

THE USE OF OPEN SOURCE FOR DIGITAL I NCLUSION IN BRAZIL

Paulo César Siqueira Phd
International Cooperation Office - IBICT

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Paulo Cesar Siqueira – psiqueira@ibict.br

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Brazil in figures and economic potential



- Total area: 8,5 million Km²
- 26 States & 1 Federal District
- 5 Regions: North, Northeast, Southeast, South, Western Center
- Border countries: Argentina, Bolivia, Colombia, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela.
- Currency: Real
- 15th world economy
- GDP: US\$ 498,4 billions (2003)
- 6890 firms certified with ISO 9000
- 420 of the 500 top corporations are installed in Brazil. (14 car industries).
- 6th capital industry and 7th chemical industry in the world
- 1st producer of paper, cellulose and raw material
- One of the greatest producers of commodities: sugar, coffee, soy bean, orange, juice, cow meat.

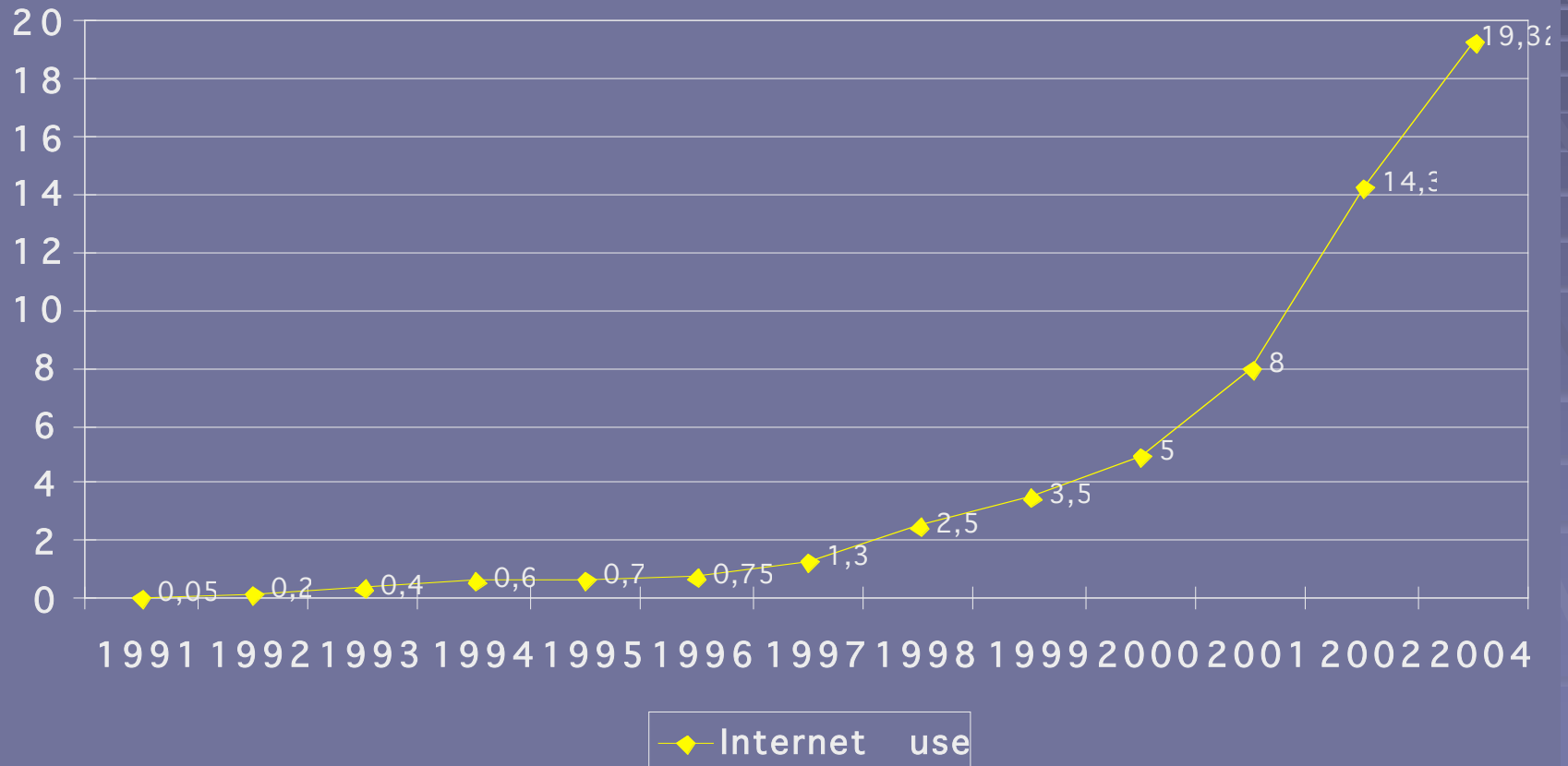
People

- Population: **184 millions** (47% of the South America) Jul. 2004
- Language: **Portuguese**
- Median Age: 27,5 years (Men= 27 and Women= 28)
- Religion: Roman Catholic (80%)
- Life expectancy: 72 years (Men=67 and Women=76)
- Undergraduate Students: 1,56 million
- Institutions of Higher Learning: 1859 (207 public; 1652 private)
- **An ethnic mixture**: Indigenous, African, European, Asian, Arabic people.

Internet users growth

Millions

19,32 million (Sep. 2004)



Broad band users: 1,650 million (Jun 2004)

ADSL connections: 82%

TV operators per signature: 16%

TOP 20 COUNTRIES WITH HIGHEST NUMBER OF INTERNET USERS

#	Country or Region	Internet Users, Latest Data	Population (2004 Est.)	Internet Penetration	Source and Date of Latest Data	% World Users
1	United States	202,452,190	293,271,500	69.0 %	Nielsen//NR July/04	25.3 %
2	China	87,000,000	1,288,307,100	6.8 %	CNNIC June/04	10.9 %
3	Japan	66,548,060	127,853,600	52.1 %	Nielsen//NR July/04	8.3 %
4	Germany	47,182,668	82,633,200	57.1 %	Nielsen//NR July/04	5.9 %
5	United Kingdom	34,874,492	59,595,900	58.5 %	Nielsen//NR July/04	4.4 %
6	Korea (South)	30,670,000	49,131,700	62.4 %	KRNIC June/04	3.8 %
7	Italy	28,610,000	57,987,100	49.3 %	C.I.Almanac Dec/03	3.6 %
8	France	23,216,191	60,011,200	38.7 %	Nielsen//NR July/04	2.9 %
9	Canada	20,450,000	31,846,900	64.2 %	C.I.Almanac Dec/03	2.6 %
10	Brazil	19,311,854	179,383,500	10.8 %	Nielsen//NR July/04	2.4 %
11	India	18,481,000	1,088,056,200	1.7 %	ITU Dec/03	2.3 %
12	Spain	14,332,763	41,895,600	34.2 %	Nielsen//NR July/04	1.8 %
13	Australia	13,359,830	20,275,700	65.9 %	Nielsen//NR July/04	1.7 %
14	Taiwan	11,602,523	22,689,300	51.1 %	Nielsen//NR July/01	1.5 %
15	Netherlands	10,806,328	16,254,900	66.5 %	Nielsen//NR July/04	1.4 %
16	Mexico	10,033,000	102,797,200	9.8 %	ITU Dec/02	1.3 %
17	Poland	8,970,000	38,158,100	23.5 %	ITU Dec/03	1.1 %
18	Malaysia	8,692,100	25,581,000	34.0 %	ITU Dec/03	1.1 %
19	Indonesia	8,000,000	221,777,700	3.6 %	ITU Dec/02	1.0 %
20	Sweden	6,722,562	9,010,700	74.6 %	Nielsen//NR July/04	0.8 %
TOP 20 Countries		671,315,561	3,816,518,100	17.6 %	IWS - Sept./04	83.9 %
Rest of the World		128,724,937	2,573,629,387	5.0 %	IWS - Sept./04	16.1 %
TotalWorld - Users		800,040,498	6,390,147,487	12.5 %	IWS - Sept./04	100.0 %

NOTES: (1) Internet User Statistics were updated on September 1, 2004. (2) Data for users in individual countries and regions may be found by clicking each country name. (3) Population numbers are based on data contained in the [gazetteer.de](#) page. (4) The most recent user information comes from data published by [Nielsen/NetRatings](#), [ITU](#), and other trustworthy research sources. (6) Data

Number of hosts

ICT for bridging social divide

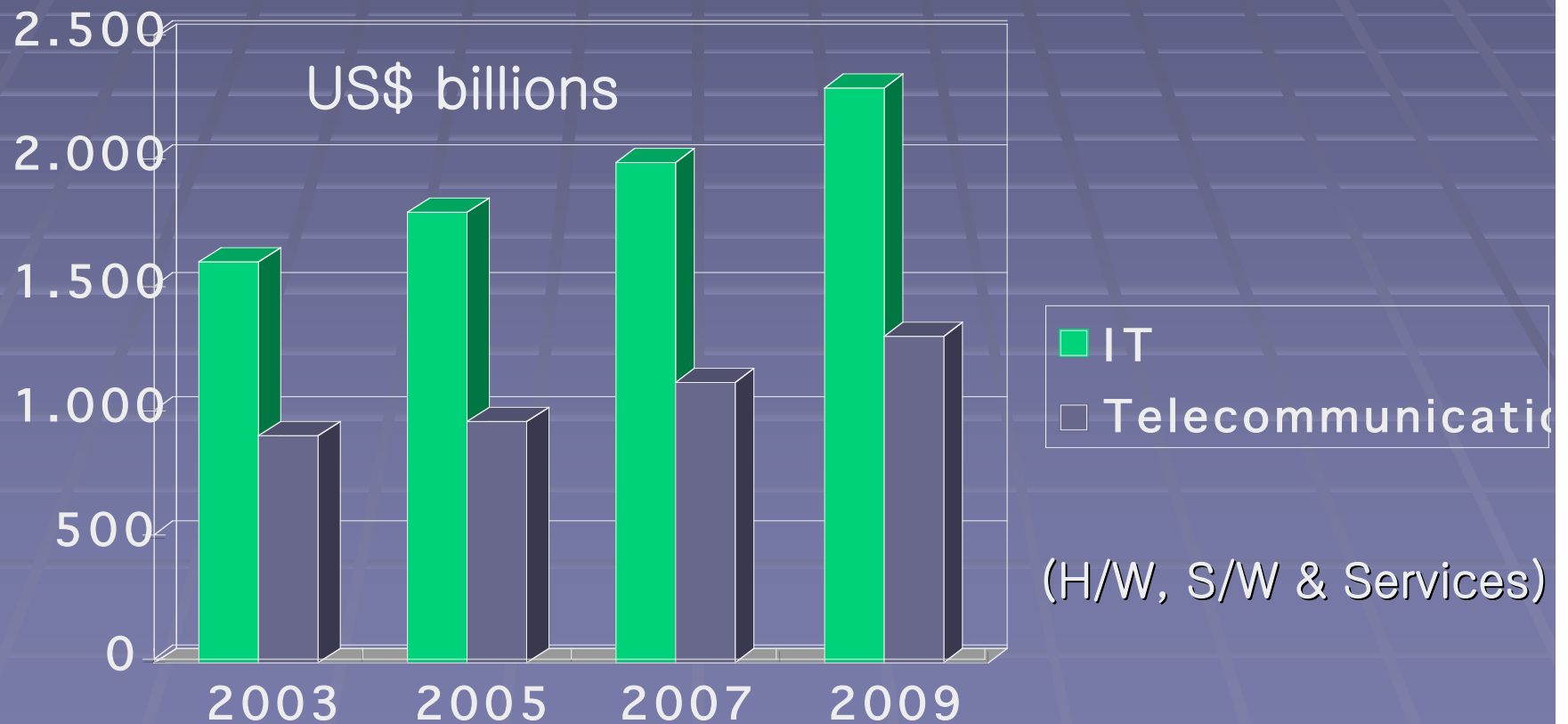
Hosts Worldwide Rank (source: Network Wizards 2004)		
	Country	Jan 2004
1º	USA*	162.195.368
2º	Japan (.jp)	12.962.065
3º	Italy (.it)	5.469.578
4º	UK (.uk)	3.715.752
5º	Germany (.de)	3.421.455
6º	Holland (.nl)	3.419.182
7º	Canada (.ca)	3.210.081
8º	Brazil (.br)	3.163.349
9º	Australia (.au)	2.847.763
10º	Taiwan (.tw)	2.777.085
11º	France (.fr)	2.770.836
12º	Sweden (.se)	1.694.601
13º	Denmark (.dk)	1.467.415
14º	Belgium (.be)	1.454.350
15º	Mexico (.mx)	1.333.406

Host rank in Americas (source: Network Wizards 2004)		
	Country	Jan 2004
1º	USA*	162.195.368
2º	Canada (.ca)	3.210.081
3º	Brazil (.br)	3.163.349
4º	Mexico (.mx)	1.333.406
5º	Argentina (.ar)	742.358
6º	Chile (.cl)	202.429
7º	Colombia (.co)	115.158
8º	Uruguay (.uy)	87.630
9º	Peru (.pe)	65.868
10º	Dominican Rep. (.do)	64.197
11º	Venezuela (.ve)	35.301
12º	Guatemala (.gt)	20.360
13º	Costa Rica (.cr)	10.826
14º	Paraguay (.py)	9.243
15º	Bermuda (.bm)	8.808

* (.edu, .us, .mil, .org and .gov)

ICT Investments

US\$ 1,6 billion
GDP 3,21 % (2003 est.)



Source: PNAD 2003 (IBGE)

Wire line & Mobile

	Telephones (Millions)	Total	Wire line	Mobile	Density per 100 inhabi tants
1	China	421.0	214.4	206.6	32.78
2	US	330.7	190.0	140.7	114.70
3	Japan	153.6	74.5	79.0	120.68
4	Germany	112.9	53.7	59.2	136.71
5	United Kingdom	85.2	35.2	49.9	144.21
6	Italy	79.7	27.4	52.3	141.28
7	Brazil	73.7	38.8	34.8	42.38
8	France	72.5	33.9	38.5	121.59
9	South Korea	55.6	23.2	32.3	116.80
10	India	54.1	41.4	12.6	5.19

Brazil is within the **first 10 countries** with the largest number of wire line and mobile telephones. However, considering the density of telephones per 100 inhabitants, Brazil occupies the **66th position**.

Source: Anatel, 2004

Mobile: From TDMA to GSM

- In 2004, GSM has become the **preferred network choice for Brazilians** from all economic groups, ages and regions.
- GSM's Subscriber base average growth is above **11% per month**. Many of these are migrating from other technologies such as TDMA.

Source: "Brazil –Mobile Communications –Market Overview", by Paul Budde Communication Pty Ltd, 2004.

Brazilian initiatives for bridging digital divide

1. Long distance learning courses

1. promoted by public universities and research centers
2. promoted by private universities or learning centers of industry in

2. The use of open sources in public administration and private sector

3. Promoting the access of the poverty communities to hardware at low cost

4. Development and organization of the digital infrastructure in public administration: policies, web pages, standardization and contents treatment

5. Infocenters

1. Promoting the access of the poverty urban communities to IT technologies by government, NGO and private sector;
2. Promoting the access of the SME to IT technologies by MDIC

Government expenditures in software

- The special Group for Software License Usage estimated the following in US\$ millions:
 - – The total expenditure on software by federal government in 2002: about US\$ 24,87Mi;
 - – Annual expenditure with software rental: US\$ 5,26 Mi
 - – Cost of system maintenance: US\$ 6,47 Mi
 - – The main ministry expenditures:
 - – Defense: US\$ 7,70 mi; Health:US\$ 4,20 mi; Education US\$ 2,64mi
 - – Main Suppliers:
 - Net Control (6,16 mi); IBM (4,24 mi); ORACLE (2,30 mi); BORLAND (1,70 mi); FUNCATE (1,52 mi); SERPRO (1,48 mi); AUTOTRAC (1,32 mi)

Justifying the use of open sources

- Migrating to the open source alternatives: is a strategic option of the government to reduce costs and to develop new technologies.
- Advantages:
 - Increased security in using these tools
 - Technical foreign independence
 - Saving money for the public administration
 - Generation of knowledge
 - Stimulus for the development of local software.
 - Promotion of the participation of the Industry and private sector in this process.
- Saving money in hardware acquisition, by replacing powered machines for terminals and single servers
- Promoting low cost hardware and software remark its important social function as a tool for bridging digital divide
- Hardware industry in Brazil is being stimulated to use Open sources as operational systems for their products
- Increasing of the software developer specialists and local developer firms.

Chronology of the open sources initiative

- October 2003– set up of technical commissions within the E-government executive committee for implementation of Open Source by Public Administration.
- November 2003 – the Presidential Cabinet recommends the use of Open source alternatives by all public sector
- April 2004– promotion of the training week in Open Source by ITI, Serpro and other institutions (150 courses for training: +2000 public employees)
- July 2004 – Publication of the Open guide by the government: a migrating reference for adoption of the open source alternatives by public sector

Phases for migrating to the Open Source systems.

- Policy phase (concluded) – debate at the government and societal levels regarding its use, promotion of this technology and free software to build an open platform.
- Cultural migration phase (in course) – describes cultural changing in many institutions towards the access to IT by open sources (fight against market monopoly, associated purchase of software and hardware)
- In this phase: qualifying and to training computer science specialists, analysts and managers are needed.
- Technical migration phase of installing software and hardware (within the pilot project the technical commission is surveying the OS exchange in five ministry partners)

- Next phase– compilation of some OS models migration to open source, as a reference for the other institutions
- Status of the migrating initiatives to open sources in Public Administration
 - Ministry of the city is the most advanced in the use of open sources
 - The last in using them is the Ministry of Education
 - Other institutions and public sectors are preparing to use these alternatives, at municipal state and level
 - Some services already available function well, like Firewall, server for files, DNS and database, but there some problems in using them for e-mail platform.

The contents of the manual for using open source

- Coordinated by the Logistic and IT Secretary of the Ministry of Planning, Budget and Management (SLTI) the manual delivers:
 - Instructions for management of digital environment.
 - Technical procedures to be followed.
 - Criteria for management migration to the Open Source.
 - Geographic references of open sources alternatives
 - Webmail
 - Project Management
 - Description of some migrating experiences in public institutions like SERPRO and the Ministry of Agro-Development.

■ Partnerships and stakeholders

- The National Institute of Information Technology (ITI) coordinates implementation of Open Source Initiative in collaboration with SLTI
- Its objective is to formulate rules and procedures to promote Open Source migration by public administration
- At public level the other participants are: Data Process Service (SERPRO), Ministries of Cities; Communication; Mines and Energy; Culture; and Science and Technology, Education; Agriculture; some universities and State and Municipal government institutions.
- At private sector local software developer firms offering new solution
- Hardware industry interested to use this software as operational system
- Local trade firms and distributors
- Training institutions
- Non governmental organizations
- Some Latin American countries are also interested in using this technology

Difficulties and challenges

- It poses a complex project, demanding good planning and management.
- Interoperability is necessary, at the first phase,
- After accepted, this technology ask for a standardization to be applied in the next phases
- Policies for development and application to state and municipal government and private sector
- Integrated models for all government.
- Continuing and regular financing support

BRAZILIAN PROGRAMME FOR DIGITAL INCLUSION: sample of application

Digital Exclusion in Numbers:

Estimated by Industry Federation of Rio de Janeiro (FIRJAN), a total of 66 million people are excluded of IT technologies access in Brazil

Users of Internet are from A and B classes

The cost of access to internet services in Brazil is three to five times the cost in the USA

To every 150 computers acquired without proprietary software, the government saves 90 thousand dollars

Objectives of the brazilian programme:

To promote the access of low-income citizens to IT technologies, knowledge and public services, contributing for a development of citizenship

Main Projects

Connected PC:

Facilitates the acquisition of hardware and software at low cost and with special financing conditions

House of Brasil:

Government initiative to increase telecenters implantation, making public services and software available for increasing use.

Connected Schools:

Interconnect public schools and education services as a network for better education (not yet implemented)

Infrastructure:

Project for better interactive infrastructure of hardware and software and public network (not yet implemented)

e-government main services and facilities

e-Procurement

- Government bidding system
- **Transparency** in Government actions
- **Cost reduction in 20%**
- Fasting acquisition processes
- “Sanitizing” corruption – 175 thousand registered firms, 51% SME



e-Voting

- About **120 million voters** (2/3 of total population)
- **Final results in few hours**
- Legacy for schools
- Bridge digital divide

Receitanet – Income tax filling over the Internet

- 18,8 million tax declarations: **97% of total income taxes**
- Prompted the development of new systems for submitting other taxes



Conclusions :

- Brazil is the first country to edit an open source official manual for public administration
- This manual can be used as reference for some other institutions, private firms (mainly SME) and individuals.
- The only condition for use is: the source must be cited
- The use of this technology by public sector may also stimulate its domestic use by citizens.
- This project is very complex: some adjustments are needed (policy, interoperability, system integration).
- A Spanish version was published for cooperation with Latin American countries.
- Low-cost and other advantages suggest its replication to other countries

Thank you



Obrigado !