



Conselho Empresarial
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JAPAN-BRAZIL
Business Council

An strategic outlook on disruptive technologies and Japan-Brazil relations

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Confederação Nacional da Indústria
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Indústria 2027



This presentation is based on project – Indústria 2027- contracted by CNI, as part of its Business for Innovation Initiative (MEI) to the Universidade Federal do Rio de Janeiro & Universidade Estadual Campinas

Technology assessment & foresight

Artificial Intelligence + Cloud Computing + Big Data; IoT + Systems + Hardware; Communication Networks; Advanced Manufacturing; Advanced Biotechnologies; Nanotechnologies; Advanced Materials; Energy Storage Devices

Industry analysis: evaluation of changes & impacts

Aerospace, Agroindustries, Automotive, Capital Goods, Chemicals, Consumer Goods, ICT, Intermediate Goods, Pharma, Oil & Gas

**Indústria
2027**
mei MOBILIZAÇÃO EMPRESARIAL PELA INOVAÇÃO

Public policy & private planning implications

World: what are disruptive technologies?



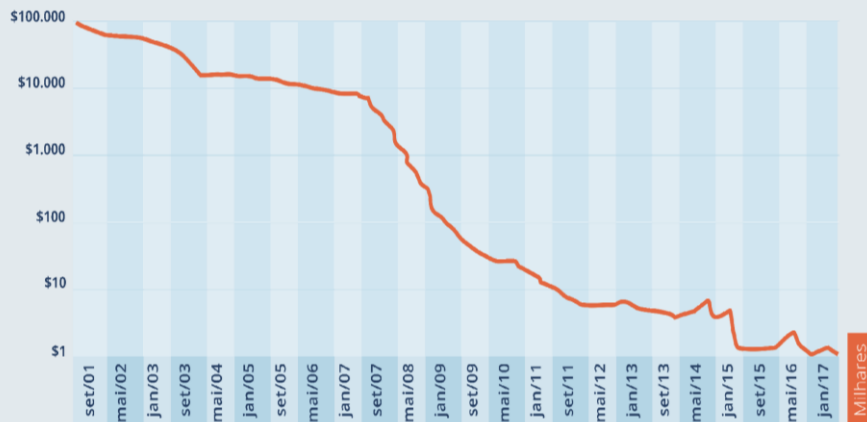
Widespread applications

Technological convergence

Costs falling

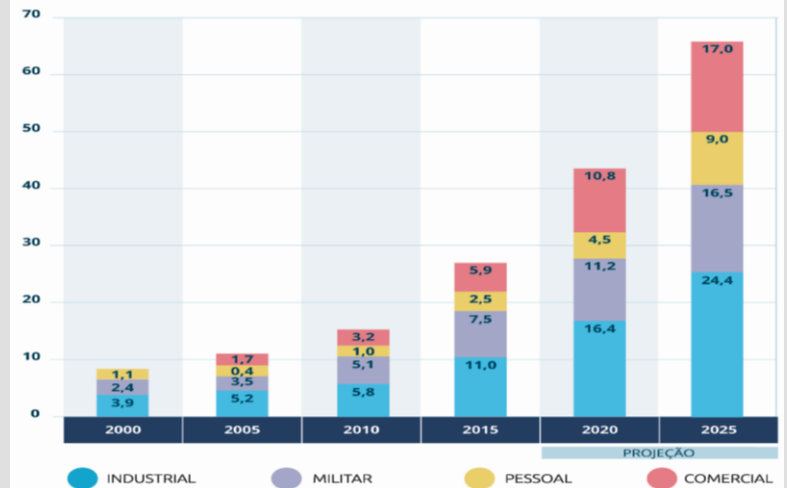
Markets expanding

Sequenciamento de Genomas: evolução do custo por Genoma, 2001 - 2017 (US\$ mil)



Fonte: National Human Genome Research - <https://www.genome.gov/sequencingcostsdata/h> Institute

Dispêndios mundiais em robótica por setores 2000-2025 (US\$ bilhões)



Fonte: Siemens - <https://www.economist.com/news/special-report/21735478-autonomous-robots-and-swarms-will-change-nature-warfare-getting-grips>

World: in up to 10 years, disruptive technologies in all economic activities



Direction of changes

Business models

Integration,
Interconnection
Intelligence

Competitive drivers

Amalgam of cost &
differentiation:

High process
efficiency and
precision and along
value chains

Product
personalisation

Market Structures

Permeable to changes in
leadership

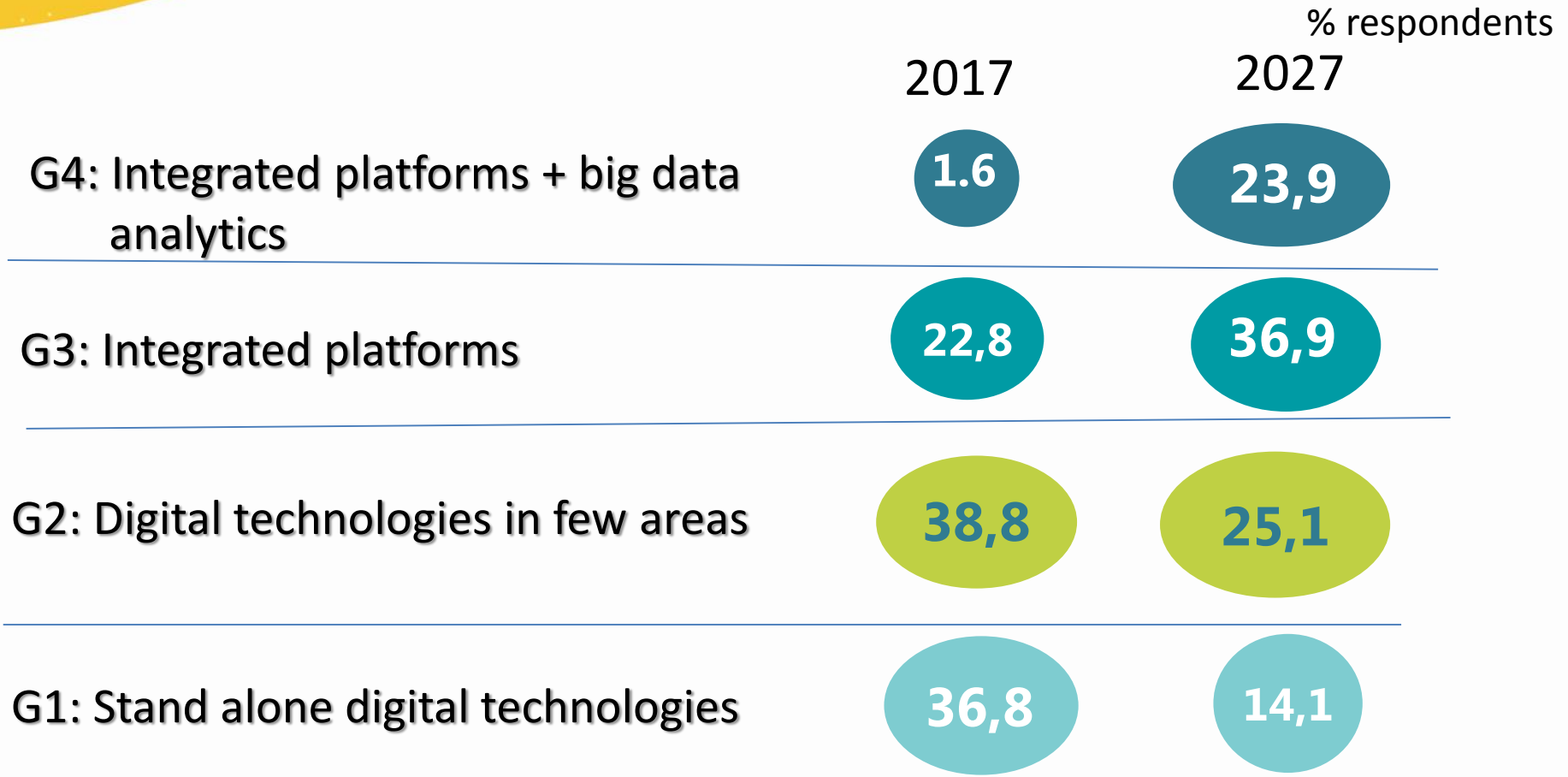
Vulnerable to entries

Blurring of sectoral frontiers

Brazil: digital technologies in industrial firms



Comitê de Cooperação Econômica
BRASIL-JAPÃO
JAPAN-BRAZIL
Economic Cooperation Committee



N= 753

**And... by 2027, for 65% of executives,
G4 will be dominant in their sectors**

Source: I2027

Implications for Brazil (& maybe most developing nations)



For those forging ahead

**Evolve with the
technological frontier**

For those catching up

**Follow international
best practices**

For those lagging behind

**Shorten distances to the
production frontier**

Brazilian industrial elite is moving ahead and
policy makers are drawing up policy proposals

Japan society 5.0: a mission oriented strategy



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Economic advancement

- The demand for energy is increasing
- The demand for foodstuffs is increasing
- Lifespan is becoming longer, and the aging society is advancing
- International competition is becoming increasingly severe
- Concentration of wealth and regional inequality are growing

Resolution of social problems

- Reduction of GHG emissions
- Increased production and reduced loss of foodstuffs
- Mitigation of costs associated with the aging society
- Promotion of sustainable industrialization
- redistribution of wealth, and correction of regional inequality

Incorporating new technologies such as IoT, robotics, AI, and big data in all industries and social activities, provide goods and services that granularly address manifold latent needs without disparity

to **balance economic advancement** with **the resolution of social problems**

**R&D/GDP:
from 3.1 %
to 4%**

"A human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space."

Japan society 5.0: also an international mission oriented strategy?



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- Disruptive technologies will change business models and competitive landscape. Everywhere
- In a conflictive, competitive, uncertain multipolar world, Japan's society 5.0 strategy is a “sight for our sore eyes”.
- Besides being a national strategy, it should be a pillar of an international development oriented strategy, symbolically, a landmark for the Meiji Restoration 150th anniversary!

Brazil-Japan & emerging disruptive technologies: a strategic outlook



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- Where to begin? Brazil. It has features from every country, every economic activity, every social group. Diversity is Brazil uniqueness & source of daring challenges & good fortune
- Japan-Brazil relations have survived many dire straits and must be strengthened a novel basis. Both countries have to diversify risks & opportunities
- Innovation based, pragmatic, forward looking and long term visions are the necessary ingredients.

Disruptive technologies must be considered as bridges to shorten distances between Japan & Brazil!



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