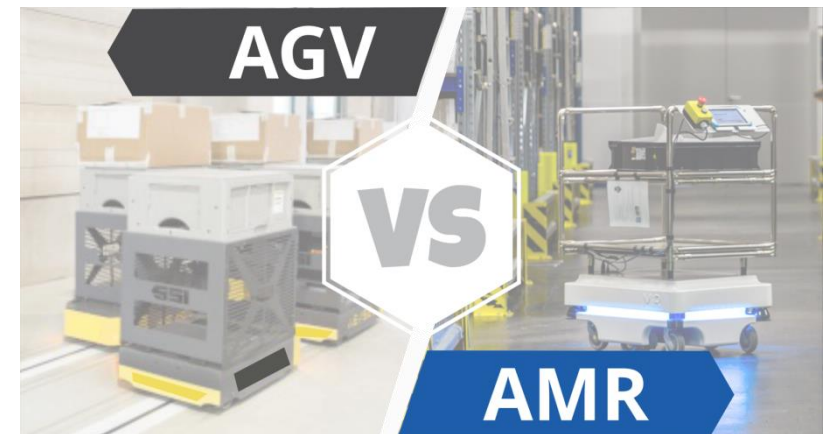
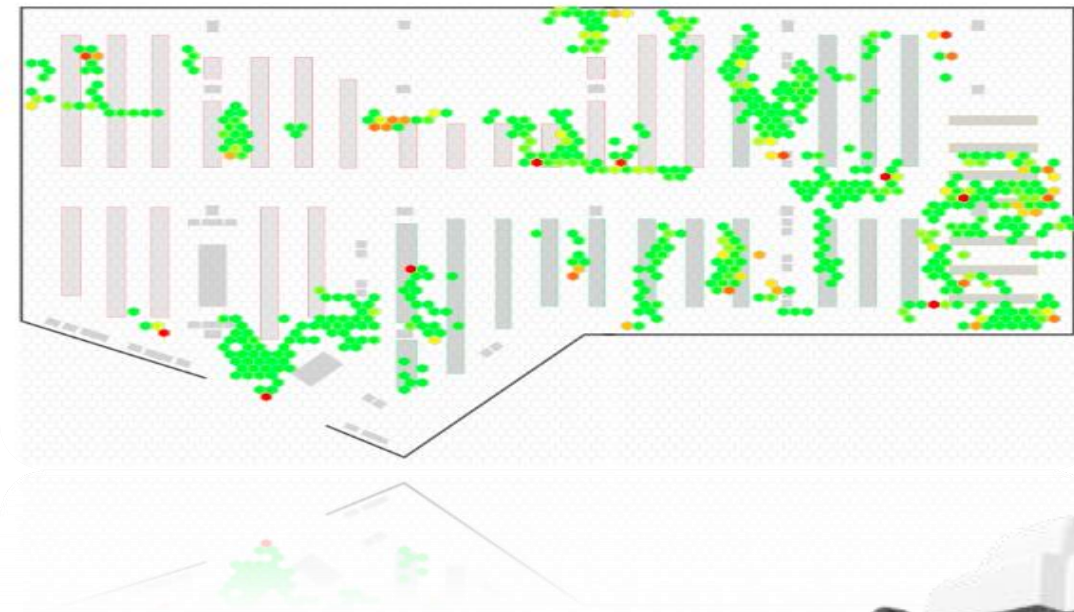


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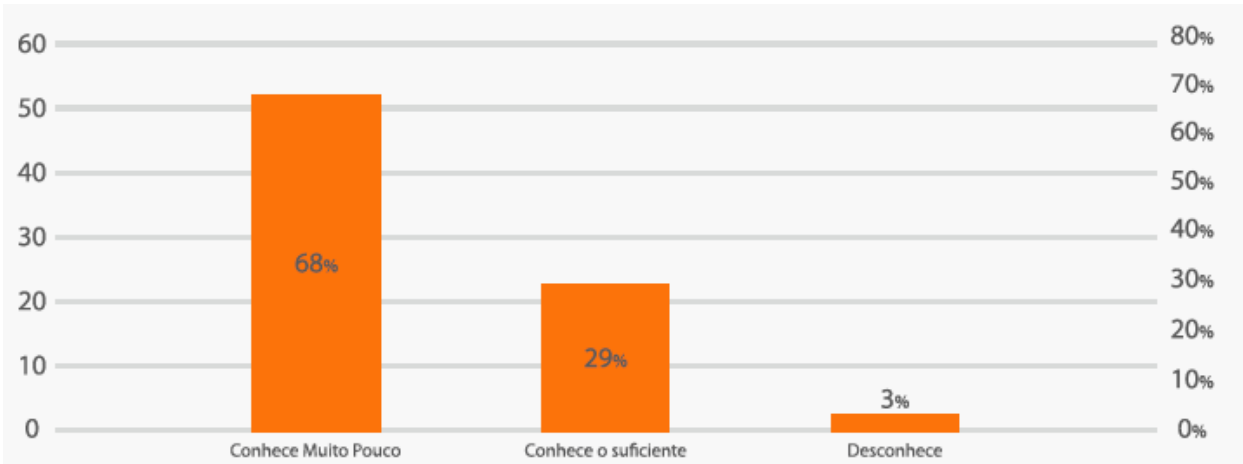




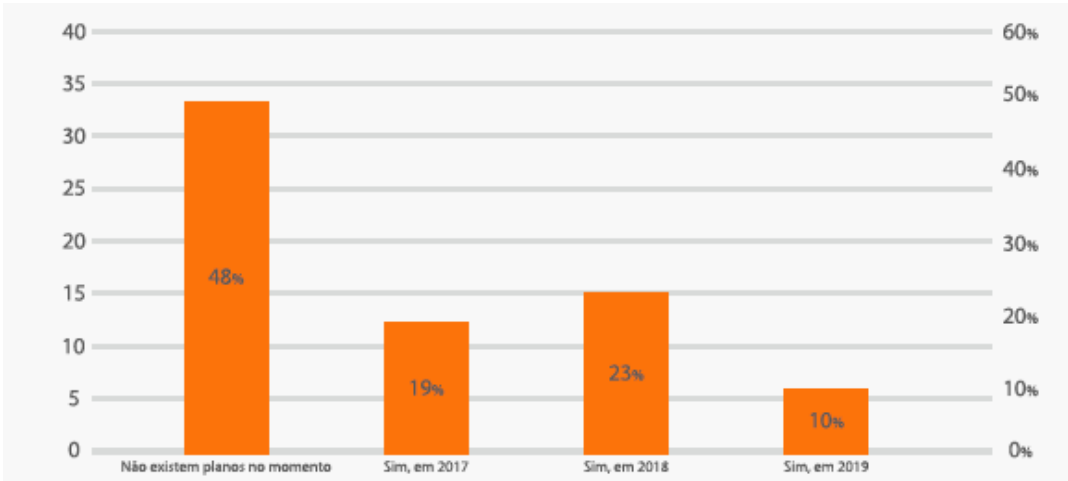
# FÓRUM BRASILEIRO DE IOT



# Low level of Awariness



# (lack of) Implementation Plans

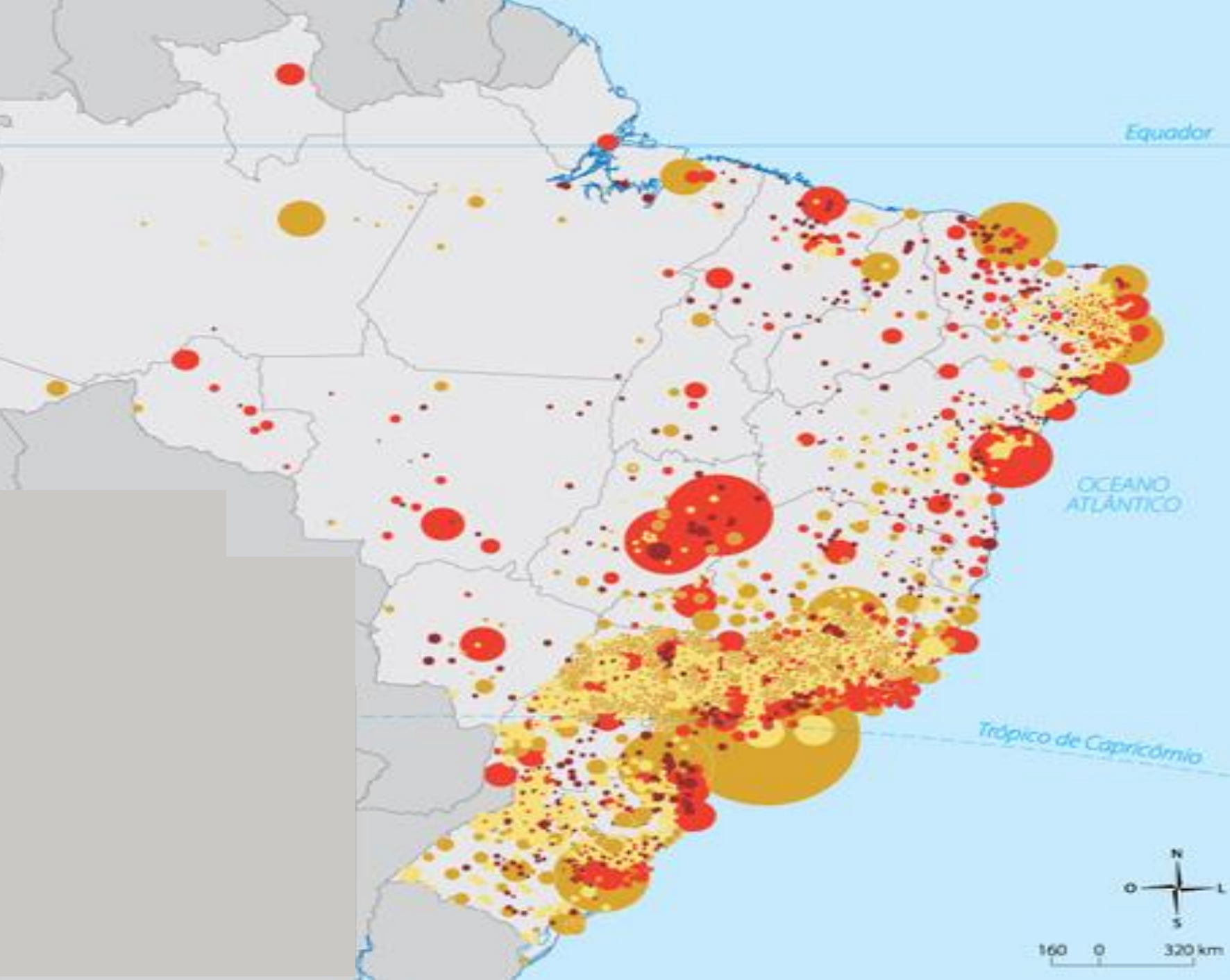


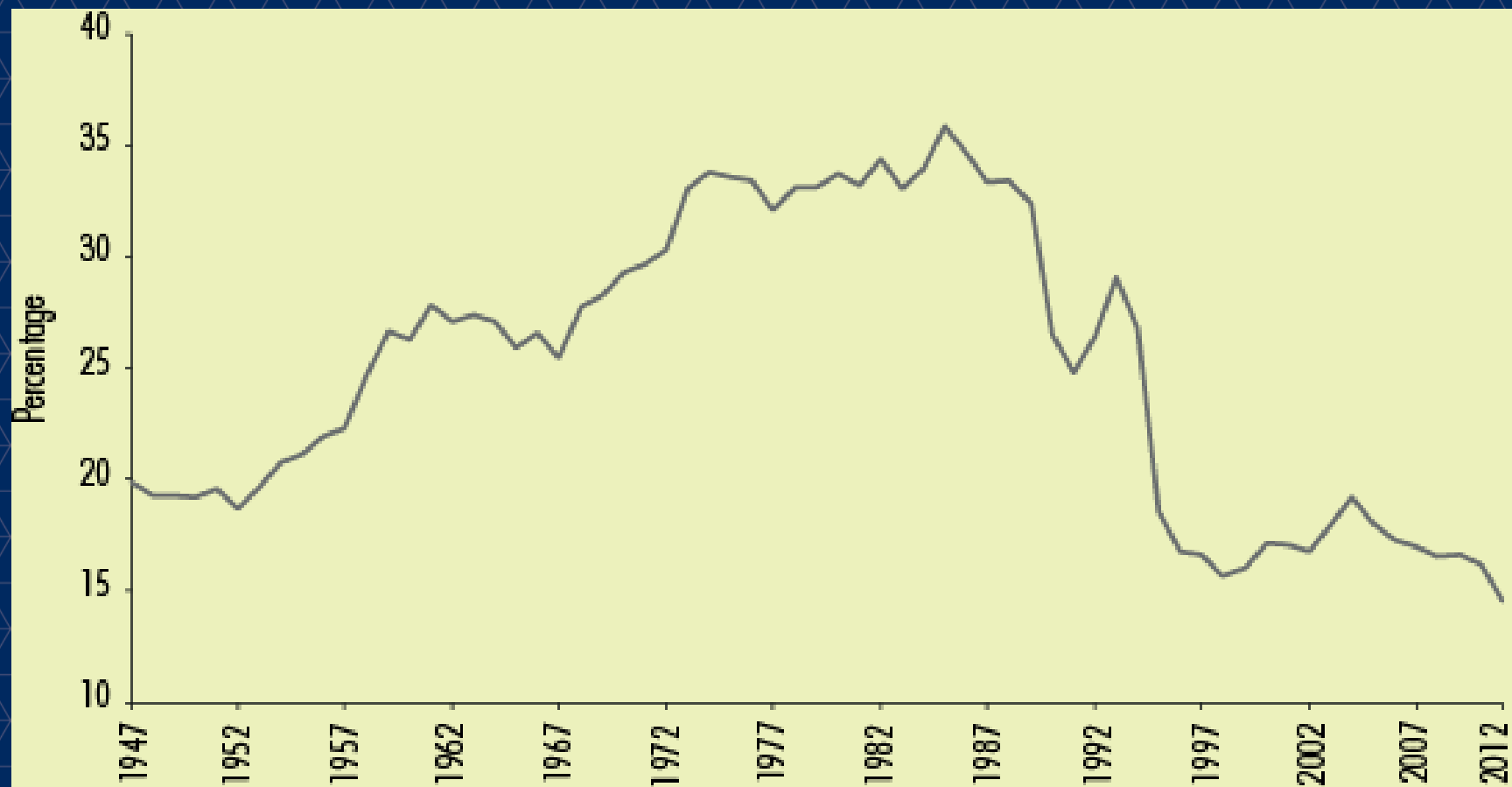
## Main drivers of IoT implementation:

- Cost reduction and sales increase (62%)
- Better quality and new products (43%)

## Most cited barriers:

- Demonstrating ROI (22%)
- Risk averse corporate culture (20%)







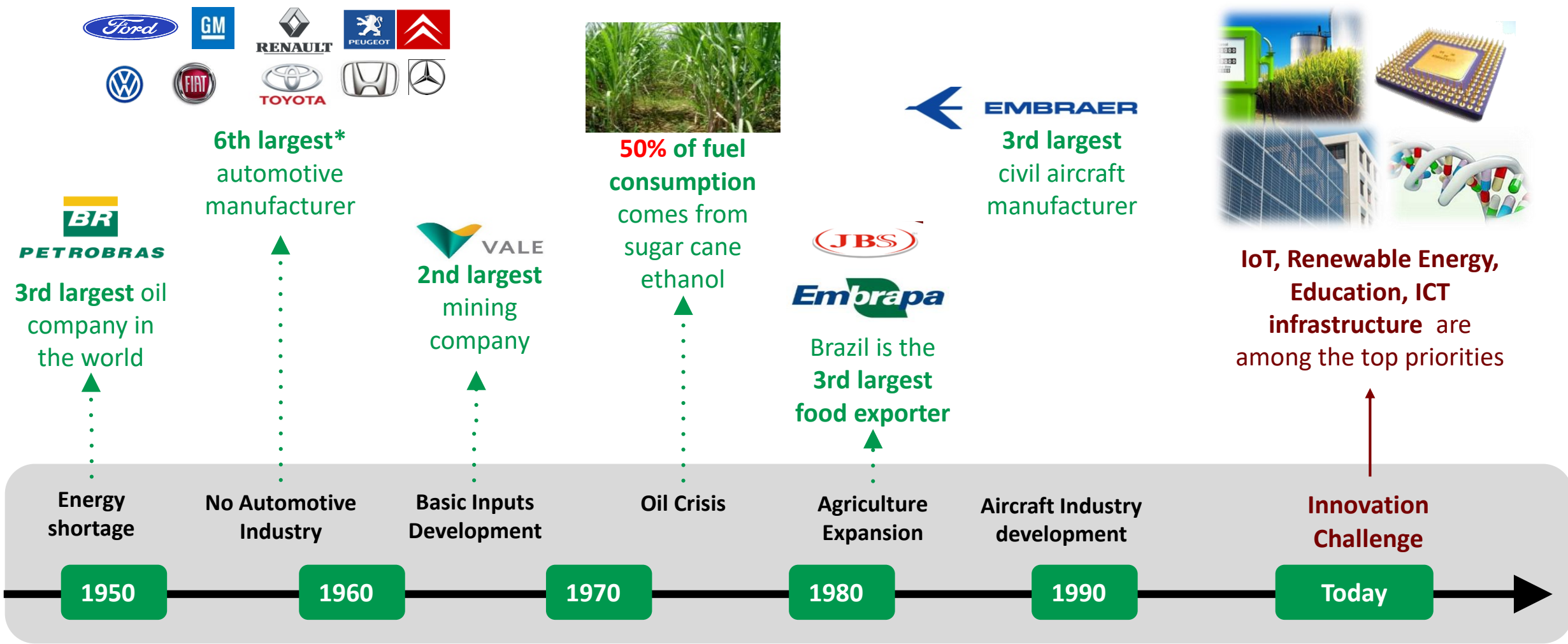
# IoT National Plan

## Implementing IoT pilots in Brazil

Bilbao, June 07th, 2018



# IoT/Innovation: Next opportunity for new companies and businesses in Brazil



\*Non-exhaustive list

During 2017, we achieved a very large engagement among Brazil's IoT ecosystem to build an IoT strategic and action plan

- 6 Associations, businesses, and other agents
- 5 Brazilian and international specialists
- 4 National IoT Chamber
- 3 Advisory Board and Executive Committee of the plan
- 2 McKinsey, CPqD and PMN
- 1 BNDES and MCTIC

**4,600+**

invitations to  
IoT Bytes

**2,200+**

contributions to  
the National  
Public  
Consultation

**500+**

participants at Future  
Lab to discuss Brazil's  
IoT aspirations

**380+**

specialists directly  
consulted during the  
study

**100+**

interviews with key  
figures throughout the  
study

**28**

Reports with detailed  
results about the  
study



## BRAZIL's IoT ASPIRATION

Accelerate the implementation of the Internet of Things as a tool for the sustainable development of Brazil, capable of...

**...increasing the economy's competitiveness...**



**...strengthening Brazil's manufacturing chains...**



**...and fostering better quality of life**



The study prioritized the environments with highest potential for Brazil, defining specific objectives for each one

Cities



**-15%** traffic jam  
**-20%** crime rates



**+25%** farm productivity  
**-30%** inputs

Rural

Healthcare



**-30%** chronic diseases crisis  
**- 40%** maintenance costs



**+45%** industry productivity  
**-20%** work accidents

Industry

**4**  
**prioritized areas**  
**60**  
**initiatives defined in the roadmap**

# Specific objectives reflect the initiatives

- Expand the IoT-qualified workforce in priority environments
- Get young people interested in IoT/ICT
- Strengthen IoT R&D and engineering, bringing it up to world class
- Promote IoT training and development of public managers



Human Capital



International insertion and innovation

- Encourage experimentation and cooperation, and the dissemination of successful business models
- Improve and disclose funding and development tools for ICTs and innovative companies
- Build an environment for continuous and participative monitoring of the IoT plan

- Expand the supply of communication networks as demanded by IoT services
- Articulate the IoT theme in public policies to expand connectivity infrastructure and solutions
- Encourage and promote IoT device, solutions and Network standardization and interoperability



Connectivity and inter-operability infrastructure



Regulatory, security and privacy

- Structure and create a regulatory framework to suitably protect personal data and encourage innovation and the protection of individual rights
- Identify and address specific regulatory issues along the priority verticals
- Define a suitable institutional design to face the IoT privacy and security challenges



# Factory 4.0

**Predictive maintenance**

**Stock Optimization**

**Enhanced productivity and worker's security**

**Detection of products' problems**

**Loading Optimization**

**Demand forecast optimization**

Source: MGI, Brazilian National Plan for IoT



# Automated mining facility

Remote  
Operational  
Center

Autonomous  
tucks

Predictive  
maintenance

Real time data  
colection

Connected  
operation and  
maintenance

Drones for  
remote  
inspection

Remote operations  
and control of  
subterranean mining

# BNDES has several options to support foreign investment in Brazil

OPPORTUNITY

## Financial Instruments for IoT Solutions

- **Credit for IoT solutions**
- **ICT Companies:** €3.25Bi (last 3 yrs)
- **Users:** financial support for farmers, cities, hospital, industries, etc.

✓ **BNDES to finance investment in local currency**

## Investment Funds

- **€125M+ available** for investment in IoT companies (next 3 yrs)
- **Co-investment with Corporate Venture and Institutional Funds** (e.g. aerospace with Embraer)

✓ **Co-invest in Funds for IoT companies**

## IoT Pilots

- **1st initiative** for coordinating **IoT pilots in Brazil**
- **Demand driven** applications

✓ **Joint investment in IoT pilots**

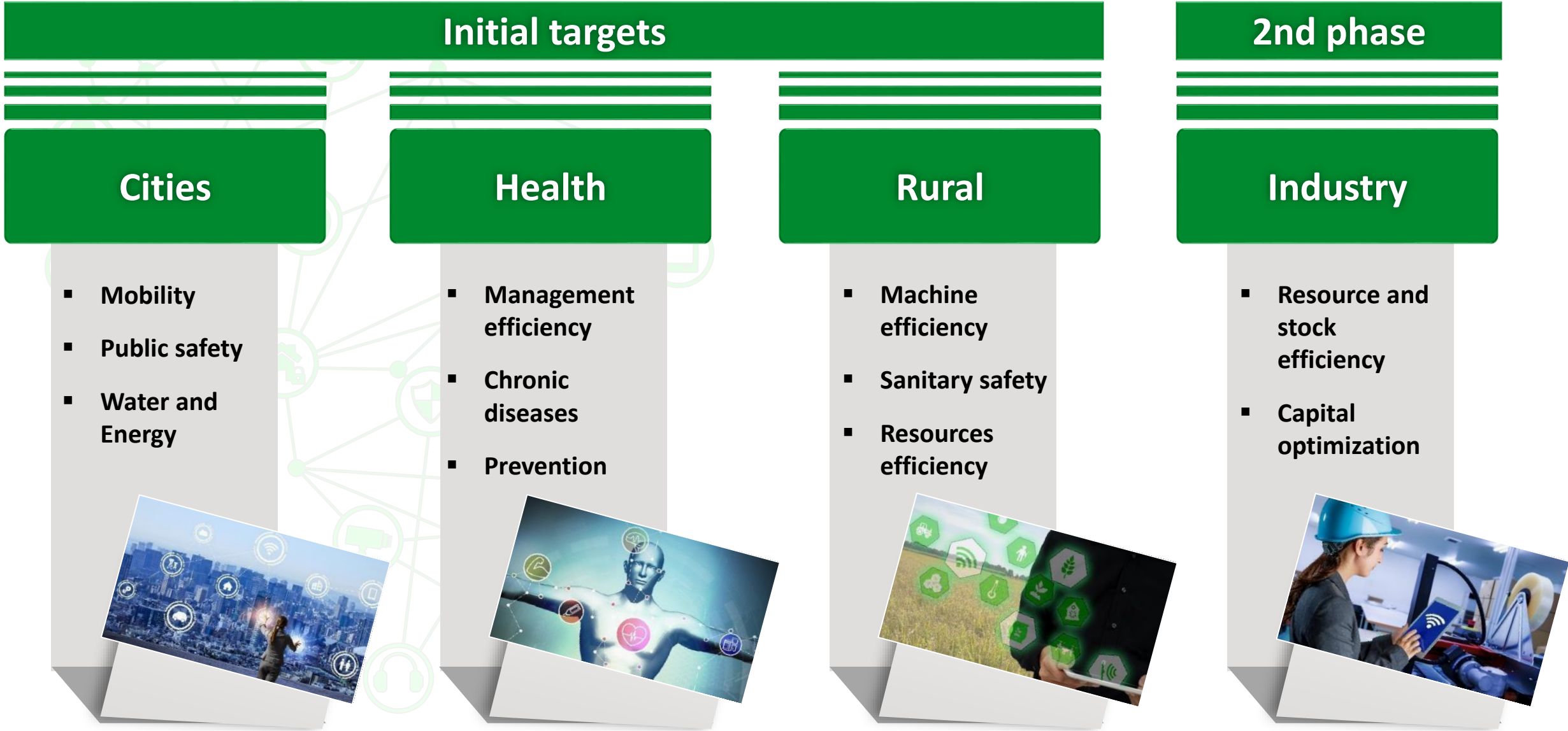
# In order to accelerate the adoption of IoT in the these select environments, we decided to start to work on a key initiative: BNDES IoT Pilots

## BNDES IoT Pilots Goals

- Use IoT to **solve Brazilian problems**
- **Foster local innovation** and IoT ecosystem
- Identify sustainable **IoT business models** and **scale up**
- Faster the **addressment/mitigate the risks of IoT thresholds** (privacy, safety, interoperability, HR etc)



# The Pilots will target the goals and applications set for each prioritized area





# Non-reimbursable funding is structured through an ICT that should be part of the consortium

## Criteria for projects selection

Relation to strategic objectives

Interoperability

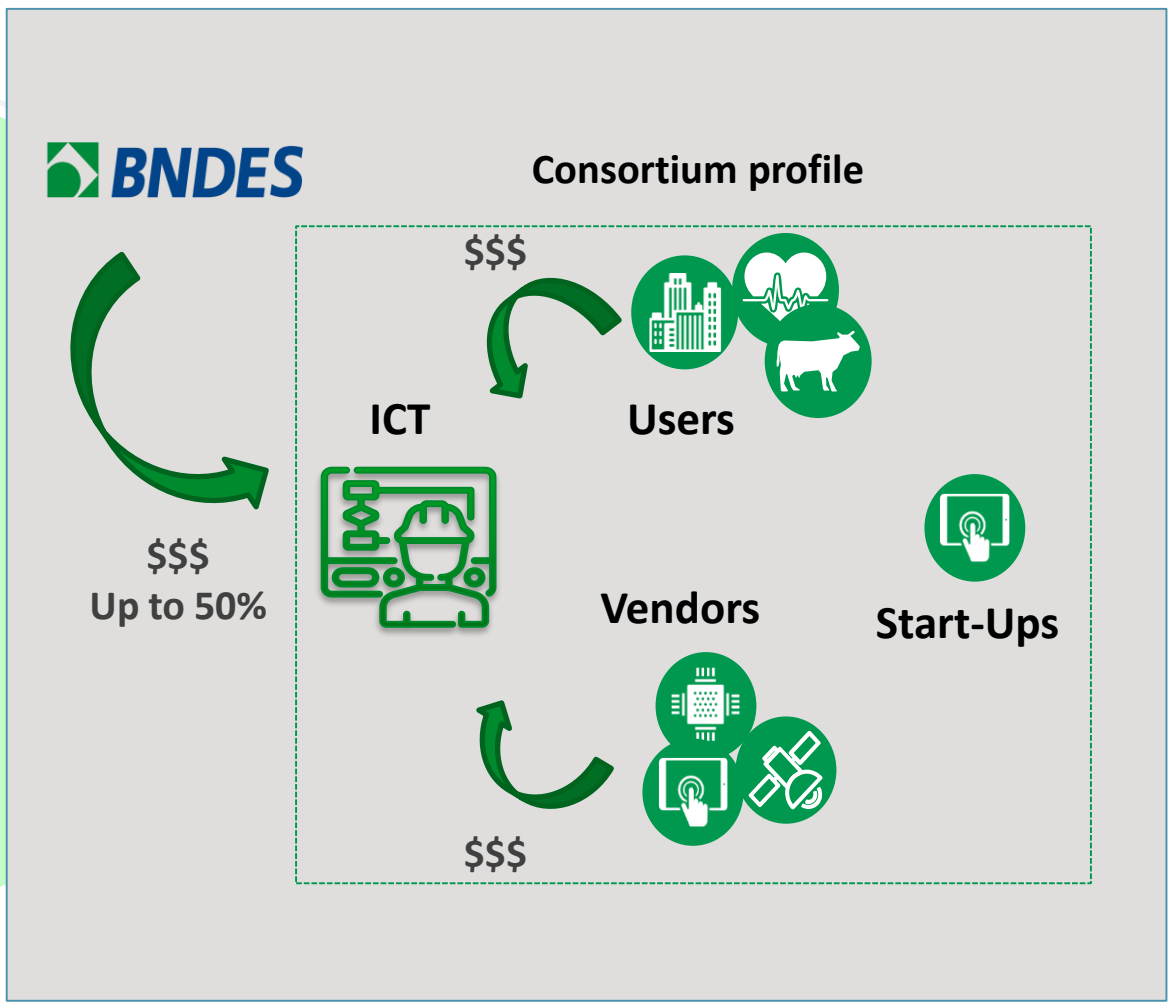
Financial contribution

Social Impact

Promotion of innovation

Replicability

Expected Economic Impact



# BNDES Pilots will trigger a more comprehensive strategy for scaling IoT use in Brazil



2018

## Launch the first pilots

- BNDES as the main source of public fund



2019+

## Large Scale Pilots and Technology Development

- Second phase for pilots
- Invest on technology where needed: sensors, AI, connectivity...

## Massification

- Increasingly implement IoT as an enabler for smarter cities
- Use of government purchasing power where IoT has proven significant impact
- Foster investment in connectivity and other enabling technologies



**Government  
initiatives could  
accelerate IoT  
adoption**



**On Health...**

**Foster the adoption of IoT  
based solutions on Public  
Health System (“SUS”)**



**On Rural...**

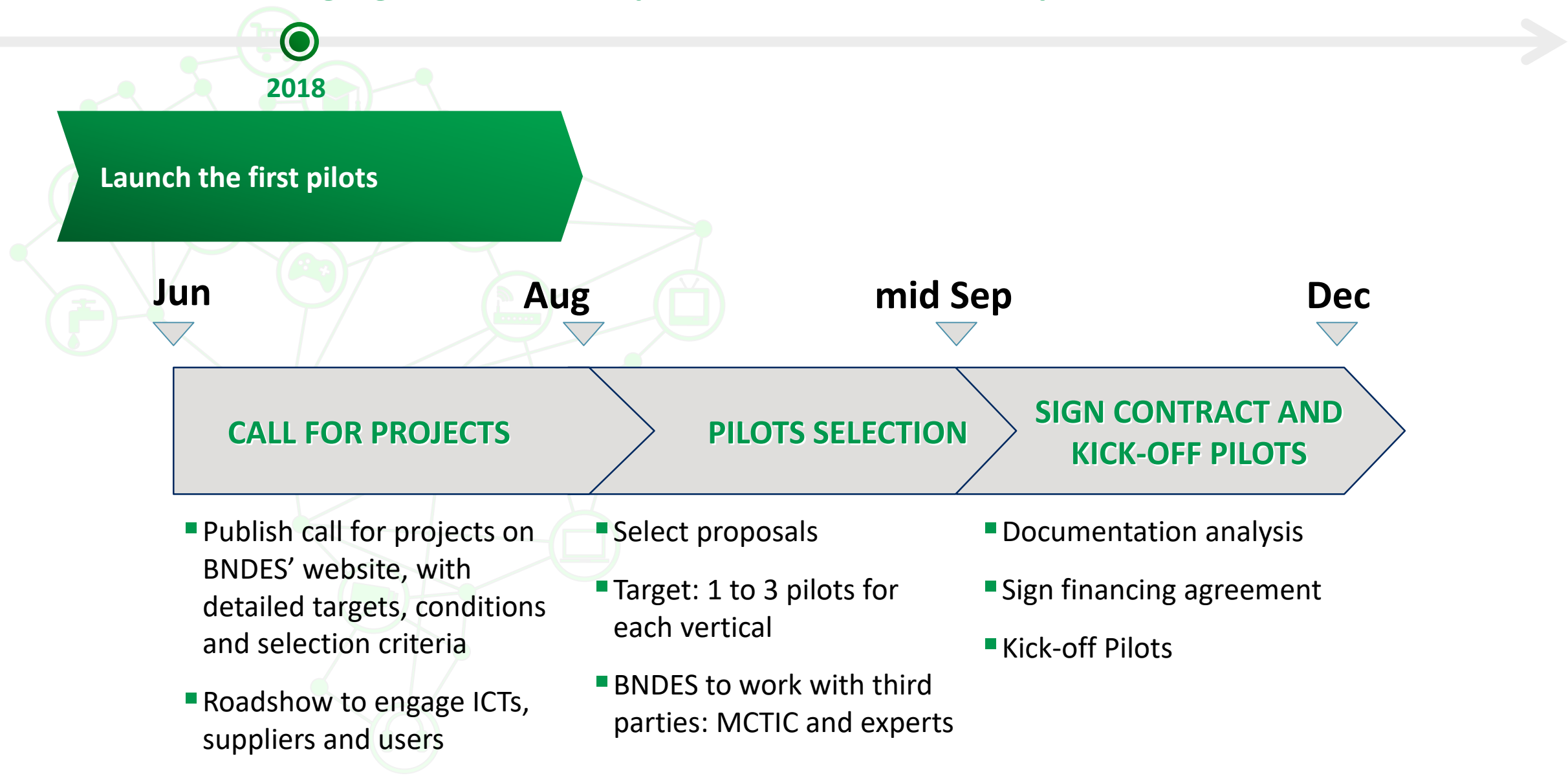
**“Plano Safra” (Inova Agro)**  
*100 M EUR (‘17)*



**On Cities...**

**“Educate” public agents for  
using technology**  
**BNDES financing to  
municipalities**

# We have a challenging, but feasible, plan to select and start pilots in 2018





It will be a pleasure to  
answer your questions.

*Thank you!*



**BNDES website**  
[www.bndes.gov.br](http://www.bndes.gov.br)



**Contato**  
0800 702 6337  
International calls  
+55 21 2172 6337



**Ouvidoria**  
0800 702 6307  
[www.bndes.gov.br/ouvidoria](http://www.bndes.gov.br/ouvidoria)



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