

Digital Terrestrial Television Transition Strategy for Brazil



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Contents

- ☰ Introduction
- ☰ Today's television broadcasting in Brazil
- ☰ Horizontal and vertical market structure
- ☰ Steps toward transition
- ☰ The economic analysis on the digital terrestrial television transition
- ☰ Conclusion



Introduction

This presentation has the main purpose of providing an in-depth examination of the transition strategy that Brazil intends to pursue in the introduction of Digital Terrestrial Television Broadcasting (DTTB) services while phasing out the rendering of analogue television broadcasting services.

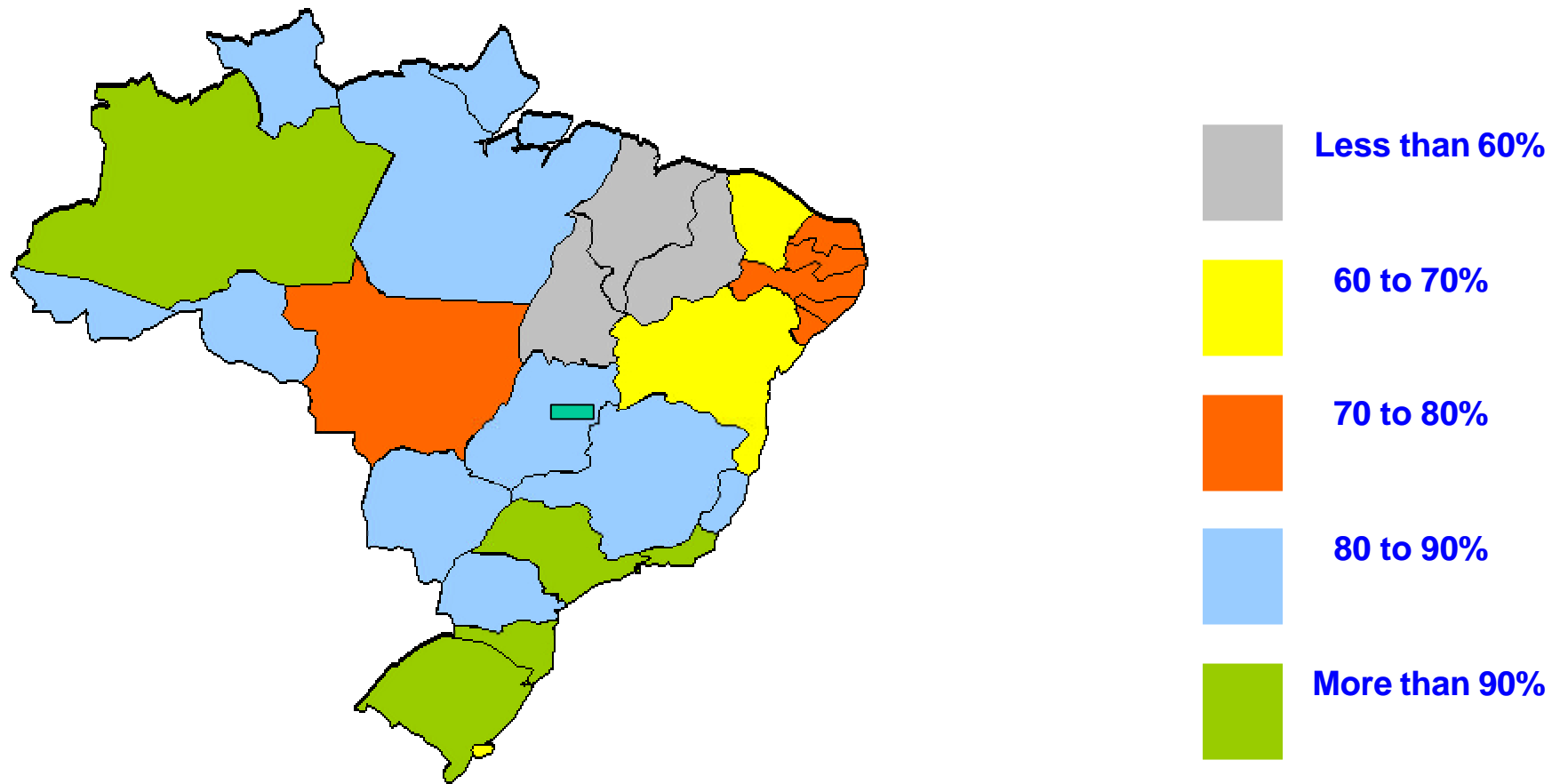


Today's television broadcasting in Brazil

- ▣ Brazil's broadcasting services are characterised as those freely and directly delivered to the public in general;
- ▣ Includes Radio and Television Broadcasting;
- ▣ The ownership of a broadcasting company is allowed only to Brazilian citizens or those naturalised over a period of time more than 10 years;
- ▣ Networks are mostly under private ownership but some non-governmental and public entities also hold the control of a few of them.

Today's television broadcasting in Brazil

TV density on Brazilian Territory





Today's television broadcasting in Brazil

Existent Stations in Brazil	
STATION	Quantity
Generator	333
Relay Station (Biggest) (5 kW)	748
Relay Stations (Smallest) (250W)	7,840
Total	8,921



Today's television broadcasting in Brazil

Digital Planning

Difficulties:

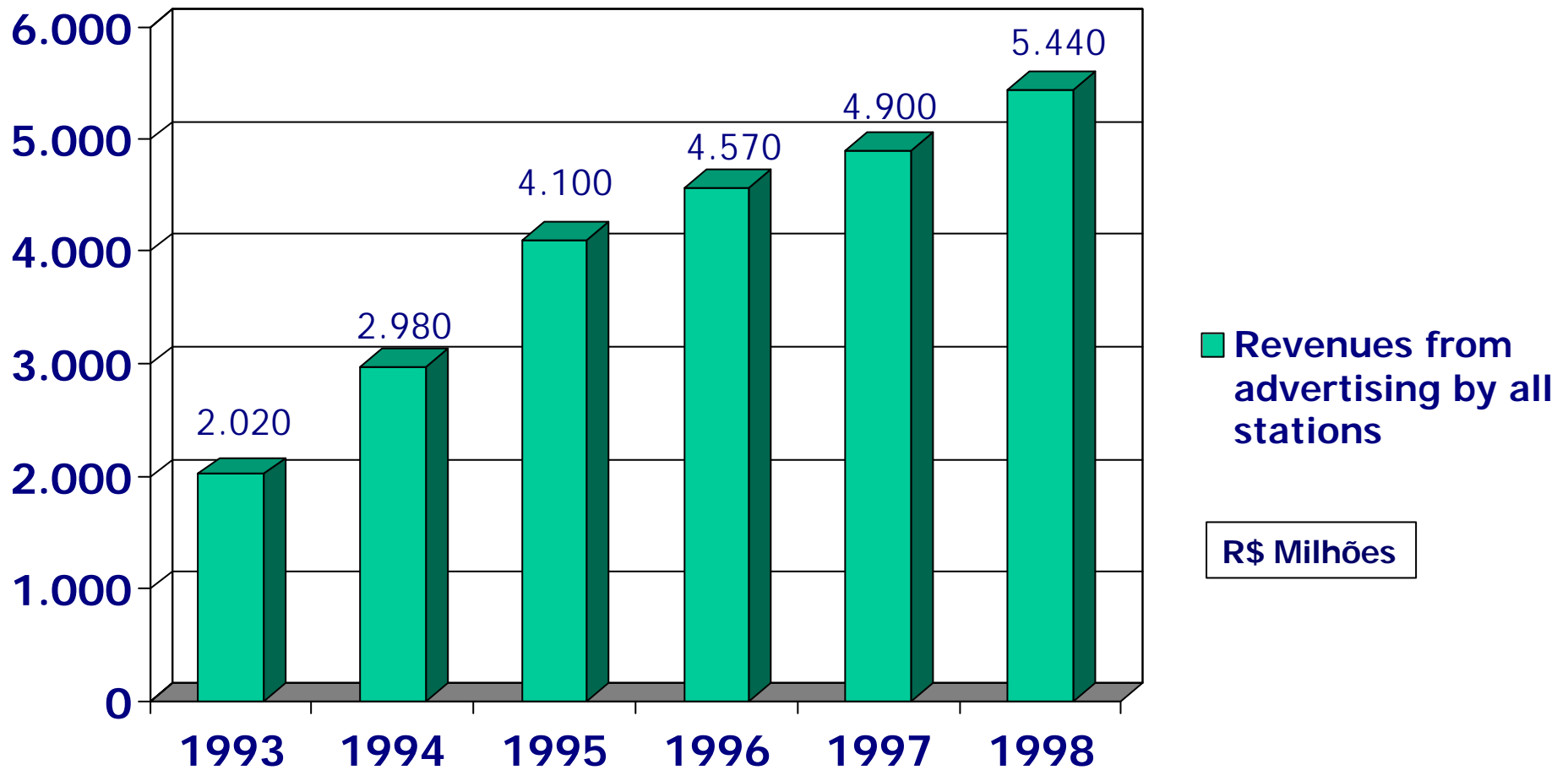
- Database on TV spectrum allotment;
- TV (VHF and UHF) Spectrum Congestion;
- Differences between digital transmission power and analogue transmission power to cover a particular area;
- Differences in the configuration of TV networks.

Priorities in carrying out the Digital TV Planning

- The TV in spectrum allotment database must be updated;
- The worst cases, in terms of areas with TV spectrum congestion, must be identified;
- Possible TV channels to be used by digital transmission must be defined;
- Studies must analyse each possible TV channel, defining maximum power, restrictions, etc.



Horizontal and vertical market structure



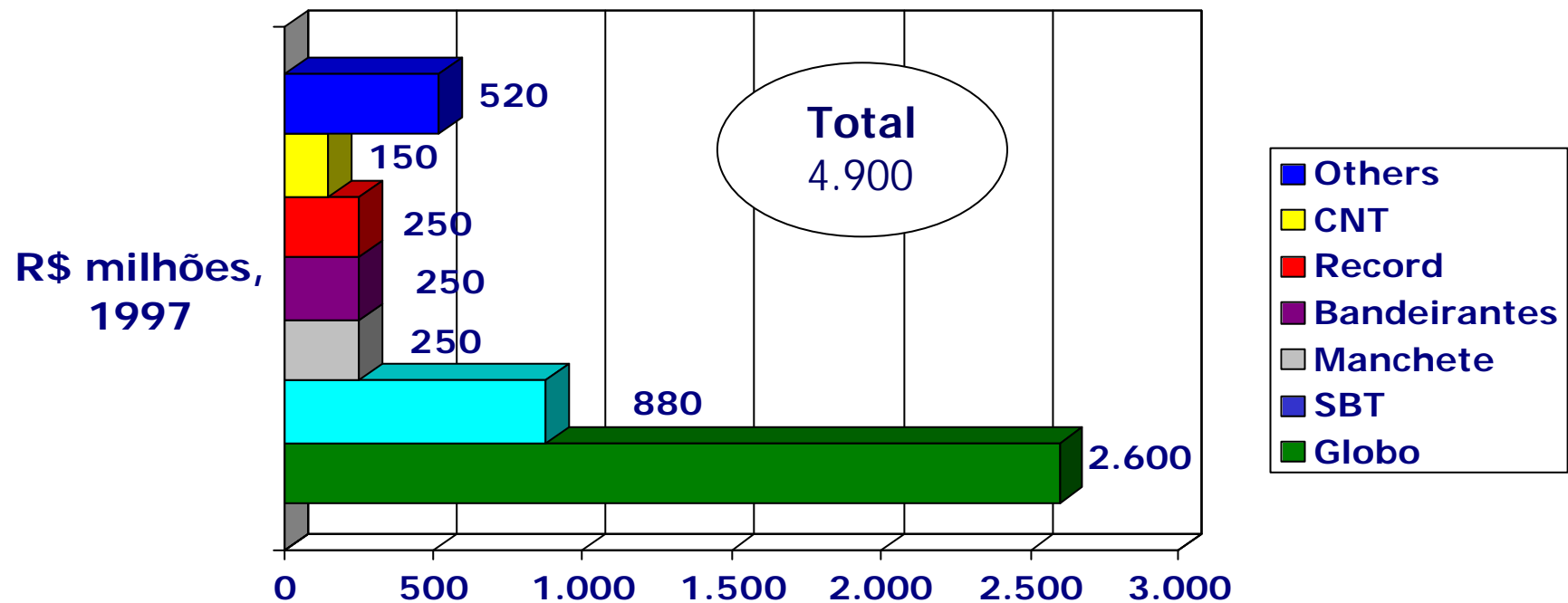
Average 1998: US\$ 1.00 = R\$ 1,21

Fte: Zenith Media



Horizontal and vertical market structure

Revenue of the main broadcasters in Brazil



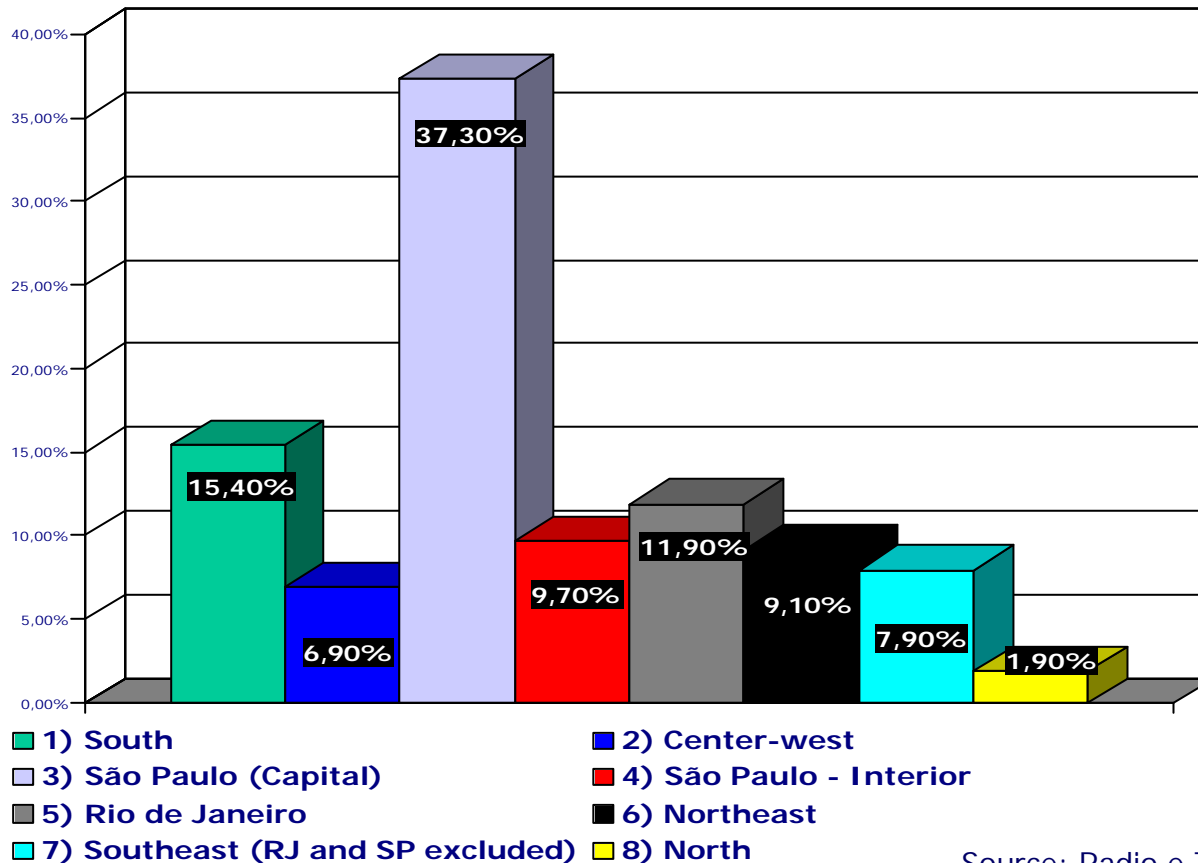
Average 1997: US\$ 1.00 = R\$ 1,1164

Fonte: Globopar, análise da equipe, 1998



Horizontal and vertical market structure

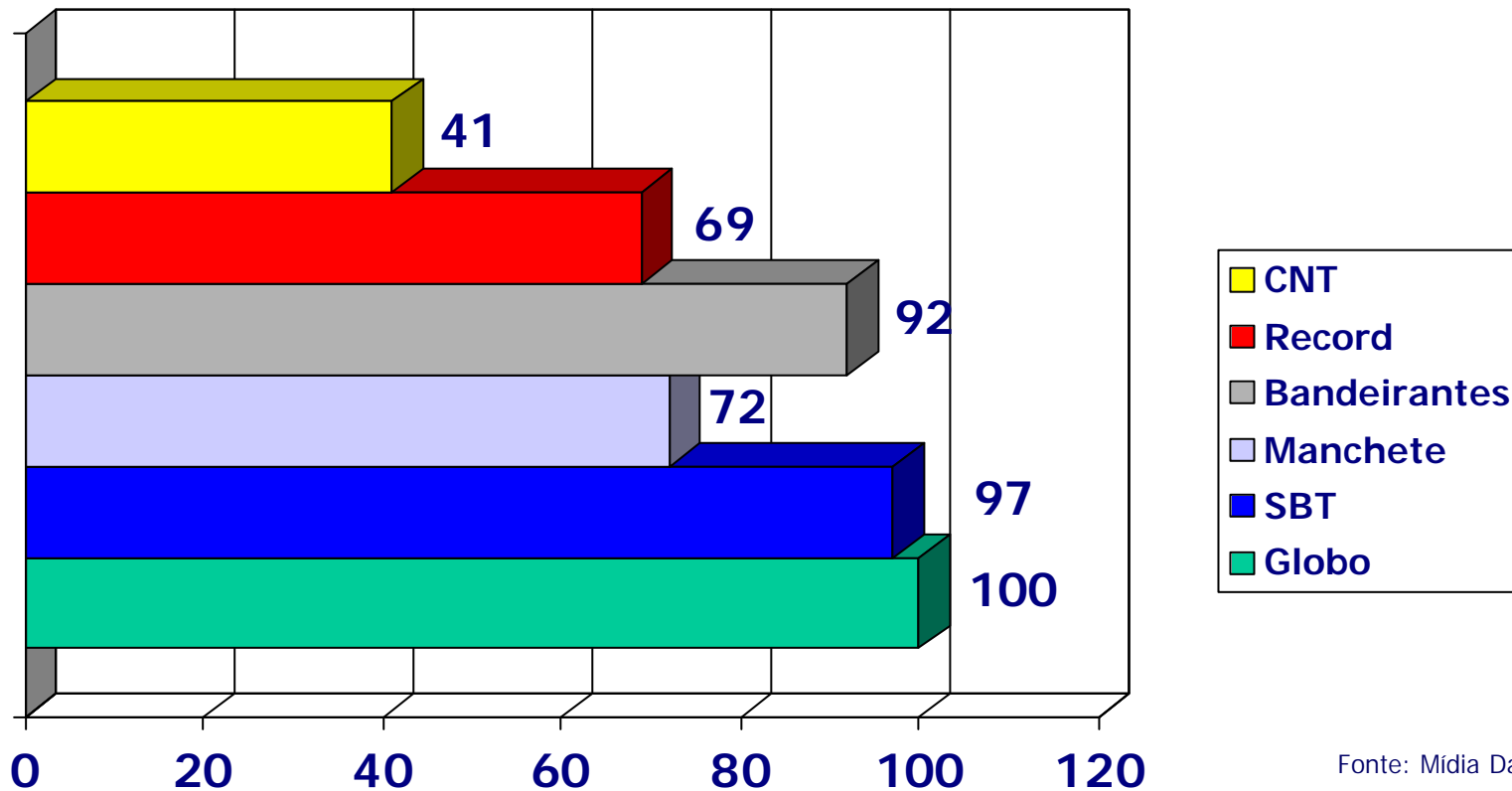
Percentage of the broadcasters revenue following the Brazilian regions



Source: Radio e TV magazine, 1998

Horizontal and vertical market structure

Geographic coverage of the main broadcasters

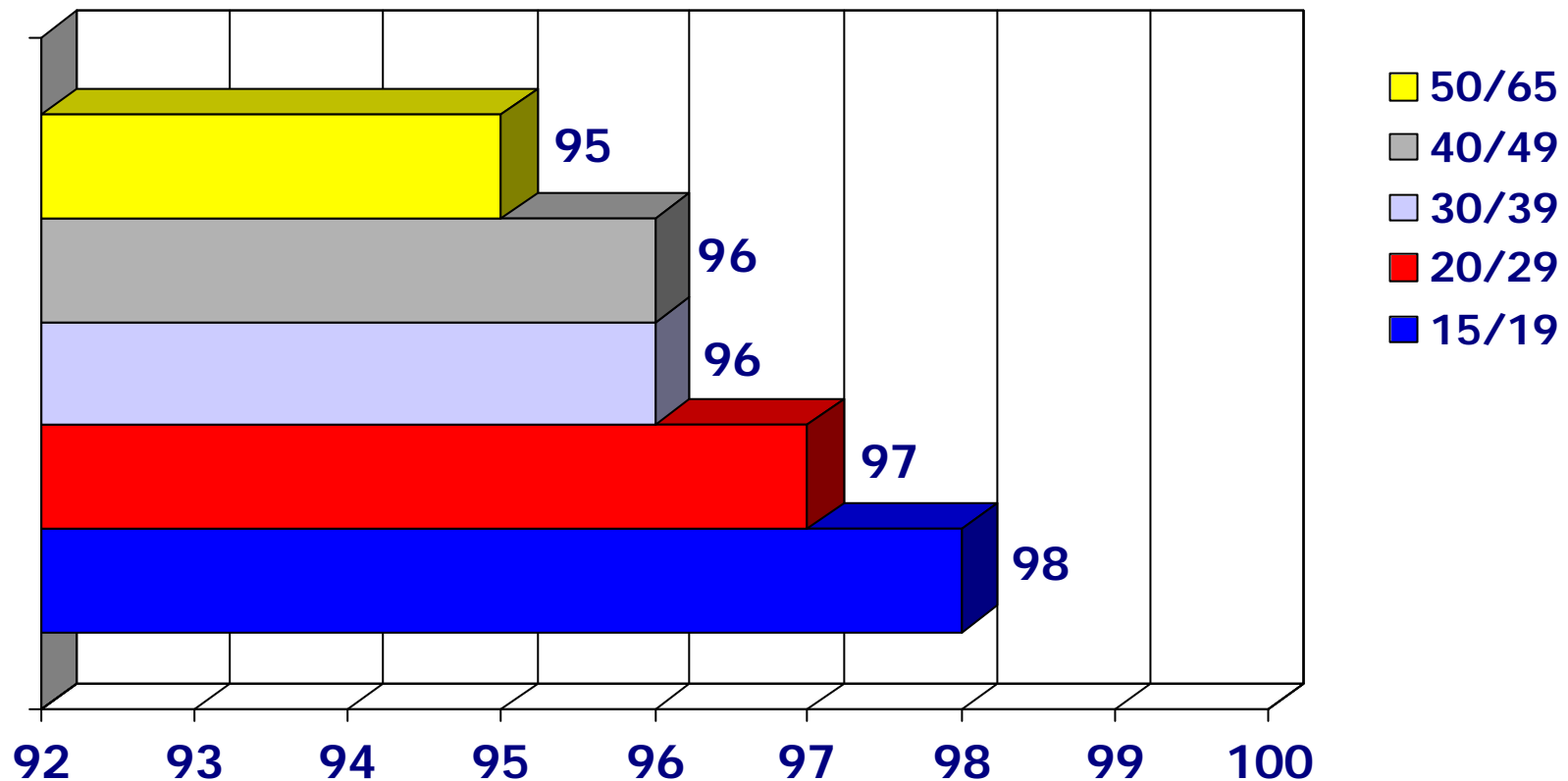


Fonte: Mídia Dados 97



Horizontal and vertical market structure

% Age classes that view broadcasting programming

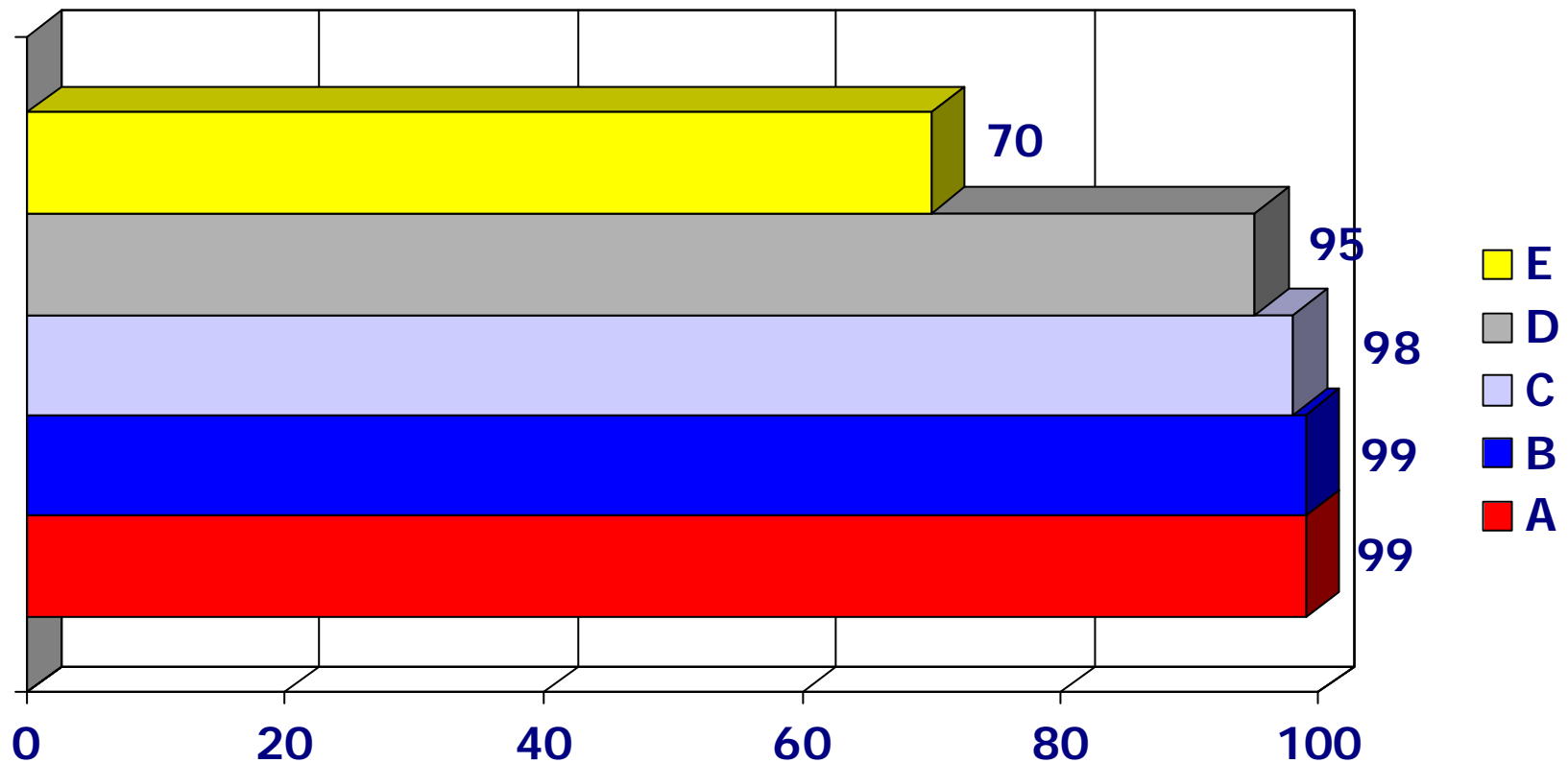


Fonte: Mídia Dados 97, análise de equipe



Horizontal and vertical market structure

% Social classes viewing broadcast programming



Fonte: Mídia Dados 97, análise de equipe



Steps towards transition

Resolution nr. 69, from 23/11/98

Approval of the Procedures to be followed during the Digital TV testing

Main outputs deriving from the testing

Definition and Presentation of the Technical Report (field and laboratory analysis);

Definition and Presentation of the Marketing and Technical Report;

Public Consultation - Digital TV standard;

International Agreement;

Technical Regulation for the Provision of Analogue TV and Relay TV Services;

Consolidation of the Basic Plans on Analogue TV, Relay TV and TVA;

The choice of the Digital Terrestrial Television Broadcasting Standard;

Technical Regulation on Digital TV;

Basic Plan for Digital TV (main stations);

Basic Plan for Digital TV (complete version);

Contribution to the question 11/2, SG2 of the ITU-D (The Decision-Making Process on Digital TV at ANATEL).



Steps towards transition

Key issues to be addressed in the choice of DTV Standard:

- ▣ Screen Format;
- ▣ Interactivity;
- ▣ Mobility;
- ▣ Television and Personal Computer Convergence;
- ▣ Telecommunication and Television Convergence.

What to take into account in the decision making - Strategic Factors:

- ▣ Universal access to information for all social classes;
- ▣ National integration and the preservation of the regional identity;
- ▣ Latin American integration;
- ▣ Technological co-operation;
- ▣ Rapid economic development;
- ▣ Rebirth of the parts and components industry.



Steps towards transition

What to take into account in the decision making - Technical Factors:

- ▣ The digital television service must be, at least, equivalent to the currently distributed analogue television service;
- ▣ Digital and analogue systems must have an adequate coexistence during the transition period;
- ▣ Flexibility for introduction of new applications must be taken into account in the long-run.
- ▣ **Implications of the digitalisation process on different TV networks:**
 - ▣ The digital television service offered in different networks must be compatible;
 - ▣ The integration of programs and functionality between these different networks must be considered;
 - ▣ Must carry rules should be duly applied.



Steps towards transition

What to take into account in the decision making - Economic Factors:

- ▣ Impact on the Broadcasting Industry Value Chain;
- ▣ Determinant factors for the promotion of the digital television;
- ▣ Cost to the Broadcasters;
- ▣ Cost to the Consumers;
- ▣ Potential market of each digital television system.

What to take into account in the decision making - Social and Cultural Factors:

- ▣ The role played by the television in the life of the citizens;
- ▣ The convergence from the cultural point of view;
- ▣ Expectations of the users on the digital television;
- ▣ Others cultural and social factors.



Steps towards transition

What to take into account in the decision making - Scenarios under analysis by Anatel:

- ▣ Scenario I - HDTV programming only and low interactivity
- ▣ Scenario II - SDTV programming only
 - ▣ Scenario II a - Multiples programs
 - ▣ Scenario II b - SDTV interactive
 - ▣ Scenario II c - SDTV with free and paid services
 - ▣ Scenario II d - SDTV with free and pay TV services and others telecommunication services
- ▣ Scenario III - Hybrid model
 - ▣ Scenario III a - SDTV / HDTV
 - ▣ Scenario III b - SDTV shared with Educational Stations
- ▣ Scenario IV - Mobility in any of the last Scenarios



Steps towards transition

Cost to be considered by Broadcaster - Studio

- ☐ MPEG Converter
- ☐ MPEG Multiplex
- ☐ Digital Camera
- ☐ Digital VTR
- ☐ Monitors
- ☐ Servers
- ☐ Etc.

Total cost for Studio is between 200,000 and 1,000,000 US\$

Source: CPqD.



The economic analysis on the digital terrestrial television transition

Cost to be considered by broadcasters for Relay Station

■ Infrastructure

- Tower
- Housing, power supply, air conditioner

■ Reception

- Satellite antenna
- Satellite receptor
- Microwave link

■ Transmission

- Transmitter 250 W
- Transmitter 5 kW
- Antenna 250 W



The economic analysis on the digital terrestrial television transition

The current Brazilian Television Plan

	TV	RTV	TVA	Total
Licensed	333	8,588	25	8,946
Planned already included	654	2.060	-----	2,714
Planned new inclusions	4,500	8,500	-----	13,000
Total	5,487	19,148	25	24,660



The economic analysis on the digital terrestrial television transition

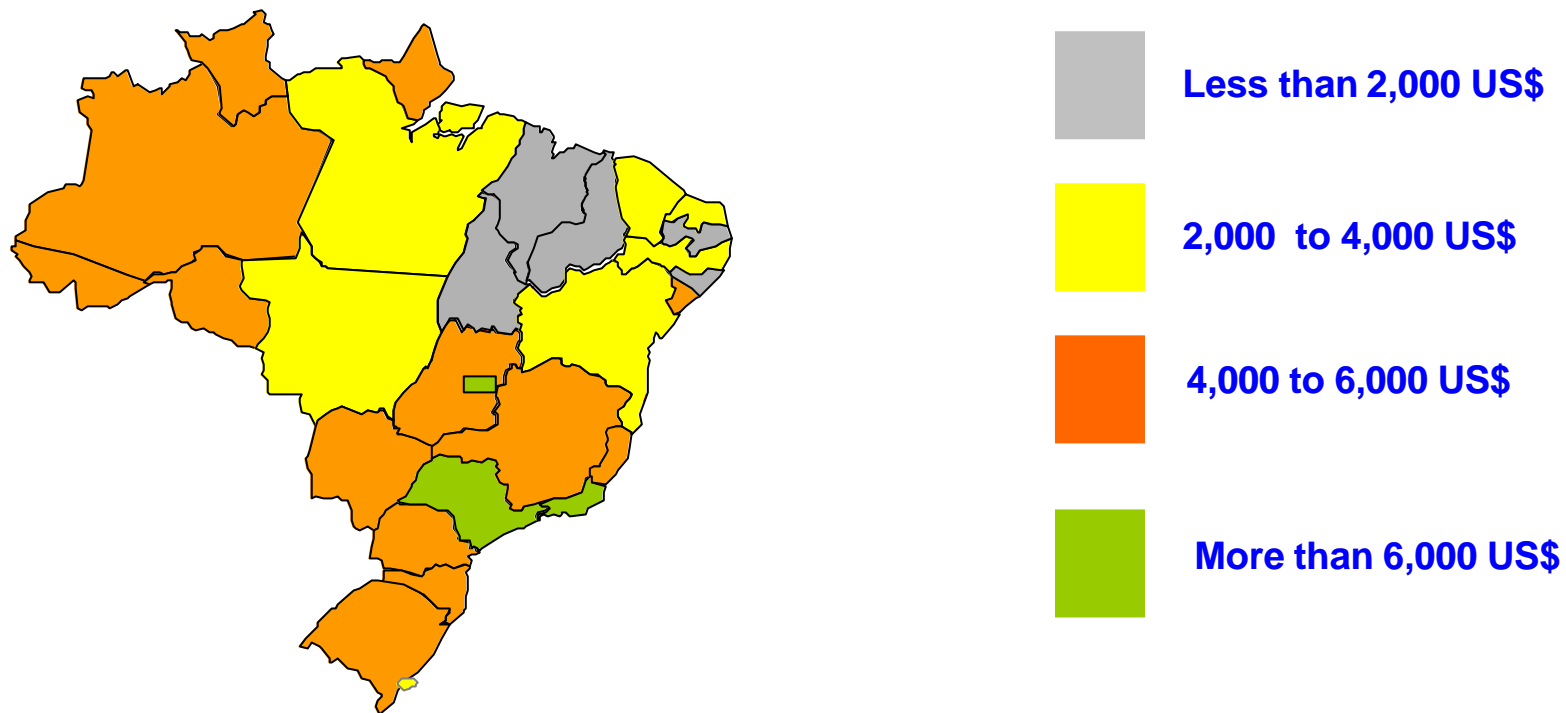
Marks to TV video quality during simulations to the public

Regions	Marks to current TV video quality	Marks to current TV video quality with a conversor	Marks to Digital TV video quality
Center-west	3,9	6,8	9,4
South	3,8	6,6	9,3
Southeast	4,0	6,9	9,5
Northeast	4,4	6,8	9,2
North	3,8	6,5	9,1



The economic analysis on the digital terrestrial television transition

Per Capita Income (in US\$)

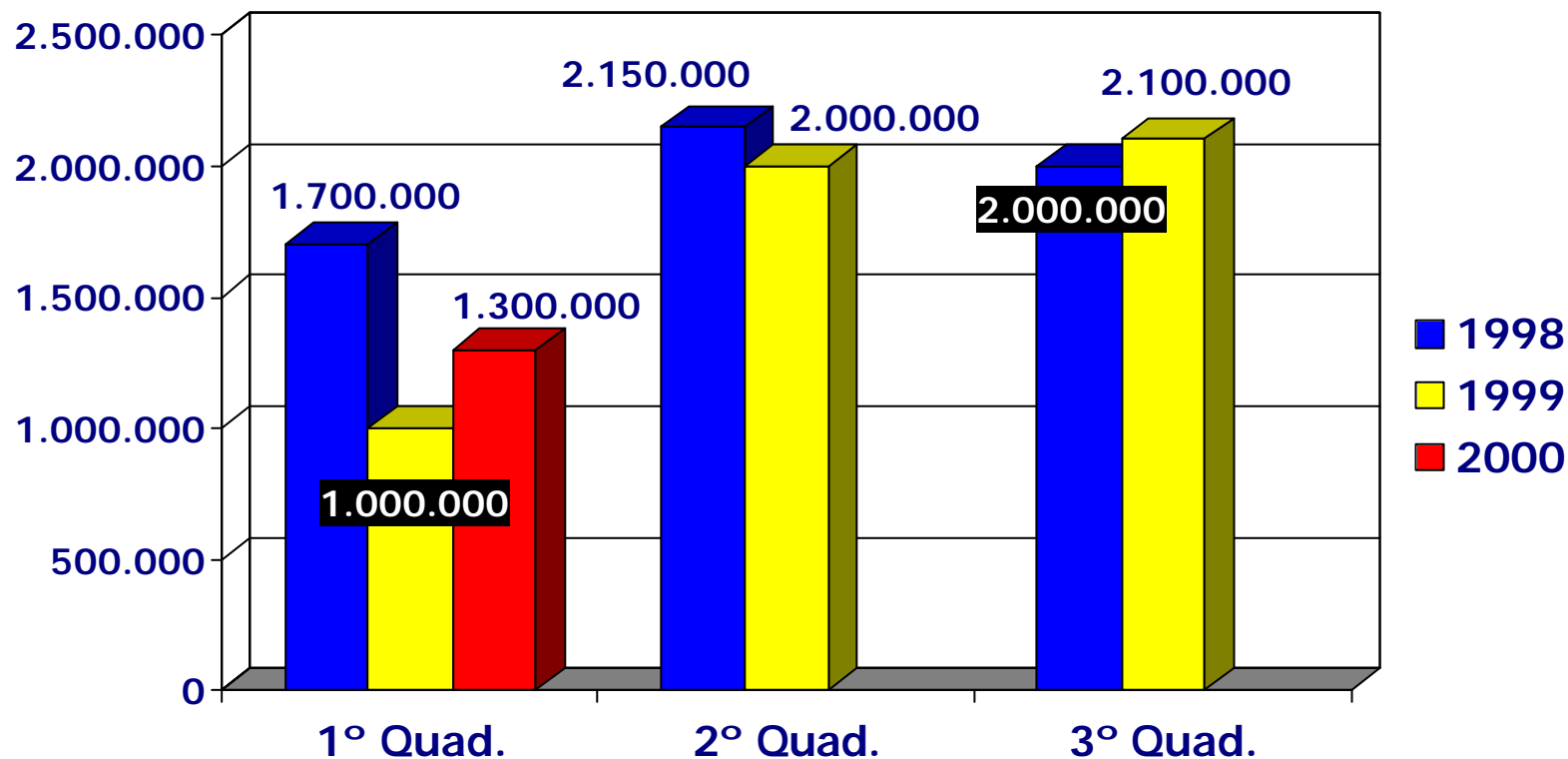


National Average is around US5,020



The economic analysis on the digital terrestrial television transition

TV Sets industrial sales

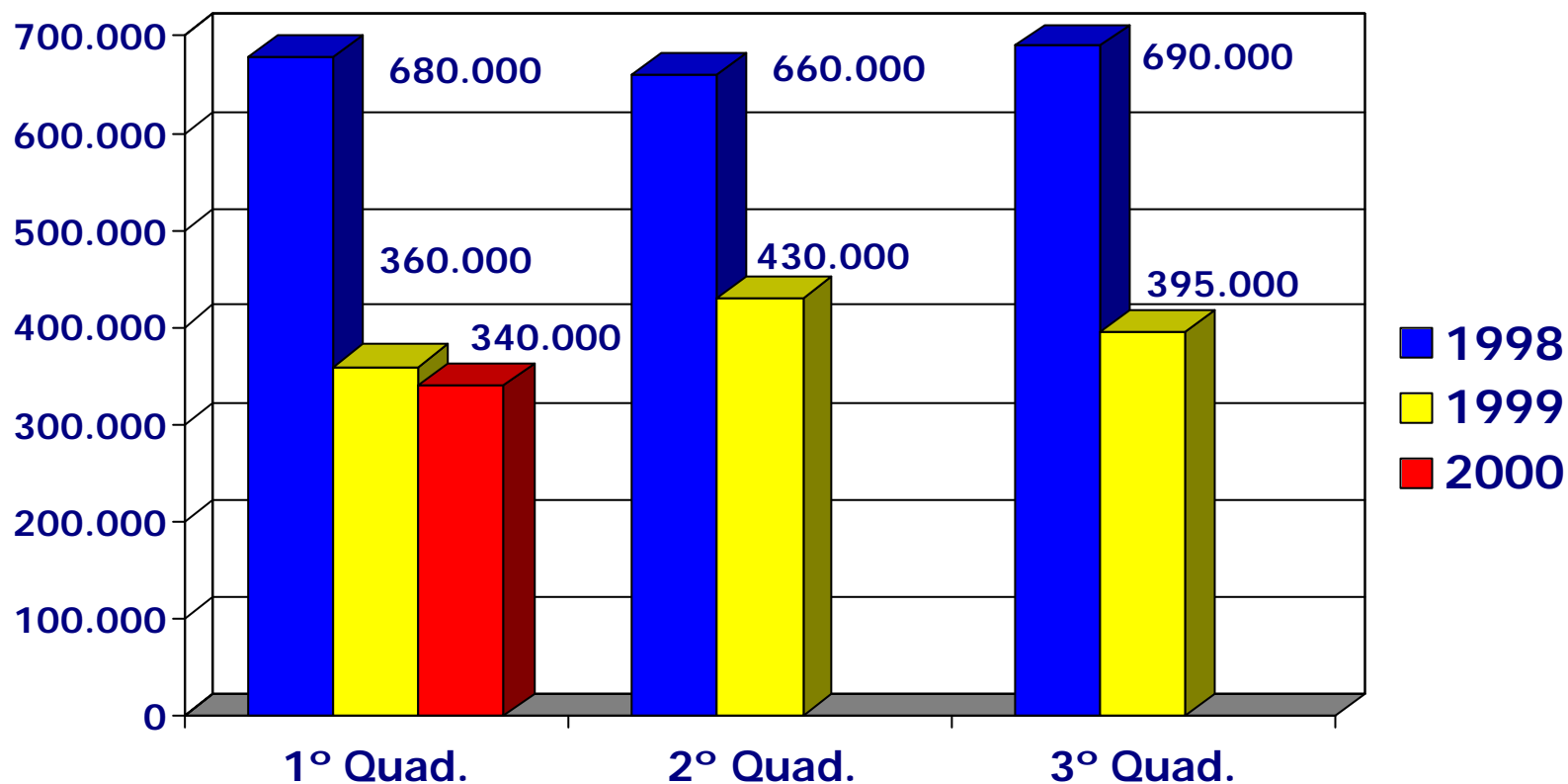


Source: ELETROS



The economic analysis on the digital terrestrial television transition

VCR's industrial sales



Source: ELETROS



The economic analysis on the digital terrestrial television transition

TV Receiver Market - Mercosur

Country	Homes (1,000)	TV sets (1,000)
Brazil	37,000	53,768
Argentina	8,900	10,600
Uruguay	970	1,750
Paraguay	700	530
Sub-total Mercosur (except Brazil)	10,570	12,880



The economic analysis on the digital terrestrial television transition

- Brazilians are keen on high technology appliances;
- Brazil's consumer electronics industry, along with Mercosul, encourages the local production of equipment;
- Most of the international TV equipment suppliers (Americans, Europeans e Asians) are presently established in the country;
- The local production of equipment is an important factor to balance Brazil's international trade in electronics goods, parts and components.



The economic analysis on the digital terrestrial television transition

The analysis of the Transition Costs for Consumers considered

- ▣ Interviews;
- ▣ Statistics model;
- ▣ Assumptions: prices, opportunities, etc.

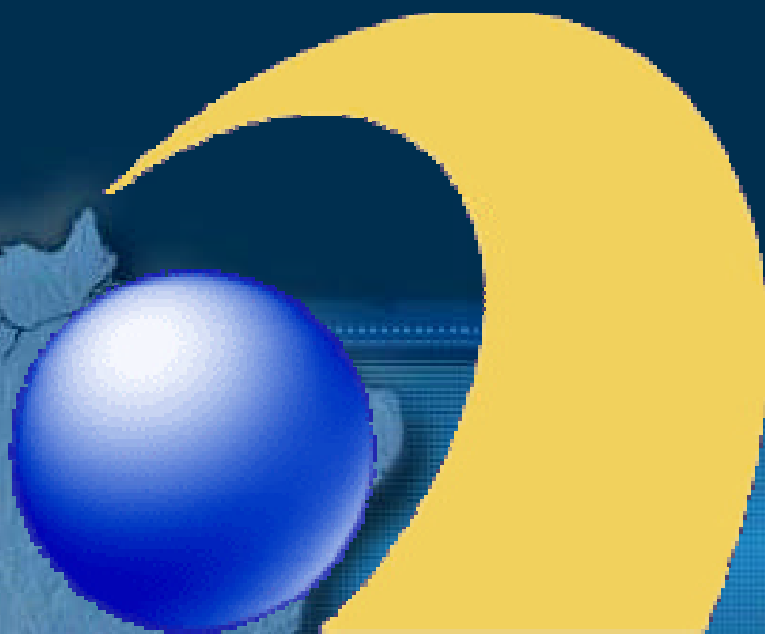
Transition Costs for Consumers

- ▣ The cost must be adequate to the Brazilian Society;
- ▣ The consumers equipment must allow a variety of configurations to meet the needs of the Brazilian Society, such as:
 - ▣ Higher interactivity;
 - ▣ Lower interactivity;
 - ▣ Full multimedia applications and services, etc.



Conclusion

Thus, considering the summary of the Brazilian Television Market presented here in terms of today's television broadcasting, horizontal and vertical market structure, steps toward transition and the economic analysis on the digital terrestrial television transition, the Brazilian administration believes that owing to sharp intra- and inter-regional differences in the consumption power of the Brazilian population, prices and features, of set-top boxes and other related equipment, are likely to have to adapt to the reality of the Brazilian market, in this sense the participation of the Brazilian population has been of great importance in the process .



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