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# **Financing Telecommunications in Brazil**

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### 1. Abstract

The tremendous communication revolution requires an unprecedented amount of capital investment. The Brazilian government has specified in its privatization plans a partnership with the private sector in order to foster growth. Considering the high returns in the telecommunications industry -- especially in emerging markets -- private sector capital is available for investments, although attracting such capital is becoming increasingly competitive. Investors have become more critical in their decisions, more specialized in their investment approaches and are faced with an increasing number of alternative investments both within and outside the telecommunications industry. Obtaining capital will not only rely on business fundamentals, and economic and market conditions, but also on the use of innovative financing techniques and structures. The objective of this paper is to describe The Brazilian Telecommunications System, its needs, and the new environment in Brazil as a result of the introduction of competition into the telecommunication industry. This paper also describes some financing techniques which telecommunication companies should apply to the international finance market.

### 2. Introduction

Brazil comes to the end of the century with a telecommunications structure that testifies to its efforts during recent decades. The country's rapid progress in the area of telecommunications actually began in the late 1960s when Embratel -- The Brazilian Telecommunications Company -- was founded and the government regulated the sector through the CNT -- *Codigo Nacional de Telecomunicacoes* -- the code of Brazilian telecommunications. At that time, more than 900 entities were exploiting public telecommunications services in Brazil, with no system integration and with a very low level of standardization and quality. More markedly, the progress began during the '70s when the Telebras System -- Brazil's Telecommunications System -- was created.

Basic telephone services were offered throughout the country. Telebras System users now have to them available basic telephone services; mobile cellular service; data, text and image transmission; mobile maritime services; value added services; video service; and others. The Brazilian engineering expertise in areas such as telecommunication system design and management is beyond question.

However, the accelerated development of the telecommunications industry during recent years is felt through the emergence of new technological applications, hardly imaginable until recently, that will significantly change the day-to-day life of businesses and people.

In this context, the federal government prepared an investment program known as PASTE, supported by itself and the private sector. PASTE will introduce dynamics into the Brazilian telecommunications industry.

Dynamics refers to competition and the recognition by the federal government of its incapacity to invest the necessary amount to meet the country's demands for modernizing the Brazilian telecommunication industry.

The telecommunications industry will continue to compete with investment opportunities in all other industries. This means that returns from the sector must continue to be attractive to other industries.

Telecommunications will effectively compete for debt and equity capital. The intrinsic returns on communications investments will remain attractive as the underlying fundamentals of the sector are extremely favorable.

A realistic constraint for telecommunications companies is, however, that many managers of capital are focusing on specific products (like ADRs or high-yield debt) or specific investments parameters (such as earnings growth or intrinsic value) or specific geographical regions. Innovative and creative financing vehicles will be necessary to differentiate between capital users and, for particular users to attract particular capital providers.

### **3. The Brazilian Telecommunications System**

#### **3.1 Historical Background**

Created in November 1972, the Telebras System -- Brazil's Telecommunications System -- is composed of a holding company known as Telebras Holding, 27 local carriers, and Embratel, the subsidiary carrier responsible for national and international long distance services.

Telebras Holding was founded pursuant to special legislation for the principal purpose of: (i) acting as a holding company for operating companies acquired or formed to supply public telecommunications service in Brazil and (ii) implementing the policies of the executive branch of the federal government in the modernization and expansion of the Brazilian Telecommunications System.

Between 1972 and 1975, through its subsidiary companies, Telebras System acquired almost all of those companies. Today, there are only four independent local carriers, one of which is private. These local carriers are responsible for approximately 9% of all telephone lines currently in operation.

#### **3.2 Relationship with the Federal Government**

The federal government has considerable influence over the operations of the Telebras System in its capacity as controlling shareholder, grantor of Telebras System's concession, and regulator of the Brazilian telecommunications sector. The federal government uses Telebras System to implement its national telecommunications policy.

The federal government is required to own a majority of Telebras System's voting capital. Law No. 5,792 of 1972 established Telebras Holding as a mixed-capital company, a corporation created by special law of which a majority of the voting capital must be owned by the federal government, a state or a municipality, for purpose of the Brazilian Corporation Law 6,404 of 1966.

As of September 30, 1996, the federal government owned [22.2%] of the capital stock of Telebras Holding, consisting of [51.0%] of the voting common shares and [3.5%] of the non-voting preferred shares. The federal government is accordingly able to control the election of Telebras Holding's board of directors and the direction and operations of all of Telebras System.

Telebras System's financial records are audited annually by a federal administrative court that assists the federal congress in the fulfillment of its constitutional obligation to ensure that companies controlled by the federal government pursue sound and legal business practices.

In addition, the budget for capital expenditures made by Telebras System must be included in the federal government annual budget and approved by the Federal Congress.

### **3.2.1 Rates: Regulation and Policy**

Rates for telecommunication services provided by the Telebras System are subject to approval by the Ministry of Finance, to which Telebras Holding submits, through the Ministry of Communications, requests for rate adjustments.

A decree issued in December 1992, the 1992 Policy Statement, by the Minister of Communication and the Secretary of Planning of the Presidency, recognized that Telebras System's average rate increase had not been adjusted for inflation for one year period. It recommended that a new rate policy for Telebras System be adopted. The 1992 Policy Statement stated that real rates had fallen approximately 40% below the level required to provide an appropriate return on investment.

As a result, a policy was implemented to grant real monthly rate increases at a weighted rate of 5.79% per month, just the first six months of 1993, thus compensating for the shortfall. The increases were allocated to telephone services other than residential and public telephone services.

The 1992 Policy Statement also established a long-term objective of eliminating cross-subsidization of services, excluding residential local service and public telephone service. Historically, the federal government's policy has been to maintain rates for international and domestic long-distance telephone service at relatively high levels compared to rates charged for such services in other countries. This policy permits subsidization at comparatively low rates for local and public telephone services. The 1992 proposed Policy Statement reduced real charges for international telephone and data transmission services, and increased real charges for commercial local telephone service. These changes were administered through a system of monthly rate adjustments, beginning in July 1993, for each class of service as a function of the variation in the costs of providing these services. It also recommended that, commencing in July 1993, Telebras System's rates be indexed to reflect the actual effects of inflation on the provision of telecommunications services.

The increases in rates provided for in the December 1992 Policy Statement were carried out through September 1993. However, as federal government policies changed in mid-1993, rate realignment and indexation were never implemented; however, rates for international services were reduced in August 1993 to counter increased competition from resellers.

Rates were effectively indexed for inflation during May and June; 1994, with the beginning of the Real Plan. No subsequent rate increases, however, were granted to Telebras System until December 1995. Consequently, despite the considerable decrease in the rate of inflation resulting from the implementation of the Real Plan, average real rates were eroded by inflation throughout the second half of 1994 and most of 1995. Average real rates declined further during this period as a result of reductions in measured local telephone service rates and in international telephone rates during November 1994. In October 1994, the rate structure for cellular mobile telephone service was changed to apply only to calls originating from cellular mobile telephones.

In November 1995, Telebras System was granted increases for domestic long-distance, local, data transmission and cellular rates, the majority of which were implemented on December 1st, 1995. Despite these increases, however, rates for local service have continued below cost and, despite the reduction in international rates, have continued to be subsidized by domestic and international long-distance services. Current federal government policy regarding further rate increases and proposed reforms, such as indexation and the elimination of cross-subsidization, remains unclear.

The absence of rate increases reduces Telebras System's ability to fund capital expenditures from resources provided by operations.

Historically, the Brazilian economy has undergone periods of great instability, that have effected the Telebras System. Moreover, the System has been affected by federal financial policies that have predicted demand, produced high real interest rates, and prevented the Telebras System from raising tariffs to keep up with inflation.

All these affects show that Brazil has not had a consistent policy in the telecommunications area.

### **3.3 Telebras' Holding Relationship with its Subsidiaries**

Telebras Holding is required by law to own more than half of the voting stock of its subsidiaries. On December 31st, 1995, Telebras Holding owned, directly and indirectly, [73%] or more of the total capital stock and [75%] or more of the total voting stock of each such operating subsidiary.

The subsidiaries have a certain amount of autonomy in operations, financing and personnel policies. Nonetheless, Telebras Holding seeks to maintain close control of each of its operating subsidiaries, setting growth and investment guidelines and establishing operating rules for them. All important administrative decisions by subsidiaries must be approved by Telebras Holding, which guarantees obligations of its subsidiaries in the ordinary course of business.

The operations of all 27 operating subsidiaries are confined to a specific geographic area. Within their respective operating areas, all domestic operating subsidiaries provide local telephone service, long-distance telephone service, cellular mobile telephone service and data transmission service. Almost all of the domestic operating subsidiaries provide other telecommunications services, such as speed dialing, automatic re-dialing, toll free number and inductive card-operated public telephone, although the services offered vary somewhat from state to state.

Embratel, the long distance carrier, provides inter-state long-distance and international telephone services, and over 40 other telecommunications services, including data transmission throughout Brazil. Embratel's domestic service is provided through the Brazilian domestic satellite system, its microwave trunk network and its fiber optic network. International service is provided through three analog submarine cable systems (two to Europe and one to USA), the Imarsat and Intelsat satellite communications system, microwave ground systems (to Argentine, Bolivia and Paraguay), coaxial cable (to Uruguay) and fiber optic submarine cable (to Venezuela, the Caribbean, USA, Mexico, Europe, Argentina, Paraguay and Uruguay).

Of the consolidated gross revenue from telecommunications services provided by Telebras System in 1995, [44.4%] ([39.2%] in the first nine months of 1996) was attributed to domestic long-distance telephone service, [32.2%] ([32.0%] in the first nine months of 1996) to local telephone service, [8.7%] ([8.1%] in the first nine months of 1996) to data transmission service, [7.6%] ([6.6%] in the first nine months of 1996) to international telephone service and [4.5%] ([11.3%] in the first nine months of 1996) to cellular mobile service. The remainder was from other telecommunications and telecommunications-reacted services, such as videotext, telex and telegraph transmission, and the provision of telephone directories.

Revenues generated by inter-state domestic long-distance and outgoing international telephone service are divided among Embratel, the domestic operating subsidiary in whose area of operations the call originated and, in the case of domestic long distance telephone service, the domestic operating subsidiary in whose area of operations the call was received. Revenues are divided at the end of each year in accordance with a percentage which varies, for each domestic operating subsidiary. The division of revenues is effected through a remittance to Embratel as the domestic operating subsidiary in whose state the call originated of a portion of the revenues it received. In the case of revenues from inter-state domestic long-distance telephone service, Embratel then remits a portion of these revenues to the domestic operating subsidiary in whose state the call was received. Embratel consequently functions as a conduit, permitting domestic operating subsidiaries with

relatively high local revenues to remit a higher proportion of revenues to Embratel, which in turn, effectively subsidizes domestic operating subsidiaries with smaller local revenues.

Telebras System's share of revenues generated by incoming international telephone service accrues exclusively to Embratel. As a result, increases in the percentage of incoming, as opposed to out-going, calls have tended to increase Embratel's total revenues. By contrast, the revenues of the Telebras System as a whole have tended to benefit from increases in the proportion of out-going calls due to the higher rates charged by the Telebras System for such calls as compared to rates paid by foreign carriers to Embratel for incoming calls.

Revenues generated by local and intra-state domestic long-distance services accrue exclusively to the domestic operating subsidiary in whose operating area the call originates. Revenues for data transmission service accrue to the subsidiary providing the service. Revenues from cellular mobile telephone service are divided among the operating subsidiaries on a call by call basis, and determined by the use made of each operating subsidiary's facilities.

### 3.3.1 The Telebras System Network

The Telebras System network has grown steadily. All new access lines installed after 1994 were connected to digital exchanges. Telebras Holding plans to replace all electromechanical, crossbar and semi-electronic analog exchanges of the Telebras System with digital exchanges. Inter-state long-distance service is currently provided principally through Embratel's microwave network, supplemented by the Brasilsat satellite system. Telebras Holding plans to convert Embratel's entire microwave network to digital capacity over time.

In 1995, [1,224,982] new access lines were installed, of which [470,183] were cellular lines and [45,200] were public telephone lines. Another [1,384,000] new access lines were installed in the first nine months of 1996. Of the access lines in service in 1996, [61.3%] were residential lines, [27.5%] were commercial lines, [8.1%] were mobile cellular lines and [2.7%] were public telephone lines.

The following table gives certain basic measures of the development of Telebras' network service for each year in the five year period ending on December 31st, 1995 and for the nine-month period ending on September 30th, 1996.

Year ended on December 31st

	1991	1992	1993	1994	1995	1996*
Installed access lines (in millions)	9.8	10.6	11.6	12.8		
Access lines in service (in millions)	9.2	9.9	10.7	11.7		
Cellular access lines installed (in thousands)	13.5	60.6	250.5	721.0		
Cellular access lines in service (in thousands)	6.7	30.7	180.2	574.0		
Lines in service per 100 inhabitants (1)	6.8	7.3	7.7	8.3		
% of access lines connected to digital exchanges	16.1	22.3	27.9	35.7		
Employees per 1,000 access lines installed (2)	10.3	9.8	8.4	7.8		
Number of public telephones (in thousands)	236.4	259.6	298.5	343.6		
Domestic long-distance call minutes (in millions) (3)	12.8	12.7	13.7	15.9		

Local calls pulses (in billions) (3)	46.6	50.0	53.3	55.6		
International long-distance call minutes (in millions) (3)						

\* Nine months, ending on September 30th

(1) All access lines in service, including residential, commercial and cellular

(2) Persons employed indirectly by the Telebras System by virtue of contracts with independent companies to supply the services of those persons are not included in these figures.

(3) For the period ended on December 31st

The Telebras System telephone network has also expanded in terms of area and number of persons served, providing services to [1,353] new municipalities in 1995, resulting in a total of [17,460] municipalities served. By September 30, 1996, the number of municipalities served had further increased to [18,391]. During 1995, the average time required to meet requests for new service decreased from approximately 24 months to approximately 18 months, although such time varies significantly from state to state.

Despite the expansion, access lines in service continue to be concentrated in large urban areas. Of all Telebras System's access lines in service as of September 30th, 1996, [56.7%] were in the states of Sao Paulo, Rio de Janeiro and Minas Gerais, and [31.4%] were in the state of Sao Paulo alone. In these and other more developed areas, the density of access lines in service is higher than in Brazil as a whole.

The quality of services provided by Telebras System currently varies from state to state, despite initiatives by Telebras Holding to improve and standardize performance throughout Brazil.

The following table gives certain basic measures of the quality of telecommunications services provided by Telebras System for each year in the five period ending on December 31st, 1995 and for the nine-month period ending on September 30th, 1996.

Year ended on December 31st

	1991	1992	1993	1994	1995	1996*
Repair requests per 100 installed access lines	4.5	3.4	3.1	3.0		
Response rate to repair requests (1) (%)	87.6	91.3	91.7	92.0		
Rate to obtaining dial tone within 3 seconds (%)	90.6	94.5	96.1	97.6		
Call completion rate of first attempt long distance calls (%)	43.5	47.8	50.3	51.2		

\* Nine months ended 30th September

(1) Response within 24 hours after request was made

Telebras System's ability to bring its quality of service to world-class levels depends on the level of investment approved by the Ministry of Communications and the Federal Congress, and on Telebras Holding's ability to obtain the funds necessary for such investments from its own revenues and through borrowings in both domestic and international markets.

### 3.3.2 Historical Capital Expenditures

Telebras System's priorities include increasing the number of installed fixed and cellular access lines, expanding the public telephone and data transmission network, improving overall quality, and increasing the digitalization of the system.

The Telebras System is required to submit its annual capital expenditure budget for approval by the Ministry of Communications. The approved capital expenditure budget is then required to be included in the annual budget of the federal government to be approved by the Federal Congress.

Telebras has received approval for capital expenditures of US\$ 4.6 billion in 1995 and US\$ 6.6 billion in 1996.

The following table provides the company's capital expenditures for each year in the five-year period ending on December 31st.

	1991	1992	1993	1994	1995	1996
Capital Expenditures						

Because Telebras System depends on federal government decisions, operational results have been affected very negatively by federal policies that have restricted the company's plans for capital expenditures. These policies have generally caused investments to fall below what is needed and, therefore, have slowed the expansion and modernization of services.

#### **4. PASTE - Recovery and Expansion Program for Telecommunications and the Postal System**

The PASTE project is an investment program of the federal government based on extensive resources drawing from the private sector: human, managerial and financial. The program aims at transforming the Brazilian communications industry into an effective setorial development agent, stimulating national productivity and ensuring universal access to communications services.

##### **4.1 Introducing Dynamics into the Industry**

The communications revolution is affecting all countries and changing the way each of us lives and works. The more-developed countries are raising the quality of their wireline and wireless service to new levels offering to provide video, data and on-line services on the one hand, and PCS -- Personal Communications Systems -- and satellite services on the other.

Less-developed countries, such as Brazil, must invest heavily to facilitate a rapid increase of access lines and cellular infrastructure, recognizing that overall economic development is linked to communications development.

This revolutionary scenario of a big transformation pushed the federal government to establish guidelines, goals, programs and projects to improve and to expand telecommunications and postal services in the country. The program is designed to implement an extensive investment program and to encourage the private sector to increase the supply of communications services in a modern industry that eliminates technological backwardness and stimulates technological innovations. This is the necessary tool to achieve productivity gains and competitiveness.

Introducing dynamism into the Brazilian telecommunications industry will be done through a massive investment program of some US\$ 75 billion by the year 2003.



## 4.2 Investment Required to Meet Technological Demands

The availability of adequate telecommunication infrastructure is a decisive factor in the effective entry of a country into the international economic arena. In order to make possible the service coverage suggested by PASTE, so as to get the necessary dynamism into the sector, it is important to emphasize goals and guidelines that will delimit actions, (PASTE,1995):

- a. competition will be introduced in the operation of telecommunication services for the purpose of significantly increasing their scope, diversity and penetration throughout the country;
- b. private sector participation will be strongly encouraged until its presence becomes predominant, and soon after, integral, through the privatization of the state-owned operating companies;
- c. state support to strategic activities and technological development will be ensured mainly through a research and development center - CPqD/Telebras System;
- d. specific activities destined to strengthen the role of communications as a development tool in economic, social, and cultural areas will be undertaken in order to support federal government priority activities;
- e. availability and use of equipment and services produced in the country will be emphasized, without privileges, so as to stimulate local manufacturers, to promote national technology, and to generate employment in the country;
- f. necessary conditions will be created to stimulate providers of value added services using public network infrastructure to enter into the market;
- g. continuity will be given to the tariff restructuring policy, aiming at the reduction and future elimination of existing cross subsidies between different services;
- h. actions will be taken by federal, state, and local governments to minimize the industry's tax load in order to offset the overall increase resulting from larger service volumes;
- i. reduction of equipment and system cost through adequate specifications, scale gains resulting from higher production levels, and constructive cooperation between buyers and suppliers will be encouraged;

### 4.2.1 Capital Expenditures Needs

Investments projected by PASTE totaled R\$ 75 billion in April 1995 values, of which approximately half will be made during the first execution period (1995/99), and the other half in the following period (2000/03) as shown in the table below:

(R\$ billions)

	1995	1996	1997	1998	1999	1995-99	2000-03	Total
Access networks	1.47	1.89	2.16	2.27	2.44	10.23	10.86	21.09
Interconnection networks	.096	1.24	1.41	1.47	1.58	6.66	7.09	13.75
Basic networks	2.25	3.47	2.95	2.80	2.86	14.33	15.23	29.56
Specialized networks	0.34	0.92	1.15	1.17	0.94	4.52	2.57	7.09

Integr. oper. & sup. systems	0.24	0.32	0.36	0.39	0.41	1.72	1.85	3.57
<b>Total</b>	<b>5.26</b>	<b>7.84</b>	<b>8.03</b>	<b>8.10</b>	<b>8.23</b>	<b>37.46</b>	<b>37.60</b>	<b>75.06</b>

## 5. Federal Government Opening of Brazil's Telecommunications System

Telebras System operates under a concession granted by the government in 1972. That concession gave the company a virtual monopoly in the provision of public telecommunications services in Brazil. The concession was reaffirmed in the current Brazilian constitution, which reserved the right to grant concessions for the provision of public telecommunications services to the federal government and required that concessions for the provision of public telecommunications services be granted only to government-controlled companies.

In August 1995, the Brazilian Federal Congress voted to amend the 1988 Constitution to allow the federal government to grant concessions to private corporations for the provision of public services.

The possibility of privatizing Telebras and its operating subsidiaries, or any liberalization in the Brazilian telecommunication sector, is under active consideration in Brazil.

To introduce effectively this opening of the Brazilian telecommunication sector, the government should consider the following:

- formulating a flexible regulation that grants an open view for business and attracts investments;
- providing incentives for the national production of software and telecommunication equipment, and for research and development of the sector;
- maintaining national control of the telecommunications sector without inhibiting the entry of foreign companies.

### 5.1 The Opening Procedures

The opening of the Brazilian telecommunications sector began with President Fernando Collor in 1990, when the federal government issued a decree proposing a reduction in the number of domestic operating subsidiaries, excluding Embratel, from 27 to 7. The reduction addressed certain inefficiencies arising from the large number of domestic operating subsidiaries. No steps have been taken to implement this decree.

President Fernando Henrique Cardoso decided to promote a complete reorganization of the telecommunications system in Brazil. His program proposed the following overall guidelines for the institutional organization of the industry:

- stimulate private sector investments;
- strengthen the role of the State as the regulatory agency for telecommunications;
- diversify the supply of private sector services in the industry;
- preserve the public sector presence in strategic telecommunications and technological development and,
- create tariff and fiscal mechanisms that will enable the transfer of resources from higher profitability markets to those with lower profitability potential.

In fact, a year and a half into the Cardoso government, which began in January 1995, the Ministry of Communications proposed a "minimum law" to regulate the so-called opening. This year the House of Representatives and the Senate approved the "minimum law".

According to that law, the Ministry of Communications has the power to establish a market reserve for private Brazilian companies in the telecommunication sector for at least three years. It can establish a cap of 49% on foreign capital ownership in a telecommunication firm. Also, the Ministry of Communications will create a regulatory agency which will control the telecommunications industry. This agency will retain the revenues obtained from the concession of the telecommunication services.

The federal government appears to intend to extend the "minimal law" in order to form a strong telecommunications market:

- creating a regulatory agency;
- creating an industrial policy for the telecommunication industry;
- securing a strategic presence in the industry;
- setting an internal return cap of 12% for private sector investments;
- establishing a real tariff policy that democratically allows access to telecommunication service, thereby reducing regional differences in the country;
- reducing the number of domestic operating subsidiaries, transforming them into regions;
- determining the size of each region;
- deciding how to sell them.

It is evident that the government is making a distinction between liberalization and privatization. Privatization, simply put, is the transfer of property and/or management of goods. Liberalization occurs when the market is opened to all enterprises. In the latter case, the winner is the consumer through reasonable prices and quality of the services that he/she pay for.

For all of these reasons, the Brazilian model is introducing competition by removing entry barriers before privatizing. Emphasis will be placed not on infrastructure, but on the consumer, sufficient equipment supply, competition and fair prices; similar to the approach of developed countries worldwide. However, telecommunications competition cannot flourish without highly specific guidelines and regulation on a variety of issues, such as interconnection and pricing policies.

While both strategies, competition and privatization, can help liberalize the telecommunications sector, the competition strategy lowers rates and improves quality more dependably. This is because monopolies are likely to focus not only on efficient operations, but also on protecting their profit margins.

## **5.2 Perspectives: Telebras System in the New Environment**

Telebras System, as it exists today, will disappear. The federal government intends to complete the opening process by the end of 1998.

In fact, some steps have been taken: it broke the monopoly beyond of Telebras System to exploit telecommunication services and, it started the bidding process for mobile cellular *band B*. However, it is too early to affirm that the total opening process will be completed according to the government's schedule. There are some important steps that do not only depend on the federal government. Organized sectors of the national economy and of the Federal Congress will be involved. Certainly,

the most important step will begin next year when the government will present the final version of the telecommunications law in order to complete the opening of the Brazilian telecommunications sector.

Recent decisions taking place in Brazil's political scenario suggest that the federal government is implementing the opening process chronologically. It will:

- separate the mobile cellular telephone service from each state operating company in order to sell these services as concessions to the private sector;
- reduce the number of operating subsidiaries, forming some local operating companies that will operate only local services;
- organize a bid process so that the private sector will operate 20% of the total value added telecommunication services (satellite services band *ku*, trunk services, computer internet services and the interconnection), allowing the companies to use local facilities;
- privatize mobile cellular service *band A*;
- privatize all value added telecommunications services;
- privatize all conventional telephone service, and finally
- privatize domestic and international long-distance service now provided by Embratel, at the end of this process.

Although the opening procedures are taking place in the country, Brazilian telecommunication officials are still working hard to complete all the regulatory requirements and to position the companies well in order to sell concessions of services and companies at the best possible price. So, during this opening process it is predicted that employment opportunities related to regulation and funding will increase at Telebras Holding.

The Brazilian officials are aware that several factors indicate that market liberalization provides significant positive effects, both for the provision of telecommunications service and for the national economy's performance. Also, this new environment requires a professionally-staffed, well-financed and autonomous regulatory agency.

## 6. Financing Telecommunications under the Assumed new Conditions

The following suggestions for financing can be presented to all telecommunication companies, especially to Telebras Holding, while it exists. As a company conservatively capitalized with a 7% ratio of total debt to total net worth, Telebras Holding has a very strong debt capacity. At the same time, it attracts equity investors as a blue chip stock, representing over 50% of the financial volume negotiated on Brazilian stock exchange.

### 6.1 Traditional Sources of Financing: From Debt to Equity

In today's modern financial system, both borrowers and investors have a lot of alternatives, as shown in the chart below, (R.C. Smith and W. Ingo, 1996). For each financing technique treated in this paper, there is a niche of investors who are studying and analyzing the best opportunities in each market involving enormous amounts of money worldwide. For this reason, focus will be placed on some alternatives in the international finance market, while observing Brazilian financial rules.

						• subsidized funds		
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-			dollar				<ul style="list-style-type: none"> <li>• project finance</li> <li>• term loan</li> </ul>
-	Fixed	long term	currency swap		• bank debt		• revolving facility
-	interest rate swap				• private placement		<ul style="list-style-type: none"> <li>• real estate</li> <li>• leasing</li> <li>• asset backed</li> <li>• unsecured</li> </ul>
Debt			non-dollar				
(	Floating	RUF			• public offering		<ul style="list-style-type: none"> <li>• domestic</li> <li>• eurobond</li> <li>• MTN</li> <li>• FRN</li> <li>• VRN</li> </ul>
-		short term	<ul style="list-style-type: none"> <li>• U.S.CP</li> <li>• ARP</li> <li>• Euro CP</li> <li>• Bank Debt</li> </ul>				
-							
-			Hybrid			straight	
-			<ul style="list-style-type: none"> <li>• callable</li> <li>• index-linked</li> <li>• convertible</li> <li>• with warrants</li> </ul>		<ul style="list-style-type: none"> <li>• stripped</li> <li>• unstripped</li> </ul>		

Equity							
—	equity options						
-		private sale					
- — - - -	full rights	public offering			domestic		
- -	restricted				international		

RUF=revolution underwriting facility; MTN=medium term notes; FRN=floating rate notes; VRN=variable rate notes

## 6.1.1 Debt Financing

### a. Project Financing

Project financing was previously used almost exclusively in both developed and developing countries for energy and other non-communication related infrastructure projects (e.g., power plants, pipelines, roads, bridges, etc. ). More recently, however, project finance structures for telecommunications investments have increased dramatically. TelecomAsia, for example, raised significant capital solely based upon a government concession. More recently, satellite projects like PanAmSat and Echostar easily raised financing on the international market.

Project financing essentially involves the creation of a separate stand-alone entity for a particular project. Debt repayment is solely dependent on the future cash flows of the project. The outlook appears favorable for communications project to tap both the traditional bank market, as well as the public bond market.

Historically, project finance investors have shied away from projects that have a significant level of technology and market risk. Unlike power projects with long-term power purchase agreements, and hence relative certainty and predictability of revenues, telecommunication projects are usually structured: (i) without a contractual commitment which provides an assured revenue stream, (ii) in a competitive marketplace and (iii) with a greater or lesser degree of technology risk. Credit rating agencies and investors are becoming comfortable with the inherent market risk that telecommunications projects present. The success of recent projects continues to prove that people want and need telephones and telecommunications services.

This notion of growing investor comfort based on robust demand for telecommunications services is particularly relevant to Latin America, especially in Brazil where there exists pent-up demand for such services.

### b. International Lease Financing

International leasing financing is an important form of asset-based financing involving the leasing of capital goods.

In leasing, the lessor owns the equipment and leases it to an operator, receiving the lease payment and the residual value, which covers the equipment's acquisition cost plus profit.

There are two types of financial leases. Straight bank leasing involves 100-percent bank financing on equipment procured with the asset acquired by the bank and delivered to the company against assignment of the leasing documentation. Alternatively, the lease may be structured through a leasing company, which pledges the equipment as well as lease revenues, with full recourse.

Leasing tends to be heavily tax driven, however, the lessor is able to deduct lease payments as part of the cost of doing business.

### **c. Eurobonds and other International Debt Issues**

The issuance of eurobonds started in the United States last century. The method is used to raise long-term capital from international sources, denominated in the currency of that country and issued in accordance with the standard procedures of the bond market, and usually at a premium interest rate reflecting the exotic nature of the borrower and/or the possibility of difficulties in collecting payments due. Such issues are and have been called foreign bonds.

The eurobond market is virtually unregulated. It is however, subject to self-imposed standards of practice. Eurobonds are typically listed on the London or Luxembourg stock exchange in order to attract investors. Each stock exchange has its own specific disclosure requirements. These issues are typically made subject to UK or New York law.

The AIBD -- Association of International Bonds Dealers -- a non-governmental industry association, sets minimum trading standards. These standards differ from legal requirements. In Brazil, the Central Bank regulates individual firms that intend to issue eurobonds.

The absence of regulation, the lack of barriers to competition, and the variety of players have made the eurobond market a hothouse for innovation: the zero-coupon bond, the floating-rate note, currency option bond, bonds with swaps, and convertible-put- bonds are just some examples.

Eurobond issuers represent a vast variety of governmental and corporate organizations from all over the world. Capital-raising opportunities in this market is superior, or supplementary, to markets at home. This is a main reason for Brazilian telecommunication companies to use this market. The advantages include volume of recourses and low interest rates.

Bonds are issued with fixed or floating-rates in a variety of currencies, often accompanied by interest-rate or currency swaps. Maturities tend to be less than 10 years, averaging around 5 to 6 years. Most bonds are offered in plain vanilla form; that is, with no early call provision or sinking funds. Bonds with special features called bells and whistles, are less frequent but do appear in volume when market conditions are ripe.

## **6.1.2. Equity Linked Financing**

### **a. Convertibles**

A convertible is part debt, part equity. Convertibles have been used regularly by issuers and investors alike for at least a century. For example, US railroads were built partly from the proceeds of convertible financing. In fact, one can trace the origin of convertibles all the way back to the beginning of corporate finance.

Convertibles offer benefits which traditional forms of capital -- stocks and bonds -- do not. For issuers, convertibles should offer the possibility of selling shares at a premium. For the investor, convertibles offer the combination of the income and capital preservation advantages of bonds with the long-run growth potential of stocks. For both parties, a convertible is neither wholly debt, nor wholly equity. It is a true hybrid.

Convertible financing can be more advantageous than an issue of either straight debt or straight equity. Most convertibles are likely to be converted; if they are converted, they enable the company to sell shares at a premium. Other types of convertibles are more likely to be redeemed. If this occurs, the company will utilize low cost debt instead.

It is important to note that a convertible has more advantages than straight debt or straight equity, however not in all cases. For a company such as Telebras Holding, which has a low leverage ratio and a potential shares increase, convertible financing can be more advantageous.

Also, convertibles can be designed to attract particular investors with specific investment criteria, to satisfy rating agency requirements, and to take advantage of Brazilian tax code provisions.

### **6.1.3. Equity Financing**

#### **a. International Equity Securities**

The extraordinary growth in appetite for investment in international stocks has been widespread. Not only are investments in the United States, Japan, and the major European countries in demand, but also investments in shares from a variety of new emerging markets, particularly Chile, Argentina, Mexico and Brazil.

These developments reflect the many factors that have led to the integration of capital markets around the world; powerful forces such as the opening up of national markets through various deregulatory processes, substantial improvements in financial reporting and information gathering, and greatly improved trading environments. Also, advances in information and communications technology have been essential to the growth in the international equities markets. Market information of all types is now available internationally, through newspapers, screens, and brokers.

Although Brazilian companies such as Telebras Holding have used the United States market for international issues and equity distribution methods, there are other several methods for achieving international distribution of new issues of equity securities: international tranches, euro equity issues, global issues, and Japanese round tripping.

### **6.2 Non-Traditional Sources of Financing**

#### **a. Strategic Partners**

Into the scenario of competition that is taking place in Brazil's telecommunication industry, the strategic partners through joint ventures, direct equity investments, partnership agreements, etc. will be important procedures to help attract capital investments and knowledge.

Typically, a tremendous amount of negotiation will be involved in tailoring a partnership to meet each party's goals. But, when determining the value of a potential partnership, important issues to consider include: valuation, partner experience, synergies, entree into new markets, company cultures, exclusivity, operating role, and plans for dissolving the agreement and future alliances.

While joint ventures have historically been dominated by strategic partners with complementary business operations, we have witnessed a recent trend involving significant investments in the telecommunications sector by partners from outside the sector.

Specifically, in Brazil, companies that are interested in *band B*, the alternative to state provided mobile cellular, include corporate investors, private banks, building contractors, press and media corporations, etc. Additionally, pension funds will inevitably invest directly in telecommunications companies as other new investors will begin to invest in the sector. This market may become increasingly receptive to a variety of telecommunications companies.



## 7. Conclusion

While the need for capital in the Brazilian telecommunications industry appears staggering, funds are available to those who understand and monitor the capital markets and employ creative financing structures that meet the demands of investors. Brazilian telecommunications companies will need to think in a much broader context in order to obtain available capital.

We believe that the financial markets will continue to adapt to meet the needs of both issuers and capital providers. It is also expected that many industrial participants will engage in various forms of highly-tailored, non-traditional financing.

Because Brazil's economy and financial market are apparently stable, the telecommunications sector is guided by market forces. So, innovative financing techniques and structures will attract very deep pools of capital available to the telecommunications sector and to ensure that the sector will continue its extraordinary expansion into the next century.

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