

CONSULTATION PAPER
ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR

- **Negotiate an Early End to the GT&T Monopoly** – In addition to consulting with all interested members of the industry and public, the Government should meet with GT&T and ATN to negotiate an early end to the GT&T monopoly. Such a move would be consistent with negotiated settlements to end monopolies of other private sector operators throughout the Caribbean and Latin America. The negotiation should focus on the best long-term interests of both parties, including GT&T's interest in changing the local service environment to permit it to operate in a financially profitable manner. Among other issues covered in this Discussion Paper, GT&T should have specific interests in promoting rate rebalancing, incentive regulation, price deregulation, a new Universal Access Program and an orderly transition to a competitive market.
- **Introduce Incentive Regulation** – GT&T's current rate-base / rate of return form of regulation should be replaced with a form of incentive regulation. This step should be taken in conjunction with rate rebalancing and the introduction of competition.

Under incentive regulation, GT&T's initial rates should be set at a level that is reasonably cost based, taking into account benchmark rates in comparable countries. Once these rates are set, GT&T's should be permitted to adjust its prices annually in accordance with a 'price cap formula'. This formula will allow GT&T to increase rates to keep pace with inflation. If GT&T is successful in increasing its revenues, or reducing its costs, it should keep the resulting profits. If GT&T not successful in doing so, consumers will be protected, because prices may not increase above the 'price cap'.

- **Establish a Universal Access Program** – A new program is proposed to provide service to non-economic areas and low income subscribers. This program would be funded through a Universal Access Fund (UAF). Revenues would be contributed to the fund by all licensed telecommunications service providers, in proportion to their gross revenues from licensed services. Additional revenues would be sought from other sources, particularly international financial institutions and donors.

Payments out of the program would be based on a competitive bidding process. Service providers, including GT&T could bid to receive a UAF subsidy to extend networks and provide access services, such as community telecentres and public payphones, to unserved areas, such as those in the interior. A variety of technologies could be used to build such networks, including VSATs and Wireless Local Loop services. The bidder with the lowest subsidy requirement would receive the subsidy, conditional upon meeting its service expansion commitments.

- **Regulatory Institutions** – Several options are put forward for the future of regulatory institutions, including (1) a singly unified telecommunications regulatory authority, (2) division of regulatory authority, with licensing performed by the Minister and ongoing behavioural regulation by a transformed version of the PUC, and (3) co-operation with regional regulators, such as ECTA. Under any of these three options, it is proposed that the Government should remain responsible for development and review of the National Telecommunications Policy, Telecommunications Law and Regulations.
- **Transition to Competitive Markets** - It is proposed that telecommunications markets in Guyana be opened to competition in accordance with a "Three-Phase Liberalization Plan" that is consistent with good economic principles and international practice. The essence of the proposed Plan is similar to that agreed to by Cable and Wireless in its April 7, 2001

CONSULTATION PAPER
ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR

Agreement with the OECS. However there are some differences, to take into account the different legal and regulatory environment in Guyana, including the term of the Purchase Agreement and the GT&T licence. The three proposed phases, details of which are provided in the paper, are:

Phase 1 – Preparation for Competition [July 2001 – December 31, 2001]

Phase 2 – Implementation of New Regulatory Framework [2002]

Phase 3 – Introduction of Full Competition [By December 31, 2002]

- **Licensing Policy** – A new licensing approach is proposed, in order to encourage maximum participation in the sector. The process for authorizing new telecommunications services will be simple, open, non-discriminatory, transparent and light-handed. There will be two types of authorizations to provide telecommunication services and to establish and operate telecommunications networks. Individual licences would be issued for networks and services that require access to radio spectrum or other scarce resources and which have more comprehensive rights and obligations attached to them. General authorizations ("class licences") would be issued for networks and services which do not require access to radio spectrum or other scarce resources and that carry a limited number of rights or obligations. It is proposed that these will include: ISPs, Resellers, Private telecommunications networks, and Value-added service providers, including information service providers.
- **Regulation of Scarce Resources** – A number of options are reviewed for the allocation of scarce radio frequency spectrum. These include the currently used 'first come, first served' approach, the comparative evaluation process, auctions and lotteries. Comments are also invited on issues related to other types of scarce resources, including public and private rights of way and telecommunications numbers.
- **Interconnection Policy** – A new interconnection policy is proposed to be implemented by way of a new regulation. The objective of the policy will be to provide seamless connectivity among all networks in Guyana, and those connecting with Guyana. Key features of the interconnection rules include:
 1. Interconnection of all Networks Encouraged
 2. Mandatory Interconnection with Dominant Operators
 3. Non-Discrimination
 4. Points of Interconnection
 5. Payment of Interconnection Costs by service provider that causes the costs
 6. Cost-based Interconnection Charges
 7. Unbundling of interconnection charges, essential facilities, including local loops.
 8. Reference Interconnection Offer to be filed by GT&T
 9. Approval and Publication of Interconnection Agreements
 10. Interim Interconnection Agreements encouraged, subject to review to conform with new interconnection regulations

**CONSULTATION PAPER
ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR**

11. Dispute Resolution by the regulator, or an independent arbitrator in a timely, independent and fair manner.

Comments are invited on all issues raised by this Consultation Paper. National consultations will be held, with a view to developing a National Telecommunications Policy, to be finally approved by the Government before the end of 2001.

Introduction

Telecommunications networks are the nervous systems of the information age. No country can participate fully in the social and economic life of the global village without a robust telecommunications infrastructure. Telecommunications networks provide the necessary infrastructure for a wide range of Information, Communications and Technology (ICT) services. In this 21st Century, far more new jobs will be created in the ICT sector than in agriculture, mining and manufacturing. Therefore, every country concerned with the future quality of life and employment of its citizens is re-examining its telecommunications and ICT policies.

The Government of Guyana recognizes the importance of telecommunications and ICT services generally to the future well being of its citizens. It is therefore reviewing its policies and approaches to the telecommunications sector, with a view to developing a new national telecommunications strategy.

This Consultation Paper is part of the process of developing the new National Telecommunications Policy for Guyana.

The Paper does not represent Government policy. The goal of the Paper is to provide a focus for the national discussion on the future of the telecommunications sector. The Paper sets out, for discussion purposes, possible objectives for the future of the telecommunications sector in Guyana, and issues and options for future action.

As part of its process of developing its national telecommunications strategy, the Government intends to consult with all parties interested in the future of the telecommunications sector in Guyana. In this regard, the Government plans to consult fully with the Guyana Telephone and Telegraph Company (GT&T) which plays the central role in the provision of telecommunications services in Guyana today. The Government also intends to consult with GT&T's major shareholder Atlantic Tele-Networks (ATN). However, the Government wishes to obtain a broad and balanced range of views on the future of the sector.

Therefore, it intends to consult with all other interested parties that wish to participate in designing the national telecommunications strategy. Such parties include individuals and businesses interested in providing information and communications services in Guyana, and representatives of other businesses, national and international institutions, consumers and other representatives of the civil society of Guyana.

The Government has retained an international telecommunications specialist (Advisor) to assist it in the development of its national telecommunications strategy. The Advisor, Mr. Hank Intven, is a partner in the Toronto, Canada office of the law firm, McCarthy Tetrault LLP, and a former Executive Director of Telecommunications with the Canadian telecommunications regulator. Mr. Intven will be working in collaboration with the Project Execution Unit for the Modernization of the Telecommunications Sector, attached to the Office of the Prime Minister and Minister of Public Works and Communications.

Some of the views put forward in the Paper are those of the Advisor only. The Government has decided to publish this paper for comment without taking any position on those views.

**CONSULTATION PAPER
ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR**

The list of issues and options set out in this Paper is by no means exhaustive. The paper is intended to be a starting point for national discussions, not its conclusion. All parties are invited to put forward additional or alternative issues and options for consideration.

Next Steps: The release of this Consultation Paper is intended to stimulate a constructive and successful national debate on the best options for the future of the telecommunications sector in Guyana. The Government intends to consult fully with all interested parties on those options. In particular, the Government intends to consult fully with GT&T and ATN, which have legally entrenched monopoly rights to provide certain telecommunications services in Guyana. However, the future of the information and communications sector in Guyana is clearly a matter of great public interest. Accordingly, all members of Guyanese civil society and other interested parties are invited to participate in the discussions on the future of the sector.

A number of public meetings will be held, at which the Advisor and members of the Project Execution Unit will discuss and explain the issues addressed in the Consultation Paper, and other issues relevant to the future of the sector. The public is welcome to attend those meetings, and to provide comments to the project team on their views regarding the sector. Additional Meetings will also be held with specific industry and consumer representatives and other interested parties in order to discuss and clarify the issues related to development of a new national telecommunications strategy.

Following receipt of comments and further discussions on the future of the sector, the Government intends to develop a national telecommunications strategy paper to outline its approach to the governance and regulation of the sector.

Comments on this Consultation Paper, or on any other issues related to the development of a national strategy for the telecommunications sector may be sent to the following address:

By E-mail: telecomreform@solutions2000.net

By Telephone: (592) 231-7366 or 231-7367

By Fax: (592) 231-7368

By Post: Project Execution Unit
Modernization of the Telecommunications Sector
68 Hadfield Street
Lodge
Georgetown
Guyana

The Road to Telecommunications Reform

The Government of Guyana considers modernization of the telecommunications sector to be a high priority. It recognizes that there is significant untapped potential for the telecommunications sector to contribute towards national economic and social development. Reform of the sector is essential to promote such development.

In this regard, Guyana does not stand alone. In recent years, an increasing number of countries have shifted the focus of their economic development from the agricultural, mining and manufacturing sectors to the Information and Communications Technology (ICT) sector.

Today, the ICT sector accounts for a significant and growing share of the overall economies of most countries. There is a growing recognition among national governments that the ICT sector is essential as an enabler of social and economic development in other sectors. Countries and their citizens who do not have access to advanced ICTs will inevitably fall behind in the race for global competitiveness.

Consistent with the experience of most other countries over the past decade, Guyana has found the need to reform its ICT sector. Sector reform must normally start with the telecommunications infrastructure, which provides the "information highways" for the other activities of the ICT sector.

Changes in the Telecommunications Sector

A major reason for telecommunications reform in Guyana, and most countries is that the telecommunications sector has changed, almost beyond recognition over the past two decades.

The Guyana telecommunications legal and regulatory framework was essentially put in place in 1990, but it was largely based on legal and regulatory precedents of earlier decades. For example, the Telecommunications Licence of the main national operator, the Guyana Telephone and Telegraph Company Limited (GT&T), was copied, almost verbatim, from the British Telecommunications plc licence of 1984. The 'Purchase Agreement' implemented the privatization of GT&T, and continues to govern key aspects of the regulatory framework. This agreement was largely based on concepts of public utility regulation, such as rate base/rate-of-return regulation, which were developed to regulate monopoly telephone companies in the United States and Canada in the first three-quarters of the last century. Similarly, the Public Utilities Commission Act and the Post and Telegraph Act are based on concepts that have not been reviewed in Guyana to take account changes in the sector. Several of these concepts have been abandoned in the US, Canada and around the world, as the telecommunications sector has evolved from the 'telephone age' into the 'information age'.

Twenty years ago, the vast majority of national telecommunications operators in the world were state-run administrations, usually known as PTTs (Post, Telegraph and Telephone Administrations), or investor-owned monopolies. Telecom operators focussed on providing basic telephone, telegraph, fax and data services over fixed wireline infrastructure. Investor-owned telecom operators largely functioned as monopolies, subject to public utility type regulation. Wireline services and the Internet were in their infancy.

Today, the telecommunications sector around the world has changed dramatically, and Guyana must adjust to these changes. Some of the main changes that have taken place in the past two decades are summarized in Figure 1.

Figure 1: Recent Changes in the Global Telecommunications Sector

- Rapid growth in wireless telecommunications; far exceeding wireline growth
- Development of the Internet as the central source of global information and business
- Introduction of fibre-optic, digital and IP technologies resulting in significant cost and price cuts
- End of the 'era of accounting rates' with significant revenue losses to developing countries
- Introduction of competition in all telecommunications markets
- Rate rebalancing: move from subsidized prices to cost-based prices
- Deregulation of competitive services; transitional regulation of dominant operators
- Move away from rate base/rate of return regulation to incentive regulation of dominant operators
- Shift of focus of regulation to promotion of national ICT sectors

Other major changes in the global telecommunications sector are described in this section of the Paper. To start, Figure 2 illustrates the current mix of subscribers on global telecommunications networks. Twenty, or even 10 years ago, virtually all telecommunications service subscribers were fixed line subscribers. This is clearly no longer the case today. Fixed line subscribers are now the minority.

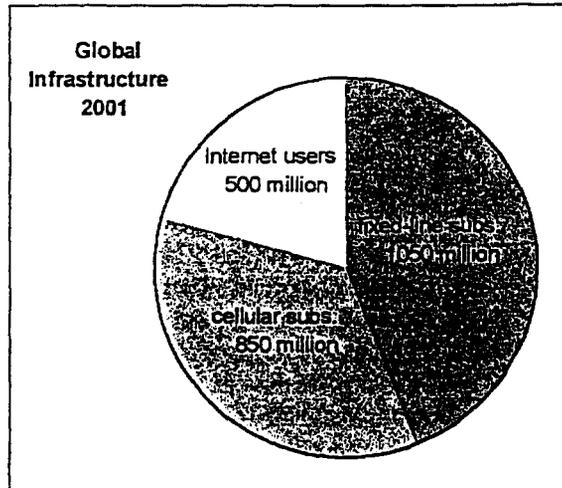
Around the world, mobile wireless telecommunications access services are growing far faster than wireline services. Today, some countries, such as Cambodia, where the wireline infrastructure was particularly poor, have more wireless than wireline subscribers. Other countries, such as Guyana's neighbour, Venezuela, have recently experienced a drop off in wireline subscribers, while wireless subscriber growth continues at full speed. Subscriber growth in Venezuela is illustrated on figure 3.

It should be noted that the Venezuelan situation is not representative of telecommunications infrastructure growth in all countries. In fact, the most industrialized countries, and some developing countries are now experiencing rapid growth in new fixed wireline subscribers purchasing 2nd or 3rd lines for high speed internet connectivity.

In almost all regions of the world, mobile services are provided on a competitive basis. In 1999, for example, mobile services were provided on a monopoly basis in only 26% of the countries reporting to the International Telecommunication Union (ITU). Figure 4 illustrates the state of competition in mobile services markets in the various regions of the world in 1999.

Figure 2: The Global Telecommunications Subscriber Base

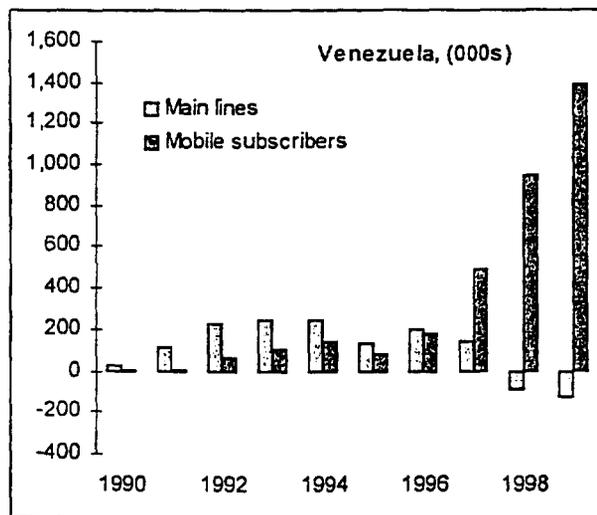
Number of users/subscribers of selected telecommunication services (forecast) in 2001.



Source: ITU World Telecommunication Indicators, and World Telecommunication Regulatory Databases

Figure 3: Mobile & Wireline Growth – The Case of Venezuela

Growth of new subscribers of mobile and fixed-line services in Venezuela, 1990-98.



Source: ITU Americas Telecommunications Indicators 2000.

The amount of competition in mobile markets has continued to increase since 1999. Today, there are relatively few countries with monopoly mobile markets outside of the Arab states.

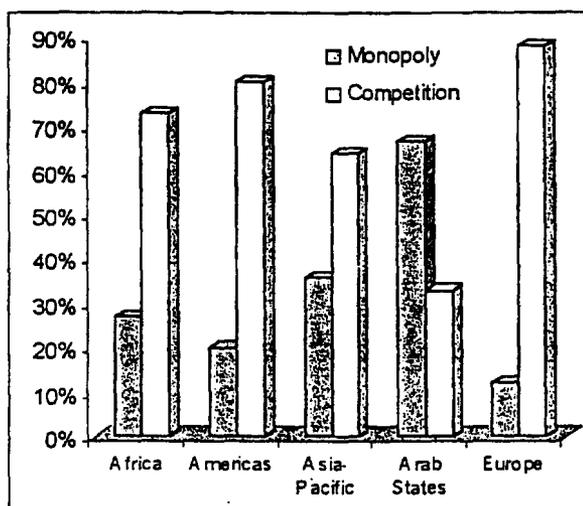
CONSULTATION PAPER ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR

Competition in mobile markets has been an important stimulant for competition in other segments of telecommunications markets. Newly licensed mobile telecommunications operators often expand into adjacent markets, such as paging, trunking, Internet, long distance and international services. The presence of a number of healthy competitors in mobile markets often leads to lower consumer prices, service innovation and more rapid network expansion, as competitors try to provide coverage of all major markets. It also expands the critical mass of trained telecommunications professionals in a country. Often, these professionals will move between incumbent operators and new market entrants, benefiting both through their increased technical and local market expertise.

Like mobile services, Internet access services have generally been provided on a competitive basis around the world. In some regions, such as Europe and North America, there are no Internet access monopolies. In most other regions, there is a relatively small and decreasing number of such monopolies. The state of Internet access competition by region is illustrated on Figure 5.

Figure 4: Competition in Mobile Telecom Services

Competition in mobile services, by region, 1999.

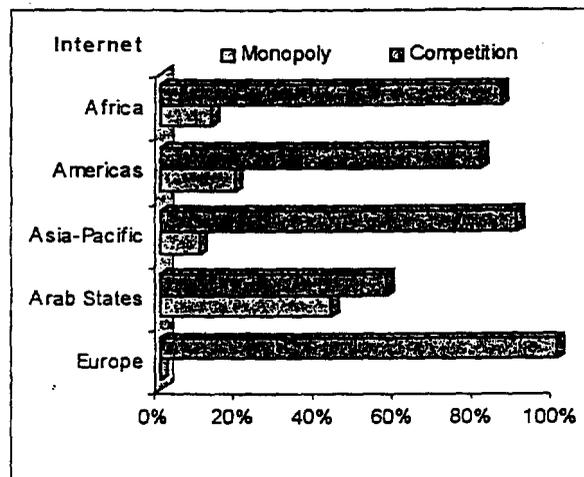


Source: ITU World Telecommunication Regulatory Database 2000.

The Internet market is very important for the future of Guyana and all other countries. Because of its importance as a social and economic tool, access to the Internet is increasingly considered as important as telephone access in promoting social and economic development. Accordingly, Internet market development is treated as a separate issue later in this Paper, with its own objectives and policy options. To understand these issues, it is interesting to examine how Internet markets are changing in various countries.

The Internet market raises some important issues related to the role of the incumbent operator¹. In most countries incumbent operators are permitted to compete in the Internet access market. However, their conduct in that market is usually scrutinized by regulators to ensure that there is a level playing field for competitive ISPs. The role of incumbent operators in the ISP market was examined by the ITU in its Trends 2000 report. An extract from that report is set out in figure 6.

Figure 5: Internet Access Competition
Competition in Internet services, by region, 2000



Source: ITU World Telecommunication Regulatory Database 2000.

Figure 6: Role of Incumbent Operators in ISP Markets

[The absence of...] legal prohibitions against competition does not mean a market is immune to the risks of concentration and dominance. This is demonstrated by a closer look at the retail and wholesale Internet market.

In developing countries, for example, incumbents have been quick to respond to Internet business opportunities. And although there may be fairly large numbers of Internet service providers (ISPs)

¹ A few words on the vocabulary normally used in telecommunications regulation (as well as in this Paper). The term 'incumbent' operator is used to designate the existing operator in a telecommunications market, as distinguished from new entrants into the market. The term 'dominant' operator is used to designate a supplier that, in the absence of regulation, would be able to exercise 'market power', that is change its prices or other terms and conditions of market supply, on a fairly permanent basis, without being constrained by market forces. Neither the terms 'incumbent' or 'dominant' bear any negative connotations. GT&T is the incumbent operator in most Guyana telecommunications markets, and it is dominant in those markets by virtue of its legal monopoly. Even after their monopolies expire, most incumbent operators remain dominant for varying periods of time before new entrants gain a sufficient foothold in the market to provide a real competitive option. While the existence of market 'dominance' or 'market power' has no negative connotations, 'abuse of dominant position' does. Abuse of dominance is subject to regulatory and other legal sanctions in most countries. Common examples of abuses of dominance include refusal to supply essential facilities (e.g. interconnection) to competitors, excessively high prices in dominant markets, and excessively low (i.e. predatory) pricing to drive out competitors.

**CONSULTATION PAPER
ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR**

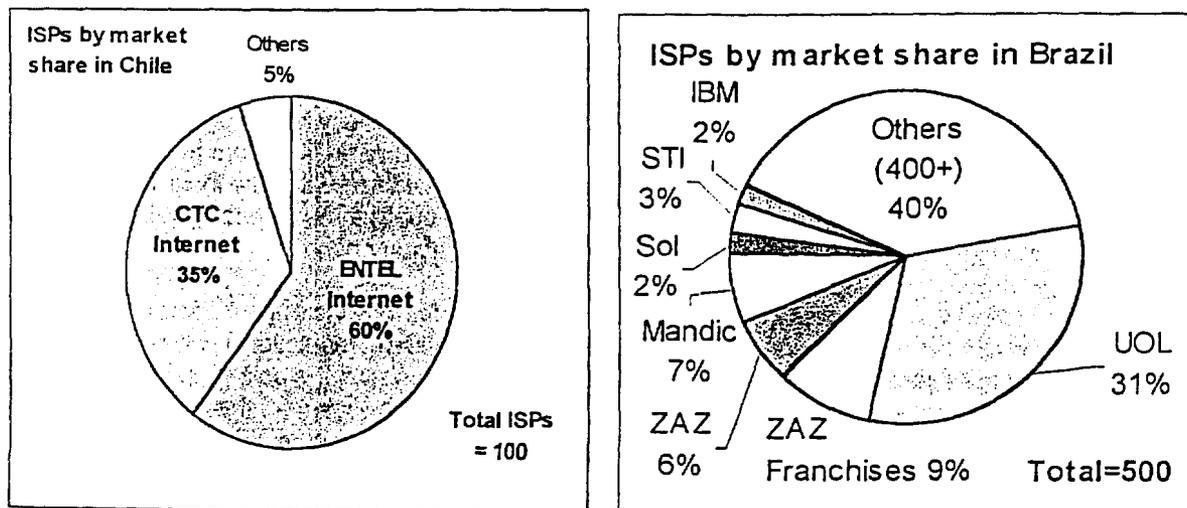
in local markets, the reality is that in many countries, the incumbent carriers' Internet subsidiaries serve a vast share of the Internet access market. This is certainly the case in parts of the Americas region. In Chile, for example, in spite of the existence of roughly 100 ISPs, the two former state-owned carriers control some 95 per cent of the market (See Figure [7], left). Incumbent Telefonos de Mexico (Telmex) controls more than 50 per cent of the Mexican Internet market, while in Argentina the four largest ISPs share some 85 per cent of the market, leaving the remaining 15 percent to more than 160 independent ISPs.

This market dominance is replicated in other regions of the world. In India, for example, despite the recent licensing of a large number of ISPs, VSNL, the monopoly international service provider (and also, until recently, the only ISP) controls the majority of the Internet access market. The same is true in Europe, where incumbent operators generally control the ISPs with the largest market shares. In France, for example, France Telecom's ISP, Wanadoo, is the largest in the country. And in Germany, Deutsche Telekom subsidiary TP Online had roughly 12 million users in early 2000, making it the largest ISP in Germany and the second largest in the world.

Market conditions are different, however, in countries where governments have prevented telephone incumbents from entering the Internet access market. In Brazil, for example, local carriers were not permitted to enter the ISP market. The restriction—which was designed primarily to channel incumbent investments into telephony networks, not to foster an independent ISP industry—gave Internet access providers a unique opportunity to gain a foothold in the market (See Figure [7] right). Some policy experts believe, however, that the large number of competing ISPs will prompt industry consolidation, resulting in roughly a dozen survivors of mergers and acquisitions. [Extract and the following figure reprinted from the ITU Trends 2000 Report]

Figure 7: New Wine in Old Bottles?

Share of the Internet market by dominant ISPs in Chile (left-hand chart) and Brazil (right-hand chart), 1999.



Source: ITU Americas Telecommunication Indicators 2000.

The roles of incumbent operators in other markets raise similar issues. Incumbent operators often remain dominant in their basic service markets long after legal monopolies are abolished. Incumbent operators generally have the incentive and the opportunity to use their market power² in basic service markets (e.g. local access and international transmission services) to improve their competitive position in adjacent markets. Such adjacent markets may include the ISP access market, cellular mobile markets, cable TV, information content, broadcasting and other value added service markets.

In most countries, regulators and policy makers welcome the presence of their incumbent basic network operators in ISP, cellular mobile and other adjacent telecom markets. However, as long as the incumbent operator exercises market power, its activities in such adjacent markets is subject to regulation to ensure new entrants have the opportunity to survive and build a workably competitive market. At that point, most policy makers and telecommunications experts would agree that a nation's telecom markets should be deregulated.

In other words, regulation is normally seen as a transitional phase in the move from monopoly to competitive telecommunications markets. Once markets are workably competitive, market forces should discipline the incumbent as well as all other operators. The regulator should then withdraw from intervention in the market. At that point, a regulator or national competition authority should maintain a 'hands off' supervisory role, and intervene only in cases of serious real or likely harm to consumers as a result of the re-emergence of some form of market dominance and abuse of such dominance.

As telecommunications markets move from monopoly to competition there is normally a period of 'asymmetric' regulation. During this period, regulation focuses on the prices and other activities of the dominant operator (usually the incumbent), while new entrants are generally left free to set prices and otherwise conduct their business with little or no regulation. At first glance, this may seem unfair to dominant or incumbent operators. However, most eventually see the logic behind asymmetric regulation, and understand that it will hasten the move to a truly competitive market and deregulation of the incumbent operators as well.

The logic behind 'asymmetric' regulation of dominant operators is quite simple. Governments and regulators have no reason to intervene in telecommunications markets except to prevent public harm that the market does not prevent. New entrants generally have no 'market power'³. They must offer good services and prices to attract any customers away from the incumbent operator. For example, they cannot set prices significantly above the level of the incumbent operator or no one will buy their services. So they cannot harm the public through 'price gouging'. If the prices are too high, consumers will simply go back to the incumbent operator.

Typically, new entrants roll out their services over time. The incumbent operator will therefore remain the only service provider in some markets. Without regulation, it will have the power to charge excessively high prices in those markets because it is the only supplier, and the services are a necessity to certain consumers and businesses. In this regard, the dominant operator clearly has market power. Dominant operators can abuse their residual market power. For example they can use profits from markets where they are dominant to subsidize below-cost prices in more competitive markets. This can weaken or bankrupt their new competitors. Accordingly, regulation of incumbent operators is normally maintained for a transitional period, until they lose their 'market power' or 'dominance'.

² See note 1.

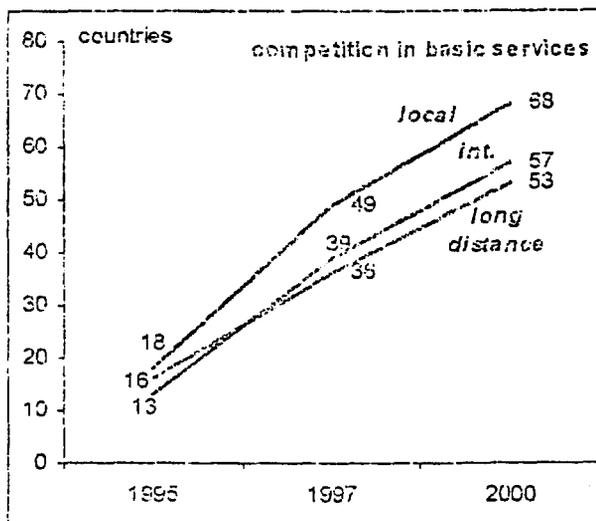
³ See note 1

**CONSULTATION PAPER
ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR**

How long does it take before an incumbent operators' services can be deregulated? This is a gradual process. The prices and other service conditions of incumbents in some markets, as in cellular mobile markets, can often be deregulated quite soon after competition emerges. In other markets, some basic rules are in place to prevent anti-competitive behaviour. Such rules are aimed at preventing abuse of dominance in the markets where incumbents remain dominant (such as refusal to interconnect their wireline networks with new cellular providers on the same terms as the incumbent's own cellular operations).

In other markets, such as those for basic local, long distance and international basic telecommunications services, competition has been slower to emerge. Figure 8 illustrates the growth in basic service competition around the world.

Figure 8: Growth in Basic Service Competition
Growth in the number of countries that allow competition in basic telecommunication services around the world, 1995-2000.



Source: ITU World Telecommunication Regulatory Database 2000

Figure 8 illustrates the speed of the change from the era when telecommunications monopolies were common in basic services. It can be seen that the monopoly status of GT&T would have appeared uncommon in 1995. However, the transition to competitive basic telecommunications markets has been very rapid, and Guyana has now fallen out of step with the rest of the region. This situation is made even clearer if one examines developments in the Caribbean and Latin America region.

Quite a number of countries in the region maintained legal monopolies in basic telecommunications markets until the last two years. However, in that short period, almost all countries in the Caribbean and Latin America have negotiated an early end to the basic telecommunications monopolies enjoyed by their main telecommunications operators. These countries are listed in Figure 9. The move to competitive markets is discussed in greater detail later in this paper under the heading Market Structure and Licensing Policy.

Figure 9: Regional Countries that have Renegotiated and Shortened Monopolies in the Past 2 Years

- Jamaica
- Trinidad & Tobago
- OECS States: Dominica, Grenada, St Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines
- Peru
- Argentina
- Ecuador

In Guyana's western neighbour, Venezuela, the monopoly over basic telecommunications services held by the incumbent operator, CANTV, has also recently expired.

GT&T's parent company, ATN, has been proactive in recognizing the end of regional telecommunications monopolies. Wireless World (a company controlled by ATN, GT&T's parent company) is currently seeking to compete in the local telecommunications business in the U.S. Virgin Islands. In doing so, Wireless World would compete with ATN's former subsidiary, Innovative Telephone Company, formerly named the Virgin Islands Telephone Company⁴.

ATN has also indicated that it is willing to negotiate modifications to GT&T's telecommunications licence in Guyana, provided it is 'adequately compensated for any curtailment of its present licence rights'.⁵

In summary, it appears that most, if not all players in the Caribbean and Latin America regions, and in Guyana itself, have recognized the end of the era of basic telecommunications monopolies.

Most, if not all, former monopoly operators have prospered in a competitive environment. The introduction of competition improves the incentives of management to operate efficiently, to expand the range of services offered, and to increase revenues as competitors help to stimulate overall market demand for telecommunications services. It is a truism of modern telecommunications policy that monopoly incumbent operators may lose a slice of the pie to competitors, but that they will have a bigger pie to share.

Impact of Telecommunications on Economic and Social Development

The telecommunications infrastructure of a country is a key determinant in the development of the ICT sector. The availability of secure, adequate telecommunications capacity at reasonably advanced levels and service qualities are essential prerequisites for the development of a whole range of other economic activities. A competitive telecommunications framework is generally

⁴ US Securities and Exchange Commission, Form 10-K for the fiscal year ended December 31, 2000, filed by Atlantic Tele-
Network, Inc.

⁵ ATN F2000 10-K (see note 4).

viewed as providing the best incentives for the development of an efficient and robust telecommunications infrastructure.

Figure 10 illustrates some of the types of economic and social activities that are highly dependent on efficient and advanced telecommunications services.

Figure 10: Economic and Social Activities Dependent on Telecommunications

- E-commerce, including marketing, sales and other electronic transactions
- Remote E-services, including call centres for customer service, telemarketing, tech. support, etc.
- Software development, ASPs, web-hosting, and related e-commerce "support industries"
- Other Internet-related industries, including advertising, games & leisure activities
- Efficient & accessible government services
- Education and training
- Provision of tele-medicine

A quick review of Figure 10 makes it clear that no country can afford to fall seriously behind in the provision of efficient and advanced telecommunications services, without risking the economic and social opportunities available to its citizens. Recent experience also indicates that telecommunications and ICTs can be a great force for global economic democratization. Centres of ICT activity, such as the software development industry centred in Bangalore, India and call centres such as those in some Caribbean islands could never have developed without the global connectivity provided by today's telecommunications networks.

Widespread access to the Internet, and its education and information resources, can provide Guyanese students, entrepreneurs, artists and others with the opportunity to learn to compete with the best in the world, in any field.

Guyana has good reasons to focus on the development of its telecommunications and ICT-related industries. The Government must search for alternative sources of economic activity, given the current uncertainties affecting its traditional commodity-based industries, especially sugar, rice and bauxite. Increases in telecommunications infrastructure generally promote economic development. Economic studies for the ITU, for example, indicate that every telephone access line added in Africa contributes approximately US \$4500 to Gross National Product.

Improved telecommunications and Internet connectivity can significantly improve the efficiency and competitiveness of existing Guyanese industries. Figure 11 provides some examples.

Figure 11: Examples of the Importance of Telecommunications to Guyanese Industries

- Tourism – The Internet is a prime source of marketing & new bookings, e.g. for eco-tourism
 - Commodity producers – E-commerce permits 'disintermediation', reduces brokerage fees, etc.
 - Artistic & crafts producers – The Internet provides new exposure & marketing opportunities
-
-

CONSULTATION PAPER ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR

- Remote service centres – such as call centres, tech centres and telemarketing require telecoms
 - Training – online training and education can improve efficiency of most Guyanese industries
-

There are other reasons for Guyana to focus on telecommunications and ICT development. The very high concentration of population (approximately 85%) in two corridors along the coastal plain, make it relatively easier to improve access to telecommunications services than in countries with widely dispersed populations or more mountainous terrain. Fluency in English, relatively high literacy rates, and relatively low local wage rates also provide competitive advantages in accessing and providing ICT services to North American and global markets.

There appears to be a consensus on the need for telecom reform in Guyana. There has been considerable tension, over the past years, between GT&T and its major shareholder on the one hand, and the Government of Guyana and its Public Utilities Commission (PUC) on the other. The Government and PUC have been particularly dissatisfied with GT&T's failure to expand its local network to meet demand, and by the increasingly anachronistic monopoly that GT&T enjoys over many telecommunications services.

GT&T and ATN, on the other hand, have been dissatisfied with the low level of rates that it is permitted to charge for local services. GT&T's dissatisfaction is exacerbated by the revenue shortfalls that it will soon experience due to the US Federal Communications Commission's decision to require US-based carriers to reduce their settlement rates. The settlement rates to GT&T will be reduced from \$0.85 to \$0.23 per minute, commencing January 1, 2002.

There have been numerous other issues in dispute between the Government, PUC, GT&T and ATN, as well as between one or more of them and new entrants or consumers in the Guyanese telecommunications sector. A significant number of these disputes have been the subject of litigation. This litigation has often led to delays and uncertainty, not to a resolution. The major issues that have arisen in the sector are discussed later in this Paper, together with options to resolve many of them.

The time is ripe for telecommunications sector reform in Guyana. Failure to achieve significant and lasting reforms would cripple the national operator, GT&T, and frustrate the Government's desire to develop the ICT sector in Guyana. While all parties may not agree on the nature of all of the reforms required, all will agree that the status quo must be changed.

It is the goal of this Paper to launch a constructive national dialogue on how to change the status quo in a manner that best serves the long-term interests of all citizens and businesses in Guyana.

General Objectives of Telecommunications Reform

The general objectives of reforms in the telecommunications sector in Guyana are similar to those of many other countries, with both developing and industrialized economies. There is likely to be a substantial national consensus on the general objectives for the future of the telecommunications sector.

Possible general objectives for the reform of the telecommunications sector are set out in figure 12. Some of these general objectives are reflected in the objectives proposed under the individual issues set out in the balance of this Paper.

Comments are invited on the appropriateness and adequacy of these objectives to guide future development of the sector.

Figure 12: Possible Objectives for Reform of the Telecommunications Sector

- To promote access to high quality, reliable and affordable telecommunications services in all regions of Guyana
 - To improve the lives of all citizens of Guyana by improved access to economic, social and information resources, through improved telecommunications which permit efficient access to the Global Information Infrastructure
 - To promote the availability to all businesses located in Guyana of efficient and advanced telecom and e-commerce capabilities to permit them to develop competitive business opportunities, thereby creating skilled employment, increased tax revenues and other economic benefits in Guyana
 - To specifically promote the development of ICT services and businesses in Guyana, to improve the lives and businesses of citizens of Guyana, and to provide export revenues
 - To improve access by all citizens to government and other public services, including information on government activities and opportunities, public health, education and economic and social development services
 - To promote competition in the supply of telecommunications services as a means to achieving improved services, increased efficiency and the other objectives listed herein
 - To improve the quality and predictability of the regulation of the telecommunications sector, including licensing of services, allocation and management of the radio spectrum and promotion of improved services
-

Issues, Objectives and Options

Introduction

The balance of this Paper contains a discussion of the main issues that should be considered in developing a national telecommunications strategy for Guyana.

The paper considers the following major issues:

1. Improving Telecom Sector Performance
2. Legal and Regulatory Framework
 - a) National Policy & Legal Framework
 - b) The National Regulatory Authority
3. Market Structure and Competition
4. Licensing and Scarce Resources
 - a) Licensing Policy
 - b) Licensing and Regulation of Scarce Resources
5. Price Regulation and Consumer Protection
6. Universal Access
8. Interconnection

The discussion of each of these issues is divided into three parts:

- Part 1 Proposed Objectives** – for the national telecommunications policy relevant to the specific issues
- Part 2 Current Situation** – This Part describes the current state of the telecommunications sector in Guyana, relevant to objectives outlined in the previous part
- Part 3 Options for Reform** – This Part discusses the options for addressing the current situation in Guyana to achieve the objectives set out in Part 1.

A few words of explanation on the purpose of each Part:

Part 1 sets out proposed objectives based on an assessment of the current state of the global telecommunications and information sector. As indicated in the section of this Paper on The

CONSULTATION PAPER ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR

Importance of Telecommunications Reform, concepts regarding good organization and regulation of the telecommunications sector have changed dramatically over the last two decades.

There remain different views today on the 'ideal' or 'model' structure and regulatory framework for the telecommunications sector. However, there has been a significant convergence of thinking on these issues recently. There is a consensus among many telecommunications experts and government policy makers on many 'best practices' for development of the telecommunications sector, particularly in emerging economies.

The "objectives" part of the discussion of each issue below, includes proposed elements of a 'model' structure and regulatory framework for the telecommunications sector in an emerging market such as Guyana. These elements are based on the best practices and trends that have developed in emerging and developed telecommunications markets around the world in recent years.

The proposed objectives are not intended as a rigid prescription for the sector in Guyana. As with everything in this Discussion Paper, the objectives are put forward for discussion purposes. Parties are invited to comment on the appropriateness of any or all of the objectives.

Part 2, provides an overview description of some important elements of the current situation in Guyana. This description is not intended to be comprehensive. It focuses on some key aspects of the current situation that call for reform, or that are relevant to the options for reform.

Comments are invited on any aspects of the description of the current situation, and corrections would be welcomed. All comments will be taken into account.

Part 3, provides options for reform of the sector, together with a discussion of some of the costs, benefits, risks and other implications of some of the options. In some cases, 'preferred options' are indicated. These preferences have been indicated by the Advisor, not by the Government.

Use of the term "preferred option" does not mean that decisions have been made by the Government or the Advisor to pursue the options. The preferences are indicated to serve as 'highlights' intended to focus the consultations on options that merit serious critical review. Some of these options are clearly consistent with international trends and 'best practices,' others seem particularly apt to the issues facing the sector in Guyana.

The Government and the Advisor wish to ensure that all points of view are fully canvassed on the advantages and disadvantages of all options, and particularly the "preferred" options. Comments are invited on all options for reform, including any other options that parties wish to bring forward.

The balance of this Paper is devoted to a discussion of the specific issues, objectives and options for reform of the telecommunications sector.

1. Improving Telecom Sector Performance

Proposed Objectives

The first, and most important measure of telecommunications sector performance in most markets is the level of availability and penetration of telecommunications services.

The main objective of good telecommunications policy should be to ensure that the national telecommunications infrastructure provides a high level of access by all citizens and businesses to affordable high quality telecommunications services, both basic and advanced.

The definition of the concepts of "basic services" and "access" are both evolving. In Guyana, and countries with a similar level of economic development, it is not reasonable to expect that penetration of individual access lines will ever approach the high levels of OECD countries. Accordingly, it should be a major policy thrust of the Government to bring access to 'shared' telecommunications services to a large proportion of the unserved population. Such shared access, includes public payphones, public 'telecentres' for telephone and Internet access, and public service in schools and similar public places. Policy initiatives of this type are discussed later in this paper, under the heading 'Universal Access'.

In addition to universal access initiatives, reforms should be implemented as soon as possible to improve the general level of telecommunications service in Guyana. These reforms are discussed below.

Current Situation

There are differing views on the current level of telecommunications service in Guyana. In the first few years after privatization of GT&T, the company embarked on a program to expand service levels. There have been mixed reviews from Government and regulatory sources on the success of that expansion program.

When ATN acquired its interest in GT&T in 1990, there were about 13,000 telephone lines in Guyana. The Purchase Agreement called for the installation of 20,000 lines over the first three years of the contract. This commitment was not realized. There are currently about 70,000 installed lines and there is reportedly a waiting list for approximately 70,000 more lines. GT&T has indicated that it has not fully complied with the expansion plan because local rates are too low to finance the required investment.

To obtain another perspective on the level of telecommunications service in Guyana, a comparison has been made with other countries around the world. By worldwide standards, GT&T's initial expansion program appears quite successful. Annex 1 to the discussion paper examines

teledensity levels in countries with similar income levels to Guyana around the world and in Guyana's region. Teledensity is defined as the number of telephone lines per hundred population.

Annex 1 indicates that teledensity levels in Guyana are quite high, compared to countries with a similar level of economic development.

The Annex also examines Guyana's 'public teledensity' level. The ITU defines public teledensity as the number of public telephones per 1000 inhabitants. Based on available data, it appears that Guyana's public teledensity level is average for comparable income countries.

In addition to achieving higher than average teledensity levels, GT&T has, since its privatization, made major strides in the following areas.

Major service improvements since privatization

- Introduction of digital switching to the majority of the network
- Installation of fibre optic cables on key routes in populated areas
- Introduction of fixed wireless access services in the Essequibo region
- Significant increase in international circuits, by construction of three additional earth stations, and connection with the Americas II high capacity submarine cable system
- Introduction of Internet service and digital subscriber line (DSL) access for ISPs
- Introduction of cellular telecommunications service, and expansion across much of the populated coastal plain of Guyana
- Expansion of payphones and introduction of pre-paid phone card services

The significance of these service improvements should not be discounted, particularly given the poor quality of the telecommunications network that GT&T inherited from its state-run predecessor.

However, it should also be noted that the conclusions on teledensity in Annex 1 relate only to the relative size of the fixed telecommunications network. Other performance indicators, including quality of service, waiting lists and network provision in rural and other traditionally underserved areas are not covered in this analysis. The data also ignore the fact that it is relatively easier to reach higher teledensity levels in a country with a concentrated population, like Guyana, than in countries with widely dispersed populations.

Other evidence suggests that Guyana still has a long way to go in providing adequate levels of access to all citizens and businesses in the country. In particular, the following service issues raise serious concerns in any country that aspires to connect its citizens to each other and the world.

Major service penetration issues in Guyana

- A large waiting list, approximately equal to the entire installed base of telephones

- Poor or non-existent service to many small communities in the Guyana interior
- Severe problems in calling Guyana from other countries due to the settlement rates dispute with AT&T
- Apparently low levels of Internet subscribers
- Low levels of Internet penetration in schools, and public access points available to low and mid-income citizens
- Comparatively low levels of cellular telecommunications services, by international standards

Options for Reform

Option A

Imposition of Mandatory Network Expansion Obligations on GT&T – This option has been discussed, implemented, revised, and reviewed at different stages since the privatization of GT&T. It has met with limited success to date. The long waiting list remains and the Guyana interior remains unserved.

Key Implications

This option appears to be financially unrealistic at this point in time, at least without major reforms in the pricing and regulatory framework applicable to GT&T.

As discussed later in this Paper, under the heading Price Regulation and Consumer Protection, Guyana's local service rates appear to be among the lowest, if not the lowest in the region. It appears likely that local rates are priced well below associated costs. Accordingly, it is not surprising that GT&T, or any reasonable business, would resist expanding its network in areas where it will not recover the costs of network expansion.

GT&T traditionally earned large profits from international services and so-called 'audiotext' services, which could be used to cross-subsidize unprofitable local network expansion. This issue is also discussed below. With the decline in both settlement rate revenues and audiotext revenues, GT&T could experience a serious cash flow problem by early January 2002.

Option B

Establishment of Access Deficit Charges – In some countries where it is recognized that the incumbent telephone operator sustains a financial deficit in providing local services, Access Deficit Charges (ADCs) are levied on other operators in the sector. These ADCs provide a means of subsidizing the maintenance and expansion of local services, particularly to high cost areas or low-income subscribers.

Key Implications

This option is not feasible in Guyana today, due to the virtual absence of competition or other service providers.

Option C

Government or international development funding of network expansion by GT&T—This is a favourite option of economists, who point out that it creates the fewest market inefficiencies. It has been pursued to a limited degree to expand telecommunications networks to unserved areas, especially in the early days of telephony, in countries such as Canada and the US.

Key Implications

This option is also not feasible in Guyana today. There are severe strains on the national budget, and it is unlikely any significant funding could be found there. More significantly, neither the Government nor international donors would consider it a priority to expand the network of a privately owned incumbent operator such as GT&T.

Option D (Preferred Option)

Market-based Reforms — Implement a series of related reforms that will promote the supply of sufficient telecommunications services to meet real economic demand. Implement practical 'universal access' initiatives to extend services to uneconomic areas of national priority. These reforms, which are discussed throughout the balance of this Paper, include:

- **Rate rebalancing** — to raise the level of local rates to real economic costs, as soon as possible. This reform will provide a financial incentive to GT&T, and to other service providers that may be licensed in the future, to expand services to all consumers and businesses that will pay the costs of such expansion.
- **Open all markets to competition in an orderly fashion** — this initiative will encourage GT&T, and the new entrants that are licensed, to provide service as quickly as possible. All operators will have an incentive to expand their market share to fill unmet demand. All markets should be opened to competition, to ensure that 'monopoly profits' are not earned in remaining monopoly markets, and that such profits are not used to provide anti-competitive cross-subsidies in newly competitive markets.
- **Introduce Incentive Regulation** — GT&T's current rate-base / rate of return form of regulation should be replaced with a form of incentive regulation. This step should be taken in conjunction with rate rebalancing and the introduction of competition. Under incentive regulation, GT&T's initial rates should be set at a level that is reasonably cost based, taking into account benchmark rates in comparable countries. Once these rates are set, GT&T's should be permitted to adjust its prices annually in accordance with a 'price cap formula'. This formula will allow GT&T to increase rates to keep pace with inflation. If GT&T is successful in increasing its revenues, or reducing its costs, it should keep the resulting profits. If GT&T not successful in doing so, consumers will be protected, because prices may not increase above the 'price cap'.

- **Establish a Universal Access Program** – to provide service to non-economic areas and low income subscribers. This program would be funded through a Universal Access Fund (UAF). Revenues would be contributed to the fund by all licensed telecommunications service providers, in proportion to their gross revenues from licensed services. Additional revenues would be sought from other sources, particularly international financial institutions and donors. Payments out of the program would be based on a competitive bidding process. Service providers, including GT&T could bid to receive a UAF subsidy to extend networks and provide access services, such as community telecentres and public payphones, to unserved areas, such as those in the interior. A variety of technologies could be used to build such networks, including VSATs and Wireless Local Loop services. The bidder with the lowest subsidy requirement would receive the subsidy, conditional upon meeting its service expansion commitments.
- **Introduce a Clear National Telecommunications Policy** – The Government would clarify the rather uncertain state of its telecommunications policy by approving a National Telecommunications Policy. This single document would include details of the measures described above, plus other aspects of a comprehensive modern telecommunications policy, including interconnection and licensing policies. The specific elements of the policy would be developed based on the options set out in this Paper. The National Telecommunications Policy would be enacted through a new Telecommunications Act and a set of new telecommunications sector regulations.

Implications

The main issue in implementing this option is the GT&T – ATN monopoly. This issue must be addressed in an open and constructive manner. The Government and GT&T both have a great deal to gain from negotiating an agreement along the lines of this preferred option.

- The Government will achieve its stated objective of opening markets to competition in order to modernize and expand the telecommunications sector in Guyana.
- GT&T will be able to pursue new market opportunities in the local services segment. By contrast, it will lose relatively little due to the opening of international markets to competition. The profit margins available from international services will have decreased or been eliminated as a result of the reduction of international settlement rates and audiotext revenues.
- The UAF subsidy approach would provide GT&T with a potential new source of revenue, while relieving it from service expansion obligations. It would no longer be viewed, or required to provide services as the incumbent "operator of last resort".
- GT&T will no longer receive a 'guaranteed rate of return' of 15%. Nor will it receive a guaranteed right to include a 6% Advisory Fee to ATN in its rate base. Such guarantees are inconsistent with the manner in which prices are set in a competitive market. However, the prospects of GT&T earning a 15% guaranteed return in the future appear highly uncertain, even absent market based reforms. There is no consensus between the company and its regulator on the basic approach to rate base / rate of return regulation. The Purchase Agreement called for an agreement on the method of such regulation in Guyana, but this agreement was never reached. There remain significant differences between the company and the regulator on the calculation of the rate base and a number

**CONSULTATION PAPER
ON REFORM OF THE GUYANA TELECOMMUNICATIONS SECTOR**

of other issues. An agreement from the Government to quickly introduce rate rebalancing and a flexible form of incentive regulation, provides the opportunity to earn much more attractive returns than a future based on regulatory argument and litigation on rate regulation.

- Under this option, GT&T will also gain a greater degree of regulatory certainty than it has had in Guyana for the last few years.

The move from rate-base / rate of return regulation to price cap regulation will bring Guyana and GT&T into line with the current practice in the large majority of countries where telecommunications operators have been privatized. Rate base / rate of return regulation has been largely discredited as an inefficient form of 'cost-plus' regulation that provides improper incentives in the highly dynamic telecommunications environment.

Other implications of this option are discussed in subsequent sections that address the specific proposals that form part of the option.

2. Legal and Regulatory Framework

a. National Policy & Legal Framework

Proposed Objectives

The proposed objective of the government is to establish a clear and coherent national policy framework. Such a framework should provide certainty and stability for long term domestic and foreign investment in the telecom sector. Ideally, such a framework should be set out in one or more clear national policy statements. It is recognized that this is particularly desirable in countries where there have not been stable or clear regulatory traditions.

It is the role of government, led by the Minister responsible for communications, to establish a national telecommunications policy. Once established, the policy should be enacted in one or more clear and consistent laws and subsidiary legislative instruments.

The telecommunications sector continues to be very dynamic. Consequently, it is also the role of the Minister and his advisors to review the policy periodically, to ensure that it evolves to meet the requirements of the public and the sector. Policy and legislative revisions should be implemented in a manner that minimizes service disruption, financial harm or perceptions of regulatory risk.

Current Situation

There is currently no clear national policy framework for the telecommunications and ICT sectors in Guyana. There is no single document or set of documents that sets out the national policy. Some elements of national telecommunications policy are set out in the laws described below, but not in a consistent or coherent fashion.

The legal and regulatory framework for telecommunications is based on the following statutes and other documents:

- *The Telecommunications Act 1990.*
- *The 1990 Purchase Agreement between the Government of Guyana and Atlantic Tele-Networks (ATN), whereby ATN purchased 80% of the shares of the formerly state-run telephone administration, renamed Guyana Telephone & Telegraph Company (GT&T).*
- *The GT&T Licence and licences of other telecommunications service providers.*
- *The Public Utilities Commission Act 1999.*