« Key Challenges in Industrial Internet»

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Imagination at work

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Industry is facing major issues

Materials ... rising costs & supply constraints

Production ... overcapacity in most industries

Labor ... increasing costs in the developing world

+

Product development ... shorter cycle times, more price points

New Industrial Paradigm is needed

Science and Technology enablers

Industrial Internet

Secure Connected Devices	Industrial Data Management	Industrial Data Science	Mobile and Cloud
-100x	-50x	10,000x	7+ billion
Sensor/chips cost	Storage cost	In-memory speed	mobile phones
Emergence of CaaS	10 year maturity: Hadoop 2.0+	Hot Job '15: Data Scientist	Rise of API's & Apps
IPv6	hadoop	R	ProgrammableWeb

Sensing, storing, analyzing and transmitting data is becoming cheap & easy

Digital Industrial Key Benefits

Digital Heritage Management

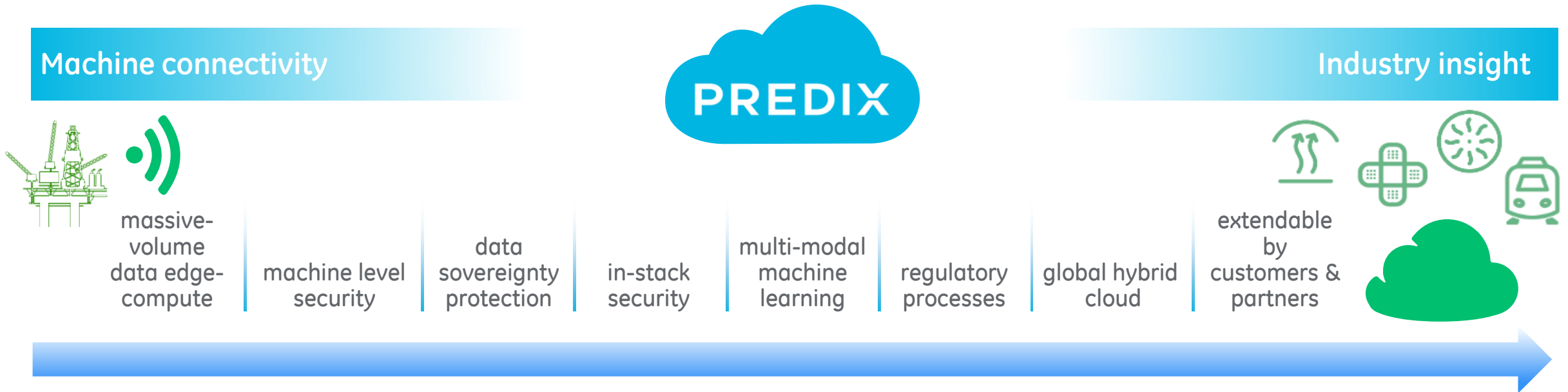**Maximize performance and asset availability**

Increase system efficiency across operations

Optimize lifecycle of design, manufacturing, service & repair cycles

Industrial Requires a Whole New OS
Predix, the OS for industry

Machine connectivity

Industry insight

PREDIX

massive-volume data edge-compute

machine level security

data sovereignty protection

in-stack security

multi-modal machine learning

regulatory processes

global hybrid cloud

extendable by customers & partners

Built for industry **+** Over 100 years of domain expertise **+** Applications & analytics for IoT use cases **=** GE's competitive advantage
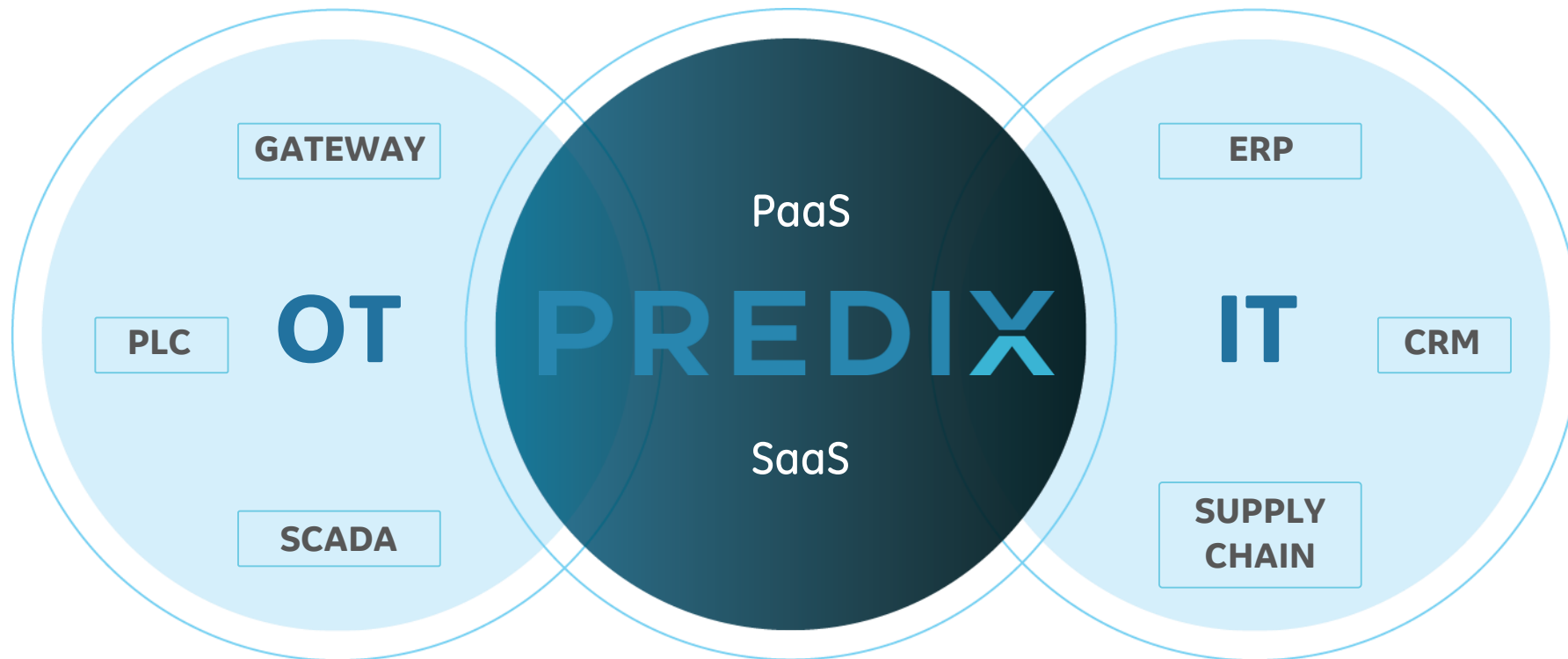
An interoperable and evolutive environment to Bridge the "OT / IT Gap"

Industrial Workload   **Data and Analytics**   **Innovation**   **End-to-End Trust**

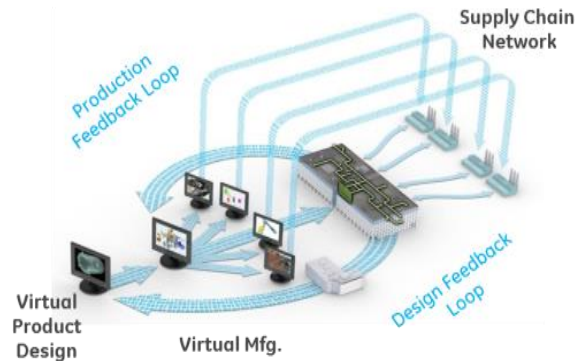GATEWAY

PLC

SCADA

OT

PaaS

PREDIX

SaaS

ERP

CRM

SUPPLY CHAIN

IT

GE Strategy: Becoming a Digital Industrial Company

One goal in sight – Drive Productivity and Increase Relevance in the World

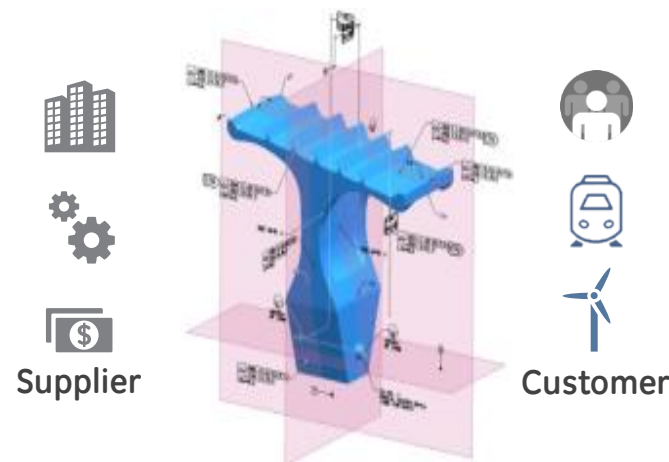| GE for GE	GE for Customers	GE for World

Productivity

- Digital thread
- Predix + data analytics
- Digital twin/1st principle model
- Services Transformation
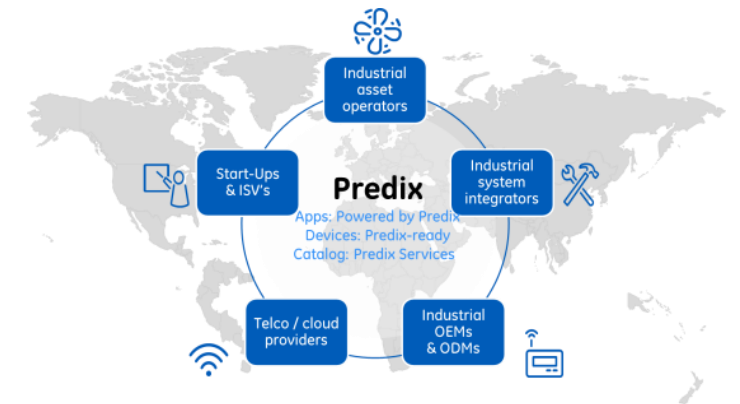
Apps

- Outcomes for customers
- Optimize GE equipment
- Industrial apps portfolio, micro services
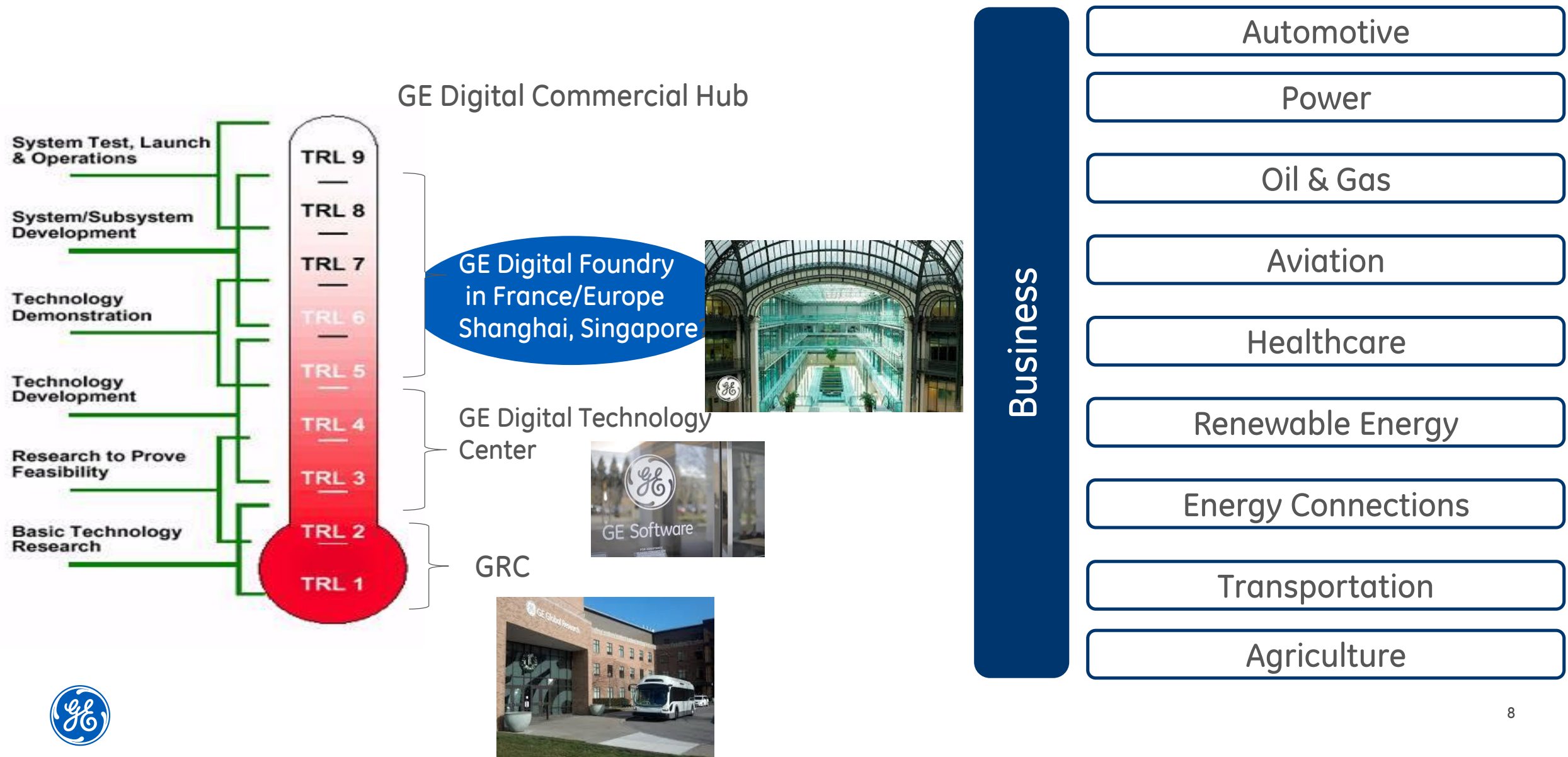- Digital extensions

Operating System

- Enable industrial companies
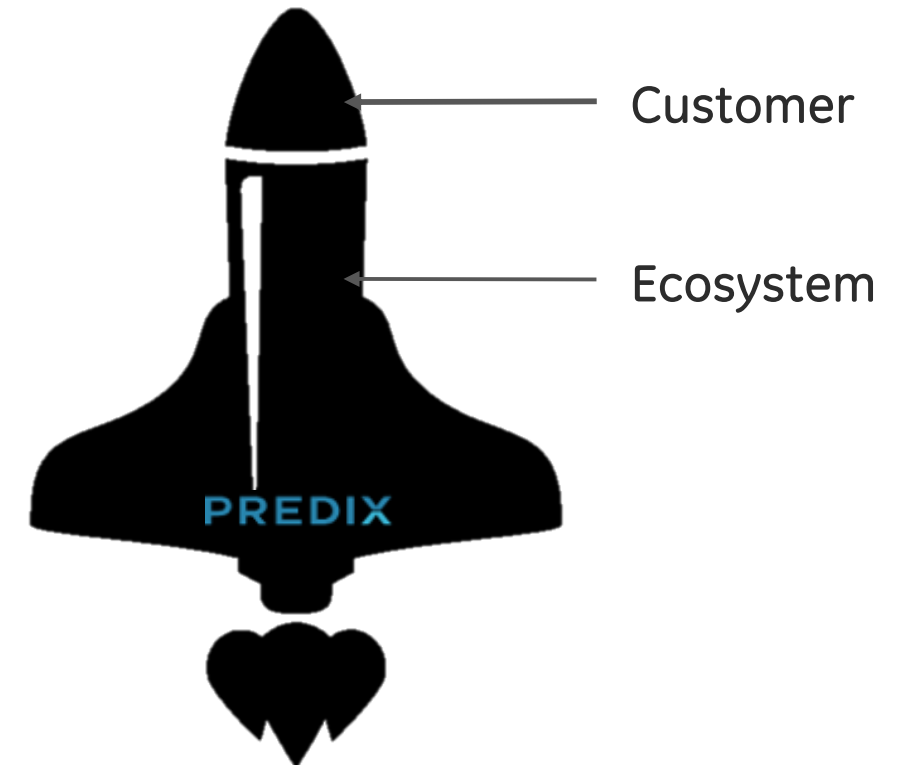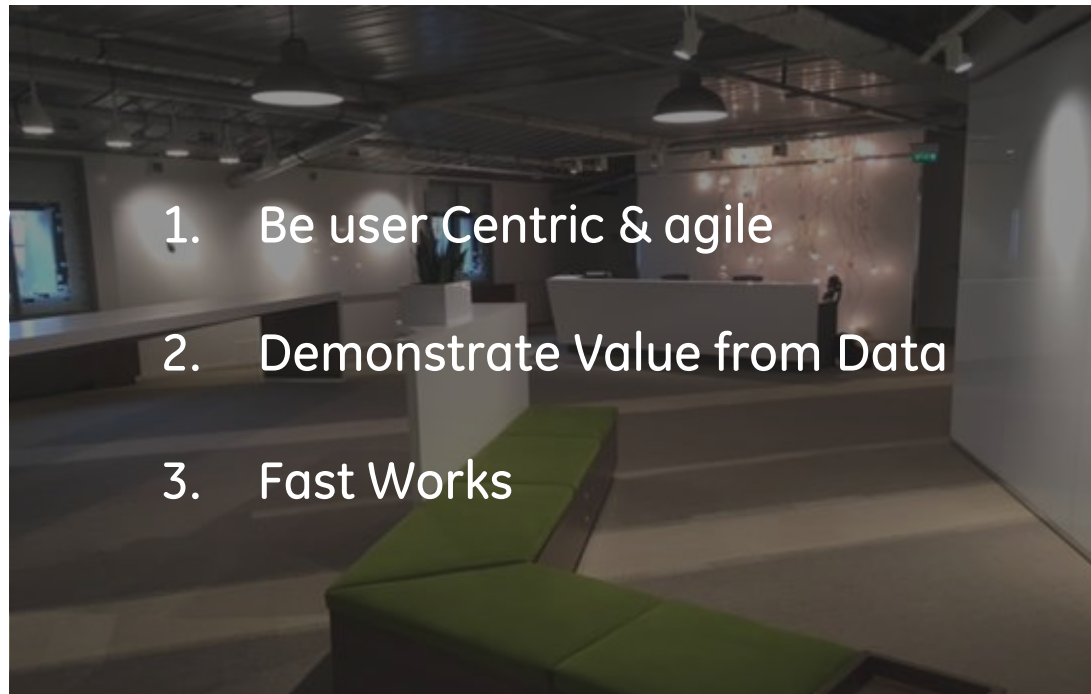- Predix industrial operating system
- Industrial-focused security
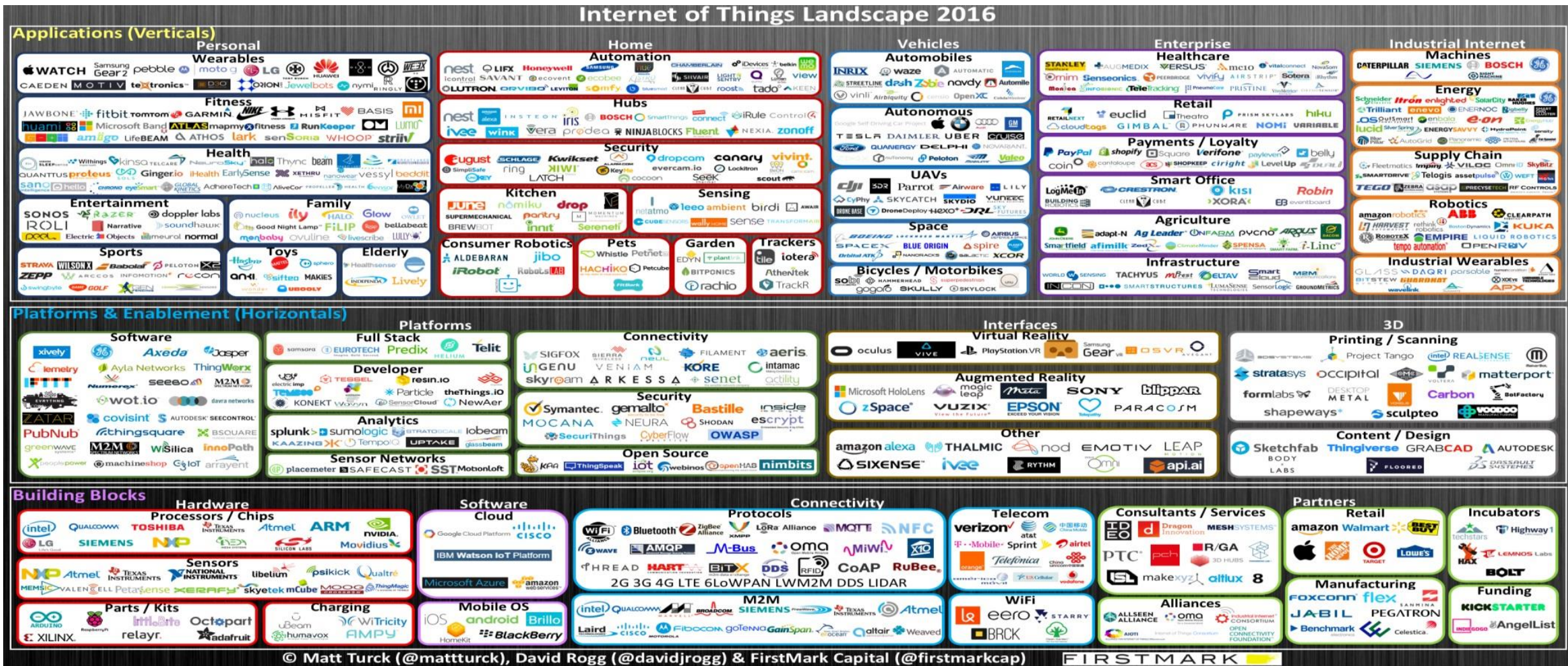
How GE built its Industrial Internet Strategy ?

GE Digital Commercial Hub

GE Digital Foundry in France/Europe Shanghai, Singapore

GE Digital Technology Center

GRC

TRL Level	Stage
TRL 9	System Test, Launch & Operations
TRL 8	System/Subsystem Development
TRL 7	
TRL 6	Technology Demonstration
TRL 5	Technology Development
TRL 4	
TRL 3	Research to Prove Feasibility
TRL 2	Basic Technology Research
TRL 1	

Business

- Automotive
- Power
- Oil & Gas
- Aviation
- Healthcare
- Renewable Energy
- Energy Connections
- Transportation
- Agriculture

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European Digital Foundry

"European leader of the Digital Industrial transformation, the Foundry is the place of innovation and co-creation at the center of the Industrial Internet ecosystem, connecting together the best and most passionate talents in Europe."
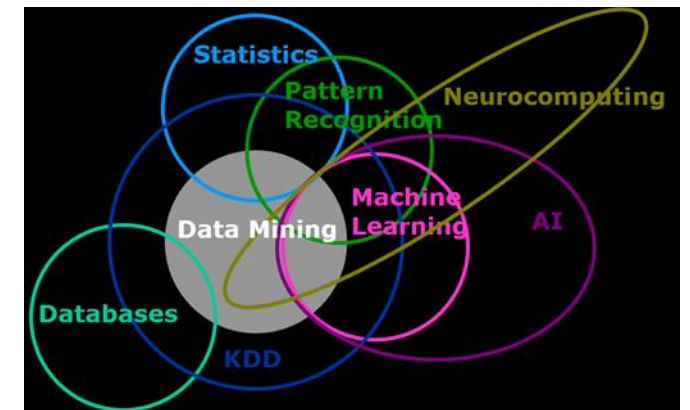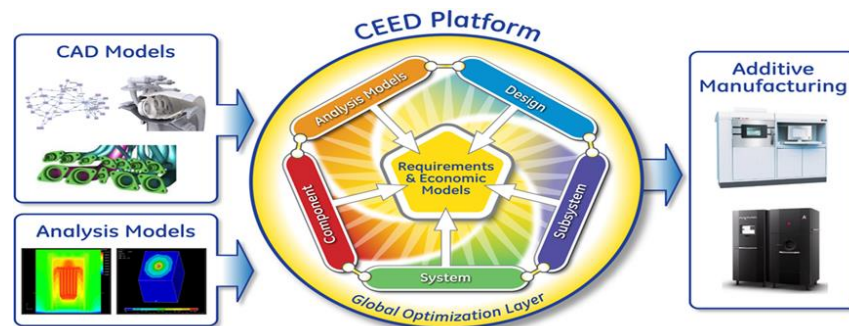
1. Be user Centric & agile

2. Demonstrate Value from Data

3. Fast Works

PREDIX

Customer

Ecosystem

Need for a new way of working

Internet of Things Landscape 2016

© Matt Turck (@mattturck), David Rogg (@davidjrogg) & FirstMark Capital (@firstmarkcap)

Develop and Attract Talents

1. Industrial Internet Community Development https://www.meetup.com/fr-FR/GE-Europe-Predix-Meetup/

2. Internship and PhD Program

3. From Training to innovation Industrial Internet Hack, http://industrial-internet-hack.devpost.com/

SoS Digital twin

https://numa-ui.run.aws-usw02-pr.ice.predix.io

https://predix-ui-seed-ab02.run.aws-usw02-pr.ice.predix.io

Leverage Innovation

1. Digital Industry Challenges http://digital-industry.io/

2. Start-ups and SME's developping Apps on Predix: Dojo program

3. Open Innovation Partnerships https://www.ge.com/digital/partners/join-our-program

Takeways

1. **Being Close to customers and agile**

2. **Being able to solve Complex issues faced by our customers through Industrial DataScience Approach**

3. **Leveraging Innovation in the IIoT**
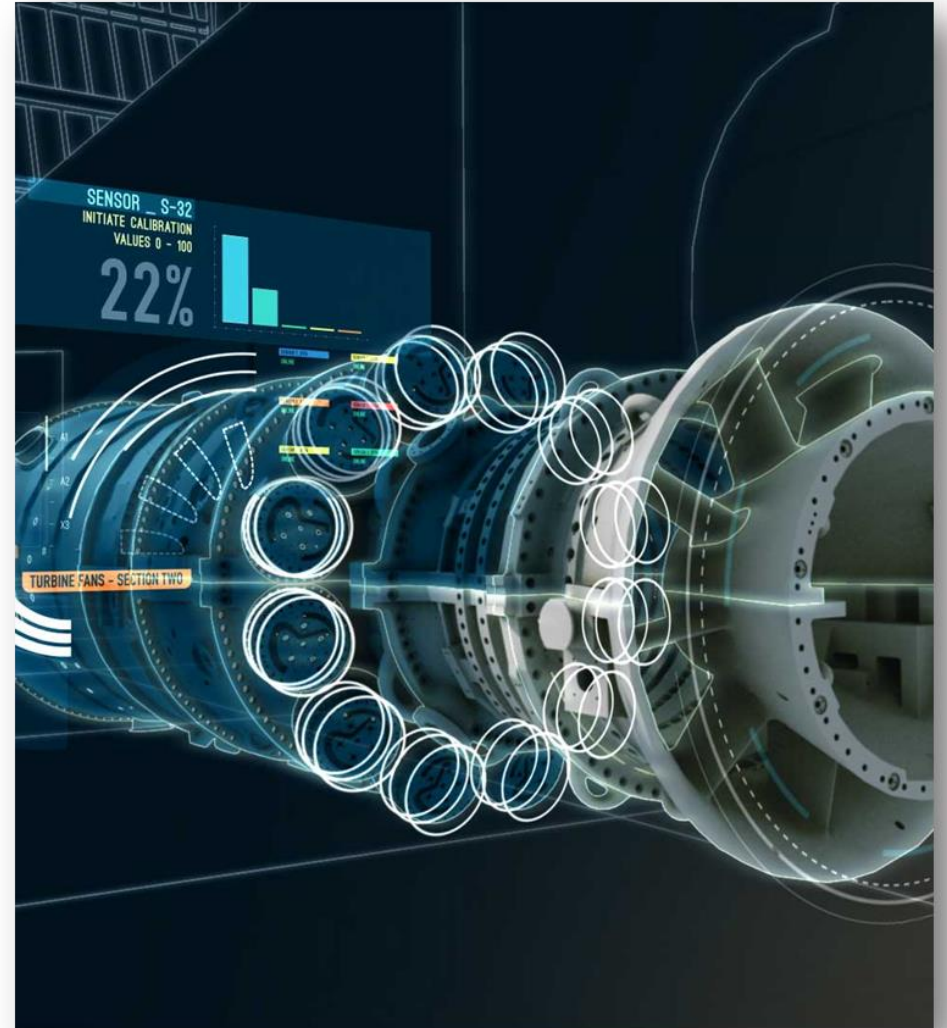
imagination at work

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