on paper -- look to an independent Controller as their first line of defense against the MCT, the earlier powers should be reinstated. As a less attractive alternative, a system of checks and balances could be established by assigning certain regulatory powers of a highly "political" nature (e.g. the granting of licenses) to the MCT.

(b) *Independence of the Controller*

Also for the purpose of attracting foreign investment, steps should be taken to ensure the independence of the Controller's office. The current draft of the Act not only limits the Controller to administrative tasks, but provides him with no tenure and requires that he seek the Minister's approval even to name his staff. Although an independent regulator would be new to Zambian administrative practice, one need look only to the status of the ZPA Board members to find a recent example.

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[2] Part 3 of the draft Communications Administration Act deals with the division of the telecommunications and postal sectors of PTC, and is discussed in Section IV.

(c) *Creation of a Board*

If the Zambian government is concerned about concentrating excessive powers in one person, the current makeup of the Controller's office might be replaced by a board similar to the FCC in the United States or OSIPTEL in Peru. As the drafters of the Zambian Privatization Act evidently believed, naming a board composed of persons from various sectors of society serves to create a policy consensus in the country.

(2) *Draft Telecommunications Act*

The draft Telecommunications Act is the centerpiece of the legislation being prepared by the MCT. It deals with some aspects of the licensing process and imposes stiff penalties for violating licensing agreements with the government. As noted earlier, the Act seeks to delineate the functions of the Controller and should be combined with the draft Communications Administration Act.

(a) *Relationship between the MCT and the Controller*

The functions of the Controller and the MCT sometimes overlap, and at times the two seem to be used interchangeably. Article 6 grants the Controller the power to grant a license, and Section 7 provides for the payment of the license fee directly to the Ministry. This lack of clarity might be partly ascribed to the ongoing turf battle within the MCT, but it should be resolved prior to passage of this Act. One solution that was discussed during our visit to Zambia was to refer exclusively to the Controller throughout this bill, while specifying the areas as to which he will be under the supervision of the Minister. Such areas should not include, however, matters as to which the Controller is expected to play a mediating role (for example, in disputes between the MCT and its licensees).

(b) *Authority of the Controller*

It is unclear whether the draft Telecommunications Act makes the Controller an administrator, a supervisor, a policeman or a judge. Although Section 3(2) is intended for illustrative purposes only, to remove any doubts about the Controller's jurisdiction its powers should extend to:

- Disputes between operators and customers and interconnection disputes between operators;
- Supervision of compliance with the draft Telecommunications Act and all licenses;
- Promulgation of interconnection rules and oversight of agreement between operators;

- Tariff regulation;
- Regulation of anti-competitive behavior and abuses of dominant market positions;

In a further effort to avoid inconsistencies in the description of the Controller's jurisdiction, Section 6 of the Act (referring to conditions of the license) could be consolidated with Section 4(2)(referring to purposes of a license). In any case, Section 6(2) should specify that a license agreement may set forth service criteria, consumer protection provisions, procedures to follow in cases of national emergencies, arbitration clauses, and mechanisms for appealing the Controller's decisions. If any doubts remain as to the ability of the Controller to grant exclusive licenses, this paragraph should state that the license may include an agreement on the part of the MCT to limit the number of future licensees.[3] Another function assumed by the Controller should be the right, with the approval of the MCT, to commence expropriation proceedings subject to adequate compensation, if necessary to carry out the terms of a license.

While the powers granted to the Controller fall short in the areas noted above, in the following instances they should be curtailed:

- Section 4(2) should not contain the phrase "... the Controller is satisfied that ..." on the third line, to eliminate the impression that the Controller has full discretion to determine the criteria. Such criteria should be set forth in specific legislation.

- Section 5 of the Act requires anyone selling telecommunications equipment -- presumably approved in keeping with Controller's type approval guidelines -- to obtain a license. We were informed by MCT officials that this clause was needed to ensure that equipment purchasers could look to reputable dealers in the event of malfunctions. However, the practice in most countries, including developing ones, has been to approve equipment and allow market forces and consumer preferences to determine the identity of the seller. Not only have other regulators felt that such a measure sufficiently protects consumers, but it has been seen as a way of reducing unnecessary paperwork and limiting the incentives to corruption.

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[3] If the Controller contemplates granting exclusive licenses, Section 4(1) could be changed to read "Any person may apply to the Controller for a license under this Section, subject to the regulations promulgated by the Controller and the exclusivity rights of any existing licensees".

- The "conditions" mentioned in Section 6(1) should not be left to the Controller's imagination. As with Section 4(2) above, such conditions need to be detailed in specific regulations drafted after all interested parties have received an opportunity to be heard.

- Section 6(2)(f)&(g) again refers to "specified matters" which need to be defined.

- In Section 6(3), the Controller should not have the power to vary the provisions of a license at will if the licensee has breached. The consequences of a breach should be stipulated in the concession agreement as explained in the following section.

(c) *Penalties for Breach*

i) *Modification of License*

The suggestion is made at Section 6(3) of the Act that if a licensee has breached any provision of a license, the Minister -- now presumably the Controller -- should have the right to modify the agreement. We disagree with this recommendation, for we believe that a breach of a license agreement should not be an open door for renegotiating the deal.

Most telecommunications license agreements throughout the world will outline the penalties to be imposed in the event of a breach. Such penalties typically include, depending on the severity of the violation, monetary fines, loss of the investment stability regime, increase in tax rates, a reduction in the license term, loss of exclusivity, and if warranted, the termination of the license.[4] It is generally thought that the government should not be given an incentive to find a violation so as to renegotiate a license -- perhaps signed by a previous administration -- with which it is no longer satisfied.

ii) *Criminal Fines and Penalties*

The draft Telecommunications Act treats fines and penalties extensively at Sections 9 and 15, but does so in a way that will prove unpalatable to international operators. Essentially, these sections turn mere contractual violations of a license into criminal offenses punishable by a fine not exceeding one million kwacha or to imprisonment for a term not exceeding three

[4] This last sanction is seldom applied in the telecommunications field, since it means that basic telephone services cease to be operated.

years, or both.[5] We strongly recommend deleting these provisions, which are also found in the draft Radio Communications Act and the draft Postal Act, and replacing them with sanctions such as those discussed in the paragraph immediately above. To the extent that Zambian law has legislation covering defamation and other crimes, such laws should suffice, for no new offense should be created merely because a telephone was used.

Section 17 of the Act criminalizes the use of a telecommunications system for the purpose of "causing annoyance, inconvenience, or needless anxiety . . .". The potential for the use of this clause to restrict free speech is obvious, and we would recommend its elimination.

(d) *Renewal of License*

Under Section 7 of the Act the MCT agrees to renew a license that has been complied with upon a payment of a fee. In our view, however, it does not make sense for the government to assume such an obligation, since even in cases where a licensee complies with the terms of a license, the regulator may have other reasons to refuse to renew it (for example, if the equipment or technology used is obsolete). Instead, this clause should merely set forth the procedure for renewing a license.

(e) *Other*

The definitions used in Section 2 of the Act do not conform to those used in the rules and regulations of the International Telecommunications Union and the pertinent CCITT recommendations. Unless there are specific reasons for not doing so, the definitions should be harmonized.

Finally, this Act should include a transitory provision whereby the Controller is given the specific right to grant a non-exclusive license to PTC. It is likely that PTC will request, and should receive, a commitment that its license will not contain less favorable terms than those given to the cellular operator. The PTC license probably will have to be negotiated with the Controller concurrently with the one to the cellular operator.

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[5] For example, Article 9(2) provides: "The holder of an operator's license who provides or offers to provide a telecommunications service in contravention of the conditions of the license shall be guilty of an offence." Articles 15 and 16 read similarly.

(3) *Draft Radio Communications Act*

(a) *General*

The draft Radio Communications Act addresses non-broadcasting communications radios, the control of interference, and requirements for CCIR. At times, however, the act is not limited to the allocation of radio frequencies as seen in Section 17 regarding the use of offensive language.

Our comments to this bill are similar to those made for the draft Telecommunications Act. Section 7 regarding suppliers' licenses; Section 10 regarding the obligation to renew the license; Section 13 regarding offenses for breach of the license; Section 17 regarding the transmission of blasphemous, indecent, obscene or offensive language; Section 18(3) regarding negligent transmission of a communication (sic); Section 20 regarding offenses; Section 21(h) regarding disorderly behavior; Section 21(k) regarding interference with the use or working of a radio station; Section 21(n) regarding blasphemous transmissions (again); Section 21(o) regarding interference with, or obstruction of a radio communications service (again); and Sections 22, 23 and 24, regarding offenses.

As with the draft Telecommunications Act, the definitions set forth in Article 2 should be harmonized with applicable ITU and CCIR rules and recommendations. Similarly, as described in detail below, the powers granted to the Controller under this Act should be specified and curtailed.

(b) *Authority of the Controller*

Most of our concerns about this Act center on the Controller's virtually unfettered discretion in nearly all areas covered by the Act. Such discretion results from the absence of guidelines to be followed by the Controller in reaching decisions, opportunities for public hearings open to all interested parties, and the possibility for an expedited administrative appeal of the Controller's rulings.

The sections of the law where these issues appear include:

- Section 5(c)(iii) which gives the Controller full power to approve classes and types of radio apparatus, without any guidelines to be followed in doing so. A mechanism for approval of the petitions set forth in this section should be specified in the law;

- In Sections 6(2), 7 and 8, the Controller has wide discretion to authorize establishment of radio stations, grant dealer's licenses, and repairer's licenses, respectively.

Similarly, the Controller needs guidelines described by law or regulation for the following sections:

- Section 9(1) the license should not be "subject to such conditions as the Controller may think fit...";

- Section 10(2) the Controller should not have "discretion" to renew temporary license since the operator should have the right to review if they have met specified conditions;

- Section 12 the Controller should not have wide discretion to issue "certificates of competency" without any guidelines for doing so;

- Section 14(c) a Controller should not be able to refuse a license if in his view it is "justified in the public interest", or if the operator has been convicted of an offense (even a minor one), especially since there is no right to appeal such a decision, even while posting a bond;

- Section 16 where the Controller assumes penal powers for it can levy fines.

As mentioned above, it would be good administrative law practice to -- in addition to circumscribing the Controller's powers as set forth above -- create a system of public hearings and expedited appeals to make the system more transparent.

Some additional clauses in the draft Radio Communications Act raise questions not found in the other drafts. These are discussed below.

(c) *Primacy of the Regulations over Decisions of the Controller*

Section 8(4) states, in contradiction to generally applicable principles of administrative law, that in the event of inconsistencies between a license and the regulations, the former shall prevail. If maintained, this section would allow the Controller to exceed the powers granted to him under future regulations, and in effect selectively grant exceptions to rules of general application.

(d) *Cancellation of Licenses*

Section 14(2) allows the Controller to cancel a license on the grounds that it interferes with a subsequent licensee's equipment, or with the services provided thereby. This authority exists even if an operator has fully complied with its license, and thus eliminates the security that a license typically affords its holder. After discussions with MCT officials, they seemed willing to modify this section to permit cancellation only if the licensee has violated the terms of its license.

(e) *Interference by Public Works*

Section 16 requires anyone wishing to build a railway or certain public works to give one month's notice to the Controller, which must notify any radio communications operators affected. If, after hearing from the operator in question, the railroad or public works builder continues with the project, it becomes liable to the operator.

In order to avoid excessive reliance on the Controller, this section should also require the railway builder or public works operator to publish a notice in a newspaper of general circulation. The private radio communication operator's rights against the builder or operator would not be affected by the Controller's failure to provide the requisite notice.

(4) *Draft Postal Services Act*

(a) *Independence of Regulatory Body*

The draft Postal Services Act does not provide for an independent regulatory body. Instead, it grants rather far-reaching self-regulatory powers to the Postal Services Corporation (the "Corporation"). In order to avoid the conflicts of interest which result from the dual role of being "player" in the marketplace and "umpire" at the same time, we recommend the establishment of an independent regulatory authority, which should be institutionally separated from the regulatory body in the telecommunications sector.

(b) *Authority of the Regulatory Body*

The independent regulatory body should have powers which are similar, in essence, to those of the regulatory body in the telecommunications field. These should include:

- Settlement of disputes between the Corporation and customers;
- Supervision of compliance with the Act and all licenses granted thereunder;

- Power to grant licenses for the provision of postal services;
- Tariff regulation;
- Regulation of anti-competitive behavior and abuses of dominant market positions;
- Representation of the Republic of Zambia in international postal matters.[6]

(c) *Independence of the Regulatory Body*

As regards the organizational independence of the regulatory body, the same considerations mentioned above for the Controller apply. In particular, the regulatory body could be imbedded in a system of checks and balances by assigning certain regulatory powers (such as the granting of licenses to the Minister.

(d) *Regulatory Framework*

The Act appears to envisage a regulatory framework which grants a far-reaching exclusive rights to provide postal services to the Corporation, but does not exclude the granting of licenses for the provision of certain other services to competing operators, such as courier service providers.

This regulatory framework should be established more clearly in the future Act. The regulatory body (or the Minister) should have the right to grant licenses, including exclusive licenses for the provision of specific postal services. The scope of the possible licensing conditions might include:

- The obligation to provide postal services to anyone in the licensing areas at reasonable and equal conditions;
- The obligation to abide by minimum quality requirements in the provision of postal services;
- The obligation to provide mandatory postal services, i.e. postal services which might not be profitable, but must be provided in the public interest;
- The obligation to comply with international laws and regulations, including the rules of the World Postal Union;

[6] More specifically, the following provisions of the Act should be amended by replacing the "Corporation" by "regulatory body": Section 5 subsec. 2; Section 5 subsec. 3 (g); Section 6 subsec. 1; Section 10 subsec. 1-3; Section 12 subsec. 1; Section 17 subsec. 1; Section 18; Section 19 subsec. 1; Section 22 subsec. 1 and subsection 2 Section 25.

- The obligation to enable competing providers of postal services to use the licensee's installations under non-discriminatory conditions;
- The obligation to submit all general business conditions regarding postal services, tariffs and rate schedules to the regulatory body for its prior approval;
- The obligation to establish accounting systems which allow the monitoring of investments, expenses and revenues in accordance with international accounting standards and the monitoring of cross-subsidization, subject to approval by the regulatory body;
- The right to impose appropriate sanctions for non-compliance with licensing conditions.

(e) *Funds for the Provision of Mandatory Services*

As international regulatory experience shows, the partial liberalization of the postal services sector may result in "cream skimming" practices. These are socially and political undesirable if they restrict or prevent the provision of mandatory services such as nation-wide delivery of mail, even in remote areas, at equal rates.

In order to prevent these practices, it might be advisable to establish a fund, to which all providers of profitable postal services must contribute. The funds could then be used to subsidize the provision of mandatory services.

(f) *International Agreements*

The Act -- and in particular its definitions section, the rules governing the liability of the postal services corporation and the description of the scope of postal services -- should be adapted, as far as possible, to the rules of the World Postal Convention of the World Postal Union of December 14, 1989.

(5) *Privatization Act, 1992*

The Privatization Act, 1992, enacted on July 4th of last year, establishes the basic framework for the Zambian privatization program. Zambian officials agreed that the Act would not apply to the granting of a cellular license, since the sale of an existing state agency would not be involved.

The Privatization Act calls for the creation of the ZPA, to be managed by a 12-person Board chosen from the President's Cabinet and different sectors of Zambian society, including labor unions, federations of employers, certified accountants, churches and farmers. The Act

raises certain issues regarding the impartiality of the sale procedure to be followed, and whether it prohibits monopolies outright. These are described below.

(a) *Independence of the ZPA Board*

A privatization process should appear to be independent from political pressures. At least on its face, the Act meets this requirement. Members of the Board serve for a three-year term and cannot be fired for disagreements with the Executive (although a person will cease to be a member if no longer a representative of the organization which nominated him). The Board is funded by Parliament.

(b) *Privatization Procedures and Transparency*

The Act allows the Board to establish the procedure that it deems best for each specific privatization, and otherwise does not unduly hinder its operations. See Article 22. In practice, the Board has not adopted uniform procedures for making a sale, choosing to do so on a case-by-case basis. The Board has not imposed any preconditions on potential purchasers, such as foreign ownership restrictions or labor retention agreements.[7] In the few small privatizations that have taken place, negotiations have been held with the three bidders deemed to be the most attractive on the basis of offered price, experience and other factors. This practice, however, carries the potential for corruption, and one of our recommendations is that for the sale process of PTC and awarding of the cellular license it should be substituted for one in which objective factors, such as price or investment commitments, are determinative.

One of the few procedural requirements set forth in the Act gives some cause for concern. Article 22(2) states that the ZPA "shall insure that each state-owned enterprise is sold for its market value". This has required the agency to conduct a valuation of the entity to be sold, and seek the Executive Branch's approval if the top bid falls below the estimated value. In addition to creating uncertainties during the sale, such a procedure lends itself to the possibility of favoritism on the part of the Executive, and may negate the benefits of an independent privatization agency. Instead, at least with respect to the privatization of PTC

[7] The Privatization Act does not reserve a percentage of shares to nationals, although Article 29(1) suggests that some shares must held in trust for citizens of Zambia.

and the granting of a concession license, we suggest that guidelines be put in place to insure the impartiality of the sale process.[8]

Other sections of the Act condone activities that might give the appearance of impropriety on the part of the officials involved in a privatization. Article 14 of the Act allows an employee or a consultant of the ZPA, or his spouse, to participate in a privatization as long as his interest has been disclosed to the Director. Similarly, Article 25 permits a member of a privatization committee or relative thereof to purchase shares of a privatized company if the sale is by public offer. Both clauses would allow members of the committee dealing with the privatization of a company to purchase shares based on inside information or even to withhold information in order to decrease the purchase price. If the privatization of PTC is to attract important foreign investors, this clause should not be seen as providing the potential for abuse.

(c) *Monopolies*

A few additional portions of the Act may raise concerns in a telecommunication privatization. Article 8(j) states that it shall be the Board's function to "ensure that monopolies are not created in the process of privatization". Article 4(1)of the draft Telecommunications Act, in turn, provides that "[a]ny person may apply to the Controller for a license under this section" (emphasis added). Both of these norms may be interpreted to prohibit the granting of an exclusive license to PTC and the cellular licensee. In conversations with the ZPA, we were

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[8] One privatization procedure which has been adopted in some countries to avoid the appearance of favoritism, involves first prequalifying acceptable international telephone operators, and then circulating draft license and sale agreements for comment. The government is free to accept or reject any comments made by the prequalifiers. The agreements are then finalized and circulated to prequalifiers. Those operators that wish to participate in the bidding must return signed documents to the government as a precondition to their bid.

The bid consists solely of a purchase price, with the award going to the party offering the highest amount. After all of the offers have been received, the government executes the documents previously submitted by the highest bidder.

This procedure has the advantage that the bid is awarded in objective criteria -- price -- and that it does away with the need for post-closing negotiations.

informed that the agency has read Section 8(j) as a statement of policy to be attained in the future rather than an inflexible rule, and has seen fit to ignore it when appropriate. On its face, however, Article 8(j) of the Privatization Act and its draft Telecommunications Act counterpart do not appear to permit such discretion. If the Privatization Act cannot be modified, then perhaps Section 4(1)of the draft Telecommunications Act might be amended to clarify that exclusivity arrangements are permissible in the telecommunications context.[9]

(d) *Other*

Another provision which might raise some eyebrows among investors is Article 38 of the Act, which requires the publication of a notice in the Zambian Gazette following the adjudication of a privatized company. Article 38 states that any person "having an interest in a state-owned enterprise and who does not make a claim within 14 days of the notice . . . shall be deemed to have relinquished interest in the state-owned enterprises."

The purpose of Article 38 was evidently to foreclose the assertion of hidden liabilities against a privatized company following the closing. While an ingenious idea, however, this clause interferes in the relationship between the privatized entity and a third party, and might be likened to expropriation of claims without adequate compensation. Indeed, ZPA officials could not assure us that Article 38 would be upheld in a Zambian court. Unless its validity under Zambian law can be clearly established, we would suggest deleting this clause since it detracts from the image -- which Zambia would like to give to foreign operators -- of a country which respects the sanctity of private agreements.

Article 47 of the Act states that any disputes arising from the privatization process, including those between the state and the purchaser "shall be resolved by arbitration in accordance with the Arbitration Act." The Arbitration Act does not prevent the state from submitting disputes to a foreign tribunal or court, but for reasons of "national sovereignty" officials at the ZPA expressed misgivings about such a mechanism. On the other hand, a number of persons at PTC said that they would have no qualms about foreign arbitration.

The Zambian government ought to be prepared for international arbitration by foreign operators, and should consider a compromise which involves the application of Zambian law, as well as foreign arbitration.

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[9] Exclusivity arrangements often draw the ire of local investors opposed to the government's privatization plans, and are used to generate negative publicity.

(6) *Conclusions*

This section suggests changes to the documents reviewed that could improve the regulatory environment for the privatized Zambian telecommunications sector, and also help the privatization process itself. Among these proposals, the following appear as most important for the long-term success of the restructuring effort.

- Policy framework chosen should be reflected in the draft legislation;
- The role and composition of the Controller, especially its relationship to the MCT and its policy-making functions, need to be defined. If feasible, we would propose granting the Controller greater independence from the MCT;
- Objective bidding and other procedures should be adopted to ensure the complete transparency of the privatization process;
- The myriad criminal penalties imposed for breaches of contractual obligations should be eliminated;
- An independent regulatory authority should be established in the postal sector, institutionally separate from the Controller, to avoid conflicts of interest with the Postal Services Corporation.

b. *Recommended Content for Laws*

In order to facilitate implementation of the principles established in the Policy Statement and to begin the process of transferring telecommunications from the Public to the Private Sector it will be necessary to put in place a suitable legal framework by drawing up a new Telecommunications Law.

The most important issues to be covered by the Law will include the following:

- Reflect the revised policy statement;
- Legally facilitate the formation, operation and definition of the role and composition of the Regulatory Entity (Controller), generally outline its responsibilities to customers, operators and Government, and be transparent and publicly accountable for its actions through the Zambian court system;

- Authorize the Regulatory Entity to issue licenses, permits and concessions, monitor and enforce compliance with the terms of licenses permits and concessions, implement tariff setting, approval and notification procedures;

- Legally establish that a Concession can be granted to a privatized telecommunications company to provide services hitherto provided by government. Establish that a stake in the company can be sold to a foreign strategic investor by a transparent public tendering process;

- Provide for competition in the sector and allow for the granting of monopolies for limited periods to ensure proper development of the network;

- Establish the right of the state to intervene in the sector in a time of war or national emergency;

- Establish that communications are private and that there are penalties for unauthorized disclosure of content of communications;

- Establish that fraudulent use of service is a criminal offense;

- Prohibit unauthorized tapping and monitoring of public telecommunications services;

- Establish the right of the private operator of basic service to open up public highways to construct external plant both above and under ground without hinderance or charge provided he restores roadway and sidewalk to its original condition. This includes the right to construct cable chambers and manholes below the roadway and sidewalk;

- Establish an independent regulatory authority in the postal sector, institutionally separate from the telecommunications sector Regulatory Entity (Controller), to avoid conflicts of interest with the Postal Services Corporation;

- Establish MCT's right to manage the national frequency spectrum and to maintain the national frequency register, allocate frequencies, monitor for approved transmission characteristic compliance, and resolve interference issues.

DRAFT TELECOMMUNICATIONS POLICY STATEMENT

I. Role of Telecommunications in Development

The Government recognizes that an effective communications system is critical to overall economic development. Reliable telecommunications service is essential for the successful operation of sectors on which economic diversification depends, including agriculture, financial services, and tourism. The Government endeavors to achieve high quality reliable telecommunications facilities appropriate to meet the needs of the nation and keep up with the level of service prevalent within the region.

II. Universal Access

Citizens of the Republic of Zambia should have universal access to service, whether through public telephone service or service to the home. It is important that users have the kind of services they need at fair prices, and when and where they need them. Service to rural areas is of particular importance, because of the large portion of the population living in rural areas and the potential of rural regions to support economic activity. The Government's short-term objective is to have telephone service to every population center through the availability of public telephones at schools and health centers. Telecommunications services should also be available to businesses in rural areas.

III. Allocation of Public Sector Resources to Telecommunications

Government policy calls for an end to subsidization of government owned enterprises. Further, the public sector cannot fund the level of investment required to implement services the nation needs. Accordingly, the Government will no longer allocate public resources to develop the telecommunications sector, particularly since it is anticipated that private capital is available for this purpose. The Government will however, retain sufficient control to ensure optimal use of national telecommunications resources, such as the radio spectrum.

IV. Role of Private Sector

The telecommunications sector will be opened up to the private sector. Participation will take the form of both investment in new telecommunications ventures as well as privatization of existing basic telecommunications facilities. The private sector is expected to bring financial, technical, and managerial resources to create and operate

a telecommunications sector suitable to meet national needs. Private sector initiatives are to be initiated as soon as possible.

V. Regulation

Private sector telecommunications services will operate within established rules and procedures, providing maximum benefits to operators and consumers. The Government will create a regulatory entity to establish such rules and procedures, monitor the sector to ensure adequate service is provided, and enforce government laws and policies with respect to the sector.

VI. Response to Market Needs

In meeting the needs of the nation, the telecommunications sector is expected to identify and be responsive to its market. This entails offering service options that are required by the market at prices appropriate for those services as well as being responsive to customer service requests and queries. The regulatory entity will be charged with ensuring sector responsiveness to the market.

DRAFT TELECOMMUNICATIONS POLICY STATEMENT
ANNEX

I. Roles of Sector Participants

A. *Public Sector*

The public sector will maintain responsibility for policy making and enforcement in relation to all telecommunications service providers and value added service providers through the Regulatory Entity established for the purpose.

The GRZ may retain holdings in the privatized telecommunications carrier. To provide for maximum sector efficiency with minimal potential for conflicts of interest, the law should call for separation of policy making, policy enforcement, and operations as follows:

- The **telecommunications entity of PTC** is an operating unit. PTC is responsible for operating the public switched network as well as other telecommunications services it provides. The sector policy should focus PTC's telecommunications division on its core operating businesses, and should provide a clear alternative for provision of services such as the engineering workshop and employee transportation systems.

- The **regulatory entity** (Controller) to be established will be responsible for enforcing sector policy through regulations to be issued and through licensing and concession agreements. Issues to be addressed by the Controller include pricing, equal access and interconnection rules and fees, type approvals for equipment, end user complaints, and other regulatory functions as appropriate. The Controller will also serve an information distribution function, including collection and distribution of network statistics, consumer questions, provision of information to other government agencies and investors, and periodic publishing of regulatory activities.

- The **Ministry of Communications and Transport** (MCT) will set policy for the telecommunications sector to be enforced by the Controller and will serve an advocacy role for the telecommunications sector in national policy debates. For example, the MCT would be expected to lobby for relief from burdensome import duties to encourage local assembly of telecommunications equipment. The MCT will also be responsible for radio spectrum management and representing the GRZ with international telecommunications organizations such as the ITU and Intelsat.

- The **Ministry of Finance** will represent the government as the holder of some portion of shares in the basic services provider.

In keeping with widely accepted policy guidelines and to enhance the confidence of potential investors in the integrity of the sector, these four entities will be completely independent of each other.

B. *Private Sector Participation*

Infrastructure development and overall performance will both be enhanced by inclusion of private sector to the greatest extent possible. Private sector operators will be licensed in all areas of the sector with the sole exception of provision of basic service in areas where PTC already operates. Specific targets for expansion of private sector participation are cellular and data networks and public telephones.

Mechanisms for stimulating private participation in the sector should be targeted to areas where investment is most needed. Licensing of independent operators, joint ventures with PTC, sub-contracting for network maintenance and external plant development, and involvement of small businesses and collectives (e.g., customer owned public telephones) are the most promising mechanisms to advance sector objectives. Revenue sharing, which is a popular method of financing exchange equipment, is likely to be less appropriate for Zambia, because exchange equipment is not a priority for investment. Another option, local service franchising, could potentially compromise the exclusivity of the national carrier. Additionally, in countries where this has been implemented, there has been extensive local regulation in place, enabling local officials to have some control over service provision in their area.

C. *PTC*

Long term objectives for PTC and its telecommunications successor are sufficient capitalization to access financial markets for funds, viability in a competitive environment, and adequate staffing policies. While these objectives should be incorporated into the mission statement of the new telecommunications entity, achieving these objectives is the responsibility of PTC management and is not a policy issue. The Law and the Concession should create an environment in which PTC management has sufficient autonomy to move toward these objectives. PTC should be on an equal footing with other operators in competing for licenses in non-basic services.

Another policy issue regarding PTC is privatization. Privatization of the telecommunications provider is clearly part of the sector policy agenda and should be explicitly stated. Because of the incipient stage of this privatization, specific details of the transaction will need to be established in an implementation plan detailing the following:

- Timing for privatization
- Use of Initial Public Offering on the Lusaka Stock Exchange
- Sale to a strategic investor (and what portion is to be sold) and policies regarding foreign ownership
- Possible exchange guarantees and tax treatment for a foreign operator
- Government retention of a portion of the company, subject to later sale
- Government retention of telecommunications division debt
- Use of a "Golden Share" authorized by the Privatization Act
- Employee participation through ESOP or profit sharing
- Subscriber participation
- Exclusivity period
- Role of National Union of Communications Workers and labor deployment strategies
- Dispute resolution between private investors and government

D. *Consumers*

The Concession granted to the Basic Services provider will identify specific service quality objectives to be achieved by the year 2000, including telephone penetration rate, national grade of service, digitalization rate, fill ratio, waiting list, and waiting period for service initiation. Additionally, consumers' rights, such as universal access, uninterrupted high quality service, dispute resolution procedures, and the right to connect consumer equipment to the network should be specifically outlined.

The following specific service quality targets have been established, to be met by the year 2000:

Performance Indicator	Target Level
Penetration Rate	1.0
Grade of Service (National)	0.01%
Digitalization Rate	54.0%
National Fill Ratio	at least 80%
Waiting List	less than 5,000
Service Waiting Period	none

The Controller will be able to establish incentives for early achievement of these objectives and penalties for failure to comply through the tariff mechanism. These are expected to be effective with a privatized operator.

The needs of one specific group of consumers needs to be addressed explicitly. PTC currently serves the Zambia National Broadcast Company (ZNBC) by transmitting broadcasts over PTC lines. ZNBC is currently not obligated to pay for this service. As part of its commercialization, the telecommunications carrier should enter into a contract with ZNBC, formalizing this relationship and initiating a fee for the service. This fee for service relationship will extend to a privatized telephone company.

II. Regulation and Competition

A. *Regulation*

Establishment of a credible regulatory entity is critical to sector development. Objectives for sector regulation include development of all segments of the market, protection of consumers' welfare in a highly concentrated (e.g., monopolistic or duopolistic) environment, and establishing a "level playing field" where all operators function under the same rules.

The regulatory environment will be established and maintained by the regulatory entity. Transparency in the regulatory process is of critical importance to regulation as well as to privatization, since investors tend to avoid the risks inherent in an unpredictable regulatory

environment. To maintain transparency and avoid potential for conflicts of interest, the Controller should be designed to be completely independent from the ministry, self-financing, and empowered to write regulations, so long as requirements to notify sector participants are met.

Regulatory functions should include type approval, tariff setting, collection and dissemination of statistical sector information, interfacing with international organizations such as the ITU, and moderating disputes between carriers and customers, licensing alternative carriers, and establishing and enforcing rules for equal access and interconnection.

B. *Competition*

The long-term objective for the sector is to have the greatest amount of competition possible while protecting the integrity of service provision. Limited monopolies will be available to developers of local cable networks for basic service provision. Much of the limited monopoly will be granted to the national telecommunications entity, which will own the bulk of the cable network. Other operators applying for licenses to develop cable networks interconnected to the national network will be granted similar limited monopolies. Permitted forms of competition in basic services includes "Country Direct" programs for international service and licensing of alternative operators to provide public telephone service.

Licenses for non-basic services including cellular, data, and radio paging will be granted on a non-monopoly basis. Accordingly, a minimum of two operators will be licensed for each service, with the exact number and timing of licenses to be determined by the regulatory entity based on anticipated demand, profitability, and affordability of service. Temporary exclusivity periods to facilitate infrastructure development may be granted at the discretion of the regulator.

Competition should be limited in certain areas until adequate infrastructure has been developed. For example, while private networks, such as those run by ZCCM and ZESCO, should be permitted for internal use, calls outside of the public should be required to be transmitted over the national network. Similarly, non-basic services, such as cellular, should be required to use the national network to carry long distance traffic rather than using dedicated lines leased from PTC or building parallel network infrastructure. The determination of when and how to introduce competition in these situations will be left to the regulator.

C. *Tariffs*

The Controller will identify which services are subject to price regulation, how tariffs are to be determined and what regulatory mechanism is to be used to govern tariff adjustments. A move towards cost-based tariffs is recommended because of their efficiency in aligning consumer objectives with provider costs. Of all cost-based methodologies available, long-run marginal costs (LRMC)[10] are recommended because this is the only structure which includes in the current tariff planned network expansion.

Tariff adjustment mechanisms should also be addressed in the regulations to be promulgated by the Controller. While specific procedures for tariff changes will be determined by the regulatory entity, the regulatory mechanism is a policy decision. This mechanism will be a price cap, or RPI-X[11] formula, as this mechanism provides incentives for efficient operations.

Tariff adjustment should be a streamlined process with low administrative costs. Besides the RPI-X formula, automatic tariff adjustments for exchange rate fluctuation should be considered, and can be implemented in one of two ways:

- Denominate national tariffs in US dollars and convert to kwacha using the prevailing exchange rate at the time of billing. This system is currently in place for international telephone tariffs.

- Estimate the percentage of the tariff basis which is denominated in foreign currency (e.g., debt service) and adjust that portion of the tariff by an exchange adjustment factor. The exchange adjustment factor would be calculated as the ratio of prevailing exchange rates to the exchange rate assumption under which the tariff was initially calculated and should be applied in the case of appreciation as well as depreciation of the kwacha.

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[10] Long-run marginal cost-based pricing is a methodology whereby the cost of network expansion is included in calculating a tariff in addition to operating, debt, service, and capital costs.

[11] RPI-X is an approach to price regulation which allows the operator flexibility to price services as long as the aggregate price increase of a predetermined set of services (referred to as a "basket") is less than the rate of inflation minus and "X" factor reflecting accelerated productivity improvement in the telecommunications sector.

D. *Equipment*

Customer Premises Equipment has been liberalized since January 1, 1993, although customer connection of their own equipment to the network is still prohibited legally. This should be established in the new Telecommunications Law through the absence of a prohibition of privately owned equipment. The Law establishing the Controller will require it to issue guidelines for type approval of equipment. One options for establishing type approvals to be considered by the regulator is to accept equipment which has been type approved in a major industrialized country (e.g., U.S.A., U.K., France, Germany, Japan). This would significantly reduce the burden of testing and calibration functions on the resources of the regulatory entity, while still providing some level of protection for the network and consumers.

Local assembly of equipment is productive to the economy and should be encouraged through removal of obstacles to local operations. Such obstacles include difficulty of obtaining investment licenses, import duties not distinguishing between assembly kits and finished products, and high sales taxes on local goods. The MCT should work with other relevant ministries to modify this structure. To ensure efficiency of such operations import substitution practices with protective tariffs should not be employed. Only in a few cases will local assembly be effective since most electronics manufacturing is now highly automated and requires a highly skilled professional work force to operate it. All the products likely to be considered are extremely competitive in the world market place.

E. *Spectrum Management*

The radio spectrum is a national resource which should be made available to telecommunications operators according to well established ITU guidelines. Accordingly, the law should establish allocation of frequencies as a government function, preferably in the MCT, and should not be performed by any operator within the sector. The frequency management center within PTC should therefore be transferred to the MCT.

III. Network Expansion

A. *Rural Service*

Service to rural areas is a priority of the MCT because of the large population of rural areas (approximately 60% of the overall population) and because of the importance of rural commerce to economic diversification and development. The rural service objective in the first instance is to have public telephone service available at all schools and clinics, since

schools and clinics represent population centers. Other objectives will be established in the Concession to be granted to the Basic Services company.

The Controller and the Basic Services Company will study the achievement of rural services and if necessary the Controller will be authorized to enter into arrangements that would allow some subsidization of service if it could be shown that the operator was unable to cover the cost of establishing service in these areas. Each of three mechanisms for subsidizing rural service should be considered, as appropriate. The first mechanism for subsidies is use of private sector funding, whereby private sector license agreements for any service will include some rural service obligation. The second mechanism for rural service development is provision of government grants to fund rural telecommunications projects. The third option entails a bidding process whereby the GRZ awards a subsidy to the operator willing to provide service for the least subsidy.

B. *Investment*

The level of telecommunications investment necessary to achieve the service performance objectives set forth in the policy is overwhelming. Investment funds should be directed to plant and equipment for both internal and external plant, public telephone repair and renovation, introduction of new services, repair, regularly scheduled maintenance, spare parts stocks, and staff training.

The Controller should require in license agreements and concessions that operators prepare and submit for regulatory review investment plans, detailing the level of investment, its funding, and how it is to be used. PTC investment should be funded through the tariff and by accessing capital markets.

IV. National Security

Preservation of national security is a critical component of telecommunications privatization and should be addressed in both the law and license agreements. The MCT will ensure that sufficient frequency spectrum is available for government national security forces while observing the needs of commercial operators in the normally assigned bands for such services. Un-authorized wire tapping and radio reception will be prohibited by law. Confidentiality of communications carried by all operators will also be assured under law by possible legal sanctions on offenders.

IV. Restructuring Guidelines

In recognition of the need for sector restructuring, the following objectives have been identified for the short term (i.e., the next six months) and the medium term (i.e., the following five years):

Short-Term:

- Restructuring of PTC into separate postal and telecommunications operating entities independent of each other and of current PTC non-operating functions;
- Legislative empowerment and creation of regulatory entity;
- Competition and private sector participation in provision of terminal equipment for connection to the PTC's transmission infra-structure leased lines and the switched telephone network (e.g. telephones, PBX's, modems, data terminals and computers, multiplexers, bridges, etc).

Medium-Term:

- Commercialization of telecommunications entity and development of privatization plan;
- Implementation of self financing regulatory entity to operate independently of MCT;
- Implementation of guidelines for type approval of equipment;
- Competition within value added, including mobile services, and enhanced services;
- Private participation in all segments of sector.

The framework for dividing the PTC into two companies, one to handle posts and the other telecommunications, is outlined in Part III of the draft Communications Administration Bill, 1993. It calls for the transfer to a newly-created company -- to be named the Postal Services Corporation, constituted under the draft Postal Services Act, 1993 -- of all property pertaining to the provision of postal services, including "all . . . rights, liabilities and obligations that, immediately before commencement of that Act (i.e., the draft Postal Services Act), were the property, rights, liabilities and obligations of the company (i.e. the PTC) . . .". In addition, property, rights, liabilities and obligations relating to telecommunications are to be transferred to the Controller, who may sell, lease or otherwise convey them to third parties if authorized by the draft Telecommunications Act, 1993, or by the MCT.

The transfers are supposed to be self-executing, that is, all rights and obligations are deemed to have been assigned immediately upon the passage of the Bill, although in some cases the need to record the conveyance in the appropriate registry is contemplated. There are several

issues which have not been addressed in the draft legislation, however, and which must be resolved for the restructuring to proceed successfully.

A. Implementation Issues

Although this section is intended to provide legal and financial guidelines for the separation of postal and telecommunications entities, a plan for implementing the restructuring also needs to be formulated. In planning the implementation, many of the currently unresolved issues will need to be addressed, largely through policy decisions and through negotiations between the entities and with the government.

1. Implementation Planning Process

Preparation of a restructuring plan which contemplates the steps to be taken to implement the division of the two sectors is critical. Drafting such a plan, as well as the resolution of disputes that are likely to occur regarding the allocation of specific property and personnel, should be the responsibility of a disinterested party. Nowhere in the legislation authorizing the restructuring is such a function authorized. Although the Controller might serve such a function, as the regulator of the restructured telecommunications sector he is bound to favor the group that he will eventually supervise. For that reason, we suggest that ultimate responsibility for implementing the restructuring of PTC, and resolving disputes between its two main divisions, should be assigned not to the Controller, but to an independent person appointed by the MCT.

The appointment and powers of the restructuring coordinator should be set forth in the legislation. The coordinator should report to the MCT, have the power to give specific orders to the PTC with respect to matters regarding the separation, and be charged with preparing a detailed plan for the break-up, to be approved by the MCT. Details of the transaction, such as who will receive which properties or buildings, which company will assume the debt and how the workers will be divided between the companies, should be identified in the restructuring plan, rather than the enabling legislation.

In addition to allocating properties between the two divisions, such a plan should also discuss how the non-core enterprises, to be separated simultaneously with the separation of the operating divisions, are to become self-sufficient. For example, the plan should provide for mandatory service contracts between the non-core enterprises and the postal and telecommunication entities until the non-core enterprises can be restructured to survive the market, could state that they will receive preferential treatment from government suppliers, and preferential rights to provide services to government agencies, and that no labor strikes

will be permitted for a short period of time unless the parties have first submitted their disputes to arbitration. In addition, the plan should describe the eventual disposition of non-core enterprises, as well as the use of proceeds from a potential privatization of former PTC entities.

2. Policy Decisions

The two most important policy decisions to be made refer to the allocation of the non-operating enterprises and disposition of PTC debt. These decisions will significantly affect the new organizations as well as further defining requirements for the restructuring process. Negotiations on these issues will be necessary, including a broad group of organizations. Specifically, negotiations should involve leadership of both the new postal and telecommunications entities, the MCT, the Ministry of Finance, and ZIMCO.

a. *Non-Core Enterprises*

The draft policy statement calls for divestiture of non-core operating enterprises, including the following:

- Engineering Workshop
- Employee Clinics
- Electronic Repair Center
- Training College
- Vehicle Workshop
- PTC Real Estate (employee housing and related)
- Transport Services
- Postbus and Postboat

Additional entities were identified by postal division officials for divestiture. Provisions for ensuring the viability of these enterprises after restructuring or providing the new operating entities with these service have not been made. Such further analysis is imperative, as divestiture of some of these units could be crippling to the basic service operator. For example, maintenance and repair of PTC vehicles currently performed by the Vehicle Workshop is essential for external plant development operations and mail delivery. The value of the core assets may diminish substantially if vehicle maintenance is not adequately provided for.

Several options have been proposed regarding the non-core enterprises:

- Assign them to the telecommunications entity, because of the greater capacity of telecommunications to fund cost centers.

- Create independent operating entities at the time of separation allowing non-viable enterprises to fail. Each entity may be considered for privatization as soon as they are established.

- Dissolve or sell non-core PTC entities and contract for the services provided by the entity with private entities.

- Create a third enterprise comprised of the non-operating divisions, supported by fixed period contracts with the postal and telecommunications entities to continue providing service. This would give the profit centers the initial advantage of common overhead and standardized operating procedures. Each profit center, as it becomes independently viable, could be subject to divestiture and privatization.

The first of these options overburdens the telecommunications entity and fails to adequately support the postal sector. It is assumed that the postal service would have to purchase services from the telecommunications entity, thus compromising the independence of the two entities and possibly creating a subsidy from telecommunications to postal services. Additionally, it is assumed that the resources of the telecommunications entity should be focussed on the core business of telecommunications, rather than supporting such enterprises as a transport system.

The second option requires immediate development of duplicate overhead facilities in each of the new entities to be created and risks their failure. It is assumed that the former PTC operating divisions will be dependent on these organizations to provide support services on a sub-contract basis, and the failure of any of them could leave the new operating entities without service. Failure of support services, such as the Vehicle Workshop or the Electronic Repair Center, would be highly damaging to PTC operations, while failure of employee benefits organizations, such as the Clinics or Transport Services, would damage union relations.

The third option would be optimal if possible, however the scarcity of private sector resources to provide services must be viewed as a constraint. For example, development of employee housing within PTC was a response to the general unavailability of adequate housing for PTC employees. A plan to contract for such services with the private sector is

likely to draw substantial opposition from employees and the PTC union, since the private sector is considered unable to provide such services.

We therefore recommend the last of these options, since it best allows for successful development of non-operating functions and minimizes institutional development at the time of restructuring. The financial viability of each operation is questionable, since there has never been a system of cost center accounting or transfer pricing between functions, and the third option best preserves their existence. By incorporating the enterprises to be transferred into a single independent enterprise with common overheads and transition period contracts with the operating entities, the likelihood that these organizations will survive is improved. Ultimately, the restructuring coordinator will have to facilitate the decision regarding the organizations to be separated and their eventual disposition (i.e., privatized vs. parastatal).

Two other entities, the Billing System and the Frequency Management Center, were identified in the draft Policy Statement as candidates for divestiture. We distinguish between these and the other entities due to certain very specific characteristics of these functions. The Billing System is an integral part of modern telephone operations, as it provides valuable information about customers, revenues, maintenance, etc. The value of the core assets may diminish substantially if the billing function is separated. Conversely, the Frequency Management function should not be associated with any operator -- public or private -- within the sector. The Frequency Management Center should be transferred to the MCT, since the radio spectrum is a national resource to be allocated by the government.

b. *Debt*

The second policy decision to be made concerns the allocation of PTC's debt. Debt has currently overtaken PTC's balance sheet, accounting for 113% of total capital. Much of this is telecommunications division debt, which similarly accounts for 115% of total assets (in the postal division, debt accounts for 82% of total capital). Although asset valuations are questionable, the level of debt in the company is sufficiently high to cripple the new operating entities, requiring application of large amounts of revenue to debt service rather than investment in infrastructure and cutting off access to capital market funding for future projects. Accordingly, it will be necessary for the government to assume some of PTC's debt in this transition.

The amount of debt to be assumed and allocation of remaining debt will have to be negotiated between the new entities to be created and with the Ministry of Finance, as existing government debt may have covenants limiting the amount of additional debt the GRZ may assume. Debt assumed by the government will free capital to be attributed to equity,

reversing the government's current position of negative equity in the company. Debt not assumed by the government will have to be allocated between the remaining entities, including non-operating entities.

The initial allocation of debt should be based on the assignment of assets funded by each loan and the percentage of assets allocated to each new entity. Once this initial allocation has been made, the ability of each entity to support the debt assigned to it should be evaluated and the allocation should be adjusted accordingly.

This is particularly important in the case of the postal sector. There are doubts within PTC as to whether the postal sector could absorb any portion of PTC's debt. Foreign loans made to PTC (approximately U.S.$16 million) include covenants stating that the funds will be used only in the telecommunications sector. Similarly, local loans have been made to PTC not for the purpose of upgrading the postal services, but expressly in order to improve the telecommunications system.[1] In practice, however, the postal sector has not been able to meet even its small share of the general PTC debt or expenses. These have been paid by the telecommunications department as an "internal" loan to postal. If after the separation the postal sector becomes responsible for its existing debt -- including advances made by telecommunications -- its financial situation may well become hopeless. Future subsidies to the postal entity to enable continued operations and investment will also have to be addressed in this policy decision.

3. Organizational Strengthening

Restructuring PTC will create several new organizations with clean balance sheets and substantial market opportunities. Without substantial managerial improvement, however, these organizations can rapidly deteriorate into unprofitability, refilling their balance sheets with debt, and effectively eliminating any of the advantages of the restructuring. Such managerial improvement is the motivating factor for divestiture of the non-core enterprises, but this alone is not sufficient to ensure the ongoing financial success of the entities. Protection of a clean balance sheet is critical in view of the impending privatization of the telecommunications entity, since further financial restructuring at the time of privatization is both undesirable and avoidable.

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[1] There are apparently an aggregate of Kwachas 800 million in local loans to telecommunications, but only Kwachas 15 million to the postal sector.

Specific areas where operational effectiveness can be improved within the telecommunications entity include:

- Strengthen External Plant Capabilities
  This includes data collection and analysis to monitor performance indicators and explain poor performance, including analysis of waiting lists and low call completion rates.

- Network Planning and Maintenance
  Planning is an essential function for both internal and external plant. Planning should be related to available sources of financing and plans should not be modified to meet donor requirements (e.g., using alternative technology offered by a specific vendor). Maintenance of both internal and external plant should be performed on a regular basis, requiring adequate supplies, spares, and service vehicles.

- Management Information Systems
  Integration of information systems will support greater precision in planning functions, both financial and operational. The billing system should be the source of market data, which can be translated into revenue projections to support budgeting functions. Information systems needs should be reviewed for all of the newly created entities, not just the telecommunications entity.

- Overhead Functions
  The capability to perform overhead functions such as accounting, capital budgeting, financial reporting, and human resource management will have to be created in all of the entities which will be created without them and reviewed for improvement in the entity to which these PTC organizations are assigned.

- Billing and Collections
  Late billing is costly in Zambia given the high interest rates and potential exchange rate fluctuations (effecting international calls). Billing should be automated so that bills are sent out on time and actions should be taken (e.g., disconnection) to ensure timely payment as well. Another part of improving collections is to reduce fraud, which maintains high levels of uncollectible revenue.

An additional measure to be taken to improve the financial performance of the telecommunications entity is to implement revenue sufficient tariffs as soon as possible after restructuring. The most efficient form of tariffs are cost-based tariffs, which should not be implemented until after the restructuring is complete. The cost structure of the

telecommunications division will change dramatically as a result of the restructuring, requiring a post-restructuring tariff change. Implementing appropriate tariffs is one of the most important steps to be taken in preserving the benefits of restructuring. An interim tariff increase is recommended to improve PTC's short-term cash flow. Such an increase should be based on a rough revenue requirement estimate; an extensive, precise rebalancing should be delayed, however, until after the restructuring so that the tariff reflects the cost structure of the independent telecom entity.

The postal division will have similar requirements for organizational strengthening. One of the major issues to be determined in the postal entity is whether the entity can generate sufficient operating margin to service its debt. A government policy decision will have to be taken regarding the financing of postal operations, and the possibility of a governmental subsidy. In many countries, policy objectives, such as universal service and uniform prices, render postal operations unprofitable. These operating shortfalls are frequently compensated by government subsidies which are authorized by specific policy decisions and administered in a transparent fashion. A transparent government subsidy of postal services would be achieved through a process whereby postal officials prepare a budget projecting operating losses and present it to the government for review. Through negotiations, government and postal officials agree on the magnitude of the subsidy, which is then included in the national budget (public sector spending program) and disbursed to the postal service according to terms agreed between postal and government officials. Such a program should be considered for Zambia, weighing the burden of a public subsidy against the debilitating effects of reduced postal service (especially to rural areas) or substantially higher prices.

4. Public Relations

Management of public relations is a critical part of the separation. Of particular concern are the opinions of the PTC labor union, the PTC customer base, and relevant politicians. These groups should be addressed head on to gather their support.

Although the draft Communication Administration Act specifies that the rights and benefits of employees are not to be affected by the restructuring, this has not been communicated to the PTC labor union, and therefore has not been communicated to employees. Union concerns can be addressed in several ways. The union should be given advance notice of decisions, timing, and activities associated with the separation. The union should also have an opportunity to ask questions and raise concerns and the restructuring coordinator should be available to attend union meetings to further explain concerns. Finally, providing a telephone number or a mailing address for employee submission of questions will help generate support for the process.

Customer concerns are likely to center on service quality and expansion and are best addressed through mass media efforts. Such efforts could include newspaper and radio announcements, explanatory inserts included in telephone bills, mailings to postal customers, and posters and announcements in post offices. Additionally, a telephone number or mailing address should be made available for customer questions as well as employee questions.

The final group of stakeholders whose concerns need to be addressed are the government officials who will be expected to authorize the separation. There is a need here for the MCT to educate other parts of the government as to the purpose of the separation, its consistency with overall government policy, and similar activities around the world. Details of the restructuring plan should be provided as needed to ensure that the details are of interest. Informal channels should be used to the greatest extent possible to convey this information; these should be supplemented by presentations at a symposium to debate national telecommunications policy and within formal meetings, such as cabinet meetings and Parliamentary session.

B. Legal Guidelines

Several issues within the current legislation addressing the separation are controversial and should be reviewed. First, Section 7(2) of the draft Communications Administration Act states that upon passage of the draft Telecommunications Act, 1993, all property held by the PTC shall vest in the Controller. Under Section 7(6), the Controller may alienate such property in accordance with the draft Telecommunications Act or upon instructions from the MCT.

As drafted, the clauses noted seem to allow the MCT to direct the Controller to act in contravention of existing legislation (including the draft Telecommunications Act) regarding disposal of the acquired property. Presumably this is a drafting oversight which can be corrected. More importantly, however, we question the need to transfer property to the Controller knowing that immediately afterwards -- unless the Controller is to become a telecommunications operator -- the property will be forwarded to a newly-created state-owned company. Instead, it would seem less cumbersome to transfer the property directly to the state-owned operator.

Since a new company will be created for the telecommunications entity, we recommend transforming the current PTC into the postal company (and deleting the reference to "Telecommunications" from the name). This would eliminate the need to transfer property to a new entity and protect the government from compounding the problem from nearly 20

years ago when PTC received property from the former Government Post Office, but never completed recording the transfer in the Zambian property registries.

Sections 7(3) and (4) of the draft Communications Administration Act provide that, upon creation of the new postal and telecommunication companies, they shall automatically receive all contract rights and obligations belonging to PTC in their respective fields. However, many agreements specifically prohibit such transfers without the other party's consent. Therefore, before Sections 7(3) and (4) are promulgated, all contracts to which PTC is a party should be reviewed, since their passage by the Zambian Parliament might result in the breach of existing agreements with no-assignment clauses and of additional contracts with "cross-default" provisions.[2] Since the telecommunications sector of the PTC may be privatized in the future, with the loss of foreign sovereign immunity, any breach of existing agreements will be of concern to new operators.

In summary, we suggest the following five steps in order to facilitate the legal aspects of the process:

- Identify in the bill those PTC divisions that will not be assigned to either of the remaining sectors;
- Appoint a restructuring coordinator charged with drafting a restructuring plan to be approved by the MCT, and with resolving disputes between the two sectors regarding property allocations. The powers of such coordinator should be set forth in the Bill;
- Identify the debt to be assumed by each sector, in light of its projected ability to pay and its privatization plans;
- If possible, do not transfer the property relating to postal services from PTC, but change only the company name to make it clear that it no longer provides telecommunications services;
- Unless third-party consents to the proposed assignments can be obtained prior to the enactment of the Bill, modify Sections 7(3) and (4) so that no transfer is effective unless the requisite third party approvals have been received.

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[2] "Cross-default" clauses, which appear in loan agreements and other international contracts, typically provide that a material breach of another agreement is a default.

C. Financial Guidelines

In large measure the financial separation of the posts and telecommunications entities was accomplished in 1975, when separate financial accounts were begun. At the time of formal separation of the entities, financial records for the existing divisions will serve as a starting point for each of the new entities. Difficulties will arise in separating additional units (such as the Training College Engineering Workshops, and other units noted in MCT's draft Policy Statement) and in separating shared assets and overheads. These difficulties arise because those units do not have separate revenues or budgets and because PTC does not use cost center accounting procedures (i.e., they cannot state costs by individual units other than the operating divisions). As a result, new balance sheets should be created, but substantial effort will have to be employed in the requisite accounting analysis.

The starting point for new balance sheet creation will be the existing divisional balance sheets, as shown in Exhibits IV-1 and IV-2. The assets and liabilities of non-core enterprises associated with each of the entities are reflected in the accounts for that division (e.g., Postbus and Postboat are consolidated into the Postal Division Balance Sheet), while all Corporate Division (including overheads as well as non-core enterprises) are split between the two operating divisions on the basis of 80% to telecommunications and 20% to posts.

In moving toward initial balance sheets for the new enterprises, a four step procedure should be followed. The first step is to make the policy decisions identified above as well as more specific policy decisions regarding asset and staffing allocations. While this is a straightforward task due to the existing divisional structure, there are several complicating factors. Shared facilities, such as post offices in rural areas which also serve as telephone company offices, represent one example of a complication in the allocation; corporate division staff and employees recently transferred from one division to another are examples of another complication. An addition area where policy decisions will have to be made is in allocating overhead assets (e.g., investments).

To facilitate the remaining policy decisions to be made, each division should prepare a staffing and asset plan, identifying which employees, functions, and assets are expected to be transferred to the new entity. These plans can be compared and differences negotiated between the divisional leaders, with negotiations mediated and disputes resolved by the restructuring coordinator.

The second step is to allocate debt remaining after the transfer to the government, stocks and spares, other assets (e.g., receivables, prepayments, investments) and payables to the relevant enterprises. The primary basis for this allocation should be the asset allocation (e.g., debt

Exhibit IV-1

TELECOM DIVISION BALANCE SHEET

In Millions of Kwacha

Unadjusted for Inflation

Fiscal Years Ending March 31

	1990	% of TA	1991	% of TA	1992	% of TA	1993 *	% of TA	BUDGETED 1994	% of TA
CASH & EQUIVALENTS	275.4	7.6%	236.6	3.4%	759.9	4.6%	401.9	0.9%	215	0.2%
ACCOUNTS RECEIVABLE (NET)	808.3	22.4%	1708.3	24.4%	4314.8	26.4%	11728.9	25.5%	26846	30.6%
INVENTORY	168.1	4.7%	187.9	2.7%	408.0	2.5%	553.4	1.2%	1220	1.4%
TOTAL CURRENT ASSETS	1251.8	34.7%	2132.8	30.4%	5482.7	33.5%	12684.2	27.5%	28281	32.3%
FIXED ASSETS*	1258.7	34.9%	2053.8	29.3%	3422.8	20.9%	6551.1	14.2%	18789	21.4%
INTANGIBLE ASSETS	1098.0	30.4%	2818.7	40.2%	7453.2	45.6%	26813.4	58.2%	40532	46.3%
TOTAL ASSETS (TA)	3608.5	100.0%	7005.3	100.0%	16358.6	100.0%	46048.7	100.0%	87601	100.0%
TOTAL CURRENT LIAB	986.6	27.3%	2206.5	31.5%	7449.2	45.5%	24723.1	53.7%	40987	46.8%
L/T DEBT	1678.7	46.5%	3631.7	51.8%	7941.9	48.5%	28094.7	61.0%	37498	42.8%
CAPITAL GRANTS	122.2	3.4%	88.9	1.3%	134.9	0.8%	60.0	0.1%	50	0.1%
DEFERRED LIABILITY	2.7	0.1%	4.8	0.1%	12.2	0.1%	45.8	0.1%	60	0.1%
POSTAL DIV CURRENT ACCOUNT										
TOTAL NONCURRENT LIAB	1803.7	50.0%	3725.3	53.2%	8089.0	49.4%	28200.5	61.2%	37608	42.9%
TOTAL LIABILITIES	2790.2	77.3%	5931.9	84.7%	15538.2	95.0%	52923.6	114.9%	78596	89.7%
SHARE CAPITAL	292.5	8.1%	415.9	5.9%	473.3	2.9%	913.8	2.0%	1579	1.8%
RESERVES	525.7	14.6%	657.5	9.4%	347.2	2.1%	−7788.7 **	−16.9%	7427	8.5%
TOTAL EQUITY	818.3	22.7%	1073.4	15.3%	820.5	5.0%	−6874.9	−14.9%	9006	10.3%
TOTAL LIAB. & EQUITY	3608.5	100.0%	7005.3	100.0%	16358.7	100.0%	46048.7 **	100.0%	87602	100.0%

* Data from 1993 Financial Statements have not been audited. Audited statements include Postal Division Current Account as a Telecom Division fixed asset. Postal Division Current Account from unaudited financial statments and budget have been added into Telecom Division fixed assets for consistency.

** Includes Kw300,000 correction for Postal Liability

Source: PTC Financial Statements.

Exhibit IV-2

POSTAL DIVISION BALANCE SHEET

In Millions of Kwacha
Unadjusted for Inflation

Fiscal Years Ending March 31

	1990	% of TA	1991	% of TA	1992	% of TA	1993 *	% of TA	BUDGETED 1994	% of TA
CASH & EQUIVALENTS	128.0	33.6%	118.0	18.8%	126.7	10.2%	194.3	7.9%	11	0.2%
ACCOUNTS RECEIVABLE (NET)	172.6	45.4%	352.9	56.1%	904.9	72.8%	1984.9	80.3%	1929	31.5%
INVENTORY	13.8	3.6%	29.2	4.6%	33.3	2.7%	42.5	1.7%	51	0.8%
TOTAL CURRENT ASSETS	314.4	82.6%	500.1	79.5%	1064.9	85.7%	2221.7	89.9%	1990	32.5%
FIXED ASSETS	66.1	17.4%	128.8	20.5%	178.0	14.3%	248.9	10.1%	4140	67.5%
TOTAL ASSETS (TA)	380.5	100.0%	628.9	100.0%	1242.9	100.0%	2470.6	100.0%	6130	100.0%
TOTAL CURRENT LIAB	205.8	54.1%	355.5	56.5%	568.9	45.8%	1358.3	55.0%	1229	20.0%
L/T DEBT	5.8	1.5%	17.9	2.8%	0.9	0.1%	0.0	0.0%	0	0.0%
CAPITAL GRANTS	0.0	0.0%	0.0	0.0%	0.0	0.0%	2.3	0.1%	0	0.0%
DEFERRED LIABILITY	1.4	0.4%	1.0	0.2%	3.3	0.3%	0.0	0.0%	3	0.1%
TELECOM DIVISION	50.4	13.2%	83.0	13.2%	242.8	19.5%	600.1	24.3%	669	10.9%
TELECOM DIVISION LOAN							58.9			
TOTAL NONCURRENT LIAB	57.6	15.1%	101.9	16.2%	247.0	19.9%	661.3	26.8%	672	11.0%
TOTAL LIABILITIES	263.4	69.2%	457.4	72.7%	815.9	65.6%	2019.6	81.7%	1901	31.0%
SHARE CAPITAL	2.8	0.7%	2.8	0.4%	2.8	0.2%	2.8	0.1%	3	0.0%
RESERVES	114.3	30.0%	168.7	26.8%	424.2	34.1%	448.2	18.1%	12527	204.3%
TOTAL EQUITY	117.1	30.8%	171.5	27.3%	427.0	34.4%	451.0	18.3%	4229	69.0%
TOTAL LIAB. & EQUITY	380.5	100.0%	628.9	100.0%	1242.9	100.0%	2470.6	100.0%	6130	100.0%

* Data from 1993 Financial Statements have not been audited.

Source: PTC Financial Statements.

should follow the assets it funded) and, where asset-based allocations are not feasible (e.g., investments), the assets or liabilities should be assigned to the largest (i.e., the telecommunications) entity.

As part of this step, the assets and liabilities associated with non-core enterprises will be removed from the balance sheets of the posts and telecommunications divisions. This, along with the allocation of funding to track the assignment of assets to the different entities, will require an in-depth review of PTC accounts, property records, debt agreements, and possible journal entries. Although the general rule has been to allocate 80% of the assets, liabilities, and expenses of overhead items to telecommunications and 20% to posts, the application of this rule will have to be reviewed as assets to be transferred to the non-core enterprises are assigned. A final modification to the balance sheet to be completed during this step is the conversion of government debt into equity. PTC debt which is transferred to the government will be viewed as an equity injection and will have to be switched from debt to equity on the balance sheet according to the terms of the debt transfer agreement.

The third step is to allocate cash and liquid assets to the new entities, as they will need sufficient working capital to sustain independent operations. Because accounts receivable are considered liquid assets, it is critical that they reflect actual collectible balances. Therefore, before they are included in the working capital calculation, accounts receivable will be written down to reflect uncollectible revenues. The starting point for this allocation will be the cash carried on the entity balance sheets. Working capital targets will be established for each entity consistent with the norms for the industry in which that entity will be operating and working capital in each entity will be funded to that level (or beyond).

The final step in establishing a balance sheet is to perform an asset valuation. The purpose of the asset valuation is to make the balance sheet accurately reflect the value of all fixed assets. It has been suggested that the balance sheet currently understates asset values, in which case it also understates equity (and consequently understates PTC's dividend obligation to the government). This process will revalue all assets based on their original purchase price, inflation, the age and condition of equipment, and the asset's estimated remaining useful life. A revaluation of buildings has been scheduled for the 1993/94 budget year and a revaluation of plant and equipment is planned for the following year.

D. Formulate and Implement a Comprehensive Restructuring Plan

The decision to separate the postal and telecommunications entities into separate divisions has been agreed to, and Section IV of this report recommends steps toward the legal and financial separation of PTC. In that section, we discuss the need for a restructuring plan and a

coordinator to oversee the process. This section expands on those ideas, identifying specific tasks to be performed.

Although PTC divisions have maintained independent operations and financial statements since 1975, separation into distinct operating entities is not as straightforward as it may appear. The separation is motivated by several factors:

- Elimination of any implicit subsidies between postal and telecommunications divisions
- Reorganization associated with commercialization of operating divisions (e.g., shedding non-operating cost centers)
- Preparation for privatization

The restructuring is intended to create financially viable entities to serve the community and be considered for privatization. In ensuring the financial viability of each entity, certain issues must be considered, including the allocation of assets and liabilities associated with overheads and shared facilities, disposition of PTC debt, and the need for ongoing performance improvement of the operating entities.

Overhead is a heavy burden for PTC, based on the employee compensation scheme, which provides employees with relatively low salaries, but a plethora of benefits, including housing (or housing allowance), transportation, and health care. These overheads, while necessary for employee benefits, are now burdensome cost centers to PTC, with no individual accounting. We recommend establishing a third entity at the time of separation to provide these functions to PTC on a sub-contract basis. The departments which are now cost centers to PTC would become profit centers to a third entity, generating revenue from the new telecommunications and postal entities, which would be contractually obligated to buy service from the third entity for a fixed period of time after the separation is implemented. The third entity would be free to solicit additional clients from among other parastatals and private companies interested in providing these services for their employees.

Shared facilities will have to be identified and assigned to one of the newly formed entities. Along with this, services performed by each entity for the other must be identified and compensation negotiated. For example, in rural areas, post offices double as telephone company offices. In separating the two entities, post office facilities will be allocated to the postal entity, leaving the telecommunications entity without local facilities. Similarly, the postal division performs the services of delivering telephone bills and collecting telephone bill payments (at post offices) for the telecommunications division.

In the short term, the sharing entity (i.e., not the entity to which a facility is allocated) will rent access to these facilities from the entity which owns them. In the longer term, management decisions will have to be made as to whether duplicate facilities should be constructed or whether the rental arrangement should be continued. There will have to be a settlement period on a regular basis (probably monthly) to account for shared facility rentals, special services (e.g., collection of bill payments), and regular services (e.g., delivery of telecommunications entity's mail and postal entity's telephone service).

PTC's debt currently accounts for approximately 113% of its assets, and foreign-denominated debt service has been crippling PTC's financial performance. A proposal for the GRZ to retain some or all of this debt is currently on the table and will have to be resolved before new entity balance sheets are established. Government retention of PTC debt will render the telecommunications entity credit worthy, thus providing the new entity with maximum flexibility in planning investment and would also make the entity a much more attractive candidate for privatization.

The time lag before privatization could potentially reverse any of the benefits anticipated from the restructuring. It is critical that the restructuring of PTC include some performance improvement to protect the benefits to be derived in restructuring the entities.

The next steps in implementing PTC's restructuring are to:

- Appoint a restructuring coordinator
- Develop a restructuring plan (and schedule)
- Execute entity separation
- Review telecommunications entity for options to improve performance
- Implement revenue sufficient tariffs reflecting new cost structure

The restructuring coordinator should be selected based on expertise in the area of restructuring, but will sufficient independence from the sector to have no interest in any of the entities to be created by the restructuring. The restructuring plan should identify major milestones in the restructuring process and establish a timeline for completion of these activities. This plan will be subject to approval by MCT.

Executing the separation will require the following:

- Creation of new organization(s) for non-operating entities
- Transfer of debt to each entity and to the government
- Negotiation of inter-entity settlements

- A public relations program to address union and subscriber concerns

The short- and long-term disposition of non-operating enterprises, including employee housing, employee clinics, employee transportation systems, the Engineering Workshop, the Electronic Repair Center, the vehicles workshop, and the Training College, needs to be determined. The restructuring coordinator will be responsible for achieving quick consensus on each of these entities and creating the requisite organizational structure to handle them. Organizational development of the non-operating entities will require identification and training of organization leaders and establishment of management information and accounting systems.

Shared facilities and inter-entity services will be identified and rental agreements will be negotiated to compensate the entity which owns a facility for usage by the other entity of the facility. These agreements between the entities will include specification of a transition period, during which facilities must be shared, and procedures for termination of the agreement (if desired) at the end of the transition period. These negotiations will be overseen by the restructuring coordinator, who will also resolve any disputes which may arise.

Once the restructuring plan is in place and the terms of the separation have been decided, issues of concern to PTC users and employees must be addressed through a public relations program, including seminars, media announcements, and notices in Post Offices and in telephone subscriber bills. Although large, sophisticated telecommunications users are likely to applaud the separation, smaller users, particularly in rural areas with limited telecommunications service, will have questions about the viability of the postal sector and their mail delivery service. Similarly, PTC employees will have to be reassured of their job and benefit security, and procedures will have to be implemented to ensure that during the actual transition, employee support systems (such as payroll) continue uninterrupted. Finally, one issue of concern to the PTC labor union is whether they will continue to represent employees of the postal entity or whether those employees would revert to the Government Workers' Union. These issues will have to be addressed explicitly through public relations programs and stakeholder fora to answer questions and alleviate concerns about the restructuring.

The restructuring program should not end with the creation of separate entities. After the restructuring (and the associated transfer of debt to the government), the telecommunications entity will have a clean balance sheet and a relatively strong financial position. This position must be protected, especially in view of plans to privatize the entity shortly. Two further activities are recommended as part of the restructuring: organizational strengthening of the telecommunications entity and implementation of a more efficient tariff structure.

1. Organizational Strengthening of the Telecommunications Entity

The PTC's ultimate predecessor was the Government Post Office, which introduced telecommunications service when technology became available. The international, dynamic environment in which today's PTC operates was never envisioned as the organizational structure of the telecommunications division was developed. In order to improve performance, as described by such indicators as employees per line, penetration rate, waiting list, fault clearance time, network utilization rate, billing collection rate and others, PTC needs to review its structure, policies and procedures at every level.

Such a review would encompass every department within the telecommunications entity and should be sufficiently broad to include functions not currently performed (e.g., external plant construction logistical planning). Procedural and training solutions should be sought for specific problems, including late billing, low collections, long delays in service initiation, poor network planning (especially external plant), uncoordinated donor activities, and insufficient supplies of parts and vehicles. This review should take into consideration long-term changes in the sector, such as introduction of regulation, competition, and privatization, enabling the entity to make improvements in anticipation of requirements (e.g., regulatory reporting) and prioritize management initiatives according to which will add the most value in a pre-privatization context.

Performance initiatives with the greatest potential include:

- Implementation of effective external plant planning
- Development of integrated management information systems, including the billing function
- Implementation of fraud control procedures and improvement of collections
- Establishment of overhead organization, including accounting, capital budgeting, and human resource support

While some management initiatives require substantial funding, some of these opportunities enable the telecommunications entity to improve performance at relatively low cost.

2. Implement Efficient Tariffs

The prevalent tariffs in Zambia presently fail to meet any of the generally accepted objectives of economic tariff policy. The first objective is revenue sufficiency, whereby revenue generated from the tariff should be sufficient to cover costs, including the cost of network expansion and the cost of capital (i.e., return to owners). The negative profitability (after

exchange losses) of the PTC is evidence of the revenue insufficiency of the tariff. The second objective is efficiency, whereby the tariff reflects the cost structure of various services, encouraging consumers to make economically optimal decisions about how much service to demand. This objective is violated by the subsidy from international to national traffic, which encourages excessive use of the local and national network, exacerbating switch congestion problems, as well as discourages use of international services, hampering the ability of Zambian business to compete in world markets. The final objective, fairness to customers, is not being met because all customers are not treated equally due to high cost customers (i.e. rural) who do not have service.

Section II of this report describes the tariff system and a proposed new tariff, which more than doubles the current tariff without guaranteeing revenue sufficiency. The same section describes the need for repair, expansion, and maintenance of the network and the poor financial performance of PTC to date. These are not independent phenomena. Without revenue sufficiency and efficiency in tariff policy, the financial performance of PTC will not improve, and without adequate funding, difficulties in operating the network are doomed to fail.

Accordingly, PTC should implement cost-based tariffs and the MCT and subsequent sector regulators should force PTC to maintain cost-based tariffs. Such a measure will achieve the objectives described above by eliminating subsidies, except for those explicitly mandated for social objectives (e.g., rural service or universal service). We recommend implementation of long-run marginal cost (LRMC) as a tariff basis, since LRMC is the only method whereby capacity expansion is factored into the tariff calculation.

Tariff rebalancing is the initial switch from ad hoc to cost-based tariffs. Rebalancing a tariff often reduces international calling rates while increasing the national tariff. Rebalancing is a one time process, which provides the baseline tariff to be adjusted through the regulatory process.

In calculating a cost-based tariff, the first step is to identify costs. This will entail data collection and analysis to determine what level of cost are attributable to each service offered. The cost calculation should include operating expenses, debt service, non-debt funded future investment, and a return to shareholders. Where possible, these should be explicitly allocated to the services they support (e.g., debt service to pay for an international exchange should be allocated to international service). Other operating costs and all overheads should be fully allocated over services based on the percentage of overall traffic associated with each service.

Finally, the rates for each service should be inflated to account for uncollectible revenue[3] and a return to shareholders. The resulting total of all costs is the gross revenue requirement, which should be expressed in its aggregate as well as on a service-specific basis. The net revenue requirement is calculated by deducting from the gross revenue requirement expected revenue from non traffic sensitive sources. Exhibit IV-3 shows a sample revenue requirement calculation based on a tariff study performed by Price Waterhouse for the Zambia PTC in 1987.

Another analysis to be performed as part of the tariff calculation is a demand study. The demand study comprises two major components: price elasticity analysis and demand forecasting. Price elasticities are used to evaluate test tariffs for revenue sufficiency. When the price of a service is increased, for example, consumers respond by demanding less of that service. If a rate increase is designed to be revenue sufficient under current demand conditions, therefore, it is likely to be insufficient when implemented because of the demand response. Price elasticities enhance the precision of the tariff by allowing an iterative process to be used to ensure revenue sufficiency. Elasticities may either be explicitly calculated (where sufficient data exists) or assumptions may be made regarding demand response.

The second objective of the demand analysis is to develop demand forecasts for tariff purposes. These forecasts are expressed in terms of metered units (or minutes) per year and form the basis for allocating the revenue requirement over revenue units. Separate forecasts are required for each common pricing element (e.g., to impose differential pricing on business and residential customers, separate forecasts would be required for each group). Finally, the effectiveness of the tariff is directly related to the accuracy of the forecasts. Demand forecasts for the purposes of tariff calculation should therefore be reconciled with forecasts of line installation used in planning external plant expansion, projections of demand used in planning circuit configuration, estimates of revenue used in capital budgeting, and any other forecasts and projections available within PTC.

Once costs, demand elasticities, and usage forecasts have been calculated, they may be combined to develop detailed tariff rates. Total revenue requirements for each service are divided by the number of units forecast for that service to estimate the baseline tariff. Using

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[3] It may be considered that if uncollectible revenue is included in the tariff calculation, no incentive exists for PTC to attempt to improve its collections. The regulator or the MCT may therefore want to designate a portion of uncollectible revenue (decreasing over time) to be included in the tariff calculation, recommending that PTC target that level.

-- PW Corporate and Telecommunications --
Revenue Requirements Definition Model
Tariff Requirements and RR Summary

25-Nov-87 Base

G. Tariff Requirements and RR Summary	1987	1988	1989	1990	1991	1992
G.1 GROSS REVENUE REQUIREMENT (000 K)						
G.1.1 Based on O&M and Capital Investments Program	433,318	429,820	564,306	758,817	1,038,749	1,209,337
G.1.2. Based on Debt Coverage Ratio	515,549	570,425	733,121	910,984	1,184,471	1,534,399
G.1.3 Based on Required Rate of Return	399,392	488,729	633,726	780,923	970,949	1,183,996
G.1.4 Maximum Gross Revenue Requirement	515,549	570,425	733,121	910,984	1,184,471	1,534,399
G.1.5 Collection Factor	85.0%	85.0%	85.0%	85.0%	85.0%	85.0%
G.1.6 Net Revenue Requirement	606,529	671,089	862,495	1,071,745	1,393,495	1,805,176
G.2. NON TARIFF SOURCES OF FUNDS						
G.2.1 Non Traffic Sensitive Revenues	20,073	41,926	56,882	75,174	101,240	143,923
G.2.2 Foreign Administrations (I/P) Revenues	38,612	53,774	75,167	105,426	148,324	209,261
G.2.3 Share Capital (000 K)	33,979	10,262	12,828	16,034	20,043	25,054
G.3. TOTAL TARIFF REVENUE REQUIREMENTS						
G.3.1 Net to be Raised Through Tariff (000 K)	513,865	565,127	717,619	875,111	1,123,889	1,426,938
G.3.2 Net to be Raised Through Tariff (000 $)	58,634	53,736	56,864	57,786	61,845	65,434
G.4. INTERNATIONAL TARIFF RR						
G.4.1. Foreign Administrations O/P Calls (000 K)	81,496	113,295	156,081	214,553	295,449	407,879
G.4.2 Foreign Administrations O/P Call Minutes	6,874,003	7,854,882	9,001,232	10,342,164	11,911,957	13,750,979
G.4.3 O/P Calls Local Unit Costs (K/Minute)	8.85	10.62	12.75	15.30	18.35	22.03
G.4.4 Foreign Administrations O/P Local Costs (000 K)	60,845	83,433	114,731	158,188	218,638	302,871
G.4.5 International Tariff Revenue Requirement (000 K)	142,341	196,728	270,813	372,741	514,087	710,750
G.4.6 International Tariff RR (000 $)	16,242	18,706	21,459	24,613	28,289	32,592
G.5 LOCAL TARIFF RR						
G.5.1 Local Tariff Revenue Requirement (000 K)	371,523	368,399	446,807	502,370	609,802	716,188
G.5.2 Local Tariff Revenue Requirement (000 $)	42,393	35,030	35,405	33,173	33,556	32,842
Exchange Rate	8.76	10.52	12.62	15.14	18.17	21.81

elasticities to determine the demand response to the baseline tariff, revenue projections are made for each service, aggregated, and compared to the aggregate revenue requirement. Prices are then adjusted upward until the aggregate revenue requirement is achieved. Adjustments are made first to the least elastic service, with subsequent adjustments being applied to more elastic services.

The tariff calculation is one component of tariff policy. Other tariff issues that should be addressed in PTC's tariff reform initiative are tariff update/adjustment procedures and a program for implementing the rebalanced tariff. Tariff components, such as operating costs, debt service, non-debt funded investment, and shareholder return, disaggregated into local and foreign costs should be explicitly identified in the tariff calculation. This will allow for regular adjustment of components effected by changing economic conditions such as inflation or exchange fluctuations. The formula for such and adjustment should be uncomplicated, easy to use, and should allow for adjustments in both directions. We recommend that foreign denominated cost (i.e., foreign debt service and foreign investment requirements) be adjusted monthly for foreign exchange fluctuations and that local costs (e.g., non-staff operating expenses) be adjusted for inflation on a monthly basis.

The central implementation issue is whether that tariff rebalancing should be implemented all at once, resulting in a one time extremely large increase or whether the increase should be phased in, resulting in frequent smaller adjustments over the course of one or more years. Recent economic reforms liberalizing utility prices and removing any form of government subsidies to parastatals have led to price increases among the parastatals, including a one time 500% rate increase by ZESCO. In deciding how to implement tariff rebalancing, we recommend that PTC review ZESCO's experience in managing this increase. PTC needs to consider several facets of their proposed rate increase that differ from ZESCO's including possibly offsetting reductions in international calling rates and subsequent increases based on tariff adjustments.

VI. Appendices

A. Final Report on Task 7 Time Sensitive Sector Issues

B. Draft Legislation and Policy

C. Personal Observations

D. List of Acronyms

APPENDIX A

Final Report on Task 7 Time Sensitive Sector Issues

I. Introduction and Objectives

The objective of this paper is to address four issues identified in Task Seven of the Scope of Work. The Scope of Work identifies these issues as the following:

- Presentation and analysis of immediate options to address the problem of mismatch of exchange capacity with external plant to reach subscribers; should include sub-contracting, revenue sharing, franchising, etc. Address potential impacts of each option on PTC and eventual privatization.

- Critique of proposed amendments to existing legislation concerning postal, telecommunications, and broadcast, and new legislation concerning interception in the context of world wide experience and in the context of developing a comprehensive telecommunications policy.

- Analysis of options to access INMARSAT land mobile services; membership in INMARSAT, revenue implications of non-Zambian registered use of INMARSAT services.

- Analysis of immediate options to provide increased service to rural areas; both in areas of commercial development (commercial farms, safari camps, mines) as well as in peasant farming areas.

Priority changes between the time the Scope of Work was written and the time of the first field trip resulted in a de-emphasis of the INMARSAT issue. Similarly, cellular licensing has become a more important issue than initially envisioned, and is discussed in Section V., "Analysis of Immediate Options to Provide Increased Service to Rural Areas...".

II. Presentation and Analysis of Immediate Options to Address the Problem of Mismatch of Exchange Capacity with External Plant to Reach Subscribers

The mismatch of exchange capacity and external plant is actually a shortfall of external plant. In addressing this mismatch issue, the PTC needs to develop a well-conceived, long-term network development plan to guide expansion of the external plant. The sub-contractors are well suited for construction projects as long as adequate contractor screening and supervision procedures are in place. Additionally, PTC's current performance could be improved by actions such as completing external plant projects that have already been identified and providing external plant construction with adequate equipment, supplies and training. In the long run, increased subscriber penetration and revenue generation will make PTC more

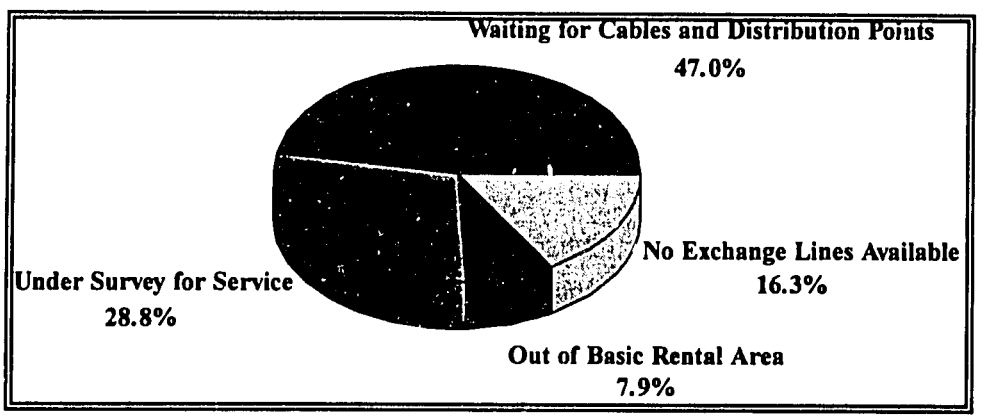
attractive to potential investors, but long-term sub-contract obligations may complicate the privatization process.

A. Description of Mismatch

The mismatch between exchange capacity and external plant capacity is actually an external plant shortfall. Insufficient external plant creates the illusion of surplus exchange capacity since there are unutilized exchange lines. When a circuit in use malfunctions, the line is simply plugged into another circuit, and the faulty circuit goes unrepaired. Total exchange capacity is currently reported to be 122,874 lines, but the **working** exchange capacity is unknown. As presented below, the number of lines in service is substantially less than total exchange capacity, with insufficient external plant accounting for nearly half of the difference.

		% of Demand
Total Expressed Demand	132,624	100.0%
Of Which:		
Lines In Service	70,756	53.4%
Installation in Progress	4,608	3.5%
Subscribers Waiting for Service	57,260	43.2%

The pie chart below shows the reasons for lack of service among the 57,260 potential subscribers waiting for service.



Insufficient external plant accounts for nearly 50% of the capacity shortage and is therefore a

major factor in the failure to meet expressed customer demand.

B. Causes of Mismatch

Inadequate external plant capacity results from a combination of problems within the sector. The most severe problems contributing to the capacity shortage in Zambia fall into three general categories: planning, implementation, and supplier problems.

Problems existing in the planning process include the following:

- Donor funding has not sufficiently addressed the need for external plant;
- Current external plant construction focuses on cable rehabilitation rather than network expansion.

Problems in implementing external plant construction projects to increase capacity include:

- Limited motor pool assigned to the External Plant group impairing efficient management of limited External Plant human resources;
- Vandalism and theft of external cables;
- Inadequate stocking procedures of splicing and other cable construction materials (in addition to budgetary constraints on cable and wire purchases). This problem is exacerbated by the high turnover of experienced staff due to AIDS and fraud-related firings;
- Heavier gauge and more expensive cable is needed to compensate for long loop cable replacement, in keeping with PTC's current standards.

Finally, PTC has some difficulties in dealing with suppliers and sub-contractors. The largest supplier of external plant materials to PTC is ZAMEFA (Zambia Metal Fabricators), the only domestic manufacturer of copper telephone cables. ZAMEFA has a substantial price advantage in doing business with PTC, since foreign competitors are assessed up to 50% for import duties and taxes. There is a belief within PTC that ZAMEFA relies on this price advantage instead of providing responsive, competitive customer service to PTC. In attempting to force more competitive pricing and delivery schedules, PTC solicits foreign bids, which are sometimes competitive despite the import duties which have to be assessed.

A final risk associated with ZAMEFA's virtual monopoly on telecommunications cable is reliability of the supply of cadmium copper, which is used as drop wire into the home. Current health issues raised by ZAMEFA with the manufacturing of cadmium copper wire could further delay delivery of the final connection to the telephone user. In the event that manufacturing of this product is discontinued, alternative materials will have to be

investigated, thus delaying final installation and possibly increasing costs.

Other supplier/sub-contractor relationships have been attempted in the form of hiring day laborers for cable trenching and contracting out cable laying operations. Experience with these relationships has raised the following issues:

- Inadequate supervisory staff for unskilled, casual labor limits the efficiency of cable trenching operations;
- The External Plant group is reluctant to use outside contractors because of past experience in which contractors have damaged the cables.

C. Options for Addressing Mismatch

Immediate options for addressing the capacity mismatch focus on expanding external plant, i.e., the purchase and installation of cables. External plant expansion is a labor intensive process which lends itself well to private sector participation in the form of sub-contracting. PTC has been reluctant to work with sub-contractors because of previous experiences where contractors damaged PTC cables. Employing preventative measures to minimize the risk of contractor negligence is a more productive response to such experiences rather than eliminating the use of contractors altogether. Use of sub-contractors is advantageous since they provide a quick way to accomplish certain tasks and, in supporting well qualified contractors, PTC will improve the telecommunications business environment. In order to use contractors most effectively, PTC should do the following:

- Implement screening procedures for contractors, selecting a contractor based on training and qualifications of staff, general reliability and reputability, and experience with similar projects;
- Establish standards of construction for external plant and duct route;
- Limit contractor activities to civil works projects (e.g., pole installation, or trenching), restricting actual cable work to trained PTC staff;
- Provide adequate PTC supervision in the project planning stages to ensure that no existing network infrastructure is at risk of construction damage;
- When feasible, hire contractors on a turn-key basis and hold them to predetermined time, budget, and quality standards by means of penalties for non-performance.

Revenue sharing and franchising are options for private sector participation typically associated with large equipment purchases rather than construction projects. Under a revenue sharing arrangement, a vendor would provide equipment for very little cash up front, collecting some portion of the revenue generated by that equipment over its life. Franchising entails selling to a franchisee the right to operate some part of the network and collect revenue associated with those operations. The franchisee would then be responsible for providing necessary network equipment. These options, along with other forms of supplier financing, should be considered for exchange equipment purchases (i.e., in the longer term) as a means of reducing dependence on donor funding.

Aside from contracting, several steps could be taken in the near term to improve PTC's response to external plant needs, including the following:

- Solicit donor funding for already identified external plant projects;
- Allocate more internal funding toward external plant expansion;
- Establish and maintain sufficient levels of external plant support material and establish restocking procedures to allow uninterrupted construction activities;
- Allocate more staff to external plant supervisory ranks and provide adequate training to enhance quality cable installation;
- Expand motor pool allocations to external plant construction crews to enhance mobility and efficiency of operations;
- Enhance competition within the supplier sector by lobbying to have import duties and taxes on foreign cable and wire reduced to allow for competition. This will reduce cable and wire cost and should result in shorter delivery intervals.

Finally, long term planning is critical in addressing capacity shortages. The single most important action is to formulate and adhere to a single, well conceived, long-term network development plan, revised at regular intervals, including both inside and outside plant. While supplier financing and donor assistance tied to other projects are very appealing in the short-term, these forms of assistance can be quite damaging in the long term by promoting capacity mismatches and equipment incompatibilities across the network.

D. Implications on PTC and Privatization

By addressing the mismatch issues, PTC will increase supply and telephone penetration throughout Zambia. Cost-effective investment will improve cash flow (i.e., paying subscribers will be added) and total asset value, since network infrastructure will be more extensive.

The impact of these options on potential privatization differ based on the type of actions to be

taken. Many of these options (i.e., those related to PTC management, such as internal funding, supply procedures, manpower allocation, motor pool allocations) will have little to no effect on potential privatization, since these are changes which could be easily implemented by potential investors. These projects would improve cash flow, however, making PTC a more attractive borrower prior to privatization.

Another type of action, contracting with private sector turn-key contractors, may have damaging effects on privatization. If PTC enters into a long term contract this may diminish the attractiveness of the company to potential investors. As a result, the strategic investors can negotiate for a lower purchase price for PTC. In negotiating such contracts, potential benefits of establishing long term relationships (i.e., lower negotiating power) must be weighed against eventual drawbacks of privatizing a company with possibly unappealing contractual obligations.

A final type of activity involves taking advantage of PTC's current parastatal status. By virtue of being a government-owned entity, PTC can solicit donor financing and influence improvements of the supplier environment, thus bringing about improvements in business conditions that a private operator could not duplicate.

III. Critique of proposed amendments to existing legislation concerning postal, telecommunications, and broadcast and new legislation concerning interception

Critical issues in the sector must be addressed immediately to facilitate economic and infrastructure development. A well-defined policy statement needs to be established to provide the framework for subsequent revisions to the draft legislation. In the short-term, licensing of additional operators to upgrade the sector should be pursued with caution to ensure that any policies will fit the long-term goals of the MCT. This report presents a brief synopsis of the main issues pertaining to the draft legislation; a more thorough examination of legislation will follow in the Final Report.

A. Description of Draft Legislation Reviewed

The following five documents are addressed in this section:

- Draft Telecommunications Policy Statement
- Draft Communications Administration Act
- Draft Telecommunications Act
- Draft Radio Communications Act
- Draft Postal Services Act

Another draft legislation regarding broadcast interception was not provided for our review.

Many policy issues regarding the telecommunications sector have not yet been resolved. Issues such as regulation, competition, interconnection, frequency management, and pricing have to be determined before enabling legislation is finalized. Accordingly, the policy statement should be the initial focus of discussion. Once the key issues are agreed upon from a policy standpoint, the associated legal requirements will be straightforward.

Because of the long lead time for the sale of PTC, Ministry of Communications and Transport (MCT) officials have apparently decided to focus on licensing additional operators now in order to upgrade the sector. In reviewing the proposed legislation, both the short- and long-term goals of the MCT must be kept in mind.

B. Comments on Individual Documents

1. *Draft Telecommunications Policy Statement*

The draft Policy Statement focuses on three main objectives:

- Upgrade service in rural areas;
- Reduce the waiting list for service and increase utilized capacity of the system, currently reported to be only 44%;
- Improve the training and qualifications of PTC staff, which are blamed for the very low levels of revenue collections (less than 50%).

None of the stated objectives are reflected in the current draft legislation. Although alluding to them at times, the draft Policy Statement largely ignores crucial objectives such as:

- Improving quality of service indicators;
- Increasing comparative advantage of the Zambian business sector when compared to other countries in Southern Africa;
- Implementing economically efficient tariffs;
- Creating a strong regulatory framework;
- Insuring the transparency of the privatization and regulatory processes;
- Possibly sharing the proceeds of an entity belonging to the Zambian people as a whole by selling small amounts of PTC shares to Zambian shareholders (e.g., "popular capitalism" schemes, such as those in Eastern Europe).

Additionally, the draft Policy Statement does not address the future relationship between newly-licensed private operators and the PTC (before or after privatization), nor does it

clearly delineate the telecommunications sector to be liberalized.

The draft Policy Statement should discuss ways of achieving the stated objectives. For example, the current draft, while recognizing that the principal obstacle to the main objective (providing service to the countryside) is that "the rural areas are ... not profitable to operators" is silent about overcoming the expected operator reluctance. Among the alternatives that might be considered by the MCT to achieve this goal are the implementation of cost-based tariffs, creation of a fund from license fees that could be used to subsidize loss-making operations in the countryside, and opening up the rural sector to local operators interconnected to the main system.

2. *Draft Communications Administration Act and Draft Telecommunications Act*

Both the draft Communications Administration Act and the draft Telecommunications Act address establishment of the Controller of Communications and define the responsibilities of that office. For the sake of clarity, we recommend merging these two acts. Other topics currently addressed by the draft Communications Act and the draft Telecommunications Act are separation of the Postal and Telecommunications functions of the PTC, some aspects of the licensing process, and penalties for violating licensing agreements with the government.

Some aspects of the Controller of Telecommunications function have to be better defined. Specifically, the scope of authority granted to the Controller, the concentration of so much power in one person, and the relationship between the Controller and the MCT are not conducive to transparent regulation and increase risk for potential private investors. An alternative to this structure is creation of an independent board to regulate the sector, similar to the FCC in the U.S. and other oversight boards implemented in countries in both developed and developing countries. Diversification of such a board would minimize the authority of any one individual and would enable representation by critical interest groups, such as a subscribers organization.

Finally, the definitions used in the draft Telecommunications Act do not conform to those used in the rules and regulations of the International Telecommunications Union and the pertinent CCITT recommendations. Unless there are specific reasons for not doing so, these definitions should be harmonized.

3. *Draft Radio Communications Act*

The draft Radio Communications Act is meant to supplement the recently enacted Broadcasting Act of 1993. At times, however, it is not limited to the allocation of radio frequencies and other topics should be reconsidered for inclusion in this act (e.g., suppliers licenses, transmission of blasphemous, indecent, obscene, or offensive language, negligent transmission of communications, offenses, disorderly behavior, interference with use of working of a radio station). These issues should be addressed in individual license agreements and should be the responsibility of the Ministry of Information and Broadcast.

As with the draft Telecommunications Act, the definitions should be harmonized with applicable ITU and CCIR rules and recommendations. Similarly, a mechanism for approval of petitions should be specified in the law.

4. *Draft Postal Services Act*

As it stands now, the draft Postal Services Act grants self-regulatory powers to the Postal Services Corporation. This structure is generally not efficient and would be improved by creating an independent regulatory body to function similarly to the future regulatory position for the telecommunications sector.

Additionally, the draft Postal Services Act establishes no mechanism within the regulatory framework for licensing competing operators to provide certain services, such as courier services. This framework should be established more clearly in future drafts of the Act. The regulatory body (or the Ministry) should have the right to grant licenses, including exclusive licenses for specifically-defined services.

Finally, the draft Postal Services Act, especially the sections pertaining to definitions, rules governing the liability of the Postal Services Corporation and the description of the scope of postal services, should be adapted as far as possible to the rules of the World Postal Convention of the World Postal Union of December 14, 1989.

C. General Recommendations

The changes to the draft legislation that are most important to the long-term restructuring effort are:

- The policy options available to the Zambian government must be further refined in view of the stated objectives for the sector. Other possible goals should be reviewed. The objectives and options chosen should be reflected in the draft legislation on posts

and telecommunications.

- The role and composition of the Controller, especially its relationship to the MCT and policy-making functions, need to be defined. If feasible, a multi-person board should be created to serve as Controller with greatest independence from the MCT possible.

- Objective bidding procedures should be adopted to ensure the complete transparency of the privatization process.

- The myriad criminal penalties imposed for breaches of contractual obligations should be eliminated.

- An independent regulatory authority should be established in the postal sector, institutionally separate from the Controller, to avoid conflicts of interest with the Postal Services Corporation.

IV. Analysis of options to access INMARSAT land mobile services, membership in INMARSAT, revenue implications of non-Zambian registered use of INMARSAT services

An initial review of options for use of INMARSAT reveal that INMARSAT's land mobile services may not be a financially viable option for the Zambian telecommunications sector. While recognizing that the flexibility provided by INMARSAT would significantly enhance the current network, the cost may not justify membership. Other more affordable technologies, such as cellular, could adequately meet Zambia's telecommunications needs and represent more efficient investment opportunities.

A. Description and Cost of INMARSAT Services

INMARSAT is a well established internationally owned cooperative providing mobile communications worldwide. Initially founded to serve the commercial, distress, and safety needs of the maritime community, INMARSAT now provides satellite communications for all mobile applications.

INMARSAT services include the following:

- **INMARSAT "A"** was designed for maritime use and requires a very large mobile earth station, generally mounted on the superstructure of a ship. Land-based applications of INMARSAT A include establishing communications links where there

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is currently no telecommunications service available (frequently used by journalists) or augmenting an existing system for services not available (such as video, high speed data, or broadcast transmissions). This service is not generally recommended for mobile telephone service due to the large size of the terminal.

- **INMARSAT "B"**, scheduled to be available by the first quarter of 1994, will provide an advanced digital service, offering high quality voice and high speed data communications. This service is intended as a high quality maritime communications service, but some land-based uses and land transportable terminal equipment are anticipated.

- **INMARSAT "C"** is a two-way message store and forward system using small terminals. INMARSAT C is intended for electronic mail and data package transmission, and would not substitute well for a mobile phone system.

- **INMARSAT "M"** is the only currently operational service available to provide land mobile service in Zambia. This service will support a relatively light weight (29.5 pound) mobile terminal the size of a briefcase, providing telephone, low speed data, and fax service. The portable version of the terminal has a battery which is only good for one hour of operation before recharging.

Of these services, only INMARSAT B and INMARSAT M are appropriate for the type of land mobile service under consideration in Zambia. The following table compares key components of these services:

	INMARSAT B	INMARSAT M
Availability	Q1, 1994	since March, 1993
Terminal Size	suitcase	briefcase
Terminal Cost (US $)	$50,000	$25,000
Space Segment Usage Charge (US $ per minute)	$6 to $10 for voice $18 to $20 for data	$5.50

Space segment usage charges are applied to the portion of a call transmitted by satellite and only represents the total usage charge for the unlikely event of a call originating in one INMARSAT terminal and terminating in another. For calls carried via INMARSAT to a termination point on the public switched network, a Land Earth Station (LES) must be used. LES capacity can be accessed either through building a new one (requiring INMARSAT

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membership, US $13 million, and 18 months) or using an existing LES in another country. There are currently five LESs operational throughout the world, with 26 more under construction (anticipated to be operational by the end of 1994), none of which are in Southern Africa. To complete a call using the public switched network, therefore, the cost (in foreign exchange) of an international call would be incurred in addition to the space segment usage charge.

The minimum cost to the user of a call using INMARSAT M for land mobile service is approximately US $9.30 per minute (assuming the LES at Perth, Australia was used -- use of a LES in the US raises the price to US $11.00), not including the cost of the terminal. By comparison, cellular mobile service in Kenya costs users $0.19 per minute (with no annual fee).

B. Recommendations Regarding Use of INMARSAT, Membership in INMARSAT, and Other Options

In light of the unit prices and the high foreign exchange cost for the space segment and the international public switched network portion, INMARSAT does not appear to be a viable option for use in Zambia until further developments have reduced costs substantially. Although some level of demand has been expressed for reliable emergency mobile communications services, such demand would be more efficiently served by development of a mobile telephone (e.g., cellular or radio) system than by the more costly INMARSAT service. INMARSAT mobile services, because of their high costs, are suitable only for situations where the value of the communication far outweighs the cost of the call, such as ships at sea or oil platforms beyond reach of land.

As a signatory to INMARSAT, Zambia could build a LES, enabling Zambia to become a regional hub for INMARSAT communications. Regional demand for INMARSAT services is unlikely to be high, however, for several reasons. First, other countries in Southern Africa are likely to focus on developing national mobile communications systems rather than using INMARSAT due to the cost of INMARSAT equipment and service. Second, other mobile service options, such as Globestar and Iridium are likely to be in place by the time INMARSAT costs are reduced to competitive levels. Finally, INMARSAT would be more cost-justified for countries with substantial maritime needs, such as Mozambique or Tanzania. It is more efficient for Zambia to purchase INMARSAT services from another country than to assume the financial risk and use scarce foreign exchange resources to develop direct INMARSAT access.

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C. Revenue Implications of Non-Zambian Registered Use of INMARSAT Services

While it is theoretically possible for large users to bypass national telecommunications services and use INMARSAT for private applications (or even resell INMARSAT communications services), this option has not been largely pursued in Zambia. The private sector in Zambia has been extremely resourceful in exploiting alternatives for service delivery where national infrastructure is inadequate for their needs. These alternatives have included development of extensive private networks (e.g., ZCCM, ZESCO), utilizing the national terrestrial transmission system to access international data transmission facilities elsewhere in Africa (e.g., Reuters, Barclays Bank) or using other international facilities (e.g., Healthnet).

INMARSAT has been generally avoided by the private sector because of the high cost of usage, in addition to the high cost of equipment. In view of the historical reluctance to use INMARSAT and the limited equipment infrastructure in place in Zambia, INMARSAT poses very little threat to the revenues of future land mobile service providers.

V. Analysis of Immediate Options to Provide Increased Service to Rural Areas, Both in Areas of Commercial Development as Well as in Peasant Farming Areas

Due to the sparse populations and difficulty of maintaining service, rural areas have historically lacked adequate phone service. In order to meet this need, wireless solutions should be considered where more traditional service is infeasible. In both instances, involvement of the private sector would provide supplementary capital and expertise, especially when considering a cellular network. Additionally, the re-introduction of public phones could ease some of the immediate demand for rural service. Long-term sector development goals must be well defined before significant action is taken to avoid crippling future plans.

A. Need for Integrated Long-term Planning

The issue of increasing service to rural areas is linked to the first issue discussed in this paper. Rural service deficiencies exist within Zambia for the same reasons they exist in other developing countries: the lack of economies of scale in serving sparsely populated areas, difficulty of maintenance and security in rural areas, poor access to subscribers and equipment off of the main roads, low consumer incomes associated with rural areas, and distortion of transmission quality based on excessive line distances. Zambia has several unusual advantages in serving these population groups, however, including an extensive microwave transmission system covering most of the country, impressive exchange equipment and

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capacity, established public phone service in rural areas, and pockets of economic activity, such as safari camps, mines, and commercial farms.

While this section is intended to address immediate options for increasing rural service, the importance of long-term planning for rural network development must not be overlooked. Historical dependence on donor and supplier finance has resulted in ad hoc network development rather than a coordinated, well managed investment program. A better approach to network development is to include rural service in long-term development programs, and solicit funding for projects that have been identified (rather than establishing projects that conform to available funding). One critical issue to be determined in the context of long-term planning is an objective for rural service (i.e., service to the home vs. public telephone service vs. service to rural population centers). This should be incorporated in the telecommunications sector policy.

B. Immediate Options for Increasing Rural Service

Several technology options appropriate for rural service exist which may be implemented by the private sector, PTC or a joint venture between the two. The most feasible of these technology options are:

- **Digital Radio Concentrator System (DRCS)** is a digital point to multi-point radio transmission system. This technically advanced system provides extensive channel capacity at reasonable cost per channel. Therefore, it can be introduced to serve scattered and small cluster rural areas as well, especially where greater channel capacity is needed.

- **Cellular Mobile Systems** should be introduced as soon as possible to provide mobile telephone service in urban and inter-urban areas, especially along the roads connecting Lusaka, Kitwe, and Ndola. The fixed cellular infrastructure, which comprises the major components used in the cellular mobile system can also be used to provide a wireless local loop to provide service to rural areas. Because of the possible twofold use of the cellular system (i.e., mobile and fixed loop services), it could provide scale economies not offered by DRCS.

- **Remote Line Units** can be used to increase the capacity and reach of an exchange. The remote line unit serves as a mini-exchange (similar to a PABX), whereby a large number of subscribers share a smaller number of lines into the local exchange. For instance, five hundred subscribers could be connected to a remote unit, which would, in turn have maybe thirty to fifty lines into the exchange. This type of service reduces line distances and utilizes cheaper wired technology to access large numbers of

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subscribers.

- **Cellular Public Phones** are another option for serving communities which are not feasible for wired service. Installation of fixed cellular public phones could be a cellular license requirement, further utilizing economies of scale.

The private sector should be relied on to the greatest extent possible in developing rural communications services. Since rural service is typically not profitable and therefore not attractive to private investors, the rural development strategy should seek to implement mechanisms to make rural service more attractive rather than perpetuate the inadequate level of investment that could be made by PTC. These mechanisms may include the following:

- Using tax incentives and legislative reform to encourage current private network operators (e.g., ZCCM, ZESCO) to carry traffic via their lines serving rural communities or to encourage large users or user groups to establish rural service networks;

- Licensing private operators to provide high margin services such as cellular with rural service obligations stated as a condition of the license agreement;

- Expanding public telephone service through private sector licensing with rural service obligations embedded in the license agreement.

In view of the magnitude of private sector interest in implementing a cellular mobile system and the generally accepted view that rural service will require implementation of some wireless technology, the second option appears to have the greatest appeal for immediate implementation. The next steps in developing a cellular system include:

- National needs (including rural service needs) must be assessed and quantified to enable the ministry to determine what conditions are acceptable (e.g., what type of technology to be used, how many licenses to award);

- The process for license application must be determined and communicated to potential investors. We recommend a process by which the government makes all decisions (e.g., technology, ownership of the cellular service provider, timing for implementation, regulatory requirements) and requests bids from potential investors, since this type of process best avoids the appearance of favoritism;

- The final steps are to solicit bids, evaluate proposals, grant the license, and establish appropriate regulatory/license enforcement systems.

C. Public Phones

Public telephones tend to be very popular in rural communities, as they are frequently the only telephone link to the rest of the world. Although Zambia has approximately 400 coin-operated telephones scattered throughout the country, limited availability of coins (due to currency devaluation) has crippled the public phone system. This, in turn, has resulted in inadequate maintenance and repair of public phones damaged by vandalism. To diminish the attraction to vandals and to increase convenience, installation of telephones that operate with debit cards is also under discussion.

The PTC is currently at the beginning of a program to transform public coin-operated telephones to accept tokens instead of coins. Repair, refitting, and reinstallation of public phones should ease the capacity shortage in rural areas. Participation of the private sector in providing and maintaining the public phones has been suggested. The PTC should, to the greatest extent possible, accelerate the public phones project and prioritize rural areas for reintroduction of public phone service.

VI. Conclusion

The following summarize our findings on the specific issues addressed in this paper:

- External plant investment projects have to be evaluated in keeping with long-term plans, but there are several interim measures such as vehicle allocation or staff training that can ease capacity constraints and should be employed immediately. Contracting is an option for civil works construction projects, but strict screening procedures should be in place to ensure that contractors are qualified and will not disrupt existing service. Contractors should not be used for actual cable installation.

- Draft legislation is premature in view of the magnitude of policy issues still to be resolved. Policy issues to be embodied in the policy document should be agreed to before any legislation is passed. Critiques of documents already drafted focus on the composition, responsibilities, and organizational relationships of the proposed regulatory entity (the Controller).

- INMARSAT is not a cost effective option for providing land mobile service in Zambia at this time. In addition to the high cost of terminal equipment and space segment usage, interconnection between INMARSAT and the public switched network would use foreign exchange to either build a Land Earth Station or to pay a foreign administration for using their LES. These resources would be more productively expended on development of a domestic land mobile service, such as cellular.

- As with the external plant issue, options for increasing rural service should be part of a long-term network development plan. Specific options for serving rural areas include improved wireline service to growing communities and wireless service to more remote areas. For both types of service private sector entities should be encouraged to participate either independently or in a joint venture with PTC through the use of various programs (i.e., tax incentives or inclusive licensing agreements). Finally, rural communities should be prioritized for reinstallation of public telephones.

In more general terms, a word of warning against short-sightedness is in order. Restructuring the telecommunications sector is an ambitious project enabling the sector to respond quickly and appropriately to technological and business environment developments in the long term. This process is complicated by needs of the user community that cannot be delayed until restructuring is complete, explaining the urgency of these four issues. Activities that are generic in scope (i.e., improved PTC management) should be implemented immediately, but those activities associated with new investment should be carefully reviewed to ensure their cost-effectiveness and productivity.

Critical issues for long-term sector planning will be addressed in the final report of this study. These issues include development of a comprehensive telecommunications policy, separation of PTC into postal and telecommunications operating entities, formulation of a regulatory structure, cellular operator licensing, and options for increasing private sector participation.

APPENDIX B

Draft Legislation and Policy

Telecommunications Policy

Preamble: Telecommunications is a Major input to the re-vitalization of the economy. The economy being made up of Industrial, Agricultural, Tourist and Financial Sectors. The development of all these sectors will depend heavily on the availability of good communications. The Government endeavours to achieve high quality reliable Telecommunications facilities in the Country , with a very high emphasis on the development of the rural sector, on which the economic diversification depends.

Introduction

{ Priorities }

The Government of the Republic of Zambia considers rural communities as very important due to the fact that above 60% of the population live in rural areas. Government policies that must be known by the rural communities must be availed at easy cost and easy reach. The means of reaching these communities are based on Rural schools and Rural health centres. The Telecommunications policy therefore place emphasis on the development of Telecommunications for all by the year 2000 and technology that increases the traditional reach of Telecommunications facilities.

Current statistics show that only 44% (JIKA Report) of the capacity is utilized and also shows a large waiting list. It is a government priority that the existing installed capacity must be utilized and waiters get service before new investments can be considered. The report also notes the low availability of public telephones, which must be increased drastically. Not only should this capacity be utilized, it must be kept installed and maintained to satisfactory levels to earn a reasonable return on investment.

Further the Japanese (JIKA Report) report show a very low percentage of adequately trained staff, though it does not show where the staff are deployed. The revenue collection ratio is very low (less than 50%) and uncollectible revenue is very high (above 15%). The low level of adequately trained staff will contribute to this low collection and the bad performance of the operating Company. Improvement of qualified staff levels, accuracy of the billing system and hence improvement of the collection ratio are important priorities.

Poor collections and the ever increasing exchange losses contribute to the poor liquidity position of the Company compounded by the spread of resources on activities that can left to specialized

agencies or companies. There is therefore an urgent need to inject investment by way of turning the Government originated grants and loans into equity and a restructure of the organizational and business operations of the Company. This will put the Company in a position where it can borrow from the financial markets and therefore attract private finance for projects with a very strong positive gearing (liquidity ratio).

Achieving the Objective

i. Rural Areas

{To be subsidized by Government .. government obligation }

To achieve the Objective set up in paragraph 1 and the preamble is not going to be easy or cheap. It is not going to be easy because the rural communities are sparely located. It is going to be expensive because the rural areas are in so far as Telecommunications is concerned not profitable to operators. However government has an obligation to provide telecommunications services country wide and every citizen should as far as practical enjoy similar or the same facilities. To achieve this major objective, the government will fund and continue to fund rural telecommunications development until such a time it can be proved viable. In so doing the Government will encourage the use of modern technology that will ensure easy reach of the sparsely located farmers, rural clinics and schools. These communities are usually as far as 60 Kilometres from the nearest exchange facility and account for as much as 40% of the customers currently waiting for service. Rural services will be based on rural schools and clinics. Farmers, Tour Operators and Miners are priority target groups. The will of Government to diversify the economy makes rural telecommunications development an essential priority. Public telephones will be based on the schools and clinics on community basis and will not be subjected to economic viability analysis but will be the life line to the world and for services.

ii. Urban Areas

{ No grants but possible source of rural grant/subsidy }

Urban areas currently suffer from low investment into the Telecommunications sector and hence very poor facilities exist in some areas. Peri-urban areas account for the other large group of customers waiting for service. The main reason is again the method of taking service to these customers without using the traditional copper cable that limits the distance. Those that are currently connected up suffer from long and persistent outages of services, congestion, line diversions and bad billing. The investment required to improve the services, ie modernize the network cannot be ordinarily be found without escalating the already large

reduction of this debt. Urban areas generate a lot of revenue and are viable economically already without any new injection of capital but require an injection of new investment from internally generated funds. To this effect, the Government will not allow any grant aid through government to be channelled into any of these profitable areas but rural areas only and will encourage the use of private finance and commercial loans as methods of funding projects in these areas.

Structural Re-organization

{ Commercial stand of operating organizations)

The PTC Ltd currently has a structure consisting of Postal and Telecommunications operating divisions supervised by a Corporate division. The PTC Ltd is going to be split into two operating companies. One for Telecommunications to be called the Zambia Telecommunications Company (ZAMTELCO) and the state owned Zambia Postal Services Corporation(ZAMPOST). The Corporate division will be dismantled. In this restructuring, the PTC Ltd is expected to concentrate on Core Business. That is the Telecommunications Division will deal with Telecommunications and the Postal will deal in Postal services only. Any other auxiliary activities will be autonomized and left to those who are experts at them.

A. The Telecommunications Operations

{ Minimize resource spread and concentrate on core business}

i. The Engineering Workshop

The Engineering Workshop is multi disciplinary operation involving woodwork and metal work. This facility makes no tangible profit if any and would do a lot to remove it on the PTC payroll and let it run autonomously on a commercial basis. Initially, the PTC Ltd will hold 100% shares scaling down to a mere 10 - 20% in two years.

ii. The Clinics

Social facilities that limit employee access do not necessarily help in productivity. A mother has to go to the heavily congested hospitals when the Company runs a clinic for staff. It would certainly help if the clinic was open to the whole family on a medical insurance scheme operated by the company. The clinic is then contracted to the company for the provision of medical services to the employees and if they cannot get the services right the services can be tendered to someone else through a competitive process.

iii. The Electronic Repair Canter

In a liberal environment, customers need to have a canter where their terminal equipment may be taken for repair. There is no need for several workshops to be set up for repairing telecommunications equipment if one efficient and elaborate one can be set up. To this effect, the Electronic repair canter must be opened up to other users through autonomization. The investment by PTC Ltd will be protected through equity participation, initially at 100% scaled down to 20 - 30% over five years. The repair canter will also be the calibration and test canter for the regulator.

iv. Billing System

It is well understood that the Billing system today is not adequate to meet the increasing need for accurate bills from a larger network and user base. The situation is compounded by the mix of systems and technology with different record structures and formats. Modernization and harmonization of different systems will help in the development of a robust and efficient billing system. The error prone bills and lack of business like approach in the collection of bills contribute to the bad liquidity position of the Posts and Telecommunications Corporation Ltd(JIKA Report). There is no incentive for the Computer canter to operate efficiently as they are part of the operating Company. Due to the current investment in the Computer canter by the PTC Ltd, computer operations will be turned into a subsidiary and the computer work required by the PTC Ltd will be contracted if the computer canter cannot efficiently do it, that is after an initial start up period. This is intended to cut operating costs and improve the accuracy and delivery of bills to the customers.

v. The frequency Management Canter

Frequency Management is a regulatory function and should immediately be moved from PTC Ltd to the Ministry. There will be no operator regulating another operator in the same sector.

vi. The Training College

The training college will be turned into an independent college that will train people in Telecommunications and Postal operations. It is intended to be an affiliate of the two Universities to provide both vocational, professional and academic courses. Funding will be provided to improve facilities and allow other countries to train staff at the College.

vii. Vehicle Workshops

The large fleet of vehicles run by PTC Ltd is expensive and can better be managed and maintained outside the PTC. Ideally the bulk of the vehicles must be owned by the Vehicle workshops and conditions set for their performance and if they cannot perform the provision of motor vehicles must be tendered competitively.

However, a small fleet of vehicles may be retained by the PTC Ltd. The main objective is to improve the useful life of vehicles and there utilization levels(JIKA Report).

viii. Real Estate

PTC Ltd has invested heavily in real estate. It is not in the interest of PTC Ltd to invest in non performing assets. It is intended that the real estate investment be sold off or handed to competent companies to run the estate maintenance and general management. It is Ministry policy that the existing capacities wherever they are shall be utilized first before any new facilities are set up. This means as much as possible the network shall attain a fill ratio better than 74% nationally which currently stand at about 44% (JIKA Report). The main reason for this is the uncoordinated development of the switching capacity and the external plant.

ix. Transport services

Motor vehicle utilization in the PTC Ltd now is very low and the result is a high operating cost. Like the human resources, they are not challenged. Despite the low utilization, the life expectancy of the vehicles is very low. One contributing factor is maintenance of the fleet. It is expected that the Fleet Management and Maintenance will be provided to the Company by specialized transport operators on contract basis and competitive terms shall apply.

Objective of Re-structuring

{ Efficiency, quality of service, capacity utilization}

The main objectives for this restructuring of the full organization are to create

1. a Company lean enough to face competition.
2. a Company with a commercial culture that is adequately capitalized to be able to raise money on the financial market.
3. a Company that is dedicated to adequately developing and well renumerating while being adequately challenged.

The challenges for this company are

1. an employee telephone ratio of 120,
2. a positive gearing
3. a penetration ratio of 1.0,
4. a grade of service nationally better than 0.01%
5. digitalization rate of above 54% by the end of the decade.
6. a fill ratio greater than 80% nationally
7. a waiting list of less than five thousand
8. no waiting period for service

To achieve these targets, at todays' cost will be impossible. Government will therefore inject funds as equity into the Company by retaking all the foreign donor provided loans and grants to PTC Ltd for Telecommunications development. This will reduce the cash outflow of ZAMTELCO and the foreign exchange losses currently being incurred. Government will then encourage private sector funding of Telecommunications development projects and these will be on commercial terms by the Company.

Rural telecommunications is usually unprofitable and cannot sustain itself. It is a government objective for the population of this country to have universal access to telecommunications services. To this end, it is government obligation to ensure telephone services are available country wide irrespective of the location. Rural telecommunications will be difficult to fund due to non-viability financially. Grants will be made available for these rural projects. The actual scheme to be used and the modalities to be used are yet to be identified. However it can be stated that Grant aid will not be available for any profitable area specifically urban areas that have very high Telephone densities.

Business Restructuring

{ Do what at you are expert at}

The business of providing telecommunication services has several aspects. The Network Equipment, Network Access and Terminal Equipment provision. It is the prime objective of the Public Telecommunications operator to ensure that the Network works properly. Availability, in telecommunications may have varied meanings. In this case no one person desiring to have service must be denied service due to lack of a network component. Having had service, no one person should be subjected to congestion at any level of the network hierarchy(Grade of Service= 0.01%).

a. Customer Premises Equipment

{ Liberalized with standardized interfaces }

Customer premises equipment create a cost base on its own and needs to be liberalized. Not only is cost the consideration but the variety and choice of available equipment. Customer premises equipment availability contribute to the waiting list due purely to non availability. If the customer was to acquire his own equipment, then this component of waiters will diminish. Customer premises will be standardized only to as far as the sending and receiving parameters and the connection that will be a plug and socket arrangement. Colour, make, ringing style and shape is the customers' choice and will bought from the street like any other commodity. However guidelines and regulations regarding maintenance and protection of the customer will be provided and should be observed.

b. Monopoly of Service Provision

{ Various Monopolies }

The current legislation provides PTC Ltd a monopoly to provide Telecommunication services in this country. In the re-structured ZAMTELCO, there will be no monopoly. However, the following principles will apply:

1. Access Network

{Limited Monopoly }

The wired telecommunications network will remain a monopoly of ZAMTELCO but any other method of providing the access network will be provided by any other operator as may be required. This does not however stop any PTO from establishing a cable access network where non already exist. Where such PTO sets up its own cable access network, it shall have the monopoly.

2. Interconnection Arrangement

{Protect the Grade of Service and provide cross connect}

All networks provided, will require to provide for network interconnection. No PTO will provide a network interconnection facility that degrades the services provided by another operator. To ensure a good quality and grade of service, operators will be required to guarantee a given grade or quality of service and any guaranteed service will carry a penalty for no compliance.

3. Basic Telephone Service (POTS)

{ Basic Telecommunications services to remain a Monopoly of ZAMTELCO .. Value Added networks to be liberalized}

Plain old Telephone service will remain a Monopoly of the dominant Operator for the time being, but all other value services, Cellular, Data and Paging, will be available for private operators. To improve the quality and grade of service the basic telephone service will be guaranteed and will carry a penalty for outages exceeding forty-eight hours. Telex service will be included in the definition of basic service but all other data services will be value added service and available for private operation. The value added services will not be available to the current PTO until network fill ratio and fault ratio can be viewed as satisfactory (> 80% and 70% in 24 hours respectively).

4. International Services

{ ZAMTELCO to Provide National and International trunking serves}

For basic services , telephone and telex , ZAMTELCO will provide all national and international trunk facilities. This entails that the ZAMTELCO national backbone will be expanded and enhanced to ensure availability at a targeted 99.9% with high quality of a digital environment. Value added services are expected to lease capacity on the ZAMTELCO backbone.

Tariff structure

{ Liberalize the Tariff adjustment procedures}

Adjustment of Tariff procedures have been cumbersome due to severe control in the past years. These procedures will be simplified and therefore will be adjusted much more easily to respond to economic indicators. However this mechanism will be agreed with the regulator and will not vary automatically per se but with economic indicators as adjusted annually. An incentive will be provided for efficiency through a price cap mechanism. Indicators to be used are the Retail Price Index (RPI) or the Annual Rate of Inflation (ARI) and the adjustment will be calculated as the rate of increase of RPI or ARI less an agreed figure (RPI - x or ARI - x). This is termed as Tariff Liberalization.

B.Postal Operation

{ More agencies than Post offices }

i. Traditional Mail
Postal operations will remain the Monopoly of ZAMPOST, a state owned enterprise supervised by the Ministry responsible for Communications. The basis of a Liberal postal system is based on the agency system, where already established businesses dispense postal services rather than the centralized system. Post offices will also dispense all other items like passport, Tax, Driving Licence, and other government and private forms on commission basis where applicable.

ii. Commercial Services

{Courier Services to be Liberalized but must be Licensed}

Mail service has two components. One component is the Traditional Mail service and the other is the Commercial Mail. Commercial mail is always allowed to have market prices control the cost and variety of services. In this case, the Courier service is termed as commercial and will only have minimal regulation only in terms of practices rather that tariffs. The control on tariffs is purely based on a price cap mechanism that will be in place to promote

efficiency. Economic indicators will be described that will show how the prices will vary.

Traditional postal service will remain the monopoly of ZAMPOST but other services will be concentrated on the postal agencies. This will reduce the costs incurred by the postal authority... ZAMPOST. However even ZAMPOST will be expected to meet the rising demand for extensive postal service and a variety of postal facilities.

iii. Postbus and Postboats

{Not Post office Business }

It is not the business of the Post office to run buses or boats. It is very important that costs are minimized by letting those who are experts at services and concentrate on the core business of one Company. The core business of ZAMPOST is running a Mail service and they will do that only. Mail conveyance should be competitively tendered for.

Regulation

{Minimum intervention levels but firm
Monitor and regulate not regulate and Monitor policy
no Controls but regulations }

The sector will be Liberalized but a regulator will be in place to oversee the operation of the sector. Regulation will be supported by a very strong system but very little intervention will be made. This will allow free operation of the sector within the regulatory structure giving freedom to the investor to have a reasonable return on investment and security for his investment.

Regulation will be done by an independent regulatory authority whose head will be appointed under the Communications Legislation Administration Act by the Minister responsible for the administration of Communications Legislation being Telecommunications, Postal and Radio Communications Acts of 1993. The Controller and his staff shall oversee the provision of Telecommunications and Postal services in the country providing a mechanism for monitoring the quality of service and grade of service. The regulatory authority will have power to Licence public Telecommunications operators and therefore enforce the Licence conditions. As far as the Licence conditions are concerned, Customer premises handlers will be required to follow strictly the regulations laid down for them and the Controller shall accordingly provide an annual report for the Minister to present in parliament.

To monitor the quality of service, the Controller will be advised by the Communications Advisory Committees (CAC) set up around the country and a Technical Finance and Legal Committee (TFLC). TFLC will preview all intended actions of the Controller and advise as necessary whereas the CAC will provide inputs to intended action of the controller. Reports for these committees will be laid before Parliament at least once a year.

COMMUNICATIONS ADMINISTRATION BILL, 1993

ARRANGEMENT OF SECTIONS

Section

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PRELIMINARY

1. Short title and commencement
2. Interpretation

PART II
THE CONTROLLER AND OTHER STAFF

3. Controller of Communications
4. Deputy Controller and other staff
5. Powers and functions of Controller
6. Delegation of functions

PART III
DISSOLUTION OF POSTS AND TELECOMMUNICATIONS CORPORATION LIMITED

7. Vesting of assets and transfer of liabilities
8. Registration of property to be transferred by Company
9. Terms of service of employees of Company upon transfer
10. Legal proceedings
11. Repeal of remainder of Act No. 18 of 1987 and dissolution of Company

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A BILL
ENTITLED

An Act to provide for the appointment of a Controller of Communications and to define his principal responsibilities; to provide for the appointment of other officers and staff for the purposes of the administration of legislation concerning communications services; and to provide for matters connected with or incidental to the foregoing.

PART I
PRELIMINARY

Enactment

ENACTED by the Parliament of Zambia.

Short title and commencement

1. This Act may be cited as the Communications Administration Act, 1993 and shall come into force on such date as the Minister may by statutory instrument appoint.

Interpretation

2. In this Act, unless the context otherwise requires:

"communications legislation" means;

Act No. of 1993 (a) the Postal Services Act; 1993,

Act No. of 1993 (b) the Radiocommunications Act, 1993; and

Act No. of 1993 (c) the Telecommunications Act, 1993, and any statutory instruments made under any of those Acts;

"communications services" means postal, radiocommunication and telecommunication services;

"Company" means Posts and Telecommunications Corporation Limited, a company incorporated under the Companies Act;

Cap. 686

"Corporation" means the Postal Services Corporation constituted under the Postal Services Act, 1993;

Act No. of 1993

Act No. of 1993 "Controller" means the Controller of Communications appointed under this Act;

Act No. of 1993 "postal officer" has the same meaning as in the Postal Services Act, 1993;

"telecommunication officer" has the same meaning as in the Telecommunications Act, 1993.

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PART II
THE CONTROLLER AND OTHER OFFICERS

Controller of Communications

3. There shall be a Controller of Communications appointed by the Minister, who shall be a public officer and shall be responsible for the administration of the communications legislation.

Deputy Controller and other staff

4. (1) The Minister may appoint a Deputy Controller of Communications, who shall be a public officer whose functions shall be:

(a) to assist the Controller in the exercise and performance of his powers and functions; and

(b) to exercise and perform the powers and functions of the Controller whenever the office of Controller is vacant or the Controller is absent or is for any other cause unable to act.

(2) The Controller shall, with the approval of the Minister, appoint such other officers and staff as may be necessary to assist him in the performance of his functions.

~~(3) The Corporation shall, with the approval of the Minister, appoint such other officers and staff as may be necessary to assist it in the performance of its functions.~~

Powers and functions of Controller

5. The general superintendence and control of communications services throughout the Republic is vested in the Controller, who shall have and may exercise and perform such powers and functions as may be conferred on him by or under this Act, the communications legislation and any other law.

Delegation of functions

6. The Controller may, subject to any directions of the Minister, delegate any of his powers and functions to the Deputy Controller of Communications or any other officer appointed under this Act.

PART III
SOLUTION OF POSTS AND TELECOMMUNICATIONS CORPORATION LIMITED

Vesting of assets and transfer of

7. (1) On and from the commencement of the Postal Services Act, 1993, there shall be transferred to, and -

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liabilities

against the Corporation by virtue of this Act and without further assurance:

(a) such part of the undertaking of the Company as, immediately before the commencement of that Act, pertained to a postal service; and

(b) subject to this Act, all property, rights, liabilities and obligations that, immediately before the commencement of that Act, were the property, rights, liabilities and obligations of the company in relation to that part of its undertaking.

(2) On and from the commencement of the Telecommunications Act, 1993, there shall be transferred to, and shall vest in or subsist against the Controller by virtue of this Act and without further assurance:

(a) such part of the undertaking of the Company as, immediately before the commencement of that Act, pertained [illegible] telecommunicat[illegible] servic[illegible], and

(b) subject to this Act, all property, rights, liabilities and obligations that, immediately before the commencement of that Act, were the property, rights, liabilities and obligations of the Company in relation to that part of its undertaking.

(3) Except as provided by this Act, every deed, bond or agreement (other than an agreement for personal services) to which the Company was a party immediately before the commencement of the Postal Services Act, 1993, whether in writing or not, and whether or not of such a nature that rights, liabilities and obligations thereunder could be assigned, shall, if it related to the part of the Company's undertaking referred to in paragraph (a) of subsection (1), have effect as from the date of the assignment thereof, as if -

(a) the Corporation had been a party thereto;

(b) for any reference to the Company there were substituted, as respects anything falling to be done on or after he commencement of that Act, a reference to the Corporation; and

(c) for any reference to any other officer of the Company not being a party thereto and beneficially interested therein

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there were substituted, as respects anything falling to be done on or after the commencement of that Act, a reference to such postal officer as the Corporation shall designate.

(4) Except as provided by this Act, every deed, bond or agreement (other than an agreement for personal services) to which the Company was a party immediately before the commencement of the Telecommunications Act, 1993, whether in writing or not, and whether or not of such a nature that rights, liabilities and obligations thereunder could be assigned, shall, if it related to the part of the Company's undertaking referred to in paragraph (a) of subsection (2), have effect as from the date of the assignment thereof, as if -

(a) the Controller had been a party thereto;

(b) for any reference to the Company there were substituted, as respects anything falling to be done on or after he commencement of that Act, a reference to the Controller; and

(c) for any reference to any other officer of the Company not being a party thereto and beneficially interested therein there were substituted, as respects anything falling to be done on or after the commencement of that Act, a reference to such telecommunication officer as the Controller shall designate.

(5) Subject to this subsections (3) and (4), documents other than those referred to in those subsections and which refer specifically or generally to the Company shall be construed in accordance with that subsection as far as applicable.

(6) Assets vested in the Controller under subsection (2) may be:

(a) sold, leased or otherwise dealt with for the benefit of any licensee under the Telecommunications Act, 1993; or

(b) otherwise sold, leased or disposed of in accordance with directions given by the Minister.

Registration of property to be transferred by

8. (1) Where -

(a) under this Act any property, rights, liabilities or obligations of the

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Company

Company are transferred; and

(b) in respect of the transfer, any written law provides for registration,

the Company shall make an application in writing to the appropriate registration authority for the registration of the transfer.

(2) The relevant registration authority shall make such amendments to the appropriate register, cancel such documents and do and attend to such other matters and things as seem to him necessary to give effect to or record the transfer and, where appropriate, shall -

(a) issue to the transferee concerned a certificate of title in respect of any property affected by the transfer; and

(b) on presentation thereof, make such endorsements as seem to him proper to be made on any deeds, documents or records relating to the title, right, liability or obligation concerned.

(3) In default of compliance by the Company with subsection (1), or in default of such compliance within a reasonable time, the powers conferred by subsection (2) on a registration authority may be exercised by that registration authority of his own motion.

(4) No registration fee, stamp duty or other duties shall be payable in respect of any transfer effected pursuant to this Act or any thing done, made or issued in pursuance of this section.

Terms of service of employees of Company upon transfer

9. Where any person who was in the service of the Company immediately before the commencement of this section voluntarily transfers from that service to the service of the Controller or the Corporation, his terms and conditions of service with the Controller or the Corporation shall be no less favourable than those he enjoyed while in the service of the Company, and for the purpose of determining his rights to or eligibility for any pension, gratuity, leave or other benefits, his previous service with the Company shall be treated as service with the Controller or the Corporation, as the case may be.

Legal proceedings

10. Without prejudice to the other provisions of this Act, where any right, liability or obligation vests in or subsists against the Controller or the Corporation by virtue of this Act, the Controller or the Corporation, and all

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other persons affected thereby, shall, as from the commencement of this Act, have the same rights, powers and remedies (and in particular the same rights as to the institution or defence of any legal proceedings or the making or resisting of applications to any authority) for ascertaining, perfecting or enforcing that right, liability or obligation of the Controller or the Corporation, as the case may be.

Repeal of remainder of Act No. 18 of 1987 and dissolution of Company

11. On such date as may be appointed by the Minister by statutory instrument (being a date later than the commencements of the Postal Services Act, 1993 and the Telecommunications Act, 1993) the unrepealed portion of the Posts and Telecommunications Act, 1987 shall be repealed and the Corporation shall be dissolved

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APPROVED FOR
Submission to
LEGISLATION
COMMITTEE

B. H. SIMAMBA
Parliamentary Draftsman

1/7/93

COMMUNICATIONS ADMINISTRATION BILL, 1993

MEMORANDUM

This Bill provides for -

(a) the appointment of a Controller of Communications and of other officers and staff for the purposes of:
  (i) the Telecommunications Act, 1993;
  (ii) the Postal Services Act, 1993 and
  (iii) the Radiocommunications Act, 1993;

(b) the principal responsibilities of the Controller as to the superintendence of communications in Zambia;

(c) the dissolution of Posts and Telecommunications Corporation Limited ("the Company") and the vesting of its assets in, and the transfer of its liabilities to:
  (i) the Postal Services Corporation constituted under the Postal Services Act, 1993, in the case of assets and liabilities that relate to the postal service provided by the Company; and
  (ii) the Controller of Communications, in the case of assets and liabilities that relate to the telecommunication service provided by the Company.

(d) matters connected with or incidental to the foregoing.

A M HAMIR
Attorney-General

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AMENDED FOR
from Senate to
LEGISLATION
COMMITTEE

COMMUNICATIONS ADMINISTRATION BILL, 1993

MEMORANDUM.

This Bill provides for -

(a) the appointment of a Controller of Communications and of other officers and staff for the purposes of:

(i) the Telecommunications Act, 1993;

(ii) the Postal Services Act, 1993; and

(iii) the Radiocom Wireless [illegible]

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(i) the Postal Services Corporation constituted under the Postal Services Act, 1993, in the case of assets and liabilities that relate to the postal service provided by the Company; and

(ii) the Controller of Communications, in the case of assets and liabilities that relate to the telecommunication service provided by the Company.

(c) matters connected with or incidental to the foregoing.

A M HAMIR
Attorney-General

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TELECOMMUNICATIONS BILL, 1993

MEMORANDUM

This Bill provides for-

(a) the regulation of the provision of telecommunication services to, from and within Zambia;

(b) the licensing of persons who operate telecommunication services; and

(d) matters connected with or incidental to the foregoing.

A.M. HAMIR
Attorney-General

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TELECOMMUNICATIONS BILL, 1993

ARRANGEMENT OF SECTIONS

Section

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2. Interpretation

PART II
FUNCTIONS OF CONTROLLER

3. Superintendence of telecommunications

PART III
LICENCES

4. Operator's licence
5. Supplier's licence
6. Conditions of licences
7. Duration of licences
8. Licences not transferable
9. Unauthorised activities
10. Revocation of licences
11. Appeal

PART IV
TELECOMMUNICATIONS AND TELECOMMUNICATION SERVICES

12. Unauthorised erection, maintenance or use of telecommunication apparatus
13. Height and depth of telecommunication lines and cables
14. Restoration of disturbed places by work on telecommunication line
15. Wilful damage to or interference with telecommunications
16. Unlawful transmission of messages
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PART V
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19. Entry on to land
20. Payments by Controller
21. Information to be supplied by licensees and applicants
22. Miscellaneous offences
23. Regulations
24. Amendment of Act No. 18 of 1987 and savings
First Schedule - The Controller
Second Schedule - Savings and Transitional Provisions

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A BILL

ENTITLED

An Act to regulate the provision of telecommunication services to, from and within Zambia; and to provide for matters connected with or incidental to the foregoing.

Enactment

ENACTED by the Parliament of Zambia.

PART I
PRELIMINARY

Short title and commencement

1. This Act may be cited as the Telecommunications Act, 1993 and shall come into force on such date as the Minister may, by statutory instrument, appoint.

Interpretation

2. In this Act, unless the context otherwise requires -

"Company" means Posts and Telecommunications Limited, a company registered under the Companies Act;

Cap. 686

"Controller" means the Controller of Communications appointed under the Communications Administration Act, 1993;

Act No. of 1993

"Deputy Controller" means the Deputy Controller of Communications appointed under the Communications Administration Act, 1993;

Act No. of 1993

"licensee" means any person to whom a licence has been issued under this Act;

"message" means any communication sent, received or made by telecommunication or given to a telecommunication officer to be sent by telecommunication;

"operator's licence" means a licence under section four;

"Suppliers' Code" means the Code by that name prescribed by the Controller by regulation;

"supplier's licence" means a licence under section five;

"telecommunication" means the transmission of -

(a) speech, music or other sounds;

(b) visual images;

(c) electronic or other data;

(c) signals capable of being interpreted as or converted to sounds, images or data; or

(d) signals for the actuation or control of machinery or apparatus,

by telephone, facsimile, telex, teleprinter or any other device or means (other than radiocommunication, as defined in the Radiocommunications Act, 1993, or telegraphy) whose principle utilises electrical, magnetic, electromagnetic or electrochemical energy or any combination of them;

Act No. of 1993

"telecommunication apparatus" means apparatus or facilities constructed or adapted for use as part of, or for the purposes of, a telecommunication system;

"telecommunication officer" means an officer appointed under the Communications Administration Act, 1993 for the purposes of exercising and performing powers and functions under this Act;

Act No. of 1993

"telecommunication service" means a service, delivered by means of a telecommunication system owned or provided by the person providing the service, whereby subscribers to the service are able to transmit telecommunications or have telecommunications transmitted for them, and includes any service ancillary thereto, such as -

(a) the installation, maintenance, adjustment, repair, alteration, removal, relocation or replacement of telecommunication apparatus related to the relevant telecommunication system; and

(b) any directory information service,

but does not include a service prescribed by the Controller by regulation as being outside the scope of this definition;

"telecommunication system" means a network of telecommunication apparatus used or capable of being used to provide a telecommunication service;

"Telecommunications Code" means the Code by that name prescribed by the Controller by regulation.

PART II
FUNCTIONS OF CONTROLLER

Superintendence of telecommunications

3. (1) The Controller shall, in consultation with the Minister, supervise the provision of telecommunication services throughout the Republic.

(2) Without limiting the generality of the forgoing, the Controller shall have the following functions:

(a) to ensure that there are provided throughout the Republic, to the greatest extent reasonably practicable, such telecommunication services as satisfy all reasonable demands for them including, in particular, emergency services, public call box services, directory information services, maritime services and services in rural areas;

(b) to promote the interests of consumers, purchasers and other users of telecommunication services (including, in particular, those who are disabled or of pensionable age) in respect of the prices charged for, and the quality and variety of, such services and apparatus supplied for the purposes of such services;

(c) to promote and maintain competition between persons engaged in commercial activities for or in connection with the provision of telecommunication services, and promote efficiency and economy on the part of persons so engaged;

(d) to promote research into telecommunications and the development and use of new techniques in telecommunications;

(e) to encourage major investors in and users of telecommunication services carrying on business outside Zambia to invest in and use telecommunication

services, and to carry on business, in Zambia;

(f) to promote the provision of international transit services (that is, services conveying sounds, visual images or signals that have been conveyed from, and are to be conveyed to, places outside Zambia) by persons providing telecommunication services in Zambia;

(g) to enable persons providing telecommunication services in Zambia to compete effectively in the provision of such services outside Zambia; and

(h) to enable persons producing telecommunications apparatus in Zambia to compete effectively in the supply of such apparatus both inside and outside Zambia.

(3) The provisions of the First Schedule shall apply to and in respect of the Controller and his staff.

PART III
LICENCES

Service licence

4. (1) Any person may apply to the Controller for a licence under this section.

(2) A licence under this section may authorise the licensee -

(a) to establish a telecommunication system of the kind or description specified in the licence and to provide a telecommunication service by means of that system; or

(b) to connect to a telecommunication system specified in the licence any telecommunication apparatus so specified, and to work that apparatus for the purposes of a telecommunication service provided by means of that system.

(3) The licence shall be issued on payment by the applicant of such fees as may be prescribed by the Controller by regulation if the Controller is satisfied that the applicant meets the financial criteria and any other criteria so prescribed.

Supplier's licence

5. (1) Any person may apply to the Controller for a licence under this section.

(2) A licence under this section authorises the licensee to supply telecommunication apparatus in accordance with the provisions of this Act and the conditions of the licence.

(3) The licence shall be issued on payment by the applicant of such fees as may be prescribed by the Controller by regulation.

Conditions of licences

6. (1) A licence is subject to such conditions as the Controller thinks fit to specify in the licence when it is granted and to any variation thereof or addition thereto in accordance with subsection (3).

(2) Without limiting the generality of subsection (1), the conditions of a licence may include conditions -

(a) requiring the payment to the Controller of a fee on grant of the licence and of annual or other periodic licence fees;

(b) requiring the licensee or any other person concerned in providing the service authorised by the licence to furnish to the Controller, in such manner and at such times as he may reasonably require, such documents, accounts, returns, estimates and other information as he may require for the purposes of exercising or performing his powers and functions under this Act;

(c) requiring the licensee not to show undue preference to, or exercise undue discrimination against, particular persons or persons of any class or description (including persons in rural areas) as regards any aspect of the service to be provided under the licence;

(d) requiring the publication by the licensee of notices specifying the method of calculating or otherwise determining the charges and other terms and conditions applying to the service to be provided under the licence;

(e) requiring the licensee, as regards any service provided under the licence, to provide, at no additional charge, such additional or special facilities for subscribers who are blind or otherwise disabled as are reasonably appropriate to meet their needs;

(f) requiring the licensee to refer specified matters to the Controller for determination; and

(g) requiring the licensee to comply with directions given by the Controller from time to time in relation to specified matters.

(3) Where the holder of a licence has been convicted of an offence under this Act, or has been the subject of such complaints by users of the service provided by the licensee as, in the opinion of the Controller, warrant action under this section, the Controller, by notice in writing to the licensee, may vary the conditions of the licence or attach new conditions to the licence.

(4) Notwithstanding any other provision of this section -

(a) it shall be deemed to be a condition of every service licence that the licensee shall abide by the Telecommunications Code, to the extent that it applies to the licensee's activities; and

(b) it shall be deemed to be a condition of every supplier's licence that the licensee shall abide by the Suppliers' Code, to the extent that it applies to the licensee's activities.

Duration of licences

7. A licence remains in force (unless sooner revoked) for a period of fifteen years commencing on the date of grant of the licence but shall, subject to this Act, be renewed on its expiry on payment to the Controller of such fees as the Controller may by regulation prescribe.

Licences not transferable

8. There is no property in a licence, and a licence is not capable of being bought, sold, leased, mortgaged or charged or in any manner transferred, demised or encumbered.

Unauthorised activities

9. (1) A person who, not being the holder of an operator's licence authorising him to do so -

(a) establishes or provides or offers to provide a telecommunication service; or

(b) connects any telecommunication apparatus to a telecommunication system or works any such apparatus for the purposes of a telecommunication system,

shall be guilty of an offence

(2) A person who, not being the holder of a supplier's licence, supplies or offers to supply any telecommunication apparatus, shall be guilty of an offence.

(3) The holder of a licence who contravenes the conditions of the licence shall be guilty of an offence.

(4) Any person guilty of an offence under this section shall be liable on conviction to a fine not exceeding one million kwacha or to imprisonment for a term not exceeding three years, or to both.

(5) Nothing in this section applies to -

(a) a telecommunication service whose only electromagnetic medium is light and the communications conveyed by which are capable of perception with the naked eye; or

(b) a telecommunication service -

(i) provided, otherwise than for fee or reward from users of the service; and

(ii) for domestic or work purposes within a dwelling or workplace,

by means of a telecommunication system that is not connected to any other telecommunication system.

(6) A prosecution for an offence under this section shall not be instituted or continued except with the consent of the Director of Public Prosecutions.

Revocation of licence

10. Where the holder of a licence has been convicted on more than one occasion of an offence under this Act, or has been the subject of such complaints by users of the service provided by the licensee as, in the opinion of the Controller, warrant action under this section, the Controller, by notice in writing to the licensee, may -

(a) revoke the licence; or

(c) refuse to renew the licence on its expiry.

Appeal

11. (1) Any person aggrieved by the revocation of his licence, or by the Controller's refusal to renew his licence, may appeal to the High Court within the time and in the manner prescribed by the regulations.

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(2) Due lodgment of an appeal stays any revocation against which the appeal is brought, pending the outcome of the appeal.

PART IV
TELECOMMUNICATIONS AND TELECOMMUNICATION SERVICES

Unauthorized erection, maintenance or use of telecommunication apparatus

12. (1) Any person who -
(a) causes or permits the unlawful erection, maintenance, use or reconnection of any telecommunication apparatus; or
(b) fails to comply with any notice from the Controller to remove any such apparatus,
shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

(2) The court before whom any person is convicted of an offence under this section may order that the whole or part of the apparatus be forfeited to the Republic, whereupon it may be destroyed or otherwise disposed of in accordance with any directions of the court.

Height and depth of telecommunication lines and cables

13. (1) Aerial telecommunication lines and cables shall be carried over land at a height of -
(a) at least four metres in urban areas and in the immediate neighbourhood of such areas; and
(b) at least three and a half metres elsewhere,
from the surface of the ground:
Provided that:
(i) where any such wires or cables cross or run along any railway, public street or public road, the minimum height from the surface of the ground shall be six metres; and
(ii) where any such lines or cables cross or run along any private street or private road, the minimum height from the surface of the ground shall be five metres.

(2) Underground telecommunication lines and cables shall be placed at least seventy-five centimetres below the surface of the ground.

(3) Placement of telecommunication lines or cables above or below any land in contravention of this section shall be deemed to constitute a nuisance at common law and is accordingly

actionable, on proof of damage, at the suit of an owner or occupier of the land.

(4) Where a person who contravenes this section neglects or refuses to take, within such reasonable time as the Controller may allow, such action as the Controller may specify in a notice to the person requiring the rectification of the contravention, the Controller may himself cause such action to be taken, and the costs of or incidental thereto shall be a debt due to the Controller, recoverable in any court of competent jurisdiction.

Restoration of disturbed places by work on telecommunication line

14. Any work in connection with the construction, maintenance or repair of any telecommunication line shall be carried out in such a way as to avoid as far as possible loss or inconvenience to the owners of the property or to the public, and on the completion of any such work, any railway, street, road, footpath, land or waterway affected thereby shall, as far as possible, be restored to the condition to which it was before such work was carried out.

Wilful damage to or interference with telecommunications

15. (1) Any person who without lawful authority -

(a) destroys, damages or removes any telecommunication apparatus;
(b) disturbs, obstructs or impedes in any way the free and proper use or working of any such apparatus or of any telecommunication system;
(c) affixes or attaches any line, cable, wire, conductor or other thing to any such apparatus or system; or
(d) wilfully interferes with or hinders the construction, alteration, restoration, maintenance or examination of any such system,

shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

(2) Any person who witnesses any other person contravening or attempting to contravene this section may, without warrant, arrest that person.

(3) A person who arrests another person under subsection (2) shall forthwith notify that other person of the cause of the arrest.

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(4) Any person arrested under subsection (2) shall as soon as possible be brought to a police station and shall there be detained until further dealt with according to law:

Provided that a person so arrested shall not be detained for a period longer than twenty-four hours unless a warrant for his further detention is obtained.

(5) Nothing in subsection (4) limits or affects the operation of any law providing for the release on bail of a person under detention.

Unlawful transmission of messages

16. Any person who, knowing or having reason to believe that a telecommunication service is being provided in contravention of this Act -

(a) transmits or receives any message by means of that service; or

(b) delivers any message for transmission by that service; or

(c) performs any service incidental thereto,

shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

Offensive or annoying messages

17. Any person who makes a telephone call or otherwise uses any telecommunication system for the purpose of causing annoyance, inconvenience or needless anxiety shall be guilty of an offence and shall be liable on conviction to a fine not exceeding one hundred thousand kwacha or to imprisonment for a term not exceeding six months, or to both.

Unauthorized disclosure of messages

18. (1) Any person operating or employed in connection with a telecommunication service who -

(a) unlawfully discloses the contents or existence of any telecommunication message; or

(b) makes use for his own purposes of any knowledge he may acquire, in the course of his duties, of the contents of a telecommunication message,

shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

(2) For the purposes of subsection (1), disclosure is lawful only if it is compellable

under any law or given for purposes of the administration of justice.

PART V
MISCELLANEOUS

Powers of inspection

19. (1) A telecommunication officer authorised in writing by the Controller or a police officer may require a person whom he has reasonable cause to suspect is a person required under this Act to be the holder of a licence to produce his licence.

(2) If authorised by warrant issued under the hand of a magistrate, a telecommunication officer or a police officer may at all reasonable times enter premises -

(a) on which any authorised operator or authorised supplier carries on business; or

(b) which are owned or occupied by a person whom he has reasonable cause to suspect is using the premises for the carrying on of a business or activity for which a licence is required under this Act,

and shall have power to make such examination, inspection and inquiry and do such things as may appear to him necessary for ascertaining whether or not the provisions of this Act or the regulations under this Act are being complied with:

Provided that nothing in this subsection shall require a warrant to be obtained for entry to premises or any part of premises which, in the ordinary course of business, are open to the public.

(3) All books, records and documents required to be kept by a licensee shall be open to inspection at all reasonable times by a radiocommunication officer or by a police officer.

(4) A telecommunication officer or police officer may seize -

(a) any telecommunication apparatus which he has reasonable cause to suspect is being used by or is in the possession or under the control of a person in contravention of this Act; and

(c) any book, record or document which he has reasonable cause to suspect will

afford evidence of the commission of an offence against this Act.

(5) A telecommunication officer may order a person to cease using, pending inquiry by the Controller, any telecommunication apparatus which, in his opinion, is being operated otherwise than in accordance with this Act, the regulations or the terms and conditions of a licence.

(6) Any person who obstructs or hinders a telecommunication officer or police officer in the exercise of his powers under this section, or who neglects or fails to comply with an order under subsection (5), shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

Payments by Controller

20. (1) Whenever under this Act or the regulations -

(a) any person is required to render any services to the Controller, the Deputy Controller or a telecommunication officer; or

(b) the Controller, the Deputy Controller or a telecommunication officer does anything (other than mere entry on to land or premises) which, but for this Act, would have made him liable to damages,

the Controller shall pay for the services or pay compensation in lieu of damages, as the case requires.

(2) If the Controller and the person concerned fail to agree on the charge to be made for the services rendered or the amount of compensation, the matter shall be determined by arbitration under the Arbitration Act, and for that purpose the parties shall be deemed to have made a submission in which reference is made to two arbitrators.

Cap 180

Information to be supplied by licensees or applicants

21. (1) A licensee and any person applying for a licence shall furnish the Controller with such documents, accounts, estimates or other information as he may reasonably require for the purposes of exercising his functions under this Act or as may be prescribed by regulation.

(2) A licensee or applicant who neglects or fails to comply with a requirement of the

Controller under this section shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

Miscellaneous offences

22. A person who -

(a) fails or refuses to furnish a return or to supply information in the manner and in the time prescribed or furnishes a false or misleading return or supplies false or misleading information;

(b) on being required to do so, fails or refuses to produce to a telecommunication officer or a police officer a licence or certificate issued under this Act or a book, record or document relating to any telecommunication equipment which is in his possession or under his control;

(c) fails or refuses, without reasonable cause, to give information to a telecommunication officer or a police officer when required to do so under this Act or gives false or misleading information;

(d) for the purpose of obtaining, whether for himself or any other person, the issue of a licence, makes a declaration or statement which he knows to be false in any material particular or does not believe to be true or knowingly makes use of a declaration, statement or document containing the same;

(e) wilfully interferes with, hinders or impedes in any way the carrying on of a telecommunication service;

(f) affixes or attaches a wire, conductor or other thing to any telecommunication apparatus;

(g) interferes with, hinders or impedes in any way the establishment, erection, alteration, maintenance or inspection of any telecommunication apparatus;

(h) knowingly transmits or causes to be transmitted a message of a blasphemous, indecent, obscene or offensive nature;

(i) without lawful excuse, by any means interferes with or obstructs the

carrying on of a telecommunication service;

(j) wilfully intercepts a message which is not intended to be received by him;

(k) reproduces or divulges the contents or substance of a message not intended to be received by him, whether received voluntarily or involuntarily, to another person or uses it for any purpose whatsoever; or

(l) contravenes or fails to comply with any of the provisions of this Act for which no other penalty is expressly provided,

shall be guilty of an offence and shall be liable to a penalty not exceeding two million kwacha or to imprisonment for a term not exceeding two years, or to both.

Regulations

23. (1) The Controller may make regulations prescribing all matters that by this Act are required or permitted to be prescribed or that are necessary or convenient to be prescribed for carrying out or giving effect to this Act.

(2) Without prejudice to the generality of subsection (1), the Controller may make regulations prescribing the licensing procedures and the fees payable for licences under this Act.

Amendment of Act No. 18 of 1987 and savings

24. (1) Part IV (sections 37 - 53) of the Posts and Telecommunications Act 1987, and sections 68, 69 (c) and 70 - 74 of that Act, are hereby repealed.

(2) The Second Schedule has effect in respect of the Company and otherwise in respect of the amendment of the Posts and Telecommunications Act, 1987 by this section.

FIRST SCHEDULE

Section 3

THE CONTROLLER

Committees

1. (1) The Controller may for the purpose of performing his functions under this Act establish such committees, and delegate to any such committee such of his functions, as he considers necessary.

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(2) The Controller may appoint as members of a Committee established under subclause (1) persons who are or are not telecommunication officers and such persons shall hold office for such period as the Controller may determine.

(3) Subject to any specific or general direction of the Controller, any committee established under subclause (1) may regulate its own procedure.

(4) Each committee shall keep minutes of its meetings and shall keep the Controller informed of its activities and shall conduct its proceedings in such manner as the Controller may direct.

(5) Meetings of a committee shall be held at such times and places as the committee may determine or as the Controller shall direct.

Users Advisory Committee

2. (1) The Controller shall under clause 1 of this Schedule establish a Telecommunications Users Advisory Committee, whose principal function it shall be to consider complaints and comments from users of telecommunication services.

(2) The Committee shall have such other functions as the Controller may determine.

Telecommunication officers

3. (1) To the extent that they are not otherwise determined by law, the Controller may determine the terms and conditions of employment of telecommunication officers.

(2) Without limiting the generality of subclause (1), the Controller may make arrangements for or with respect to the provision and maintenance of schemes (whether contributory or not) for the payment to such officers and their dependants of such retirement benefits, gratuities or other allowances as it may determine.

Controller's funds

4. For the purposes of this Act, the Controller shall be funded by -

(a) such sums as may be payable to the Controller from time to time from moneys appropriated by Parliament for the purpose;

(b) such sums as may be payable to the Controller under this Act or any other written law;

(c) such sums as may be levied by the Controller by way of licence fees, charges for any service provided by the

Controller or any telecommunication officer, transaction commissions and any other levies imposed; and

(d) such sums of money or such other assets as may accrue to or vest in the Controller in an official capacity from time to time, whether in the course of the exercise of his functions or otherwise.

Annual report

5. The Controller shall, not later than 30 September in any year, submit to the Minister a report of his activities under this Act and the Minister shall, not later than fourteen days after the first sitting of the National Assembly next after the receipt of the report, lay it before the National Assembly.

SECOND SCHEDULE

Section 24

SAVINGS AND TRANSITIONAL PROVISIONS

Interpretation

Act No. 18 of 1987

1. In this Schedule -

"the Act of 1987" means the Posts and Telecommunications Act 1987; and

"the repealed provisions" means the provisions of that Act repealed by this Act.

Company deemed to hold licence

2. On the commencement of this Act, the Company shall be deemed to be the holder of an operator's licence which shall, subject to this Act, remain in force for such period as the Controller may by statutory instrument determine.

Grant of other licences, etc.

3. On the enactment of this Act, supplier's licences may be applied for and granted, and the Controller may exercise such other of his functions as he may deem necessary prior to the commencement of this Act, in all respects as if this Act had commenced.

Saving of regulations, etc.

4. Any regulation or statutory instrument made under the Act of 1987 for the purposes of any of the repealed provisions shall, notwithstanding the repeal of those provisions, be deemed to continue in force as if made under this Act.

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Existing lines and cables

5. Every telecommunication line or cable that, immediately before the commencement of this Act, was placed under, over, along, across, in or upon any land for the purposes of a telecommunication system then established shall, to the extent that its placement complied with the Act of 1987, be deemed to be placed in compliance with this Act.

Information and broadcasting was requested to agree on the

RADIOCOMMUNICATIONS BILL, 1993

MEMORANDUM

This Bill provides for -

(a) the regulation of the provision of radiocommunication services;

(b) the licensing of persons who operate radio stations or radio apparatus or who supply, maintain or repair radio apparatus; and

(c) matters connected with or incidental to the foregoing.

A. M. Hamir
Attorney-general

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RADIOCOMMUNICATIONS BILL, 1993

ARRANGEMENT OF SECTIONS

Section

PART I
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1. Short title and commencement
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3. Application

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19. Transmission of defamatory matter
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A BILL
ENTITLED

An Act to regulate the provision of radiocommunication services; to provide for the functions of the Controller of Communications; and to provide for matters connected with or incidental to the foregoing.

Enactment

ENACTED by the Parliament of Zambia

PART I
PRELIMINA...

Short title and commencement

1. This Act may be cited as the Radiocommunications Act, 1993 and shall come into operation on such date as the Minister may, by statutory instrument, appoint.

Interpretation

2. In this Act, unless the context otherwise requires -

"amateur radio station" has the meaning ascribed to it by the Schedule;

"authorised repairer" means a person authorised by a licence under this Act to carry on the business of repairing radio station apparatus at radio stations;

"authorised dealer" means a person authorised by a licence under this Act to carry on the business of selling or supplying radio apparatus;

"authorised repairer" means a person authorised by a licence under this Act to carry on the business of repairing or maintaining radio apparatus;

"broadcaster" means a person licensed to operate a broadcasting service under the Broadcasting Act, 1993;

"broadcasting service" means a radio-communication service for reception by members of the general public;

"broadcasting station" means a transmitting station used for the

purpose of carrying on a broadcasting service;

"Controller" means the Controller of Communications appointed under the Communications Administration Act, 1993;

"Convention" means the International Telecommunication Convention signed at Nairobi on [date] 1981 or any other international telecommunication convention to which the Government is from time to time a party, and includes in either case any regulations or other subordinate instruments or provisions annexed thereto or made thereunder;

"dealer" means a person who carries on a trade, business or industry in which transmitting stations or their component parts are assembled, manufactured, imported, bought, sold or exchanged or offered or exposed for sale or exchange;

"Deputy Controller" means the Deputy Controller of Communications appointed under the Communications Administration Act, 1993;

"diffusion" has the meaning ascribed to it in the Broadcasting Act, 1993;

"distress call" means a radiocommunication concerning safety of life on land, at sea or in the air;

"generating apparatus" means apparatus -

(a) generating or designed to generate; or

(b) liable to generate fortuitously, Hertz waves of a frequency or kind prescribed by the regulations;

"harmful interference" means radiation, conduction or any other electromagnetic effect which -

(a) prevents or impedes, or persistently or repeatedly interrupts a radiocommunication service carried on in accordance with the provisions of this Act or of the Convention; and

(b) is not caused by the working, in accordance with the provisions of this Act, of a transmitting station on its allocated frequency;

"Hertz waves" means electromagnetic waves of frequency not less than ten

Hertz and not more than three million megaHertz;

"licence" means a licence in force under this Act and "licensed" and "licensee" have corresponding meanings;

"mobile station" has the meaning assigned to it in the Schedule;

"radio station" means a receiving station or a transmitting station, or a receiving and transmitting station;

"radio station apparatus" means any apparatus, equipment, instrument, pole, mast, standard, wire, cable, thing or means whatsoever designed, constructed or adapted for use in connection with, or for the purpose of conveying electrical energy to, a radio station;

"radiocommunication" means the transmission and reception of sounds and impulses by means of Hertz waves;

"radiocommunication officer" means an officer appointed under the Communications Administration Act, 1993 for the purpose of exercising and performing powers and functions under this Act;

"radiocommunication service" means a service whose primary activity is the transmission or reception of radiocommunications;

"receiving station" means apparatus designed, constructed or adapted for use for the reception of radiocommunications;

"ship station" has the meaning assigned to it in the Schedule;

"transmitting station" means apparatus (other than generating apparatus) designed, constructed of adapted for use for the transmission or emission of radiocommunications.

Application

3. The provisions of this Act and of the Convention shall not apply to the Zambia Police Force or the Defence Force except in so far as they relate to -

(a) the establishment of radio transmitting stations and the erection of radio station apparatus at permanent sites;

(b) the allocation of frequencies by the

Controller;

(c) the approval of the Controller of the mode of transmission to be used in connection with radio transmitting stations and the power to be radiated therefrom;

(d) the prevention of harmful interference;

(e) distress calls, messages and signals; and

(f) the manner of carrying on radiocommunication services governed by the provisions of the Convention.

NOTE: Is subsection (1) consistent with the convention?

PART II
FUNCTIONS OF CONTROLLER

General supervision and control of radiocommunications

4. The Controller shall have the general control and supervision of radiocommunications and radiocommunication services, subject to the provisions of this Act and the Broadcasting Act 1993.

Approval of sites, allocation of frequencies, etc.

5. (1) Subject to subsection (3), the Controller shall -

(a) approve the sites at which all transmitting stations, other than aircraft, mobile or ship stations, are to be established and at which all radio station apparatus used in connection with the transmitting station is to be erected; and

(b) allocate the frequencies on which all radio transmitting stations and all apparatus referred to in paragraph (a) of the definition of "generating apparatus" in section <u>two</u> shall be worked; and

(c) approve -

(i) the mode of transmission to be adopted in connection with all transmitting stations and the power to be radiated therefrom;

(ii) the classes, types and standards of transmitting stations and radio station apparatus to be used in connection with different classes of

radiocommunication services; and

(iii) the classes, types and standards of receiving stations and radio and other apparatus to be used in connection with diffusion services.

(2) In exercising the powers conferred upon him by paragraph (b) and sub-paragraph (i) of paragraph (c) of subsection (1), the Controller shall have regard to the provisions of the Convention.

PART III
LICENCES AND CERTIFICATES

Service licence

6. (1) Any person may apply to the Controller for a licence under this section.

(2) A licence under this section authorises the licensee to establish one or more radio stations at such places as may be specified in the licence and to provide a radiocommunication service in accordance with the provisions of this Act, the Convention and the conditions of the licence.

(3) The licence shall be issued on payment by the applicant of such fees as may be prescribed by the regulations.

(4) The Controller may, without charge, issue a temporary licence authorising a person to be in possession of a radio station for a limited period on condition that the station is not used for the purpose of carrying on a radiocommunication service.

Dealer's licence

7. (1) Any person may apply to the Controller for a licence under this section.

(2) A licence under this section authorises the licensee to sell, give, supply or transfer ownership or possession of radiocommunication apparatus in accordance with the provisions of this Act and the conditions of the licence.

(3) The licence shall be issued on payment by the applicant of such fees as may be prescribed by the regulations.

Repairer's licence

8. (1) Any person may apply to the Controller for a licence under this section.

(2) A licence under this section authorises the licensee to repair radio station apparatus in accordance with the provisions of this Act and the conditions of the licence.

(3) The licence shall be issued on payment by the applicant of such fees as may be prescribed by the regulations.

Conditions of licences

9. (1) A licence is subject to such conditions as the Controller may think fit to specify in the licence when it is granted and to such other conditions as the regulations may prescribe from time to time.

(2) Without limiting the generality of subsection (1), the conditions of a licence may:

(a) specify the site or sites at which any radio station or radio stations to be operated under the authority of the licence are to be located and regulate the manner of their installation;

(b) specify the kind or kinds of radio station authorised by the licence and regulate the type and standard of radio station apparatus to be used in any such radio stations;

(c) specify the frequency at which transmissions from any such radio station are to be made; and

(d) specify the mode of any such transmissions.

(3) It shall be deemed to be a condition of every licence that the licensee shall comply with the provisions of the Convention.

(4) In the event of any inconsistency between conditions imposed by the Controller on a licence and conditions imposed thereon by the regulations, the provisions imposed by the Controller shall prevail to the extent of the inconsistency.

NOTE: Do you want the Minister to be able to vary the conditions of a licence during its currency (whether of his own motion or on the application of the licensee)? See the note on Telecom Bill.

Duration of licences

10. (1) A licence remains in force (unless sooner revoked or suspended) for the period specified in the licence but shall, subject to this Act, be renewed on its expiry on payment to the Controller of such fees as may be prescribed by the regulations.

(2) A licence which, at the time it was issued, was endorsed as a temporary licence is renewable at the discretion of the Controller.

Licences

11. (1) There is no property in a

not transferable

licence, and a licence is not capable of being bought, sold, leased, mortgaged or charged or in any manner transferred, demised or encumbered.

Certificate of competency to operate amateur radio station

12. On application in writing and on payment of the fees prescribed by the regulations, the Controller may issue a certificate of competency to a person who appears to the Controller to hold the qualifications or experience, or the qualifications and experience, prescribed by the regulations as necessary for operating an amateur radio station.

Offences

13. (1) A person who, not being the holder of a service licence authorising him to do so:

(a) operates a radio station of a kind specified in the Schedule or has possession or control of such a radio station; or

(b) not being a broadcaster, operates a radio station of a kind other than a kind specified in the Schedule or has possession or control of such a radio station; or

(c) provides a radiocommunication service,

shall be guilty of an offence.

(2) A person who, not being the holder of a dealer's licence, supplies or offers to supply any radio station apparatus shall be guilty of an offence.

(3) A person who, not being the holder of a repairer's licence, carries on a business of repairing, or offers to repair for a consideration, any radio station apparatus shall be guilty of an offence.

(4) The holder of a service licence who operates a radio station, or who provides or offers to provide a radiocommunication service, in contravention of the conditions of the licence shall be guilty of an offence.

(5) The holder of a dealer's licence who supplies or offers to supply radio station apparatus in contravention of the conditions of the licence shall be guilty of an offence.

(6) A person who, not being the holder of a certificate of competency that authorises him to do so, operates an amateur radio station or has possession or control of such a radio station, shall be guilty of an offence.

(7) Any person guilty of an offence under this section shall be liable upon conviction to a fine not exceeding one hundred thousand kwacha or to imprisonment for a term not exceeding three years, or both.

Suspension or revocation of licence or certificate

14. (1) Where a licensee is convicted of an offence under this Act, or where the Controller otherwise considers action under this section to be justified in the public interest, the Controller, by notice in writing to a licensee, may -

(a) suspended the licence or the person's certificate of competency for a period not exceeding twelve months;
(b) revoke the licence or certificate; or
(c) refuse to renew the licence on its expiry.

(2) Without limiting the generality of subsection (1), the Controller may cancel or refuse to renew a licence on the ground -

(a) that the radio station in respect of which the licence was issued, or the radio station apparatus used in connection therewith -
  (i) prevents the erection of apparatus or equipment by another licensee;
  (ii) injures or interferes with the working of a radio station or the carrying on of any radiocommunication or telephone or telegraph services established by another licensee (whether before or after the date of issue of the licence concerned); or
  (iii) is likely to injure or interfere with radio station apparatus or other equipment, circuits, wires or the like erected installed or operated by the Controller or by another licensee (whether before or after the date of issue of the licence concerned); or
(b) that radiocommunication or telephone or telegraph services established by the Controller or another licensee after the date of the issue of the licence are available to the licensee and provide, in the opinion of the Controller, an adequate means of communication for his purposes.

(3) While a licence or certificate of competency is suspended, the holder thereof is deemed, for the purposes of section 13, not to hold it.

(4) When a licence is cancelled, the person having possession or control of a radio station to which the licence relates shall dispose of the radio station within such period as the Controller may direct by order under his hand.

Appeal

15. (1) Any person aggrieved by the suspension or cancellation of his licence or certificate of competency, or by the Controller's refusal to renew his licence, may appeal to the High Court within the time and in the manner prescribed by the regulations.

(2) Due lodgment of an appeal stays any cancellation or suspension against which the appeal is brought and stays any order under subsection (5) of section fourteen, pending the outcome of the appeal.

PART IV
MISCELLANEOUS

Notice to be given of certain works

16. (1) A person who desires to construct a railway or works for the supply of light, heat or power by means of electricity shall -

(a) give one month's notice in writing to the Controller of his intention to commence the construction of the railway or works; and

(b) furnish the Controller with a plan of the proposed railway or works, together with particulars showing the manner and position in which the railway or works are to be constructed and operated and such further information as the Controller may require.

(2) If it appears to the Controller that -

(a) the operation of or the equipment to be used in connection with a railway or works referred to in subsection (1) is likely to injure or interfere with the working or maintenance of a radio station or radio station apparatus or the carrying on of a licensed radiocommunication service; or

(b) the working or maintenance of a radio

station or radio station apparatus of a person licensed under this Act or a radiocommunication service carried on by a licensee is being injured or interfered with by the construction or operation of or the equipment used in connection with -

(i) a railway or works referred to in subsection (1); or

(ii) any railway, works or other operations whatsoever,

the Controller shall in writing notify the person constructing or operating the railway or works of the action which the person shall take to remedy or prevent the injury or interference.

(3) A person who proceeds with the construction or the equipment of a railway or works or continues to operate a railway or works after he has been given notice by the Controller under subsection (2) without complying with the terms of the notice given under that subsection shall be liable -

(a) to a penalty recoverable by the Controller by action in a competent court of five hundred thousand kwacha for each day he fails to comply with the terms of the notice; and

(b) for any loss or damage caused to the working or maintenance of a radio station or radio station apparatus by his failure to comply with the terms of the notice.

Rejection of certain messages

17. Notwithstanding the terms of any agreement to which the holder of a service licence is a party, it shall be the duty of the licensee and any servant or agent of the licensee to refuse to transmit any message which, in the opinion of the licensee, servant or agent, is blasphemous, indecent, obscene or offensive or whose publication would, in his opinion, be contrary to law.

Unauthorised disclosure of messages

18. (1) Any radiocommunication officer or person <u>employed in connection with a radiocommunication service</u> **[these words inserted]** who:

(a) unlawfully discloses the contents or existence of any radiocommunication message that is not of a public character; or

(b) makes use for his own purposes of any knowledge he may acquire, in the

course of his duties, of the contents of a radiocommunication message,

shall be guilty of an offence and shall be liable upon conviction to a fine not exceeding one hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or both.

(2) For the purposes of subsection (1), disclosure is lawful only if it is compellable under any law or given for purposes of the administration of justice.

(3) Any radiocommunication officer or person employed in connection with a radiocommunication service [these words inserted] who:

(a) wilfully mistimes, intercepts or omits to transmit, or prevents the transmission of, a communication; or

(b) wilfully or negligently omits to transmit or impedes or delays the transmission of a communication,

shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a period not exceeding two years, or both.

Transmission of defamatory matter

19. No liability shall lie against the Controller, the Deputy Controller, or any telecommunication officer acting in the performance of his functions under this Act for transmitting or conveying or taking part in transmitting or conveying by telecommunication in good faith any defamatory matter.

Powers of inspection

20. (1) A radiocommunication officer authorised in writing by the Controller or a police officer may require a person whom he has reasonable cause to suspect is a person required under this Act to be the holder of a licence, certificate or authority to produce his licence, certificate or authority.

(2) If authorised by warrant issued under the hand of a magistrate, a radiocommunication officer or a police officer may at all reasonable times enter premises -

(a) on which any authorised dealer or authorised repairer carries on business; or

(b) which are owned or occupied by a person whom he has reasonable cause to suspect is using the premises for the carrying on of a business or

activity for which a licence is required under this Act,

and shall have power to make such examination, inspection and inquiry and do such things as may appear to him necessary for ascertaining whether or not the provisions of this Act or the regulations under this Act are being complied with.

(3) All books, records and documents required to be kept by an authorised dealer or an authorised repairer under this Act shall be open to inspection at all reasonable times by a radiocommunication officer or by a police officer.

(4) A radiocommunication officer authorised in writing by the Controller may inspect at all reasonable times any radio station, radio or other apparatus.

(5) A radiocommunication officer or police officer may seize;

(a) any radio station which he has reasonable cause to suspect is being worked by or is in the possession or under the control of a person in contravention of this Act; and

(c) any book, record or document which he has reasonable cause to suspect will afford evidence of the commission of an offence against this Act.

(6) A telecommunication officer may order a person to cease using, pending inquiry by the Controller, a radio station or radio or other apparatus which, in his opinion, is causing harmful interference or is being operated otherwise than in accordance with this Act, the regulations or the terms and conditions of a licence.

Offences

21. (1) A person who -

(a) fails or refuses to comply with any lawful order under this Act;

(b) fails or refuses to furnish a return or to supply information in the manner and in the time prescribed or furnishes a false or misleading return or supplies false or misleading information;

(c) wilfully delays or obstructs the Controller, a telecommunication officer or a police officer in the exercise of the powers or performance of the duties conferred or imposed upon him by or under this Act;

(d) on being required to do so, fails or refuses to produce to a radiocommunication officer or a police officer a licence or certificate issued under this Act or a book, record or document relating to any radio transmitting station which is in his possession or under his control;

(e) fails or refuses, without reasonable cause, to give information to a radiocommunication officer or a police officer when required to do so under this Act or gives false or misleading information;

(f) fails to comply with the terms and condition of a licence or certificate issued to him under this Act;

(g) without the permission of the licensee or a radiocommunication officer having authority to grant such permission, enters any part of a licensed radio station which is not open to members of the public;

(h) behaves in a disorderly manner in a radio station operated by the Controller or a licensee;

(i) for the purpose of obtaining, whether for himself or any other person, the issue of a licence or authority under this Act, makes a declaration or statement which he knows to be false in any material particular or does not believe to be true or knowingly makes use of a declaration, statement or document containing the same;

(j) wilfully destroys, injures or removes radio station apparatus of the Controller or a licensee;

(k) wilfully interferes with, hinders or impedes in any way the carrying on by the Controller or licensee of a radiocommunication service or the free use or working of a radio station or radio apparatus of the Controller or licensee;

(l) affixes or attaches a wire, conductor or other thing to a radio station or radio apparatus of the Controller or a licensee;

(m) interferes with, hinders or impedes in any way the establishment, erection, alteration, maintenance or inspection of a licensed radio

station or radio station apparatus of the Controller or licensee;

(n) transmits or causes to be transmitted -

(i) a false or fraudulent distress call;

(ii) a communication of a blasphemous, indecent, obscene or offensive nature;

(o) without lawful excuse, interferes with or obstructs the carrying on of a radiocommunication service;

(p) wilfully intercepts a communication which is not intended to be received by him;

(q) reproduces or divulges the contents or substance of a communication not intended to be received by him, whether received voluntarily or involuntarily, to another person or uses it for any purpose whatsoever;

(r) contravenes or fails to comply with any of the provisions of this Act for which no other penalty is expressly provided,

shall be guilty of an offence and shall be liable to a penalty not exceeding two million kwacha or to imprisonment for a term not exceeding two years or to both.

(2) A person contravening paragraph (g) or (h) of subsection (1) who fails to leave a radio station immediately on being required to do so by a radiocommunication officer may be removed by a radiocommunication officer and a police officer shall, on being requested to do so by a radiocommunication officer, remove or assist in the removal of the person.

(3) A person who witnesses another person contravening or attempting to contravene the provisions of paragraph (j), (k), (l), (m), (n) or (o) of subsection (1) may, without warrant, arrest that other person.

(4) A person who arrests another person under subsection (3) shall forthwith notify that other person of the cause of the arrest.

(5) Any person arrested under subsection (3) shall as soon as possible be brought to a police station and shall there be detained until further dealt with according to law:

Provided that a person so arrested shall not be detained for a period longer than twenty-four hours unless a warrant for his further detention is obtained.

(6) Nothing in subsection (5) limits or

affects the operation of any law providing for the release on bail of a person under detention.

Forfeiture of equipment

22. (1) On the conviction of a person for an offence referred to in paragraph (c) of subsection (1) of section twenty-one, the court convicting the accused may, on the application of the prosecutor and in addition to any penalty which it may impose, order the confiscation of the radio station or radio apparatus in connection with or by means of which the offence was committed, unless it is proved to the satisfaction of the court that the radio station or radio station apparatus is not the property of the accused and that the owner was unable to prevent its unlawful use by the accused when the offence was committed.

(2) Any radio station or apparatus confiscated under this section is forfeited to the Republic, and may be destroyed or otherwise disposed of in accordance with directions of the court.

Damages

23. A person who, whether wilfully, negligently or otherwise, destroys or damages a licensed radio station or radio station apparatus of the Controller or licensee shall be liable to pay such expenses as may be incurred in making good the destruction or damage.

Civil actions

24. (1) The Controller may by civil action in a competent court recover the amount of a fee payable under this Act.

(2) On the conviction of a person for an offence of having in his possession or under his control a radio station specified and defined in the Schedule in respect of which no licence has been issued under this Act, the court convicting the accused may, on the application of the prosecutor and in addition to any penalty which it may impose give summary judgment in favour of the Controller for the amount of the appropriate licence fee.

Regulations

25. (1) The Controller may by statutory instrument prescribe all matters which by this Act are required or permitted to be prescribed or which are necessary or convenient to be prescribed for carrying out or giving effect to

this Act.

(2) Without prejudice to the generality of subsection (1), the Controller may by regulation -

(a) make such provision as he may consider appropriate or necessary to give force and effect, within Zambia, to the provisions of the Convention;

(b) classify radio stations, other than broadcasting stations and radio stations used solely in connection with broadcasting and diffusion services, and in so doing, amend the Schedule or vary the definition of a radio station specified in the Schedule and prescribe the nature of the radiocommunication services to be carried on therefrom;

(c) provide for the inspection and testing by officers of broadcasting stations and radio and other apparatus used in connection with broadcasting or diffusion services and for the method of installation, working and maintenance thereof;

(d) provide for the establishment, maintenance, protection, working and conduct of all or any radiocommunication services carried on by the Controller or any licensee, including any such service carried on in conjunction with a telephone or telegraph service;

(e) make provision for the purpose of ensuring that -

(i) the use of generating apparatus or power lines does not cause harmful interference and in so doing, prescribe the conditions to be observed with respect to -

A. the maximum intensity of electromagnetic energy of specified frequencies which may be radiated in any direction from generating apparatus or power lines when in use;
the electromagnetic energy of specified frequencies which may be injected by generating apparatus into the power lines by means of which power is supplied to the generating apparatus;

(ii) the use, in connection with a broadcasting or diffusion service or otherwise of radio stations or radio or other apparatus, so as not to injure or interfere with radio-communication, telephone or telegraph services or with radio stations or radio or other apparatus, equipment, circuits, instruments, wires and the like;

(f) prohibit or restrict the importation, purchase and sale of any apparatus capable of causing harmful interference;

(g) make provision for the keeping of books, records and documents, the furnishing of returns and the supply of information relating to dealings in, and the repair of, radio transmitting stations by authorised dealers and authorised repairers;

(h) prescribe the qualifications in respect of age, term of service, skill, character and otherwise, required by applicants for certificates of competency to work amateur radio stations;

(i) make provision for or with respect to -

(i) the holding of examinations to determine the proficiency of applicants for certificates of competency to work amateur radio stations;

(ii) the issue of such certificates to persons with the qualifications prescribed under that paragraph;

(j) fix the fees to be paid -

(i) by applicants in connection with examinations referred to in subparagraph (i) of paragraph (i); and

(ii) on the issue of certificates of competency to work prescribed an amateur radio station;

(k) prescribe -

(i) the form and manner in which applications for licences and certificates under this Act are to be made and information to be supplied in connection therewith;

(ii) the form of licences and certificates, terms and conditions to be attached to licences and certificates and the periods for which licence and certificates shall remain in force;

(iii) the circumstances in which and the terms and conditions subject to which licences and certificates shall be issued;

(l) make provision for the cancellation, suspension and amendment of licences and certificates and for the surrender or delivery to the Controller of licences and certificates for those purposes;

(m) prescribe the circumstances in which and the conditions, including the payment of a fee, subject to which copies of licences and certificates may be obtained;

(n) make provision for the notification to the Controller by persons to whom licences and certificates are issued of changes in their places of residence or work;

(o) make provision for the notification of the Controller of changes in the places, aircraft, ships or vehicles at or in which radio stations in respect of which licences are issued, established, installed or worked; and

(p) make provision for the proper exercise by the Controller of the powers of control of and supervision over radiocommunication services conferred upon him by this Act and of the other powers, functions and duties thereby conferred or imposed upon him.

Repeal of Cap. 796 and savings

26. (1) The Radiocommunications Act is hereby repealed.

(2) Notwithstanding the repeal of the Radiocommunications Act -

(a) any licence, certificate, permit or authority issued under the provisions of the repealed Act which, immediately before the commencement of this Act, was subsisting or was of force or effect or capable of acquiring force or effect shall,

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subject to the terms and conditions on which it was issued, continue to subsist or to be of force or effect or, as the case may be, acquire force or effect and shall be treated, for the purposes of this Act as having been issued under the corresponding provisions of this Act;

(b) any application allocation, approval or exemption made or given, examination or test taken or made, any agreement, other than a contract of service, entered into, record kept or other thing done under the provisions of the repealed Act which, immediately before the commencement of this Act was subsisting or was of force or effect or capable of acquiring force or effect shall, subject to the provisions of the said Act, continue to subsist or to be of force or effect or, as the case may be, acquire force or effect and shall be treated, for the purposes of this Act, as having been made, given, taken, entered into, kept or done under the corresponding provisions of this Act.

SCHEDULE

(Sections 2, 13, 24 and 25)

CLASSIFICATION OF RADIO STATIONS

In this Schedule -

"radio station" does not include a broadcasting station or a receiving station used solely in connection with a broadcasting or diffusion service;

"Aeronautical station" means a radio station used for the purpose of carrying on a radiocommunication service with and for the benefit of aircraft;

"Aircraft station" means a radio station continuously subject to human control which is installed in an aircraft;

"Amateur station" means a radio station worked by a person interested in the technique of radio communications solely with a personal aim and without pecuniary interest;

"Base station" means a radio station established on land and used for the purpose of carrying a radio

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communication service with mobile stations;

"Coast station" means a radio established on land and used for the purpose of carrying on a radiocommunication service with and for the benefit of ship stations;

"Fixed station" means a radio station used for the purpose of carrying on a radiocommunication service between specified points;

"Meteorological aids station" means a radio station used for the purpose of transmitting special signals intended solely for meteorological and hydrological observations and exploration;

"Mobile station" means a radio station capable of use whilst in motion or during halts at unspecified points but does not include an aircraft or ship station;

"Model control station" means a station used for the purpose of controlling models;

"Press station" means a radio receiving station used for the purpose of receiving news broadcast from recognised press agencies;

"Private experimental station" means a radio station utilising Hertz waves in experiments with a view to the development of the science and technique of radiocommunications but does not include an amateur station;

"Radio control station" means a radio station used for the purpose of controlling mechanism or other apparatus which is not installed in a model;

"Radiolocation station" means a radio station used for the purpose of -

(a) determining the relative direction, position or motion of an object; or

(b) the detection of an object by means of the constant velocity or rectilinear propagation characteristics of Hertz waves;

"Ship station" means a radio station installed in a vessel which is not permanently moored;

"Special service station" means a radio receiving station used exclusively for the purposes of receiving time signals, notices to navigators, epidemiological and medical advice and like services of general utility;

"Standard frequency station" means a radio transmitting station used for the purpose of transmitting standard and specified frequencies of known high accuracy intended for general reception.

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APPROVED FOR
Submission to
LEGISLATION
COMMITTEE
Parliamentary Draftsman
4/7/93

POSTAL SERVICES BILL, 1993

MEMORANDUM

This Bill provides for -

(a) the creation of a Postal Services Corporation ~~whose functions are to be exercised by the Controller of Communications;~~

(b) the provision of postal and telegraph services by the Corporation; and

(c) matters connected with or incidental to the foregoing.

A M HAMIR
Attorney-General

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A BILL
ENTITLED

An Act to regulate the provision of postal services into, out of and within Zambia; to constitute a Postal Services Corporation and to define its functions; and to provide for matters connected with or incidental to the foregoing.

Enactment

ENACTED by the Parliament of Zambia.

PART I
PRELIMINARY

Citation and commencement

1. This Act may be cited as the Postal Services Act, 1993, and shall come into operation on such date as the Minister may, by statutory instrument, appoint.

Interpretation

2. (1) In this Act, unless the context otherwise requires -

"addressee", in relation to any postal article, means the person to whom the postal article is addressed;

"authorised officer" means a postal officer authorised in writing by the Corporation to do the thing in relation to which the expression is used;

"Controller" means the Controller of Communications appointed under the Communications Administration Act, 1993;

Act No. of 1993

"Corporation" means the Postal Services Corporation constituted by this Act;

"courier service" means a service by which a document, letter, parcel or any article (other than a telegram) is conveyed from door to door without a postage stamp;

"franking machine" means a machine used for making impressions on postal articles to denote payment of postage and includes any meter and any franking or date-stamping die used in connection with postal franking;

"mail" means every postal article and every mail bag, container or conveyance of any

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kind by which a postal article is carried, whether or not it contains a postal article;

"bag" means any bag, box, basket, parcel, hamper or other container or covering in which a postal article is conveyed, whether or not it contains a postal article for the time being;

"money order" means a money order -

(a) issued under this Act; or

(b) issued by any postal authority for payment under this Act;

"postal article" means every article collected for conveyance by post, and includes a telegram;

"postal officer" means any person appointed under the Communications Administration Act, 1993, for the purposes of exercising or performing any powers or functions under this Act;

"sender" of a postal article means the person from whom the postal article purports to have come;

"telegram" means any message transmitted by means of telegraphy and delivered to the addressee;

"telegraph office" means any place used by the Corporation for the handling of telegrams;

"transmission", in relation to a telegram, includes the reception as well as the sending of the telegram.

(2) For the purposes of this Act -

(a) a postal article shall be deemed to be in the course of conveyance by post from the time it is delivered to the proper postal officer or deposited in a letter box or other receptacle stationed by or with the approval of the Corporation for that purpose, to the time it is delivered to the addressee, or is returned to the sender, or is otherwise disposed of under this Act;

(b) a postal article shall be deemed to have been delivered to a post office if it is placed in any letter box or other receptacle stationed by or with the approval of the Corporation for the deposit of postal articles or is delivered to the proper postal officer;

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(c) a postal article shall be deemed to have been delivered to the addressee if it is delivered to his house or place of work, into his private box or his post office box or to his servant or agent or, where the addressee is a guest at an hotel, if it is delivered to that hotel:

Provided that in the case of a telegram, where a residential or office address is given, the telegram shall have been delivered to the address so indicated.

PART II
THE POSTAL SERVICES CORPORATION

Establishment of Corporation

3. (1) There is hereby established the Postal Services Corporation, which shall be a body corporate with a common seal capable of suing and being sued and subject to the provisions of this Act, capable of performing all such acts as a body corporate may by law do or perform.

(2) The provisions of the First Schedule shall apply as to the constitution of the Corporation and otherwise in relation thereto.

Functions of Corporation

4. (1) The principal function of the corporation shall be to conduct a postal service and telegram service for the Republic.

(2) The Corporation shall have such other powers and functions as are conferred on it by or under this Act.

PART III
POSTAGE AND POSTAL SERVICES

Operation of postal services

5. (1) Any person other than the Corporation who:

(a) operates a postal service; or

(b) collects, tenders, sends, conveys or delivers any letter to be dealt with otherwise than as permitted by or under this section,

shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred and fifty thousand kwacha or to imprisonment for a term not exceeding three months for every letter in respect of which the offence is committed.

(2) The Corporation may prescribe, by

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statutory instrument, either generally or in any particular case, the terms and conditions under which letters may -

(a) be sent, conveyed and delivered otherwise than by post; or

(b) be collected otherwise than by the Corporation, whether to be dispatched by post or not.

(3) Nothing in this section prohibits -

(a) the conveyance and delivery of a letter by the sender himself;

(b) the conveyance and delivery of a letter by any person otherwise than for fee or reward;

(c) the conveyance and delivery of a letter concerning the affairs of the sender or his agent, client or customer, or of the addressee or his agent, client or customer, by means of a message sent for that purpose;

(d) the conveyance and delivery of a letter, solely concerning goods or property commercially sent by water, land or air, to be delivered with the goods or property, if the letter is open to inspection and has inscribed on it the words "consignee's letter" or other words of similar import;

(e) the conveyance and delivery of a letter exceeding the prescribed dimensions for a letter;

(f) the conveyance and delivery of a letter containing any document issuing out of a court or of any return or answer thereto; or

(g) the conveyance and delivery of a letter in such circumstances, and on such conditions, as may be prescribed by the Corporation by statutory instrument.

(4) Subsection (3) does not operate so as to:

(a) authorise any person to make a collection of letters for the purpose of their being conveyed or delivered in any manner authorised by any of paragraphs (b) to (f) of that subsection, where the collection is made from the letters of more than one person or authority; or

(b) authorise a common carrier by land or his servant or agent to collect letters or convey or deliver a letter, whether

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or not for fee or reward, except for such letters as are mentioned in paragraph (d) of that subsection.

(5) Nothing in this section prohibits the establishment and maintenance by a council of a district postal service in accordance with the Local Government Act, 1991.

(6) Nothing in this section prohibits the operation of a licensed courier service.

(7) In this section, "letter" includes a postcard.

Postal charges

6. (1) The Corporation, with the consent of the Minister, may determine all fees and charges in connection with the transmission of articles by post.

(2) The following communications, however, shall be exempt from all such fees and charges:

(a) [illegible] and addressed to the President; and

(b) such other postal articles, in such circumstances, as the Corporation may determine.

Articles posted by mistake

7. If any article is posted by mistake and liable to postage, and evidence is adduced to the satisfaction of any authorised officer that the article has been posted by mistake, an authorised officer may open and return that article to the sender without charge:

Provided that if the article contains any letter or manuscript liable to postage, the authorised officer shall retain it until the postage has been paid.

Underpaid and unpaid postage

8. (1) Except as otherwise provided by this section, where insufficient or no postage has been paid, the addressee shall pay the postage or other sum due on the postal article on his accepting delivery unless he forthwith returns it unopened.

(2) Where the addressee refuses to accept delivery or returns the postal article, or if the addressee is dead or cannot be found, the sender shall pay the postage or other sum due on it.

(3) If the postal article appears to the satisfaction of an authorised officer to have been sent for the purpose of annoying the addressee the authorised officer may waive or remit the postage or other sum due on it under subsection

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Postal charges remaining unpaid

9. (1) If any person refuses to pay any postage or other sum which is payable by him in respect of any postal article, an authorised officer may dispose of the postal article in such manner as may be prescribed.

(2) Such postage or other sum may be recovered by the Corporation in any court.

Issue and withdrawal of postage stamps

10. (1) The Corporation may, with the consent of the Minister, provide such postage stamps as it thinks necessary for the purposes of this Act and may, with like consent, withdraw any issue of such postage stamps.

(2) Notification of the withdrawal of any issue of postage stamps shall be given by the Corporation by notice published in the Gazette and in one or more [illegible] Zambia.

(3) With effect from such date as the Corporation may ~~by~~ appoint by a notice under subsection (2), not being earlier than one month after the publication of the notice, postage stamps of the issue described in the notice shall cease to be postage stamps for the purpose of this Act and no claim shall lie against the Corporation in respect of any postage stamps to which the notice relates.

Opening and returning of postal articles

11. Except as otherwise provided by this Act, no person other than an authorised officer shall, after any postal article has been delivered to a post office, open the postal article or return it to any person.

Prohibited articles

12. (1) Except as otherwise provided by this Act and subject to such conditions as may be prescribed, no person may send by post -

(a) opium, morphine, cocaine or any narcotic, or any substance the possession of which is prohibited by any law;

(b) any explosive, inflammable, dangerous, filthy, noxious or harmful substance;

(c) any sharp instrument not properly protected;

(d) any noxious living creature;

(e) any creature, article or thing which is likely to injure any person or damage

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any postal article.

(2) Any postal article found to have been sent in contravention of this section may, on such terms and conditions as may be prescribed, be destroyed or otherwise disposed of by an authorised officer.

Precedence of postal articles

13. Where the dispatch or delivery of any letters from a post office would be delayed by the dispatch or delivery at the same time of another class or other classes of postal article, any or any class of them may, subject to such conditions as may prescribed, be retained in the post office for dispatch or delivery at a later time or date.

Detention for customs, excise, duty or tax

14. (1) An authorised officer may detain any postal article suspected to contain goods liable to customs, excise or any other duty or tax and may in the presence of the [illegible] the [illegible]ve's repre[illegible] [illegible] examine that postal article.

(2) If on any such examination no goods liable to any duty or tax are discovered in the postal article, the postal article shall be delivered to the person to whom it is addressed or to his representative, on payment of the postage, if any, payable thereon.

(3) If on any such examination any goods are found to be liable to customs, excise or other duty or tax, the postal article may be withheld from delivery until payment of the duty or tax and the postage, if any, payable thereon.

(4) The authorised officer shall deliver the article to the authority responsible for the collection of the relevant duty or tax for examination if the authorised officer is not certain that those goods are not so liable.

Postal articles relating to an offence

15. (1) Where an authorised officer suspects that any postal article contains anything in respect of which an offence has been or is being committed, he shall:

(a) detain that postal article; and

(b) by notice in writing, served personally or by post, request the addressee or the sender, or any agent thereof duly appointed in writing, to attend at a post office at a time specified in the notice and open the postal article in the presence of the authorised officer.

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(2) If any person on whom a written notice has been served under subsection (1) fails to attend or, having attended in person or by his agent, refuses to open the postal article, the authorised officer shall open the postal article.

(3) Any postal article opened under this section shall thereafter be forwarded or delivered to the addressee with an explanation on the opening of the article, unless it is required for the purpose of any criminal investigations or proceedings.

Insufficiently stamped postal articles

16. Where a postal article received by post from outside Zambia, or posted within Zambia -

(a) bearing a fictitious stamp; or

(b) purporting to be prepaid with any postage stamp which has been previously used,

section nineteen shall, with any necessary modifications, apply to the postal article:

Provided that where a postal article is received from outside Zambia, the sender shall not be required to attend at the post office.

Registration of postal articles

17. (1) Subject to this Act and on payment, in addition to ordinary postage, of such fee as may be determined by the Corporation, the sender of a postal article may have the postal article registered.

(2) A postal article shall be registered at the post office at which it is posted.

(3) The postal officer registering a postal article shall issue a receipt for the postal article.

(4) In the event of the loss of any postal article which is registered under this Act or the loss of the contents of any such article while the postal article is in the custody of the Corporation, the Corporation shall, on such terms and conditions as may be prescribed, pay compensation in respect of the loss.

Parcel post

18. The Corporation may establish a parcel post and in that respect may from time to time determine -

(a) the conditions under which parcels may be sent, conveyed, delivered, returned to senders or otherwise disposed of;

(b) the form of declaration to be made by any person or his agent desiring to send

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or receive any parcel; and

(b) subject to any law relating to customs, excise or any other duty or tax, the arrangements for the collection of such customs, excise, duty or tax.

Cash-on-delivery system

19. (1) The Corporation may, by statutory order, irect that subject to this Act and the payment of the appropriate fee fixed by the Corporation, an amount equal to the value of the of a postal article at the time of (as specified in writing by the sender of al article) shall be recovered by a postal on delivery of the postal article to the o whom it is addressed.

Any amount received under subsection (1) remitted to the sender of the postal

No liability shall attach to the ion of the Controller or any postal officer ct of any amount referred to in this section unless that amount has been received from the addressee.

List of mail bags

20. Every mail bag conveyed shall be entered on such list or way-bill as may be prescribed.

Agents of the Corporation

21. The Corporation may make and enter into contracts and arrangements for the conveyance of postal articles or mail bags through or by means of any shipping line, vessel, railway or vehicle or other carrier whatsoever.

PART IV
MONEY ORDERS, ETC.

Money orders, postal orders, warrants and other orders

22. (1) The Corporation shall, on such terms and conditions as it may determine, provide for the remittance of money by post by means of money order, postal order or other like warrant or order.

(2) Money orders, postal orders or other warrants or orders shall be issued and paid at such post offices and in such manner as the Corporation may determine.

(3) The Corporation shall be liable for the amount of any postal order, money order or other warrant or order only if a claim is made within three years after the date of issue.

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Such orders, etc., to be security

23. (1) A money order, postal order or other warrant or order issued under this Act shall be deemed to be an order for payment of money and a valuable security within the meaning of any law relating to forgery or theft.

(2) An unissued postal order, money order or other warrant or order shall be deemed to be money of the Corporation.

Refusal to issue or pay such orders, etc.

24. (1) When an authorised officer is satisfied from any advertisement, letter, circular, or other documentary evidence that a person -

(a) is conducting, or assisting as agent or otherwise in conducting, a lottery other than a lottery promoted and conducted in accordance with any law; or

(b) is dealing in indecent or obscene matter,

the authorised officer may refuse to pay in favour of that person, or to issue for payment to that person, any money order, postal order or other warrant or order under this Act.

(2) Any postal order, money order or other warrant or order issued under this Act the payment of which is refused under this section -

(a) may, if issued within Zambia, be returned to the person to whom it was originally issued; and

(b) shall, if issued outside Zambia, be returned to the appropriate postal authority of the country in which it was issued.

PART V
TELEGRAM SERVICES

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Telegram Service

25. The Corporation shall, on such terms and conditions as it may determine, operate and provide a telegram service.

Precedence of telegrams

26. Telegrams shall, as far as practicable, be transmitted ~~by the~~ in the order in which they are received, but telegrams relating to the safety of human life, the preservation of peace in Zambia or in any other country, the arrest of criminals, the discovery or the prevention of crime or any other matter related to the administration of justice and, when so required, telegrams sent by or on behalf of the Government, shall have

precedence over all other telegrams:
Provided that -
(i) nothing in this section prevents precedence being given to any class of telegrams under such conditions and upon payment of such special rates as may be determined by the Corporation; and
(ii) no person shall be permitted to occupy a telecommunication line in such manner as to impede unreasonably the transmission of other telegrams.

Unlawful telegram services

27. (1) Any person other than the Corporation who operates a telegram service shall be guilty of an offence and shall be liable on conviction to a fine not exceeding two hundred and fifty thousand kwacha or to imprisonment for a term not exceeding three months for every telegram in respect of which the offence is committed.

PART VI
MISCELLANEOUS

Forgery, possession and misuse of stamps and money orders

28. (1) This section applies to:
(a) any postage stamp, date stamp, mark, figure, or franking machine used in or for the purposes of a postal service provided by the Corporation; and
(b) any money order, postal order or other warrant or order for the payment of money through the Corporation.
(2) Any person who, without lawful authority or excuse -
(a) makes, engages, alters, reproduces, purchases or otherwise obtains, imports into Zambia or has in his possession or custody any thing to which this section applies; or
(b) uses, issues, sells, offers for sale, sends by post, deals in or otherwise disposes of any such thing,
shall be guilty of an offence and shall be liable upon conviction to imprisonment for a term not exceeding seven years.
(3) Any person who has in his possession or uses, deals in or otherwise disposes of any thing to which this section applies, knowing it to have been made, engraved, altered, reproduced, purchased, obtained or imported into Zambia in contravention of this section, shall be guilty of

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[illegible] for a term not exceeding seven years.

(4) Any article mentioned in subsection (1) [illegible]sed by or found in the possession of any person in contravention of this section shall, on conviction of the person, be forfeited to the Republic and may be destroyed or otherwise disposed of by the Corporation in accordance with directions given by the Minister.

Offences relating to postage stamps and post marks

29. (1) Any person who, with intent to defraud -

(a) removes any postage stamp from any postal article or from any document used for the purposes of the Corporation;

(b) removes from any postage stamp which has previously been used any mark or impression which has been made thereon at any post office; or

(c) uses, cuts, scrapes, defaces, obliterates, adds to or alters any mark or impression upon any postal article, money order, postal order or other warrant, order, paper or material whatsoever provided, used or made for the purposes of the Corporation,

shall be guilty of an offence and shall be liable upon conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

(2) Any person who sells any postage stamp from which any mark or impression put thereon at any post office for the purposes of the Corporation has been removed shall be guilty of an offence and shall be liable upon conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

(3) For the purposes of this section, the sender of a postal article shall, until the contrary is proved, be deemed to be the person by whom the postage stamp was affixed upon that article.

Fraudulent use of official marks

30. Any postal officer who, with intent to defraud, puts any incorrect official mark on a postal article shall be guilty of an offence and shall be liable upon conviction to a fine not

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General offences relating to marks

31. A person authorised to receive or in any way handle mail who, -

(a) wilfully or negligently loses, destroys, detains, delays, misdelivers or omits to dispatch mail;

(b) unlawfully communicates or divulges the contents of any postal article;

(c) while in charge of any mail -

(i) permits an unauthorised person to have access to that mail;

(ii) is intoxicated; or

(iii) wilfully misspends time and thereby delays the arrival of such mail at its proper destination;

(d) through negligence or misconduct, endangers the safety of mail;

(e) gives false information of an assault upon him or of theft or attempted theft from him, at any time when he was in charge of mail;

or

(f) without lawful authority, collects, receives or delivers any postal article otherwise than in the ordinary course of his duties,

shall be guilty of an offence and shall be liable upon conviction to a fine not exceeding one hundred thousand kwacha or to imprisonment for a term not exceeding six months, or to both.

False entries relating to mail

32. Any postal officer carrying mail and required to keep any record relating to that mail who makes any false entry in that record, knowing the entry to be false, shall be guilty of an offence and shall be liable upon conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

Offences relating to postal articles

33. Any person who -

(a) in purported compliance with any requirement under this Act, makes any false statement as to the contents of any postal article;

(b) sends by post -

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(i) any article in or upon which there is any indecent or obscene matter or anything of a profane, libellous or grossly offensive character;

(ii) correspondence dealing with any fraudulent or immoral business or undertaking;

(c) without due authority, places any placard in or against any post office or telegraph office;

(d) wilfully damages or disfigures any post office or telegraph office or wilfully damages, disfigures or tampers with any card, notice or other property of, or which is being used by or on behalf of, the Corporation;

(e) commits a nuisance with respect to a post office or telegraph office or any card, notice or other property referred to in paragraph (d); or

(f) by any false representation, induces any postal officer to deliver to him or to any other person any postal article not addressed to or intended for him or for that other person,

shall be guilty of an offence and shall be liable upon conviction to a fine not exceeding two hundred thousand kwacha or to imprisonment for a term not exceeding twelve months, or to both.

Theft of or interference with mail

34. Any person who -

(a) steals any mail;

(b) steals from any mail or post office or telegraph office, or from the custody or possession of a postal officer [illegible] a postal article;

(c) unlawfully destroys mail or any postal article or any of the contents of a postal article;

(d) receives any mail or postal article or any of the contents of a postal article, knowing it to have been stolen; or

(e) stops mail with intent to steal or unlawfully to search the mail,

shall be guilty of an offence and shall be liable upon conviction to imprisonment for a term not exceeding ten years.

Transmis-

35. Any person who puts into or places

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APPENDIX C

Personal Observations

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Personal Observations

Leaving Lusaka at the end of the second field trip turned out to be more difficult than originally envisioned. Upon learning of the cancellation of our Air Zimbabwe flight to Harare, the team arranged to take a charter flight instead.

One team member tried repeatedly to phone the charter flight company on the grounds of the airport. Despite the best efforts of airport staff, no call could be completed in 45 minutes of attempts. Ultimately, it was more effective to take a taxi to the charter flight's office and arrange the flight in person.

Another team member tried to call Harare to reschedule a meeting. Both public and private phone service were inadequate to reach either a PTC operator or a USA Direct operator. Other travelers in Lusaka trying to relay a message to Zimbabwe were similarly unable to get through.

This experience exemplifies the frustration of businesses in Zambia as well as foreigners trying to do business in Zambia. While it was relatively easy to drive to the other side of the airport to arrange a charter for our team, this type of substitution for communications is very costly and inconvenient for rural farmers. The inadequacy of public telephone service is discouraging for both commerce and tourism, and, like so many consumers we met in Zambia, we would have paid any price for a cellular phone. Without drastically improved communications service, Zambia will be unable to generate the national and international competition necessary for economic development.

APPENDIX D

List of Acronyms

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List of Acronyms

AMPS	Advanced Mobile Phone Service
ANI	Automatic Number Identification
ATM	Automatic Teller Machine
BT	British Telecom
CCIR	The International Radio Consultative Committee
CCITT	The International Telegraph and Telephone Consultative Committee
CPE	Customer Premises Equipment
E-TACS	European - Total Access Communications System
ERC	Electronic Repair Center
ESOP	Employee Stock Ownership Program
FCC	Federal Communications Commission
FDM	Frequency Division Multiplexing
GDP	Gross Domestic Product
GPO	General Post Office
GRZ	Government of the Republic of Zambia
GSM	Global Standard for Mobile Telecommunications (Groupe Special Mobile)
INTELSAT	International Telecommunications Satellite Organization
INTS	International Stage
ITU	International Telecommunications Union
JICA	Japanese International Cooperation Agency
K	Kwacha
LRMC	Long Run Marginal Costs
LS	Local Stage
MARS	Multi-Access Radio System
MCT	Ministry of Communications and Transport
MFC	Multi-Frequency Compelled
PABX	Private Automatic Branch Exchange
PBX	Private Branch Exchange
PCO	Public Call Office
PTC	Posts and Telecommunications Corporation
RBOC	Regional Bell Operating Company
RFP	Request for Proposal
RPI-X	Retail Price Index minus Productivity Factor (Price Cap formula)
RSS	Radio Subscriber System
SADC	Southern African Development Community

SPC	Stored Program Control
TACS	Total Access Communications System
TDM	Time Division Multiplex
TLS	Toll and Local Stage
TS	Toll Stage
U.S.	United States
UHF/VHF	Ultra High Frequency/Very High Frequency
VFT	Voice Frequency Telegraphy
ZCCM	Zambia Consolidated Copper Mines Limited
ZCTU	Zambia Commercial Trade Union
ZESCO	Zambia Electricity Supply Corporation
ZIMCO	Zambia Industrial and Mining Company
ZNBC	Zambia National Broadcast Corporation
ZPA	Zambia Privatization Agency