

## **EFFECTIVE REGULATION: Brazil Case Study**

### ***1) Foreword***

UIT<sup>1</sup> has recently concluded some case studies about effective telecommunications regulation, among which the Brazilian case study is included. The Brazilian regulation experience by the National Telecommunications Agency – ANATEL is seen from a positive standpoint and its “Best Practices” have been duly pointed out. As a result, we now have access to one of the most comprehensive studies about the Brazilian experience in building the new telecommunications model.

Conclusions are considered to be full of details as a reference to the Brazilian Regulation Agency on-the-job developed “Best Practices” and we hope that they are useful to other countries seeking own solutions for their difficulties in building their own regulation processes.

At the moment, having in mind not to duplicate valuable efforts, our contribution to the discussion of the Brazilian experience will be focused on some aspects depicted from the “Best Practices” pinpointed by the study. Likewise, some future challenges concerning the continuous bettering of our regulation practices shall also be discussed, aiming mainly at meeting the needs, as well as fulfilling the rights of every Brazilian citizen.

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<sup>1</sup> Brazil has been selected as one of the case studies about effective telecommunications regulation, developed in 2001 by the Sector Reform Unit (SRU) of the ITU Telecommunications Development Bureau.

<sup>2</sup> Study was developed based on interviews carried out at National Telecommunications Agency (ANATEL), at the Ministry for Communications, at UIT Regional Office in Brazil and among several telecommunications operators nowadays present on the Brazilian market. Likewise, a great variety of material and documents produced by ANATEL in building its regulation model were carefully selected

## 2) *The Regulation Reform and ANATEL*

Started in January 1995, restructuring of the Brazilian telecommunications system is considered a case of success among international experiences in the segment. The new model<sup>3</sup> was originated from the breaking of the telecommunications state monopoly in August 1995. Its profile is defined by LGT – General Telecommunications Law, issued in June 1997.

The role of the State in this area changes from an operator one to a regulator one, by the creation of the National Telecommunications Agency - ANATEL. Likewise, telecommunications regulation competence, as well as its “*modus operandi*”, has changed at several levels (Table 1)

**Table 1:**  
**Brazil: Telecommunications Regulation Reform**

	<b>Before Reform</b>	<b>After Reform</b>
<b>Policies Formulation</b>	Ministry for Communications	Executive & Legislative bodies
<b>Regulator</b>	Ministry for Communications / Telebrás	Anatel
<b>Operator</b>	Telebrás, Embratel	Private Operators
<b>Enterprises Control</b>	Government, stockholders	Private stockholders
<b>Concessions</b>	Lack of Commitment Lack of Obligations No sanctions Undetermined Term of License	Control of Concessions Targets Fixed by Contract Sanctions Fixed Term of License
<b>Regulation Focus</b>	Operators	Users

<sup>3</sup> In August 1995, the National Congress enacted Constitutional Amendment No. 8 that extinguished state telecommunications monopoly. Law No. 9295, or the Minimum Law, sanctioned in 1996, regulated the following services: Mobile cellular, Satellite Telecommunications Signals Services and the Limited ones, as well as the utilization of the Public Telecommunications Network for the rendering of Value Added Services

### Profile of the National Telecommunications Agency – ANATEL

ANATEL is the result of the same strategic vision that has restructured and reoriented the course of the Brazilian telecommunications, with the adoption of a new model for the sector. Such a modern model, with clear rules which guarantee the **competition** and the

**universalization** of the services, was established on June 16, 1997, pursuant the approval of Law No. 9.472, the General Telecommunications Law (*LGT*). In its essence, the establishment of the National Telecommunications Agency (ANATEL), conceived to make feasible the new model and to perform the regulating and inspecting role over the sector on which the State was discontinuing its functions as administrator.

ANATEL is thus an expressive and pioneer pillar of the change of attitude of the Brazilian State as far as the public services are concerned. It was established to organize the exploration of the telecommunications services and, at the same time, to gain the confidence of the potential investors on the new model, on the transparency and consistence of its rules, but also taking as a reference the needs and rights of users.

ANATEL is a special autarchy, linked to the Ministry of Communications. In addition, the Agency is totally disentailed from the political powers and from the telecommunications services operators.

The task of ANATEL to organize, discipline, rule, grant or authorize and inspect is based in two main principles:

- to promote the **universalization**, i.e., to open to the Brazilian population from all regions of the country, from the villages with more than 100 inhabitants to the great urban centers, the opportunity to have access to the basic telecommunications services.
- to assure the **competition** among the companies rendering telecommunications services, as it is currently occurring, with highly positive results for the users.

By basing its activities in the principles of the **universalization** and of **competition**, the Agency has as its main goal to meet the needs and rights of the consumers, even at the most isolated points of the national territory. And it should act with independence, impartiality, legality, impersonality and publicity.

ANATEL has its administration inspired in the management model, thus guaranteeing the agility and the efficiency of its performance, in all aspects. It is comprised of two high bodies: the Council of Directors and the Advisory Council.

**Council of Directors** – Its members are chosen by the President of the Republic and approved by the Federal Senate, forming the body responsible for the decision-making in the Agency. Its members are appointed for terms of five years, except for the Councilors of the present and the first group. They shall remain in office from 3 to 7 years, in order to establish a process by which Councilors are replaced at regular intervals, specifically, one Councilor per year.

The Council of Directors exercises its powers and functions provided for in the General Telecommunications Law (*LGT*), the Regulation of the Agency and its Bylaws and expresses its decisions by means of resolutions, briefs, judgements, acts and administrative rulings. Its decisions are taken during sessions, meetings or deliberative voting – a procedure by which the votes of the Councilors are collected without the need for a meeting or a session, thereby expediting the work of the Council. The Council of Directors also has in its scope committees headed by its members and intended to develop studies, proposals and recommendations on specific matters.

**Advisory Council** – It is the institutional body of public participation in the activities of ANATEL. The Council is composed of 12 members: two representatives from the Federal Senate, two from the Chamber of Deputies, two from the Executive Branch, two from the entities representing the providers of telecommunications services, two from entities representing users and two from entities representing the society at large. Their members are appointed for terms of three years, with the exception of the first members of the Council who shall have a term of office of one year, one third a term of two years and one third a term of three years. They are designated by the President of the Republic and are not remunerated.

The summaries of the Advisory Council's decisions are published in the Official Gazette of the Union and simultaneously in the library section of the Agency's site in the Internet. The full content of the minutes of the meetings are also available.

**Organizational Structure** – The President of the Council of Directors also assumes the position of Executive President. As such, he is responsible for the hierarchic direction of the Agency in all its aspects of institutional responsibilities and attributions, in addition to its operational, functional and organizational responsibilities. The President's staff is composed of a cabinet and advisory bodies:

- Chef of Cabinet
- Legal Counsel
- Inspector General
- International Advisory Staff
- Consumer Relations Advisory Staff
- Technical Advisory Staff
- Congressional and Social Communication Advisory Staff.

**Office of Ombudsman**– the Office of Ombudsman acts independently and without any hierarchic entailment with the Council of Directors or with its members. Its main objective is to produce critical opinions on the performance of the Agency, submitting them to the Council of Directors, the Advisory Council, the Ministry of Communications and to other agencies of the Executive Branch and to the National Congress, in addition to publishing them in the Official Gazette of the Union.

**Superintendencies** – The organizational structure is composed by the following superintendencies, coordinated by an Executive Superintendent who assists the President in his executive tasks:

- Executive Superintendent
- Superintendency for Public Services
- Superintendency for Private Services
- Superintendency for Mass Communication Services
- Superintendency for Radio Frequency and Inspection
- Superintendency for General Administration

The multiple executive tasks of ANATEL regarding the Brazilian telecommunications and the Agency's administration itself are apportioned among such bodies. Emphasis is given to the implementation of the main functions of:

- Ruling of the Telecommunications Services

- Certification of Telecommunications Products
- Inspection of Telecommunications Services
- Granting of Concessions for Telecommunications Services
- Authorization for the Use of Radio Frequencies and Licensing of Stations
- Monitoring and Control of Commitments Assumed by the Telecommunications Services Providers.

### **3) Universalization (Universal Services)**

Universal service policies are, traditionally, key elements to ensure expansion, by the countries, of telecommunications networks far beyond the limits that would be set by the dynamics of a free market. Apart from this, more recently, the increasing technological convergence and the ever increasing lack of barriers among the different markets have changed the telecom business structure to such an extent that the definition of basic services itself have been thought over by the Governments, mainly in what concerns issues related to digital divide.

In Brazil, according to the new regulation model, the Universal Service Obligations (USO) strategies include:

#### **(1) Contractual Granting Obligations:**

General Plan of Universal Goals(PGMU);

Scope and Attendance Commitment

#### **(2) Fust (Telecommunication Services Universalization Fund) Utilization:**

Target Plans According to Programs and Projects (PMU)

One of the most impressive results of such a model has been the accelerated evolution of telephone penetration amongst the Brazilian population as of the Reform (Table 2).

**Table 2:  
Brazil – telephone penetration**

	Reform		Privatization				
	1995	1996	1997	1998	1999	2000	2001*
Phonelines per 100 inh.	<b>8.5</b>	9.4	10.6	<b>12.3</b>	15.1	18.5	<b>21.7**</b>

Cell.Phones per 100 inh.	<b>0.9</b>	1.7	2.8	<b>4.5</b>	9.1	13.9	<b>16.0</b>
<b>Telephone penetration</b>	<b>9.4</b>	11.1	13.4	<b>16.8</b>	24.2	32.4	<b>37.7</b>
<b>Public Payphones (10<sup>3</sup>)</b>	<b>367</b>	428	521	<b>589</b>	740	910	<b>1,336</b>

\*Sept. 2001

\*\*refers to the number of terminals installed, under use

**Source:** ITU WTI Database, Anatel

The General Plan of Universal Goals(PGMU) has established not only individual access targets, but mainly those in relation to collective access (payphones), of fundamental importance to the low-income level populations located in remote areas of the country. This has ensured a consistent growth of accessibility and availability of telephone services in Brazil (Table 3).

In terms of service affordability, the most important price component in the fixed Brazilian telephony in the past was the habilitation that granted access to a residential phone line (and that, in practical terms, meant a self-financing system of the monopolist enterprises, considering that, in fact, it was their shares that were sold).

**Table 3:**

**Brazil:** Accessibility and Availability of Telephone Services According to General Plan of Universal Goals (PGMU), 2001/2005

<b>Indicators/ From</b>	<b>Dec.31<sup>st</sup> 2001</b>	<b>Dec.31<sup>st</sup> 2003</b>	<b>Dec.31<sup>st</sup> 2005</b>
Installation of Individual Fixed Phone Services	Areas with more than... <b>1000</b> inh.	Areas with more than... <b>600</b> inh.	Areas with more than... <b>300</b> inh.
Response Time to Individual Access Requests	Within <b>4 Weeks</b>	Within <b>2 Weeks</b>	Within <b>1 Week</b>
Payphones per 1000inh. Minimum		<b>7.5</b>	<b>8</b>
Distance from individual Access	<b>800 meters</b>	<b>500 meters</b>	<b>300 meters</b>

**Source:** Anatel

As of telecommunications reform, installation charges were significantly<sup>2</sup> reduced, thus allowing wide strata of the Brazilian population, specially low income ones, to have access to a telephone line.

Considering that fixed telephony operators universal targets, if met in advance until the end of 2001, enable such operators to secure new authorizations to act in new markets, in practical terms, commitment for 2003 are being met today.

Amount of investments made in the expansion of services offer (fixed, mobile, of mass communication) and demand attendance in the period 2000/2005, is estimated to be circa US\$ 45 billion, which shall increase capillarity of the Brazilian telecommunications plant to figures well above 120 million accesses, fixed and mobile alike.

Notwithstanding, new challenges led to the sanction of Law n° 9.998/2000 that created the Telecommunication Services Universalization Fund (FUST). Main FUST purposes are “to provide resources intended to cover cost portion related only to the fulfillment of the obligations of universalization that cannot be repaid by the efficient exploration of the service”.

FUST main revenues sources are comprised of:

- (a) 1% of telecommunication services gross operational revenue, both under the public and private systems, taxes being excluded;
- (b) 50% of revenues from indent c, d, e, and j, of Law no. 5.070/66 (FISTEL), up to the limit of R\$ 700 million;
- (c) proceeds obtained by Anatel from the transference of cession, permission or authorization of services .

Some FUST application criteria are already defined: 30%, at least, of revenues of each fiscal year shall be applied in STFC, in the areas of SUDAM and SUDENE (in practice, the poorest regions of Brazil that already are the aim of specific

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<sup>2</sup> While user previously needed to spend US\$1,000 for habilitation to a residential telephone line, nowadays he has to pay circa US\$ 20 (or less), and after installation of telephone set.

development projects in the country). Likewise, at least 18% of total resources shall be applied in public education institutions.

The following main future objectives related to the use of such a Fund have been established:

(i) Attainment of targets (low-income level communities; and localities with less than 100 inhabitants);

(ii) Implementation of individual access to the fixed telephone switched network (FUST), under favorable conditions;

(iii) Access to public intended information digital network services, including Internet;

(iv) Installation of high velocity network for signal interchange and videoconference among educational institutions and libraries;

(v) Supply of individual access and interface equipment to deficient people and their care institutions;

(vi) Rural telephony implementation.

As a pioneering project, the educational area shall receive resources from FUST under the form of a communication network that shall offer Internet connection and related specialized services (as those of teleconference). Installation of 290,000 terminals, in 13,500 secondary level public schools with more than 600 students is foreseen for its the first year.

#### ***4) Commitment to Quality***

##### ***4.1. ISO-9001 Standard***

Anatel quality policy definition was based in its mission, as well as in the general principles set forth in the General Telecommunications Law. In order to call for quality from telecommunication services operators, so as to adequately meet with users needs, it was understood that the Agency should play a leadership role in such an area, which could be used as a “demonstration effect” for the whole sector.

Anatel already had a Management System set out since its establishment. Notwithstanding, by virtue of the great challenges under its responsibility, it has been necessary to venture out in search of higher quality standards. In 1998, the Directing



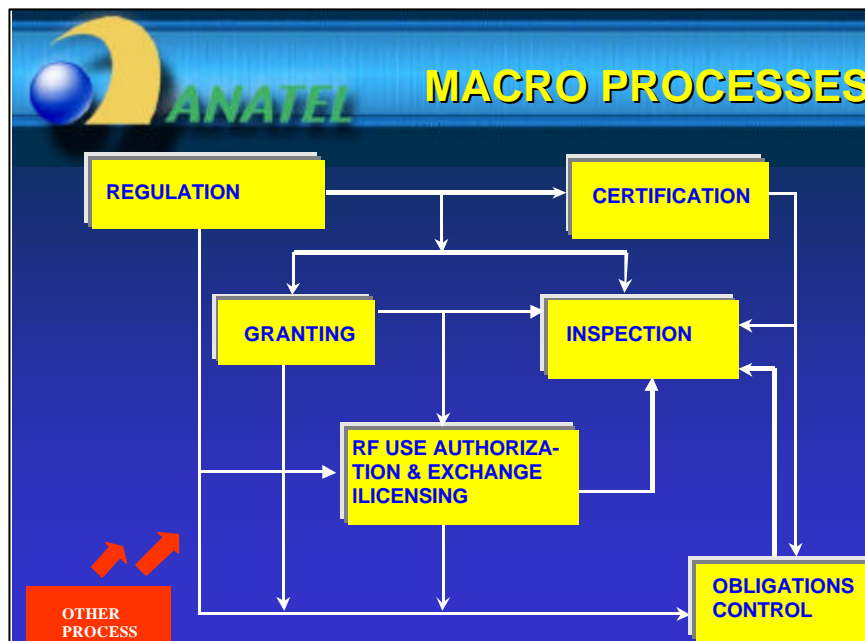
Council took the strategic decision to start a process of changes in order to improve management of the Agency, as per international ISO Standards.

Efforts to the establishment and implementation of Anatel Quality Assurance Management System (SQA) started in 1998. The purpose was to standardize the Agency working procedures, so as to impart higher quality and agility to both internal and external services rendering, as well as to improve and integrate working procedures aiming at strengthening Anatel mission and institutional objectives. As a result, three guidelines were defined:

- (I) **Managerial Leadership:** transformation agents are the managers that are aware of the objectives, guidelines, institutional attributions, and also that results are proportional to time, determination and priority given to the process, always trying to respect individual culture and pace;
- (II) **Participative Change:** success is dependent on participation; it is everyone's duty to promote it in discussions, in the formulation of proposals and in the implementation of solutions;
- (III) **The role of the executor in the transformation:** he who knows the work in the day-to-day activity has to be involved in the improvement process; procedures shall be wrought out by those familiar, in fact, with reality.

Six end-procedures have been defined in the fundamental Agency attributions (Figure1).

**Figure 1:**  
**Anatel: Definition of Quality Macro processes**



Anatel's quality program was a carrying out, aiming at standardizing and improving working procedures and then have the main processes of the Agency

certified in all locations where a regional representation exists (figure 2). Anatel Quality System certification shall be attained up to the end of 2001.

**Figure 2:**  
**Anatel: Certified Processes According to ISO-9001/1994**



As a guideline to constantly promoting participation of associates who really know what should be done and how it should be done, the program has involved ever more people to write out and improve working procedures.

Developing integrated actions and in partnership with the areas; rationalizing SQA procedures; transferring the role of management representative, for the purposes of Quality Assurance Management System, to the Management Superintendence (SAD) and recasting the Agency so as to face the new challenges derived from the opening of the telecommunications market and from technology convergence and services are examples of what shall be done in the future. Once this is accomplished, Anatel shall definitely enter in the continuous cycle of service rendering quality improvement.

## **5) Competition**

In accordance to the new model, all telecommunications services shall be rendered under a competition system. Notwithstanding, as a transition rule, the Fixed Telephone Switched Service

(STFC) is still rendered under the scheme of a duopoly<sup>3</sup>, a situation that shall be over on 31 de December 2001.

In order to foster increasing competition among the incumbent enterprises (concessionaries) and the newcomers (authorized, named *mirros*), an asymmetric regulation system was established. STFC *Concessionaries* enterprises of STFC operate under strict control of Anatel in what concerns universalization, quality, tariff targets, and other variables, essential to the service.<sup>4</sup> Authorized enterprises have wider action freedom (as the system of tariff freedom, without commitment to continuity and universalization).

The possibility for the user to choose the long distance operator (by the differentiation of the operator's code), being national ones ( 4 competitors) and international ones ( 2 competitors) quickly eroded the market of the traditional incumbent (Embratel), as stated in Table 3.

**Table 3:**

**Brazil: STFC National and International Tariff Minutes**

(August 2001, %)

<b>L.D. Operators</b>	<b>Market Share (%)</b>
<b>Embratel</b>	<b>43.1</b>
Others	56.9
<b>Total</b>	<b>100.0</b>

**Source:** Anatel

However, competition at local market level is still incipient (please refer to table 4), not only because new competitors entered into operation recently, (as of year 2000), but also by competition intrinsic difficulties in such markets, also observed at international levels.

**Table 4:**

<sup>3</sup> STFC modalities include: local ,2 operators per region, long distance national (intra-regional and inter-regional), 4 operators per region, and long-distance international, 2 operators up to the end of 2001.

<sup>4</sup> Concessioneries operate under the public juridical system, bound to continuity and universalization obligations, subject to tariff regulation, reversion of goods, insurance plans but with guaranty of maintenance of their economic conditions. Authorized ones, in turn, operate under the private juridical system.

## Brazil: STFC Installed Accesses and under Service, 2001

(million and %, until August 2001)

Operators	Installed Accesses		Accesses in Use	
	Number (10 <sup>6</sup> )	Market Share	Number (10 <sup>6</sup> )	Market Share
<b>Incumbents</b>	40.8	<b>91.7</b>	35.7	<b>99.0</b>
<b>New comers</b>	3.7	<b>8.3</b>	0.5	<b>1.0</b>
<b>Total</b>	44.5	100.0	36.2	100.0

**Source:** Anatel

In terms of mobile cellular service, the outstanding expansion in this market due to its intrinsic characteristics, as well as to the flexibility of subscription options (pre-paid versus post-paid system) has represented not only a new option for users as regards fixed telephony system, as well as has brought about an increasing competition among the Band A and Band B operators (table 5).

**Table 5:**

### BRAZIL: Participation in the Mobile Cellular Service Market

(million of accesses, %)

Plant	Number of Accessses (10 <sup>6</sup> )	%
<b>Band A</b>	17.8	66.9
<b>Band B</b>	8.8	33.1
<b>Total</b>	26.7	100.0

**Source:** Anatel

Implementation of Personal Mobile Service from 2002 onwards, shall make room for the entrance of more competitors into the regional markets defined (the 10 SMC regional markets have been regrouped in 3 coincident to those of STFC). In more densely populated urban centers, it is expected that up to five operators shall actuate, with the corresponding diversification of services and reduction of prices aiming at fighting for the market.

As far as STFC is concerned, original contracts of concessionaries included a “premium clause”. This means that such operators – provided they in advance and fully meet the universalization and expansion obligations foreseen for the end of 2003 – may apply for new licenses in new markets and services as from 2002 (as authorized ones). Likewise, the authorized

– subject to fulfilling of a minimum offer of a certain number of terminals up to the end of 2001 – shall also be entitled to apply for new licenses (figure 3).

**Figure 3:**

**Brazil: Scenario Foreseen for STFC as of 2002**

MODALIDADES DO STFC		PRESTADORAS DE STFC			
Local	TELES REGION.	APÓS 2003	PRIMEIROS COMPETIDORES (TELES)	APÓS 2002	NOVOS COMPETIDORES
Intra-anuf					
Intraestadual		EMBRATEL		PRIMEIRO COMPETIDOR (EMBRATEL)	APÓS 2001
Intraestadual/ Intra-regional					
Inter-regional	APÓS 2003		APÓS 2002		
Internacional					

### Legend

STFC Modalities	STFC Operators
Local; Intra-anuf; Inter-state;	REGION. TELECOM
Inter-state; Intra-regional;	AFTER 2003; AFTER 2003
Inter-regional; International	EMBRATEL; FIRST COMPETITORS (TELECOM)
	AFTER 2002; AFTER 2002
	FIRST COMPETITOR (EMBRATEL)
	NEW COMPETITORS AFTER 2001

The expectation is that this process of operators competing in the Brazilian telecommunication market entering new services and markets may lead to a future process of alliances, partnerships and mergers, resembling what has happened in the international market. Anyway, regulation measures regarding opening, as of 2002, of STFC market shall be issued by Anatel until the end of current year.

### ***6) User as the Most Important Customer of Regulator***

***User is the focus of all decisions reached by the Brazilian regulation Agency. This being so, it is natural that several initiatives be taken aiming at promoting a greater integration between users of telecommunications services and the Society in general. Among them,***

*the User Relationship Advisory Board, the User Defense Committee, the Telecommunication Services Satisfaction Polls, as well as the relationship with Consumer Defense Bodies, are duly highlighted. User Relationship Advisory Board has a Central Attendance Office that may be accessed 24 hours a day through a toll free number, besides communications by facsimile or letter. Such Central Attendance Office records complaints about telecommunications services, information about radio interference and receives suggestions in general from the Brazilian Society. Complaints about telecommunications services are relayed to the operators that have 5 days to solve the user's difficulty. In the event of reiterated complaints, the issue is passed over to the Inspection area.*

*Besides promoting an important interface with the Brazilian Society, the Central Attendance Office fulfills an important role, or be it, that of identifying problems with the operators, thus becoming an important element of support to the Inspection area. Complaints are catalogued by contractual item and by operator and later on relayed to the areas responsible for the control of the operators.*

*User Defense Committee is an initiative on the part of Anatel of creating a more direct interface with the Brazilian Society. The Committee is composed by members of the civil society, beside high-level executives of Anatel. Presidency of the Committee is filled by one of the Counselors of Anatel. Committee main purpose is to assist the Directing Council in connection with issues related to the users of telecommunications services. The Committee brings about public meetings in several Brazilian capital cities, thus getting information from local inhabitants, as well as divulging users rights.*

*Furthermore, Anatel promotes polls concerning users satisfaction with the telecommunications service. At such polls the perception of the user towards quality and attendance by the telecommunication operators is addressed. Polls are periodically carried out and the results remain available to the public at the library and in Anatel web site. Here also the results obtained are utilized as input data to guide Inspection activities.*

## **8) THE TECHNOLOGICAL CHALLENGE**

Brazilian telecommunication model devotes great attention to the industrial and technological aspects. Sizing of network under implementation, geographic diversity of the Country, as well as variety of requirements on the part of users, call

for large volume equipment and services acquisition, as well as the search for technical solutions, sometimes not available in other markets.

For this reason, right from the start of the implementation of the model, steps were taken for the set up of conditions focused on the creation of a suitable industrial base in the Country that could ensure the supply of the required goods and services for the expansion of the telecommunications network. This industry invoiced, in the year 2000, US\$ 5,47 billion and exported goods amounting to US\$ 1,16 billion.

Brazil shall also participate with more emphasis in the development of new products and technologies. This is the condition need for the local industry to be able to not only meet the increasing demand for products of high technologic content, but also to keep itself competitive and insert itself in the global telecommunications world.

This is one the biggest challenges that shall be faced by the emerging countries. In spite of the priority given by the Government to the education, science and technology fields, the telecommunications sector now has resources around US\$ 100 million a year, to be applied in technological development, in the formation of human resources, as well as financing to small and medium sized telecommunications enterprises.

Thus the sector shall be able to better prepare itself to face the challenges of implanting new 3rd generation mobile systems, IP networks, digital TV and multimedia services required by the telecommunications infra-structure of the following years.