
Innovation Policy in Brazil depends on

- ✓ **Focus on market failure – technological risk**
 - ✓ **Definition of the problem vs solution**
- ✓ **Long run, courageous and audacious goal**
 - ✓ **Leverable and achievable projects**
 - ✓ **Investment to attract private capital**

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Good examples on Innovation Policy in Brazil in the last years

- ✓ Industrial Policy introduces **technological innovation debate**;
- ✓ ***Ciências Sem Fronteiras*** and ***PRONATEC*** improve the human resource and ***“EMBRAPII”*** was created to offer technological services;

Three relevant actions to think about the future policies:

- ✓ ***Programa Inova Empresa*** was the first Brazilian Program focused on technological innovation;
- ✓ ***FINEP-30DIAS*** makes financing innovation process more rigorous and creates fast track mechanism for firms to innovate;
- ✓ ***Programa Plataforma do Conhecimento*** was launched to make technological innovation procurement possible;

Future actions and policies in Brazil must focus on higher technological risk, long-lasting benefits to create new industrial capacity

Attention to the following points for the next years

- ✓ ***Deliverable** from public investment in S,T&I has not been clear for the society in the last years;*
- ✓ ***Weak innovative strategy** remains in companies, **difficult dialogue** between Universities and Enterprises and lack of human resources;*
- ✓ ***Poor venture capital market**, seed money and corporate venture;*
- ✓ *Legislation makes the **innovative entrepreneurship** not easy to deal with;*
- ✓ ***Technological innovation procurement** from the government is new and must be implemented;*
- ✓ ***New funding** must be predictable in the long run;*

Innovation policies must be implemented in a long run view and in a sense of urgency

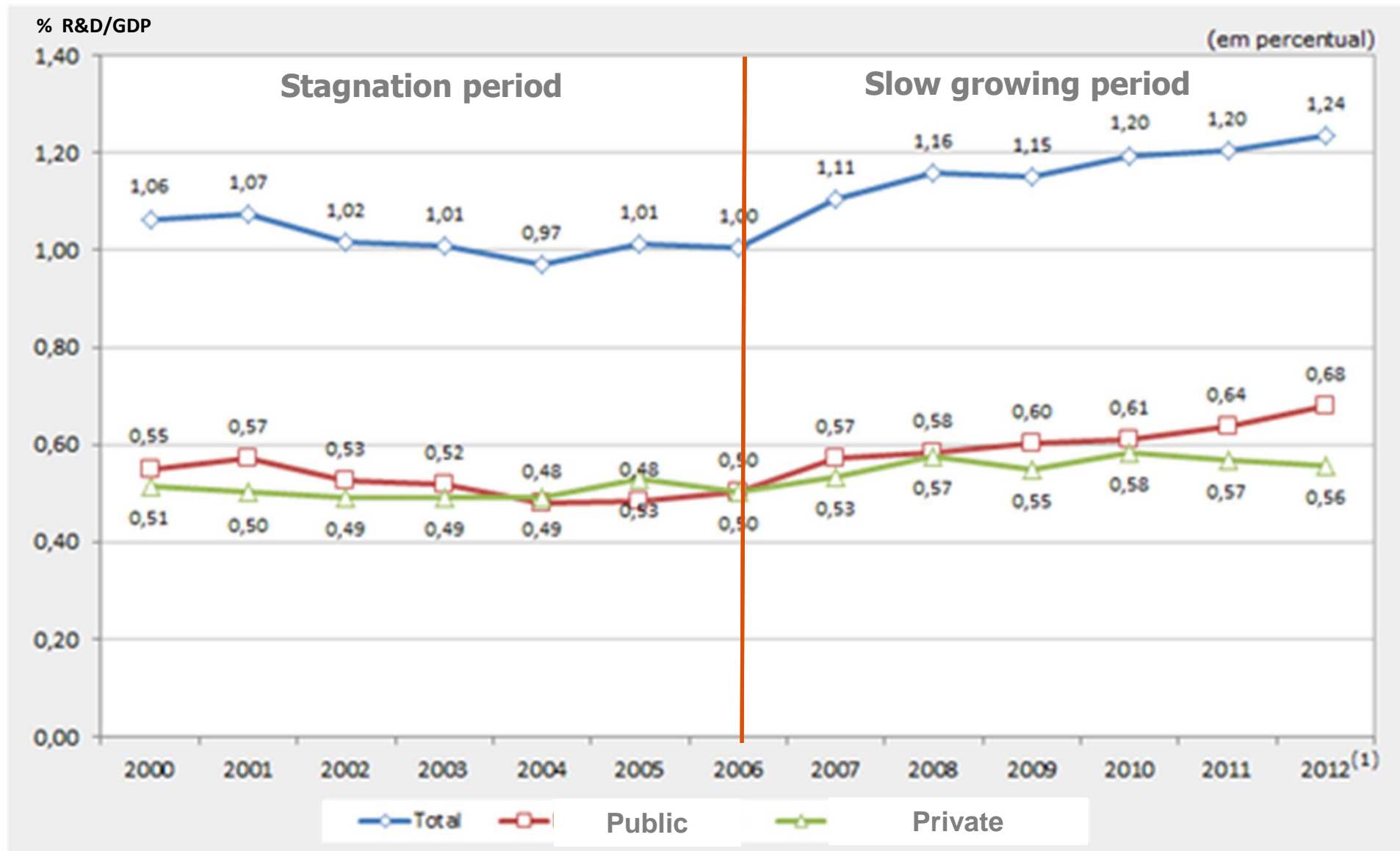
Innovation is a key for productivity to increase in the Brazilian firms

Types of firms	Number of firms in the Brazilian Industry	Productivity (value added/worker) (R\$ thousand)
All firms	98,420	39.03
Not innovative firms	60,612	34.93
Innovative firms	37,808	45.50
Innovative for firms	35,435	43.91
Innovative for the Brazilian market	4,420	67.30
Innovative for world market	309	96.38

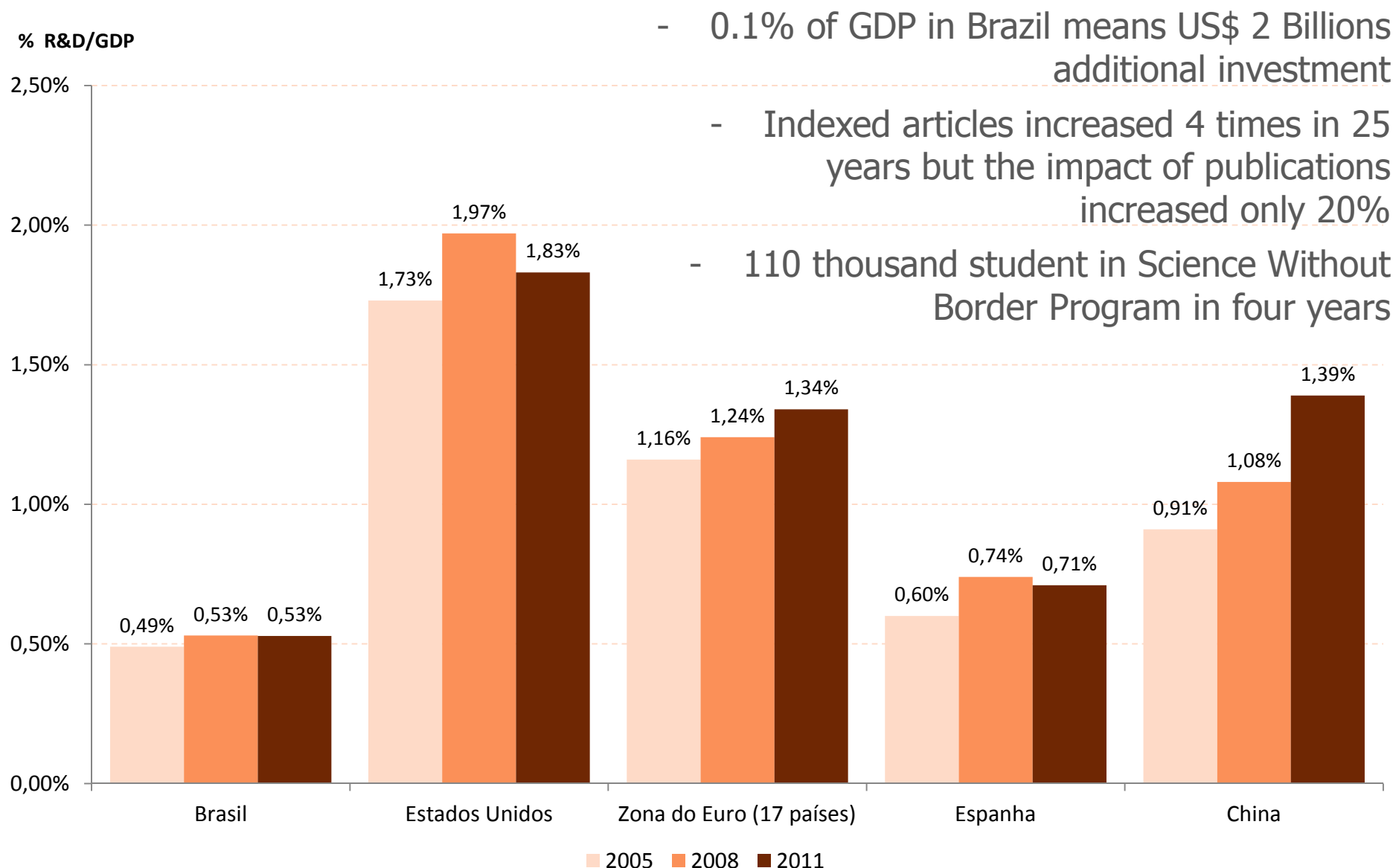
Empirical evidence: Brazilian innovative firms invest 23% more in relation to revenue after innovating compared to similar firms that do not innovate!

**Innovation *causes* the investment to increase in Brazil.
New capacity production must be the target of policies**

There was a change in R&D investment ...




... but the R&D entrepreneurial investment is still very low



- 0.1% of GDP in Brazil means US\$ 2 Billions additional investment
- Indexed articles increased 4 times in 25 years but the impact of publications increased only 20%
- 110 thousand student in Science Without Border Program in four years

Technological efforts in firms are still slow, but they have advanced under a few public policies

- ✓ **Master and PhD in charge of R&D** in firms changed from 2,953 in 2000, to 4,330 in 2005 and 5,632 in 2011
- ✓ **The investment in R&D** of enterprises was multiplied two times from 2000 to 2011
- ✓ **The intensity of R&D** (R&D/Value added) increased from 0.62% in 2008 to 0.71% in 2011



But, in 2009/2011 only 2.1% of Brazilian firms got governmental financing for their innovation projects in R&D. Out of **7,177 enterprises that continuously invested in R&D in 2011**, only 421 obtained financing in R&D in partnership with universities and only 245 got economic subvention

More investment in S&T and more efficiency

- ✓ **More investment:** Only to follow the displacement of the world technological frontier, the public investment in S&T would need to increase more than 10% a year and to move from ~ U\$ 10 bi invested to ~U\$ 30 bi
- ✓ **More Efficiency:** i) focus on higher technological risky areas; ii) integration of instruments and agencies; iii) deliverable projects - product and process; iv) reduce bureaucracy; v) public-private partnership

From these two main ideas the “Plano Inova Empresa” was born in 2013...

Plano Inova Empresa

U\$ 15 bi were offered to invest in four years (2013-2018)
2.787 Firms and 238 Science and Technology Institutes have applied to support their projects

First evaluation of the Program was very positive

- ✓ Encourage higher technological risky projects;
- ✓ Integrated tools (loans subsidized + grants + equity + fiscal incentive) made *additional effects* possible (R&D were increased in companies);
- ✓ Public procurement (in drugs) was the pioneer Brazilian experience to stimulate technological innovation;
- ✓ First *corporate venture capital* in a public-private funding partnership was created;

Reduce burocracy, increase transparency and rigorous analyses were the main challenges ...

More transparency and efficiency of public sector

Finep changed its process to analyze technological innovation projects in order to increase the efficiency and transparency

Finep
30 Dias

Horizontal segregation: two different teams analyze projects (merit evaluation and financial condition) - collegiate decision

Vertical segregation: Director collegiate analyze only was approved by inferior instances

Indicators to increase the quality of the analysis. Brazilian Innovation Survey is used as reference to calculate:

- Rating for company's innovation trajectory
- Project technological rating

General
framework
finished in 30
days and
contracted in 60
days

New instrument for technological procurement: *National Knowledge Platforms Program*

Platforms are public-private partnerships that articulate research institutes and enterprises in a cutting edge ST&I infrastructure.

Platforms are problem solving oriented and driven by the country's ST&I strategic demands.

Platforms should generate knowledge, scientific advancements, products and processes that have high impact on ST&I and, consequently, on people's lives.

Legal Basis: Presidential Decree N° 8.269/2014

“Art 2. Knowledge Platform is defined as...

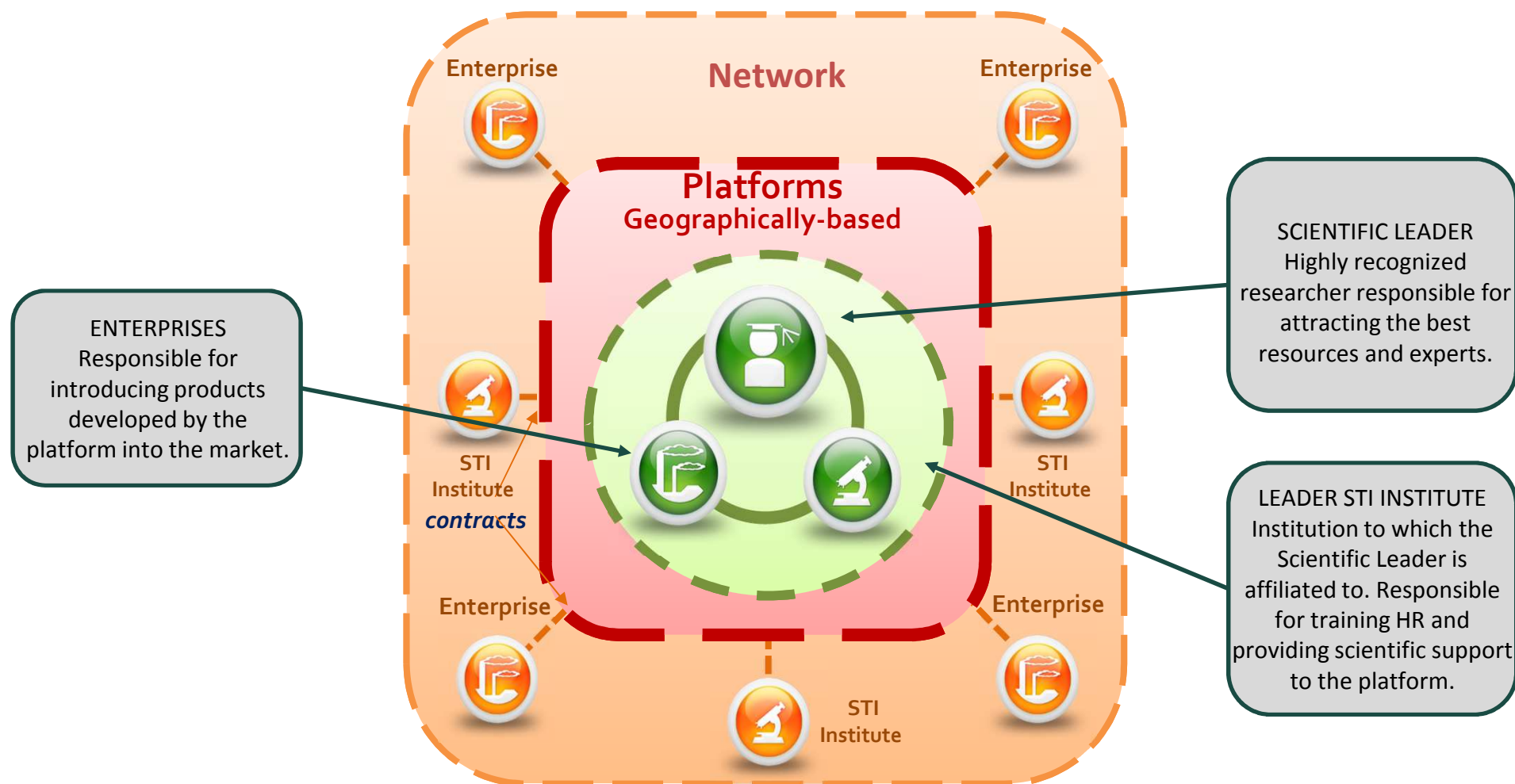
...the enterprise, consortium or private nonprofit organization that represents a public-private partnership...

Institutional-legal
arrangement

...oriented to the provision of solution for a specific technical problem or to the development of innovative products or processes of high technological risk.”

“Innovation
Procurement”
(Art. 20 - Innovation
Law)

National Knowledge Platforms Program



Fostering and funding institutions: CNPq, CAPES, BNDES, FINEP

Priorities Knowledge Platforms Program

Resources
11
US\$
billion

20
Platforms



Agriculture



Health



Energy



Amazon

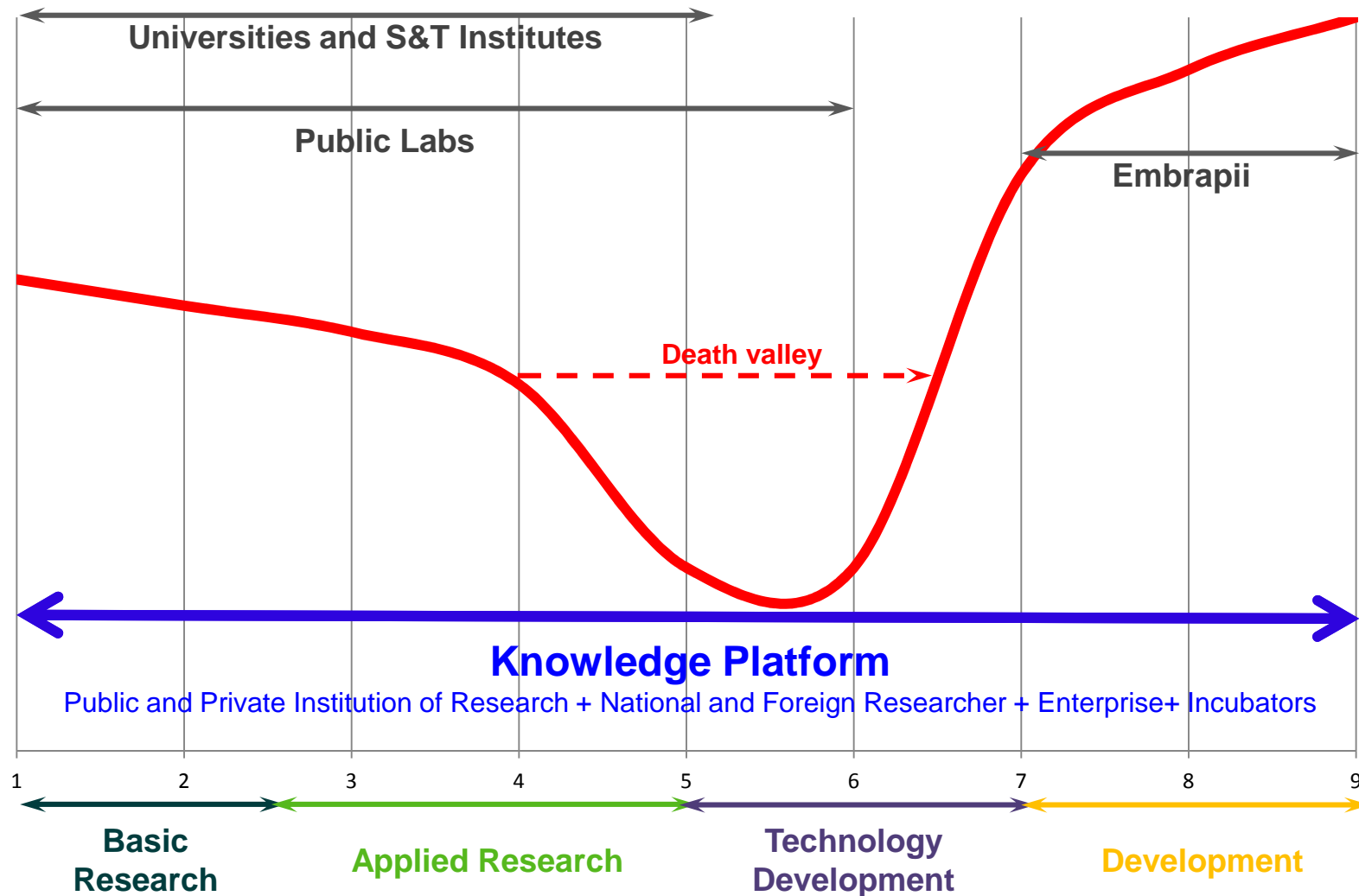


**Advanced
manufacturing**



ICTs

Performance Spectrum of Knowledge Platform



Source: Office of Science and Technology Policy, U.S. National Security and International Affairs, 2011

Brazil needs to reduce ST&I gap with advanced countries

- Focus on new scale to support ST&I activity
- Set up new ST&I logics structuring knowledge production through public demand
- Long term initiative, linking basic research to innovation
 - New legal bases to support entrepreneurship
- New institutional support linked sectorial areas – energy, agriculture, health and defense
 - Funds to S,T&I from Social Funds (oil)
- Action to improve venture capital and support technological start-ups
 - Technological innovation procurement

Thanks

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