Welcome to the Industrial Internet Forum

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Industrial Internet Consortium

Keio University
June 3, 2016
The Industrial Internet is leading the next economic revolution

Global GDP Per Capita

GDP data extracted from the Futurist 2007
The Measurable Outcome will be in the Trillions of Dollars

GE: $32.3 trillion opportunity representing 46% share of GDP today.

Cisco: Internet of Things (IoT) will increase private sector profits 21% and add $19 trillion to the global economy by 2020.

Gartner: IoT product and service suppliers will generate incremental revenue exceeding $300 billion in 2020.

McKinsey Global Institute: $36 trillion operating costs of key affected industries could be impacted by IoT.

The convergence of *Internet of Things, Industrie 4.0, Cyber-Physical Systems* presents an enormous opportunity.
Yet there are current roadblocks to widespread adoption
The IIC: Things are coming together

June 3, 2016
To accelerate growth of the Industrial Internet by coordinating ecosystem initiatives to connect and integrate objects with people, processes and data using common architectures, interoperability and open standards that lead to transformational business outcomes.

Launched in March 2014 by five founding members:

AT&T, Cisco, General Electric, IBM & Intel.

The IIC is an open, neutral “sandbox” where industry, academia and government meet to collaborate, innovate and enable.
Founders & Contributing Members…

…joined by several more Steering Committee members
IIC Founders, Contributing Members, & Large Industry Members

IIC Founding Members

IIC Contributing Members

Contributing Members

SAP
Schneider Electric
HP
IBM
Intel
GE
Toshiba
Olympus
Kaspersky
Munich Re
Kuka
Neustar
InterDigital
Oracle
Bosch
Oracle
Fuji Film
ABB
PTC
Emc
Nokia
Xilinx
Unisys
3M
Itron

ACADEMIC
IIC Founding Members

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Contributing Members

SAP
Schneider Electric
HP
IBM
Intel
GE
Toshiba
Olympus
Kaspersky
Munich Re
Kuka
Neustar
InterDigital
Oracle
Bosch
Oracle
Fuji Film
ABB
PTC
Emc
Nokia
Xilinx
Unisys
3M
Itron

ACADEMIC
IIC Small Industry Members

[Logos of various companies]
IIC Small Industry Members

[Image of various company logos, including Rubicon, Predikto, Machina Research, Wapice, modius, Pollux Automation, Omni-ID, IoTium, Dt&C, Datawatch, Asavie, Qylur, FOGHORN, kepware, care Innovations, GlobalSign, Kabuku, FOGHORN, energy, CSS, Nation-E, WIBU Systems, WATERFALL, etc.]

[Images of company logos are not transcribed as text.]
IIC Core Focus Areas

Activities fall into three main areas that ultimately drive new opportunities for IIC members:

The IIC Ecosystem
Companies joining together to advance innovation, ideas, best practices, thought leadership and insights

Technology & Security
Architectural frameworks, standards requirements, interoperability, use cases, privacy & security of Big Data

Testbeds
Innovation to drive new products, processes, services

Innovative products!

BSSL: Business Strategy & Solutions Lifecycle
IIC Track & Trace Testbed

Source: Bosch
IIC Testbed: Communication and Control
Participants:

- Members: EMC Corporation and Cork Institute of Technology
- Other Participants: Vodafone, Irish Government Networks, Asavie, and Cork Internet Exchange

Market Segment:

- The scale and scope of the project means INFINITE can be used across a wide and diverse range of industries and sectors

Solution:

- Completely virtual domains that are able to be connected via mobile networks
- A solution that allows multiple virtual domains to securely run via physical networks

Commercial Benefits:

- Ideal for mission-critical systems
- Industrial Internet applications in an environment that resembles real-world conditions
Member Participants:
• IBM and National Instruments

Market Segment:
• Predictive maintenance cuts across multiple market segments like power plants, manufacturing, process, mining, transportation, aerospace, and defense

Goals:
• Develop new predictive maintenance analytics modeling techniques
• Document standard and secure architecture patterns and data formats for predictive maintenance in the Industrial Internet era

Commercial Benefits:
• Increase equipment uptime and prevent catastrophic failures
• Provide condition monitoring data to experts thru the cloud
What about Standards? And Open Source?

Already plenty of standards at the communications level (e.g., OMG DDS)

**Semantic standards are going to be critical in all verticals**

IIC is a source for standards requirements & priorities
The Industrial Internet Consortium Today

- 250 organizations from 30 countries and growing (Kazakhstan!)
  - 7% in Japan
- 20 running testbeds all over the world
  - More than 20 coming through the approval process and in design
  - Expanding into new verticals (agriculture, security, etc.)
- Reference Architecture available for a year; second version in development
- Security Framework in draft available to members & liaison partners
  - Risk management very critical
- Business Strategy & Solutions Lifecycle a year old, first white paper due soon
- Strategy for influencing standardization on track
- Much more breadth in Steering Committee
Interconnecting Regional Efforts

- Major new collaboration announced in February with German regional Plattform Industrie 4.0
  - First two meetings (Zurich in November, Chicago in May) are producing proposals for consideration by both Steering Committees
  - Real collaboration happening in architecture & testbeds especially
- The Consortium is also developing ties with other regional efforts
  - France: Alliance Industrie du Futur
  - China: Internet+ and China 2025
  - United States: Cyber-Physical Systems
  - Chile: Industrial Internet Centers of Excellence
  - Japan: Industrial Valuechain Initiative
  - Europe: AIOTI
Your Moderator: Yasumoto sensei

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