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Economic Meeting 2005

Brazil / Germany

Technological Evolution of Communications x

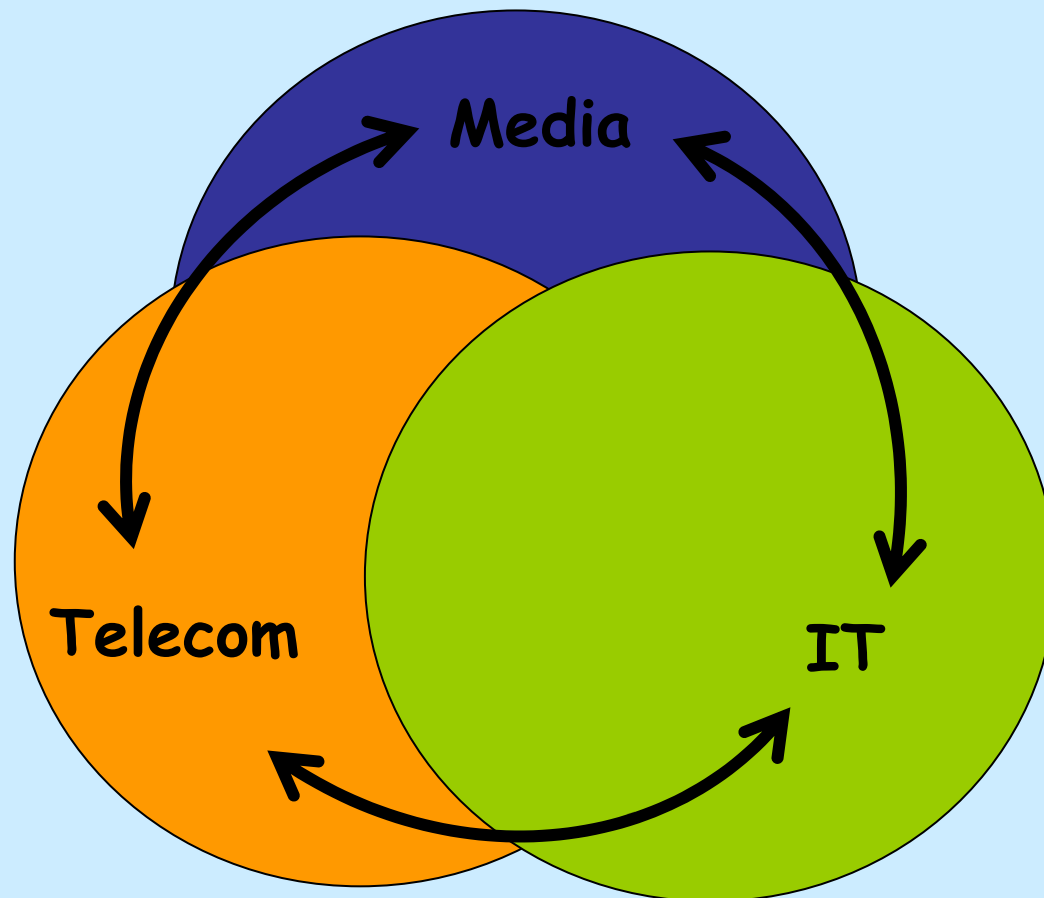
Demand for Cooperation

Adilson Primo – President / Siemens Ltda.

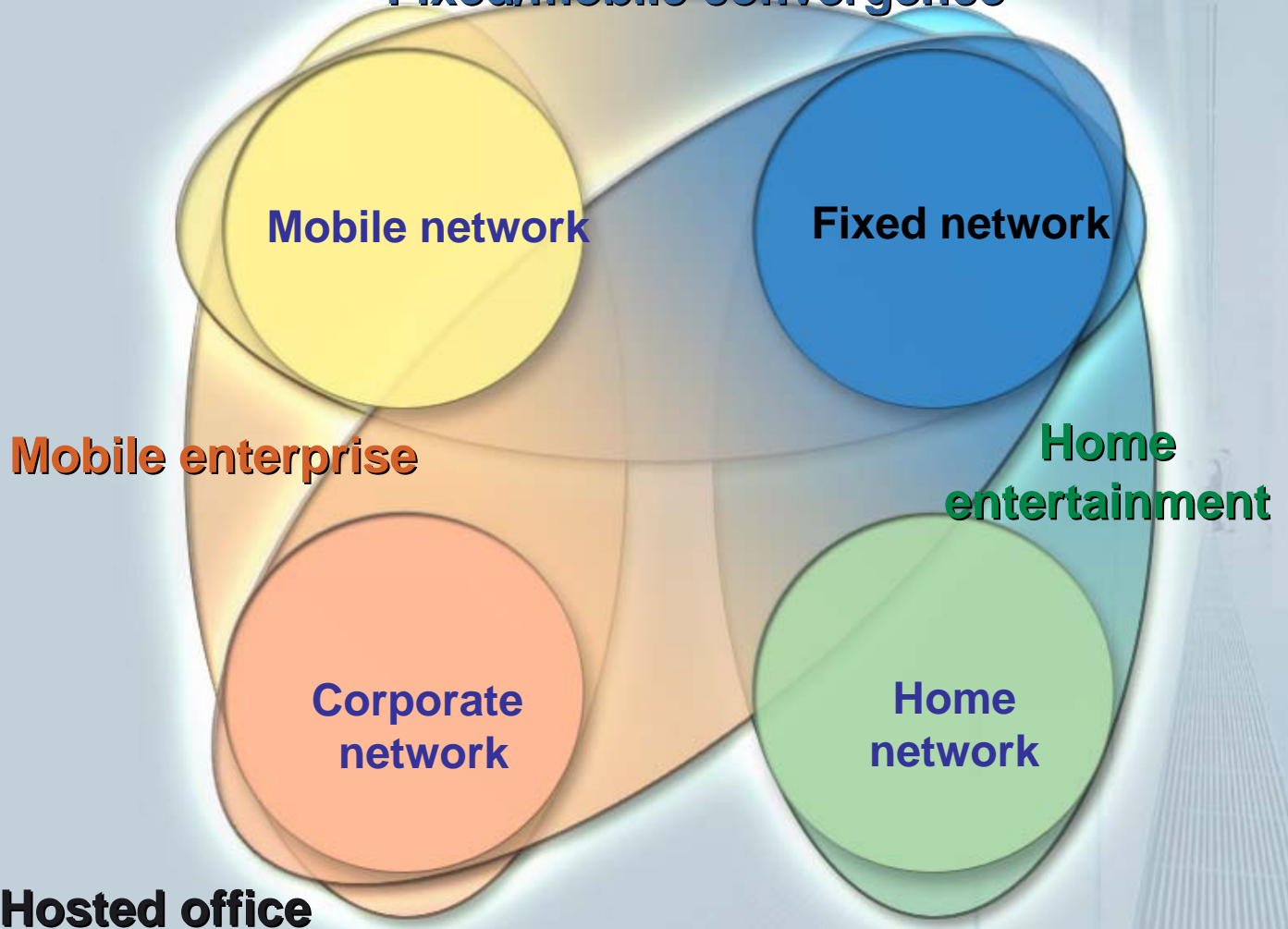


The Convergence of Communications

U\$ 5'' Market
Opportunities are increasing...
But also the challenges to maintain the business are...

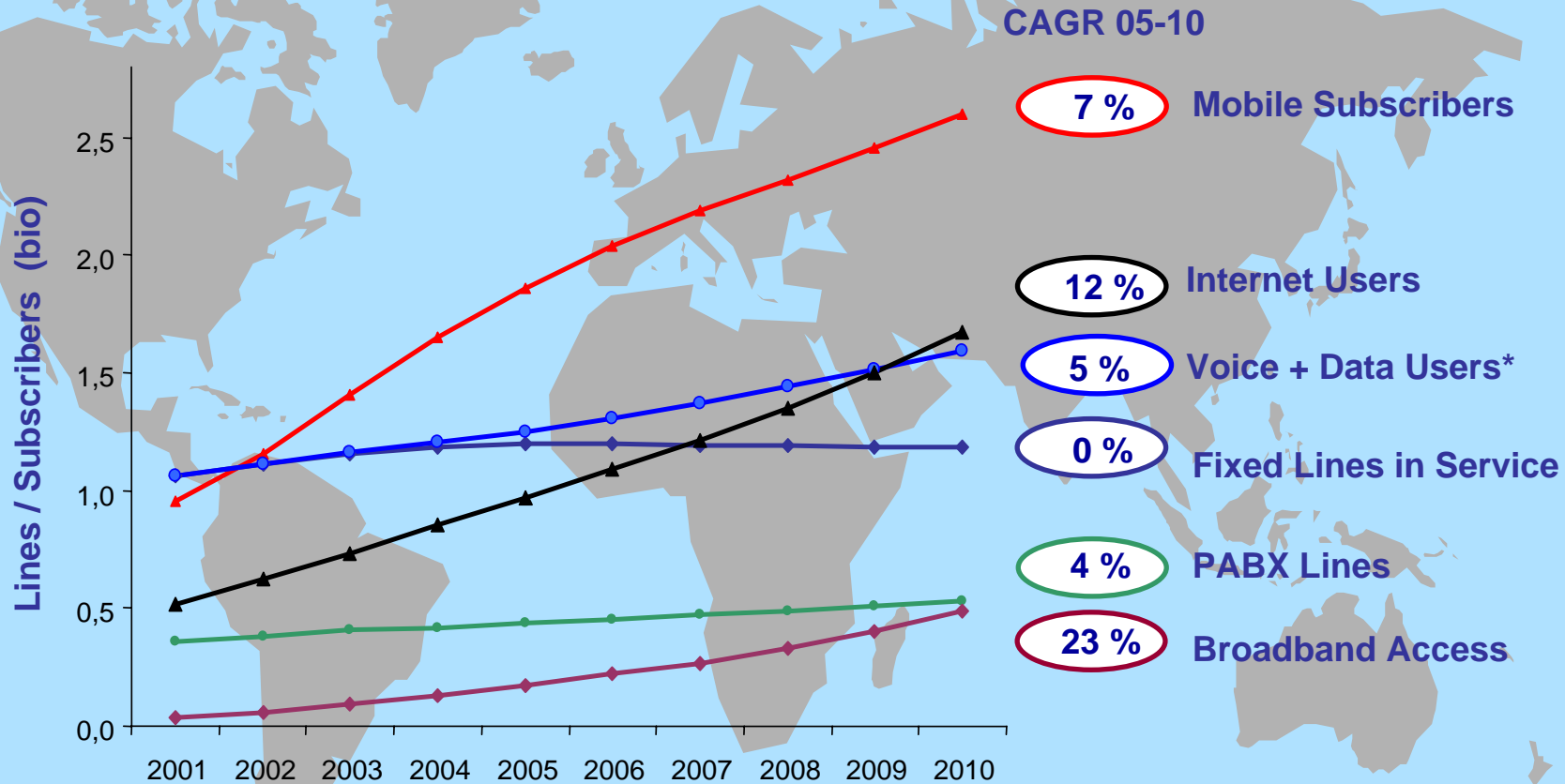


Fixed/mobile convergence



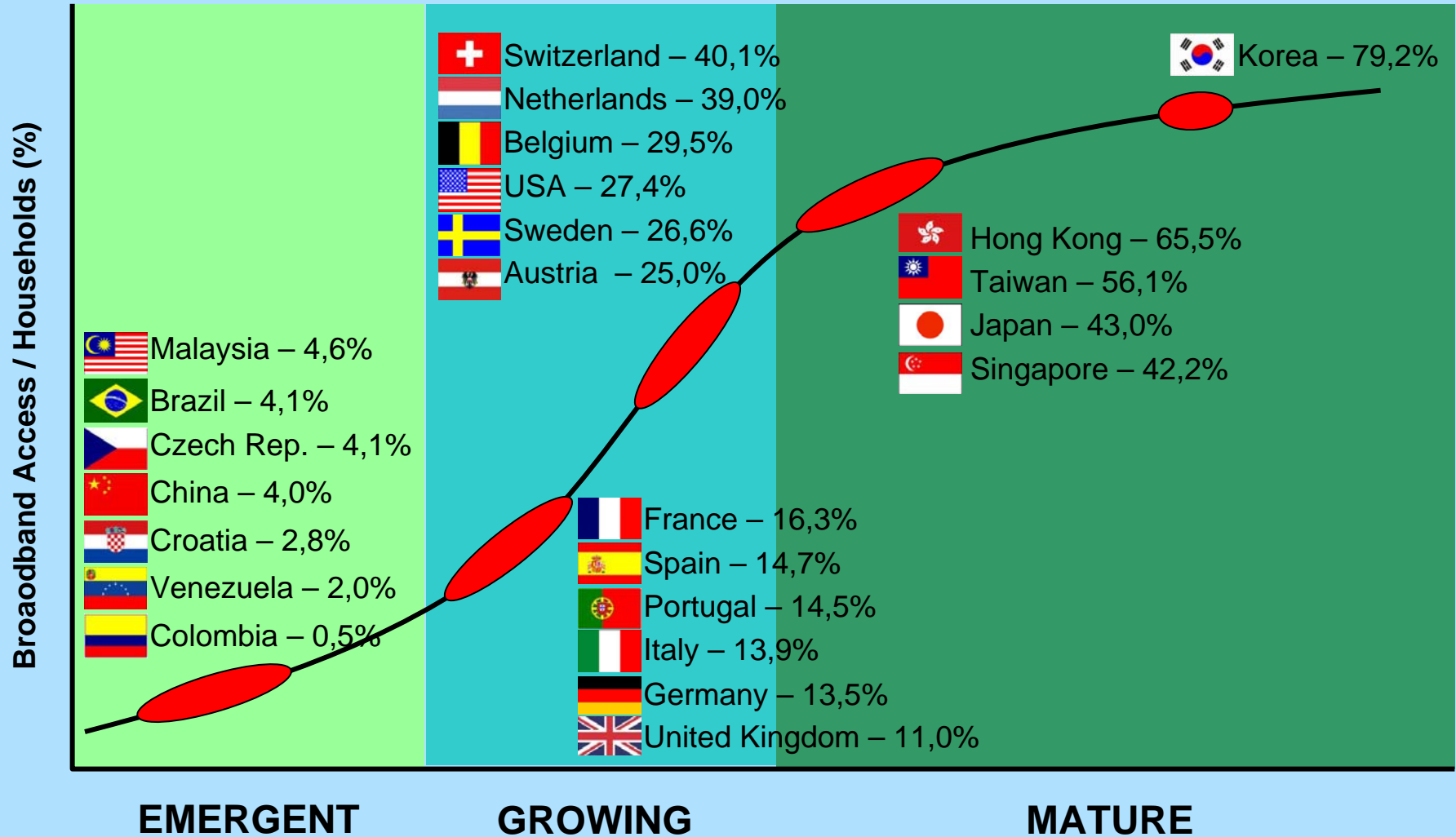
Telecommunication Market: Users and Access Evolution

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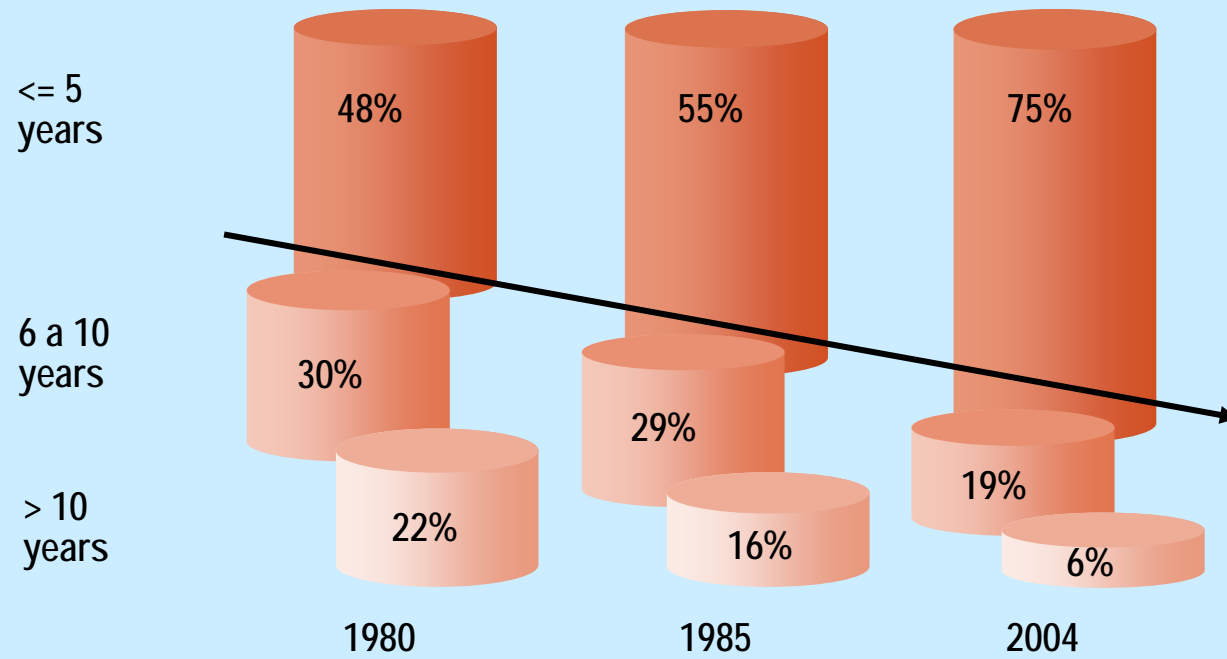
* Fixed Lines in Service + VoIP Clients

Broadband Access: Worldwide Evolution



Innovation: Speed is a Key Factor

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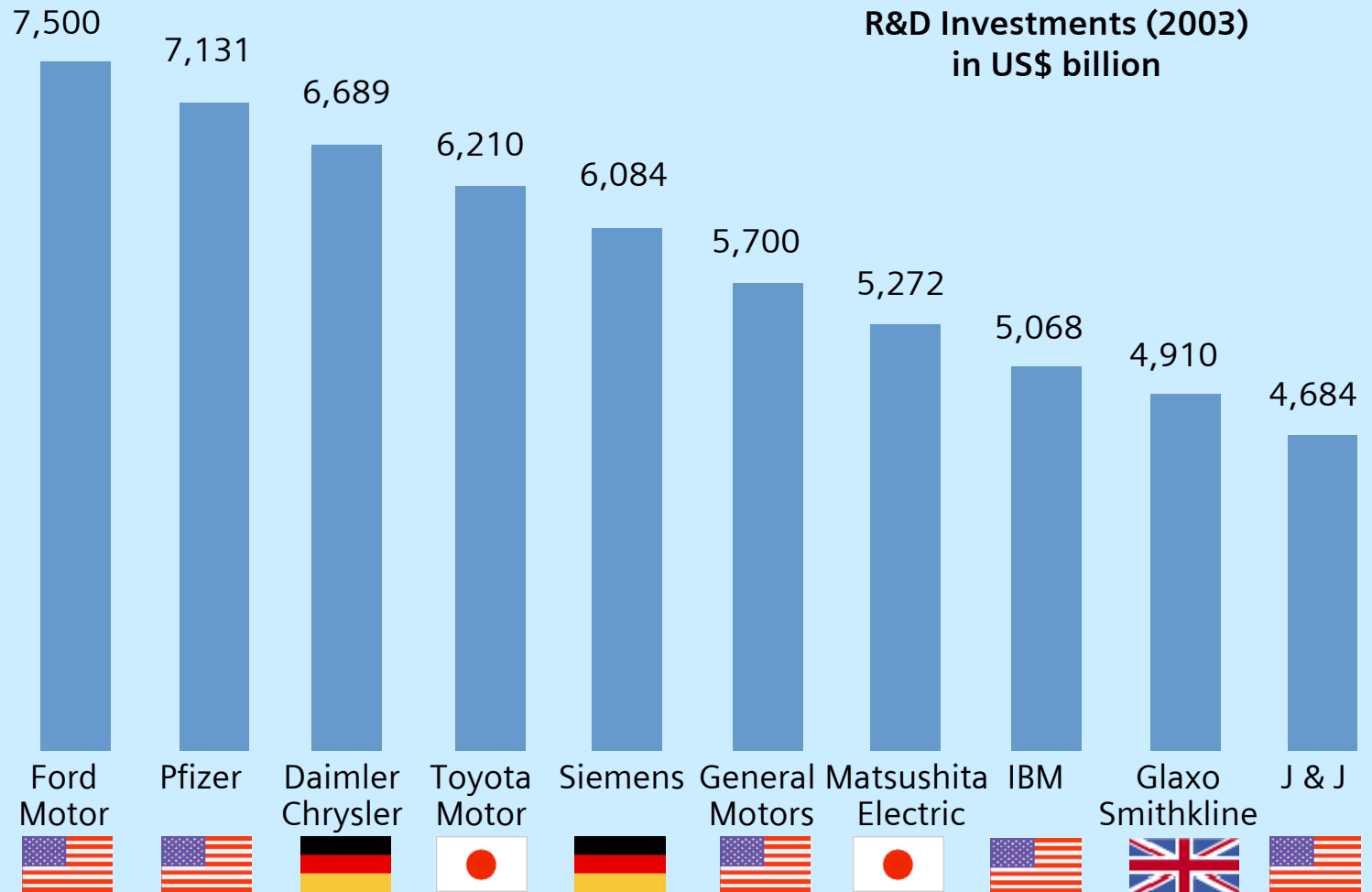


Product life-cycle released by Siemens



Innovation: Requires High Investments

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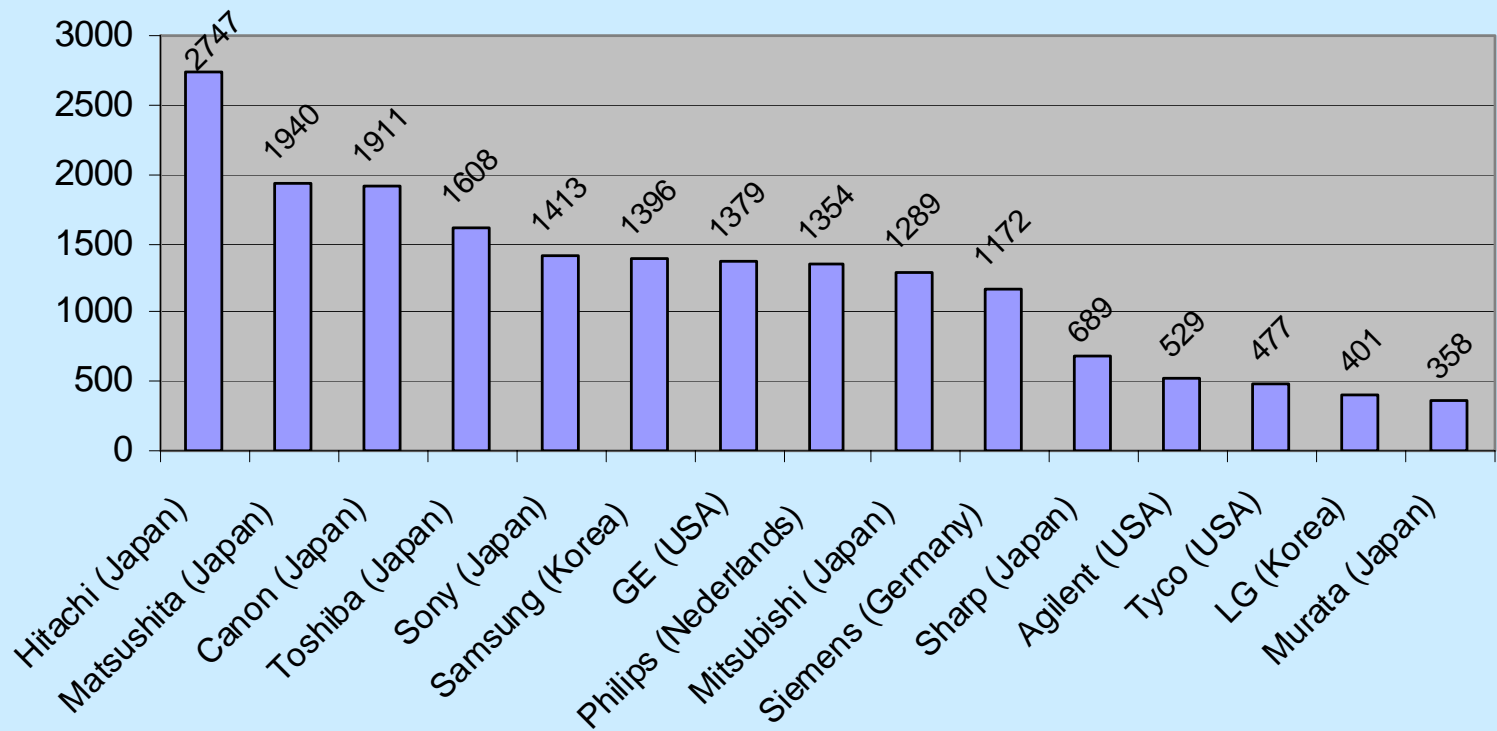


Source: TOP 15 – Technology Review / R&D 2004

Innovation: Capability is measured by Patents



Patents in the electroelectronic sector registered in USA



Source: The TR Patent Scorecard 2004

Number of Patents: The number of U.S. patents awarded, excluding design and other special-case inventions.

Innovation: A question of Resources and Competencies

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=> Challenges of R&D Projects:

- **More larger R&D Teams**
- **High Tech Competencies in New Technologies**
- **Multidisciplinary Knowledge**
- **High Investments**
- **Tough Schedules**

=> Current Approaches:

- **Qualified Innovation and Knowledge Management**
- **University and Research Institutes Partnerships**
- **Joint Ventures**
- **R&D Outsourcing and Offshoring**
- **R&D in competitive countries (competence / cost)**
- **Collaborative, distributed and simultaneous R&D Projects**



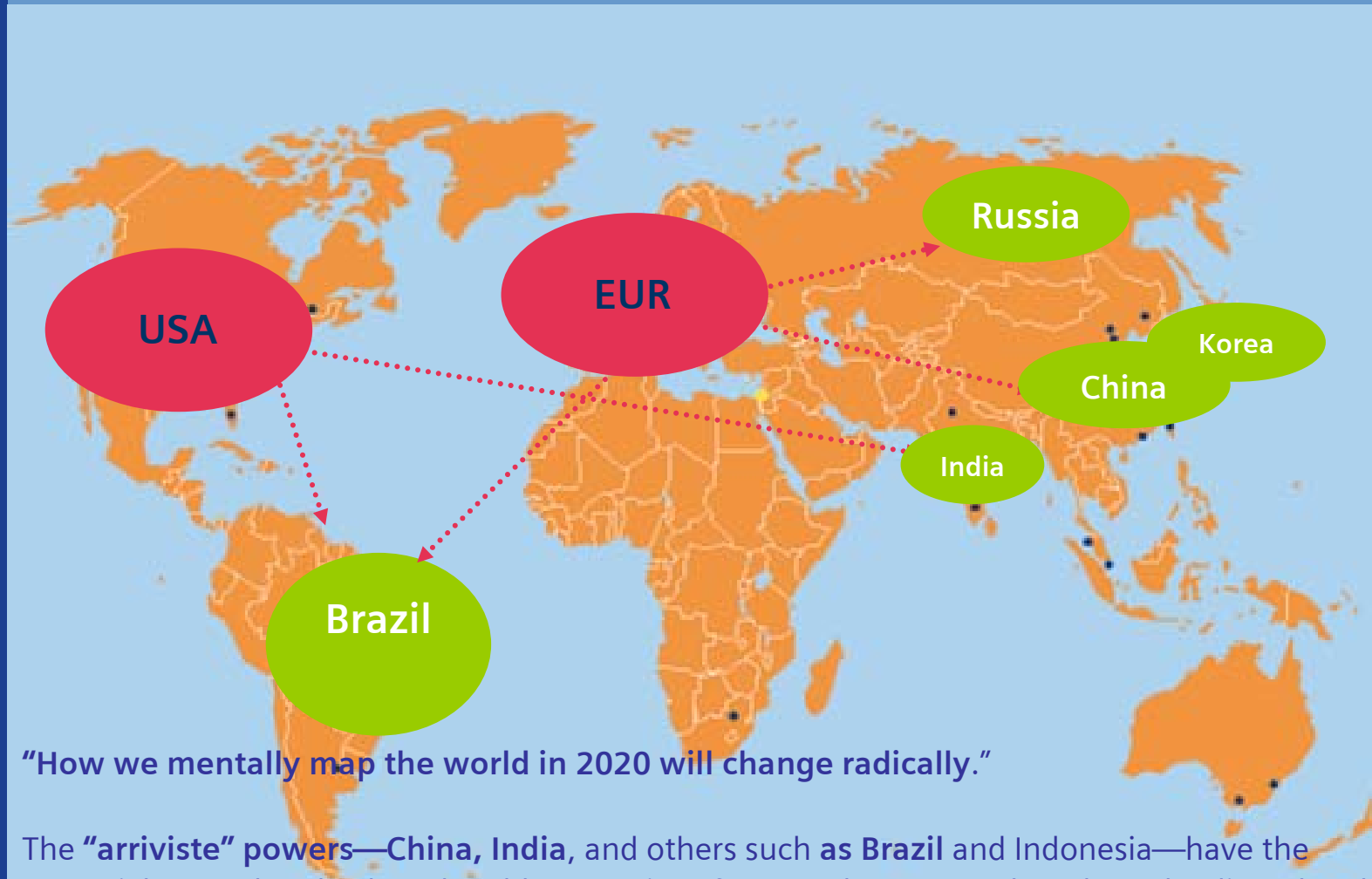
Aspects for the Internationalization of R&D

- 
- **Close to the customer**
 - **Close to the production**
 - **Networking to the Scientific Community**
 - **Attractive Costs**
 - **Competencies**
 - **Recruitment of Talents**

▶ **R&D goes with business, market and competencies**



R&D Decentralization



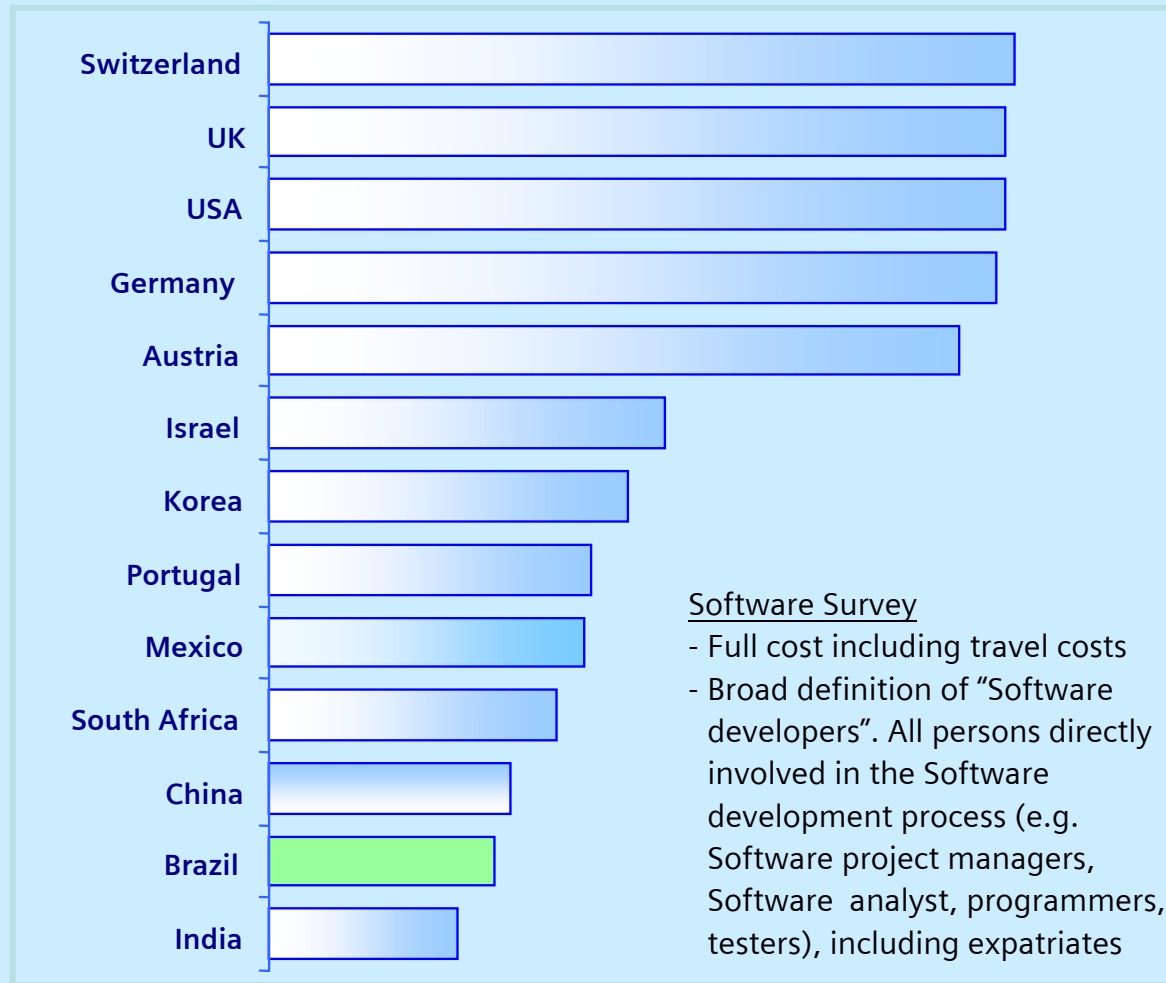
“How we mentally map the world in 2020 will change radically.”

The “arriviste” powers—China, India, and others such as Brazil and Indonesia—have the potential to render obsolete the old categories of East and West, North and South, aligned and nonaligned, developed and developing.

Source: CIA Report of the National Intelligence Council’s 2020 Project



Decentralization: Cost is a Key Factor



Hourly rates / Work cost per hour 2004

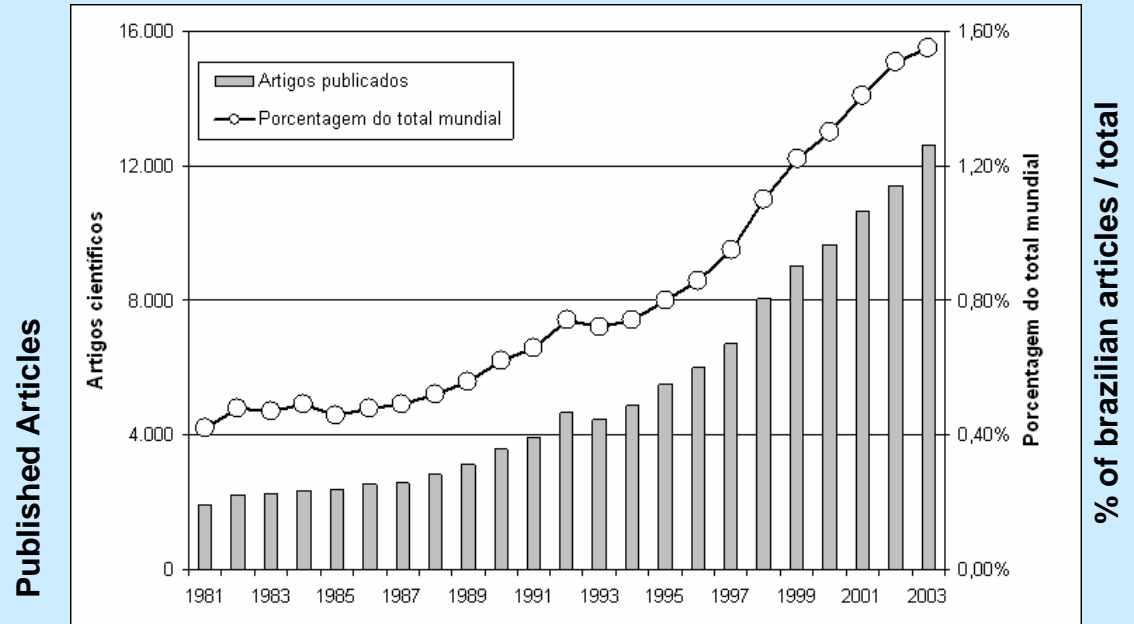
Siemens top R&D countries



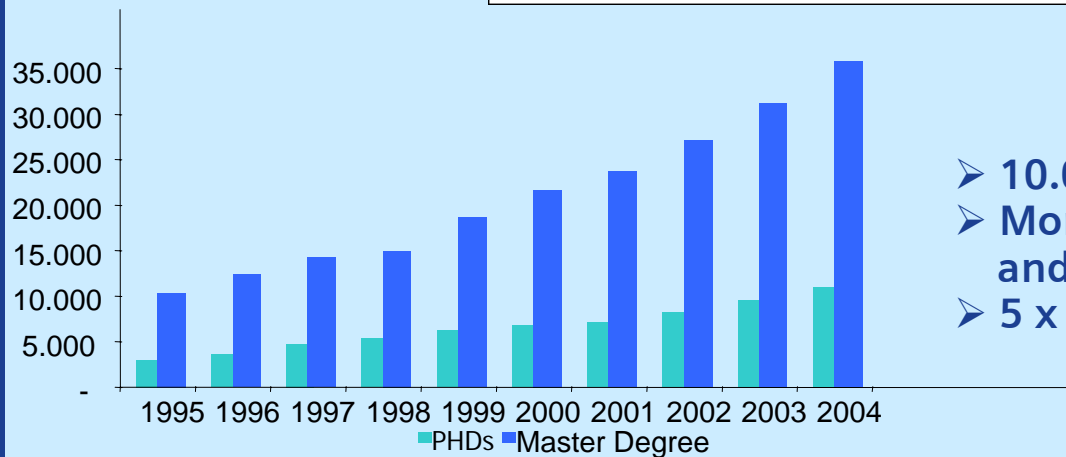
Brazil: Technological Capability

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- One of the most worldwide growth
- 9% Japan
- 8% UK
- 7% Germany
- 5% France



Source: ISI – NSI



- 10.000 PhD / year
- More than Australia, Italy and Canada
- 5 x more than Mexico

Source: Siemens / CS, based on CAPES data - Ministry of Education

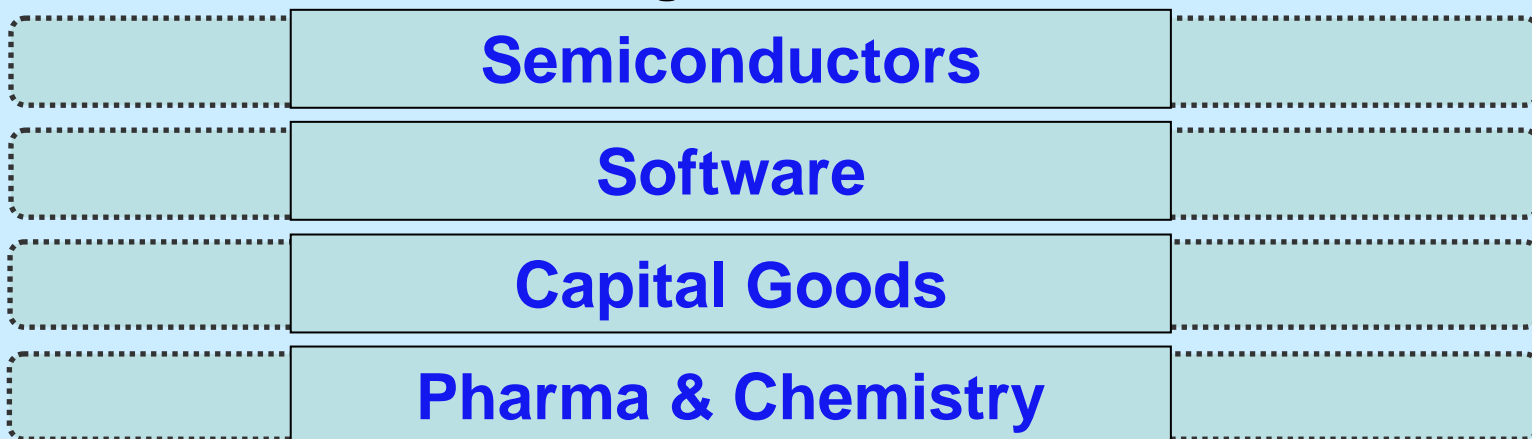


Brazil: Industrial and Tecnological Policy

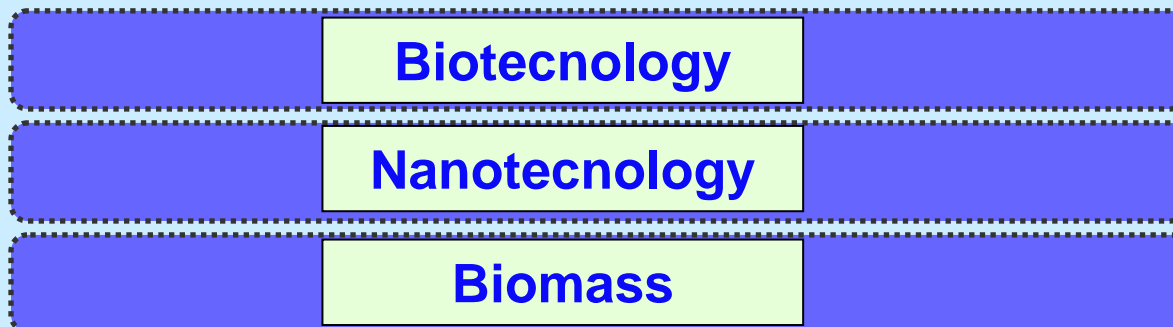
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- **Focused governamental Investments**
- **National Development Council**
- **National Industrial Development Agency**

Strategic Sectors



Future Fields



Brazil: Public Incentives for R&D Projects

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- **Fiscal benefits for IT / Telecom companies - IT Law**
(80% of Industrial Tax Reduction)
- **Non-reimbursable funds for common projects with Universities**
(€ 200 million / year)
- **Income tax reductions**
(200% of yearly R&D expenses)
- **Grants for “in-company” researchers**
- **Low interests Financing**
- **Economic Subventions - in discussion**
(Direct non-reimbursable funds – without Universities)
- **Technological governmental orders - in discussion**



Siemens Brazil: Cooperation in the Telecommunication Area

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Enterprise Communications (voice, data, image – e.g., PABX)



- One of the 9 worldwide development centers
- Brazil has one of the 6 seats in the R&D board
- The software for the HiPath 1200 PABX (only sold in Europe) was totally developed in Brazil
- Worldwide export base (including to USA)



Brazil: A Natural Option for Technological Cooperation

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In which of the following countries does your company plan to spend the most on R&D in the next three years (excluding your domestic market)? (Top ten locations out of 54.)

(% respondents)

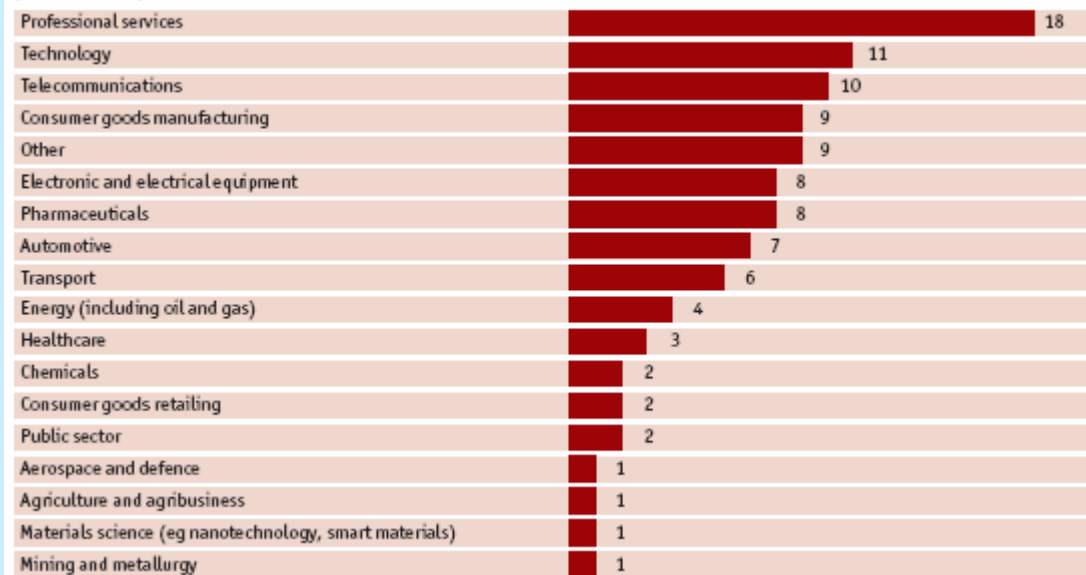
1. China	39
2. US	29
3. India	28
4. UK	24
5. Germany	19
6. Brazil	11
7. Japan	10
8 = France/Italy	9
10. Czech Republic	8

Source: The Economist Intelligence Unit

Source:

White paper written by the Economist Intelligence Unit sponsored by Scottish Development International, 2004. "Scattering the seeds of invention – The Globalization of R&D"

What is your company's primary industry? (% respondents)



Brazilian and German Cooperation

- Germany and Brazil can converge to a more intensive cooperation in technological innovation issues.
 - The Brazilian industrial and scientific base is having an increasing international recognition.
 - The Brazilian government is implementing horizontal and vertical technological policies to increase industrial innovation activities.
 - The environment for R&D offshoring in Brazil is very attractive.
- ⇒ It could be created a working group in order to analyse mechanisms to foster partnerships between the two countries, consisting of:

Ministry of Science and Technology
Ministry of Development, Industry and Trade
Enterprise representatives
Universities / Research Institutes
Others





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Thank you!

Adilson Primo

