



General Session & 18th Annual Meeting of Members

February 23, 2017

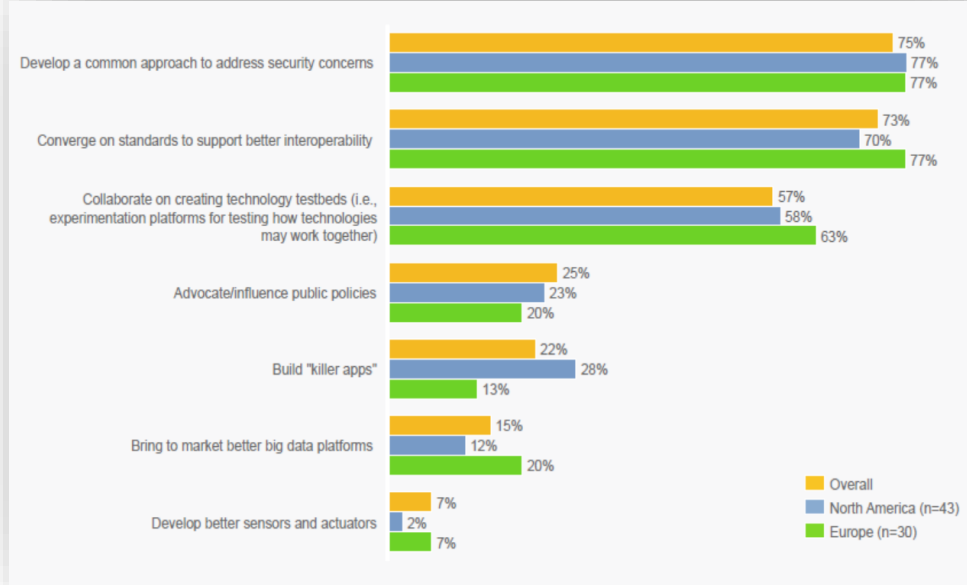
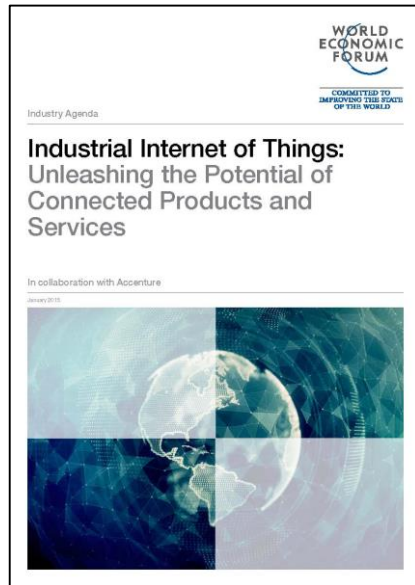
The Future of Industrial Automation

Industrial Internet of Things

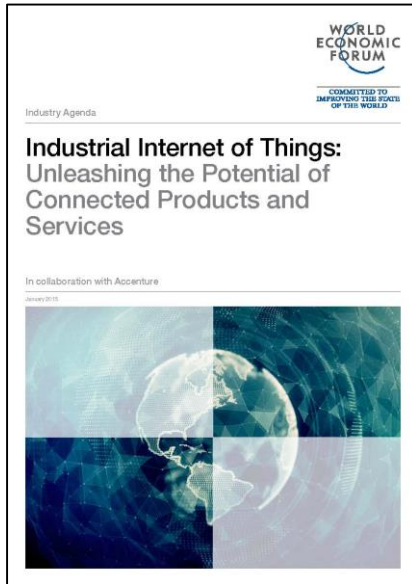


ODYA™

Important actions that industry can take to accelerate adoption, according to the World Economic Forum



More important actions that industry can take to accelerate adoption

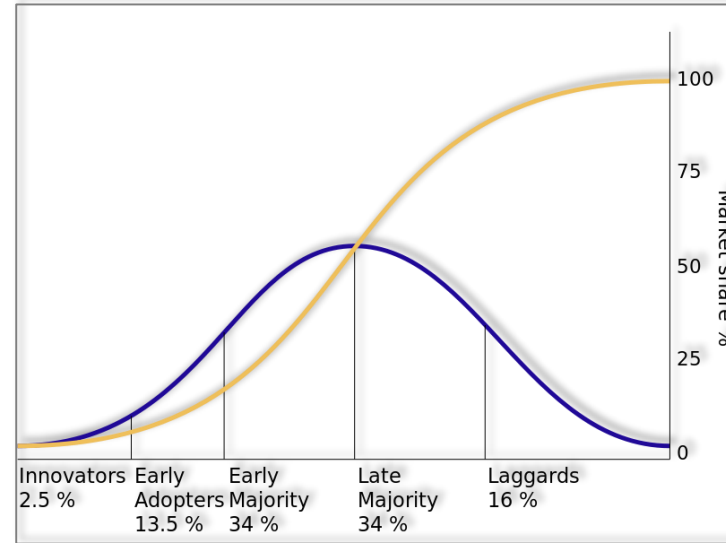


Leverage Key Enabling Technologies

- Ubiquitous Connectivity
- Cloud Computing
- Embedded Sensors and Actuators
- Real-time analytics
- Maturing Software Industry
- Investments in big time IT firms
- Adaptive, learning based algorithms
- Situational and geospatial awareness

A survey of more than 1400 C-suite executives found that, although >80% believe that IIOT can transform their business model, only 7% have a strategy in place to do so.

“Winning with the Industrial Internet of Things: How to Accelerate the Journey to Productivity and Growth” Accenture 2015.



Given that we are at the “Early Adopter” stage of diffusion, ODVA’s strategy is based on general Guiding Principles to drive diffusion. Changing customer needs will be the ultimate driver.



Industrial Internet of Things: Unleashing the Potential of Connected Products and Services

Edy S. Liongosari
Chief Research Scientist
Accenture Labs

February 23, 2017



Accenture is a leading global professional services company, providing a broad range of services and solutions in **strategy, consulting, digital, technology and operations.**

Annual revenues
in 2016 (USD
Billion)

\$32.9

Number of clients
worldwide

5,000+

Number of
countries served

120+



Number of deeply
skilled professional

390,000+

Number of patents
issued and pending

5,500+

Number of
industries served

40+

Example: Connected Ships

Facility
Inspection

Increase
Awareness

Operator
Alertness



Waterway
Inspection



Real-time Location
(for planning and
tracking)



Container Handling



Employee
Demographics



Employee Safety
and Comfort



Process
Enforcement



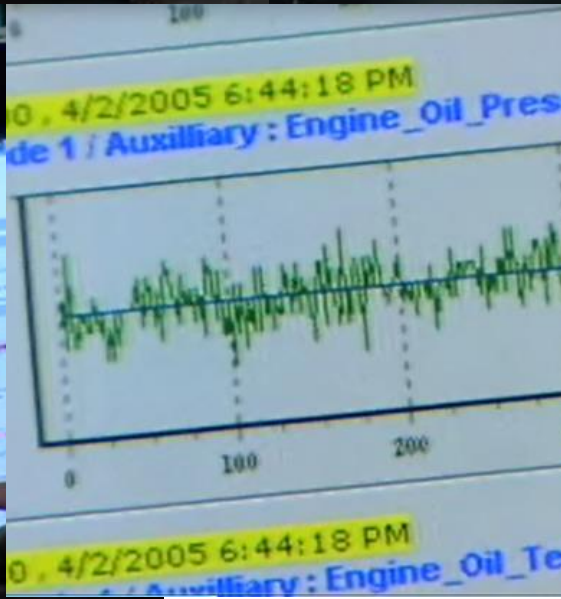
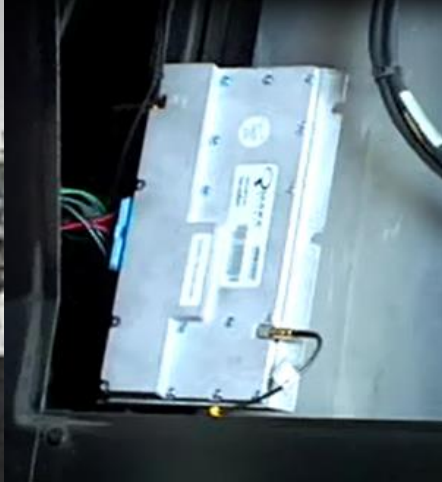
Predictive
Maintenance

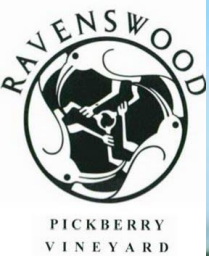


Automated
Optimization



2002



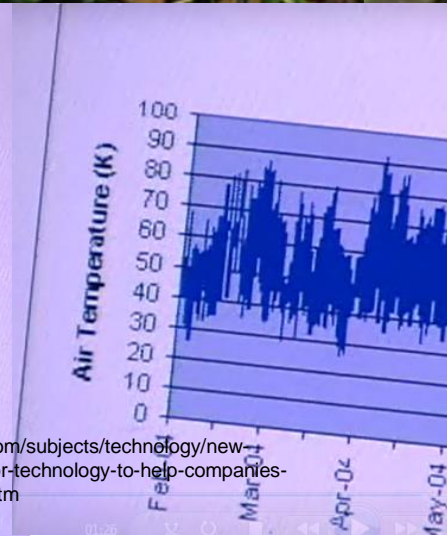


get the
readings!

Endpoint 2

Sensor ID	SM104
Type	Soil Moisture
Reading	27 % VWC
Battery	3.36 volts
Timestamp	2005-03-14 19:26:40.0 PST

Sensor ID	AT104
Type	Air Temperature
Reading	45 °F
Battery	3.36 volts
Timestamp	2005-03-14 19:26:40.0 PST



<https://newsroom.accenture.com/subjects/technology/new-accenture-offering-uses-sensor-technology-to-help-companies-deploy-wireless-applications.htm>

Internet of Things in the News – Circa 2014

GIGAOM

Cisco invests in Ayla and Everything as part of \$150M internet of things fund

*International CES:
The Internet of Things Hits Homes*

The New York Times

Intel Declares IoT Important Enough to Start a New Division

WEEK

Microsoft readies 'Internet of Things' service

THE AUSTRALIAN

readwrite

A Massive Market Opportunity Awaits In Analyzing The Internet Of Things

Cisco shells out big bucks to invest in Internet of Things companies
Cisco doubles down on global connectivity

technadar pro

Who will be the Google of the internet of things?
May 1, 2014 2:52 pm by Sally Davies

FT



silent
herdsman

Google closes \$3.2 billion purchase of Nest
The acquisition brings with it the Learning Thermostat and the Protect smoke and CO detector as Google looks to make its mark in the smart home.

cnet

Cows Are Getting Plugged Into The Internet of Things
Surveillance, Technology // Apr 5 2014

Project Objectives



Industrial Internet of Things:

- Fad or real
- How big and how far
- Which areas that will be most impacted
- What are the implications: business models, industry structures and the role of actors within each of these eco-systems
- What are opportunities – short and long term
- What are the key risks and concerns
- What are societal impact such as privacy, security, and employment
- What are pragmatic steps that can be taken to work towards those benefits and to address risks/concerns

Workshops and Participating Organizations

WORLD
ECONOMIC
FORUM

accenture

APOLLO TYRES LTD.

MIT apigee

DAIMLER

AutoGrid

BAE SYSTEMS

SAMSUNG

kaggle

CISCO

intel

LOCKHEED MARTIN

BlackBerry

Allianz

BT

ABB

ORACLE

ca

WIPRO

SIEMENS

O'REILLY

salesforce

A.P. MOLLER
MÆRSK GROUP

AlienVault

BAYER

Henkel

Schneider
Electric

TATA
CONSULTANCY SERVICES

Philippines

industrial internet
CONSORTIUM

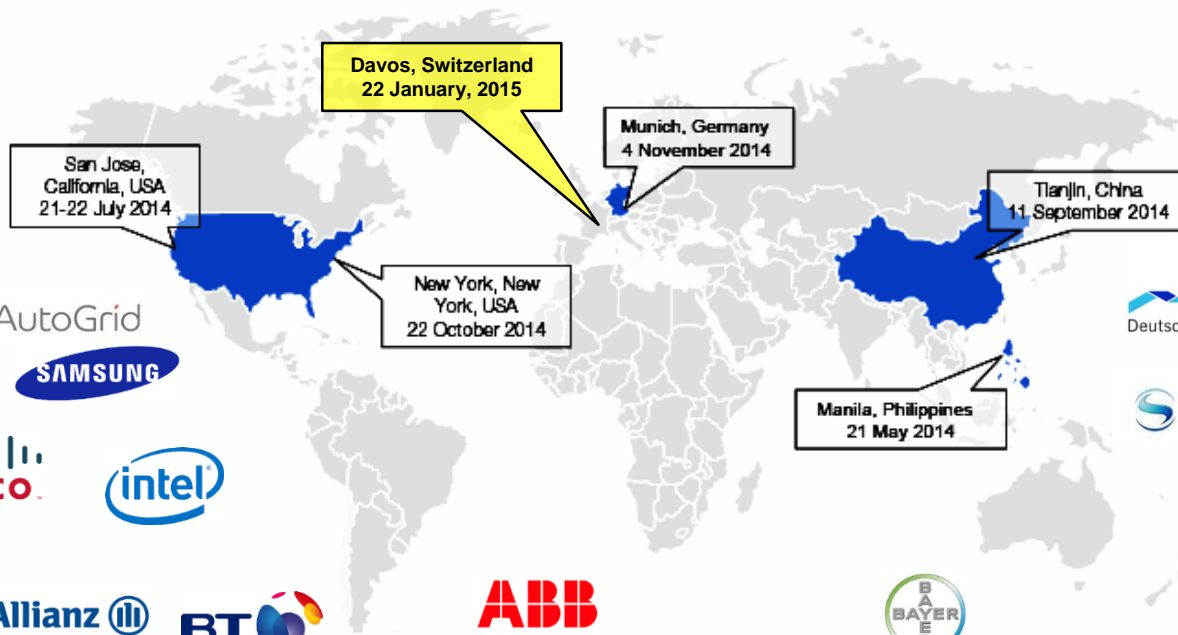
Industrie 4.0

Internet
of Things
World Forum

QUALCOMM

mocana

HUAWEI



GE

HP

SAP

PHILIPS

Telstra

BHARAT FORGE
KALYANI

Deutsche Börse Group

DHL

SAFRAN

EMC²

Morgan Stanley

FLEXTRONICS

GDF SUEZ

Framework of the study

Impact on Business, Economy and Jobs

- What new business models, industry ecosystems and overall economic growth will the Industrial Internet create?
- How will the increasing automation as a result of adopting the Industrial Internet transform the future job market and skill sets required to succeed in the new economy?
- How can businesses and governments best deal with the near- and intermediate-term transitions?

1. Create New
Products &
Services

2. Create &
Destroy
Industries

3. Shift Value
Within, Across
Industries

4. Change the
Nature of
Control Points

5. Redefine
Role/Value of
Processes, Data,
Infrastructure

6. Transform
How Work Is
Done

Opportunities & Disruptions

Key Enablers

- Cloud
- Ubiquitous Connectivity
- Embedded Sensors
- Real-time Analytics
- Maturing Software Industry
- Investments by big IT firms
- ...

**Industrial Internet
of Things**

Key Inhibitors

- Security
- Legacy OT & Infrastructure
- Interoperability
- Privacy
- New Investment
- Perceived Risks
- ...

Public Policies

What are appropriate public policies to accelerate the development and adoption of the Industrial Internet across multiple industries e.g., energy, manufacturing, healthcare, transportation and public sectors?

The Davos Session: From IIoT, IoT to Digital Transformation (Jan 22, 2015)



Industrial Internet of Things: Unleashing the Potential of Connected Products and Services

In collaboration with Accenture

January 2015



Source: www.weforum.org/reports/industrial-internet-things-unleashing-potential-connected-products-and-services

72%

believe that the Industrial
Internet is disruptive



78%

say that the disruption
will occur within **five**
years



88%

indicate that businesses are
not ready for it now



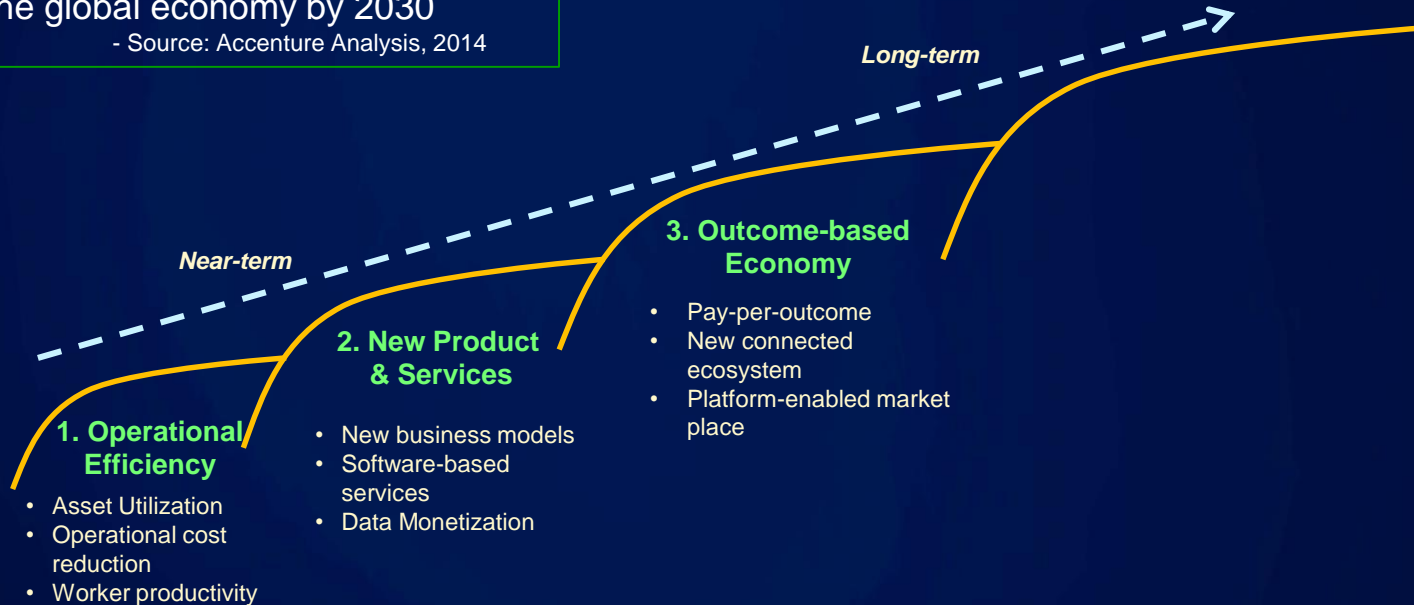
7%

have a funded IIoT strategy

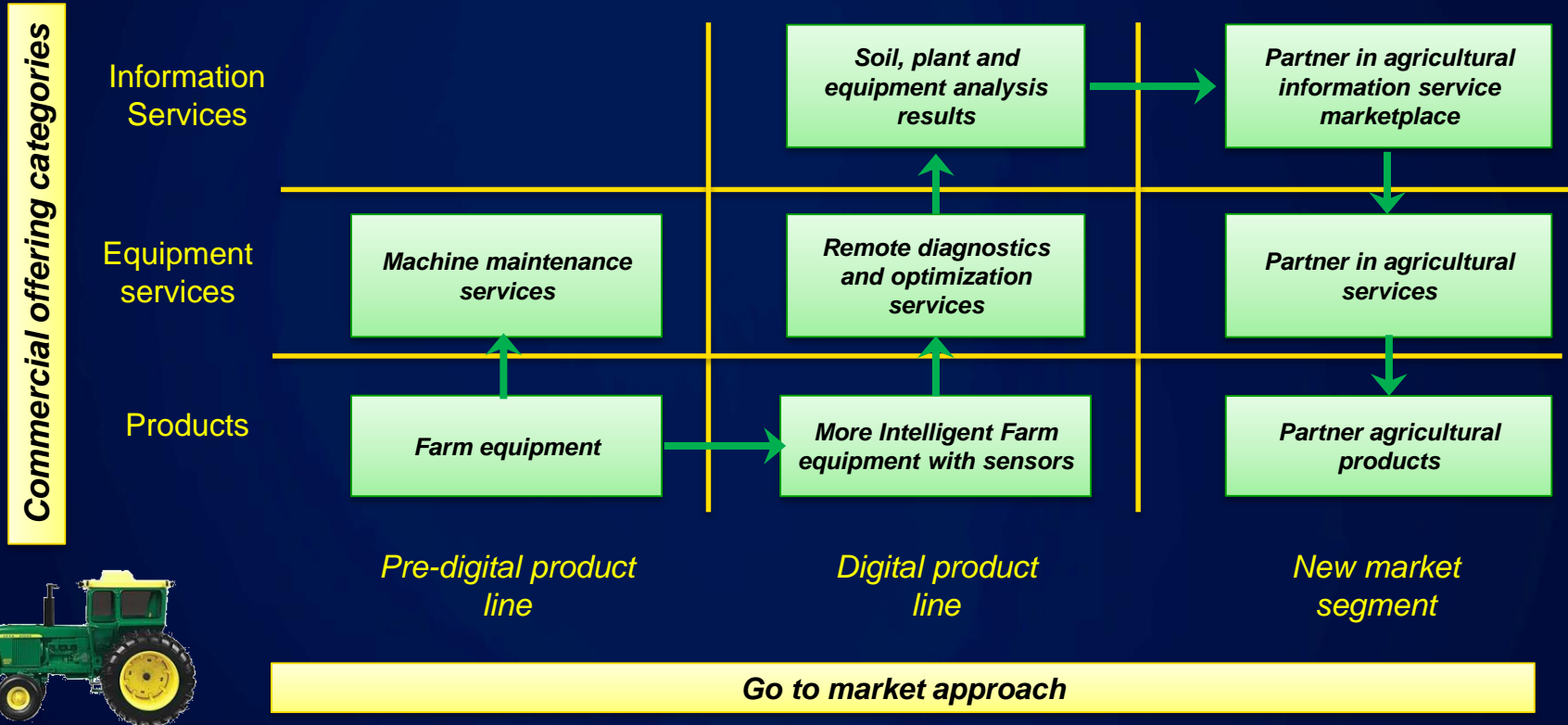
The adoption of the Industrial Internet will be driven by incremental benefits in a near-term and transformational new business models over a long term

Industrial Internet could add up to **US\$14 trillion** to the global economy by 2030

- Source: Accenture Analysis, 2014



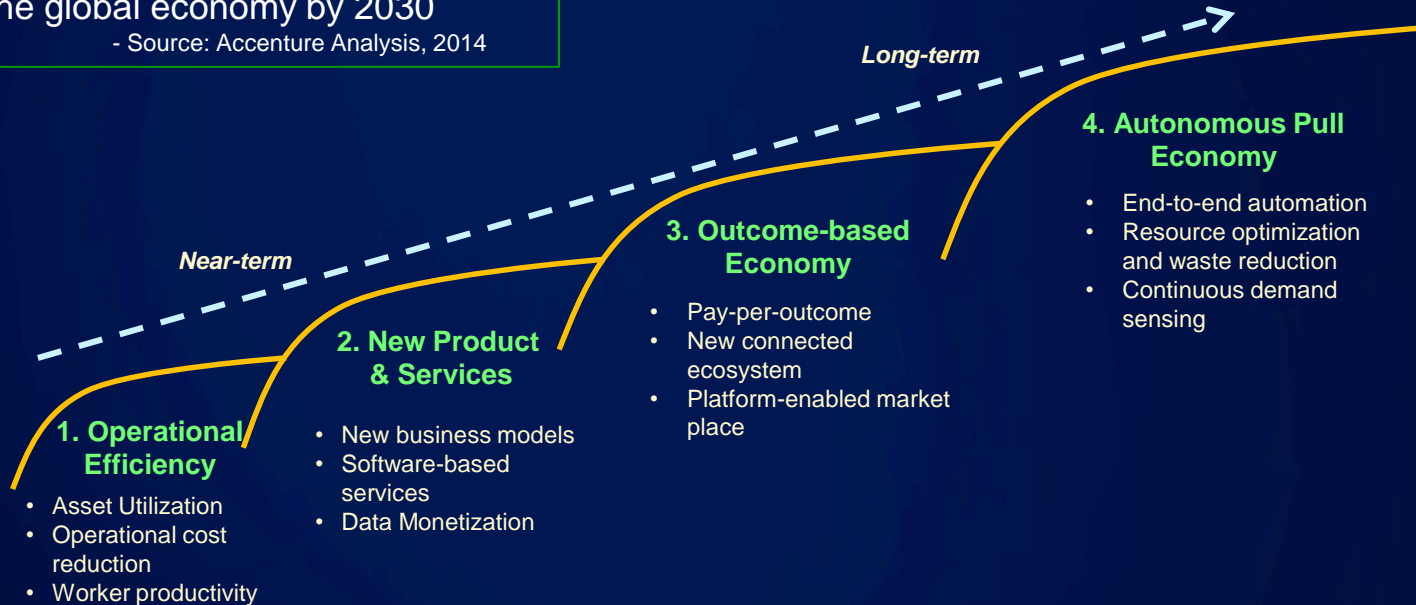
Industrial Internet of Things will enable organizations to drive unconventional revenue



The adoption of the Industrial Internet will be driven by incremental benefits in a near-term and transformational new business models over a long term

Industrial Internet could add up to **US\$14 trillion** to the global economy by 2030

- Source: Accenture Analysis, 2014



The increasing use of connected products & smart machines will transform the job market and the skill mix in the future workforce

93%

agree with the above statement



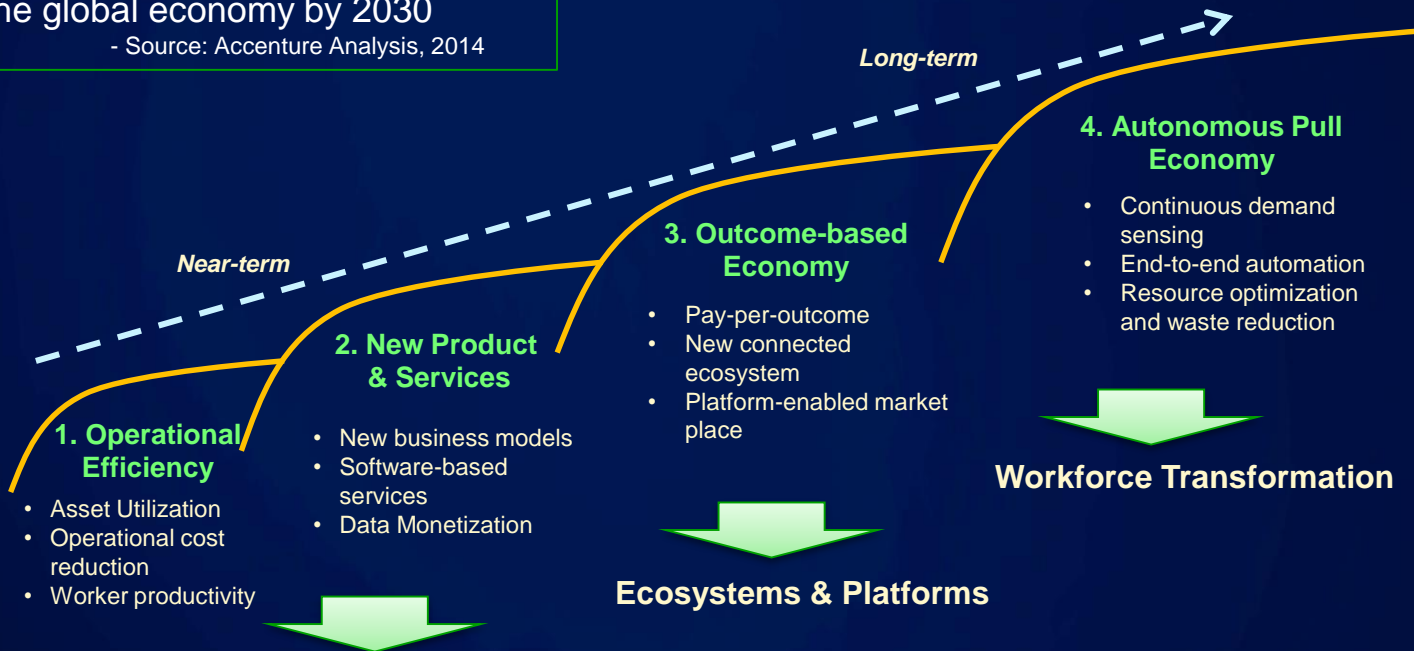
Once you are done with your current task, pls contact Andy



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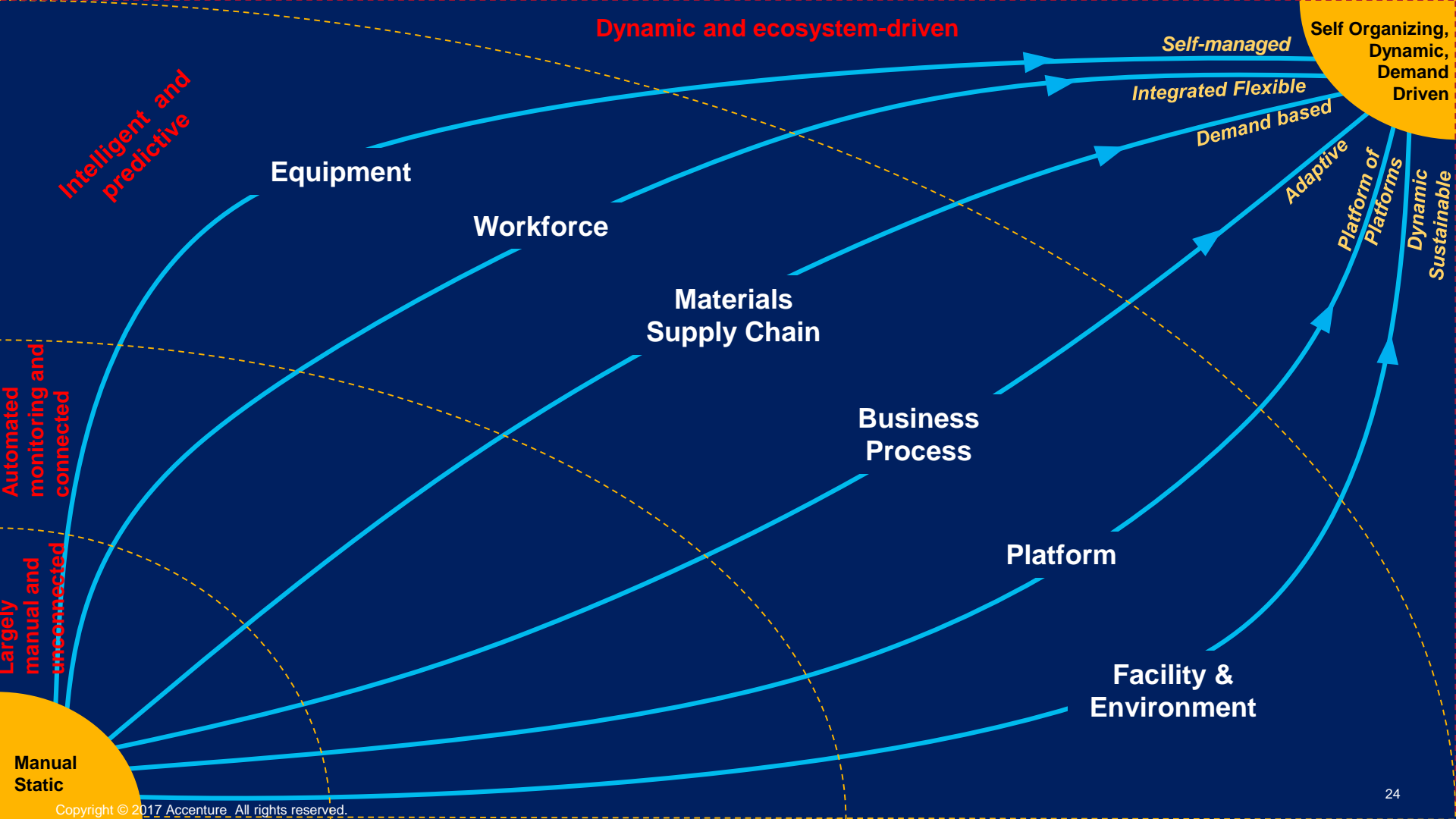
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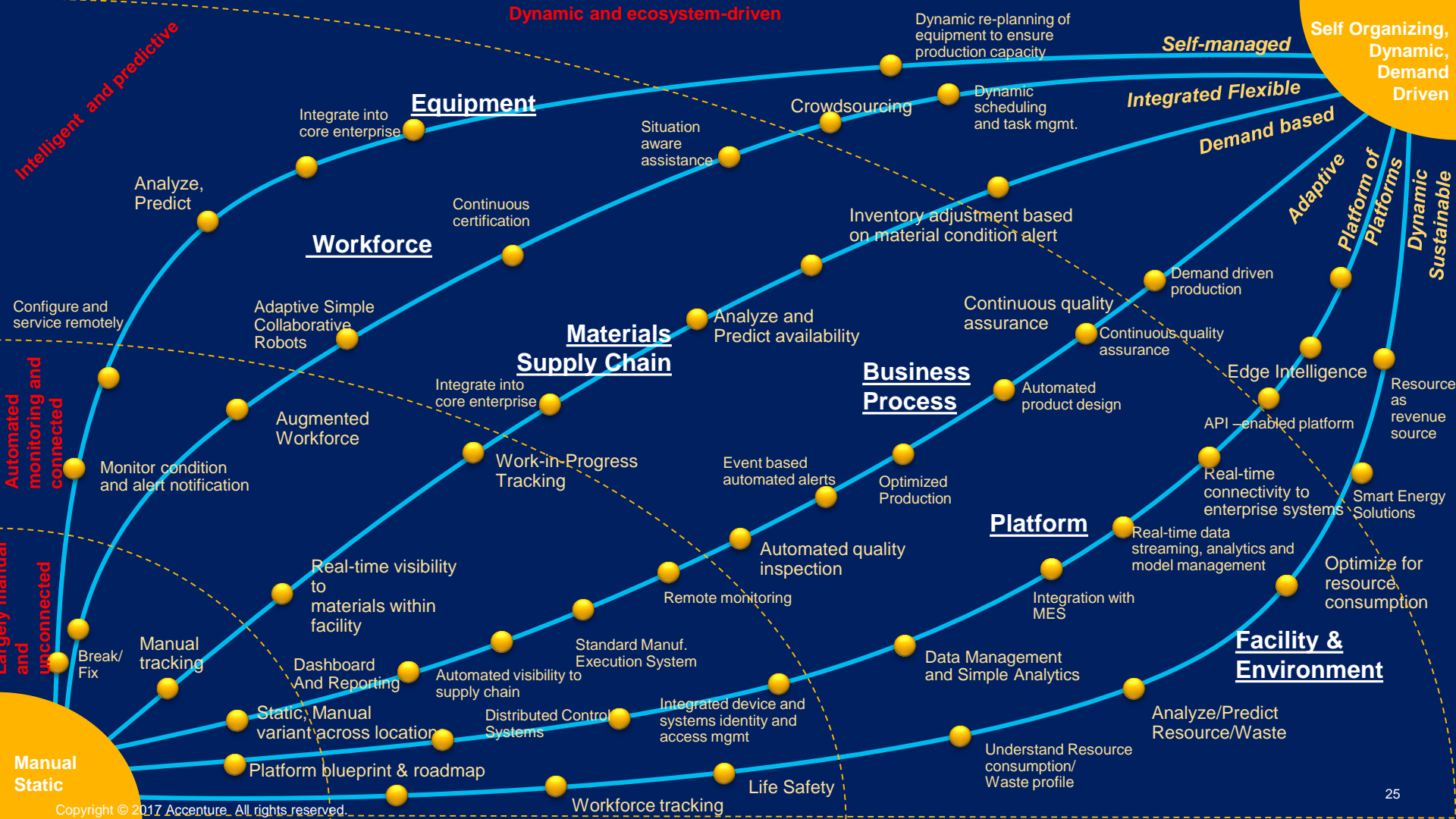


Adoption of Industrial IoT is a multi-faceted multi-step process



https://acnprod.accenture.com/t20160119T041002_w_/us-en/_acnmedia/PDF-5/Accenture-804893-Smart-Production-POV-Final.pdf





Today's Industrial Internet Architecture

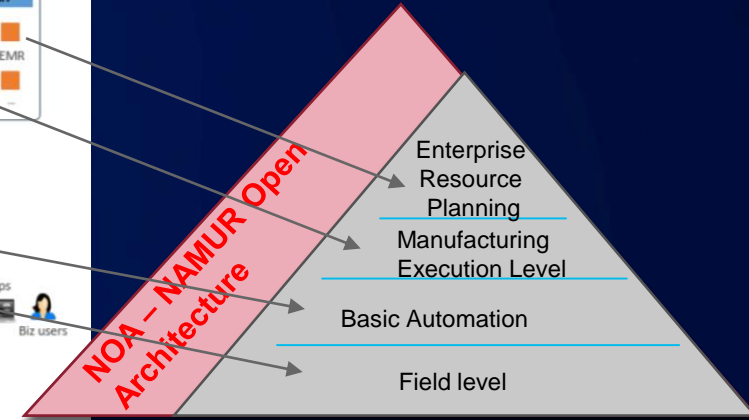
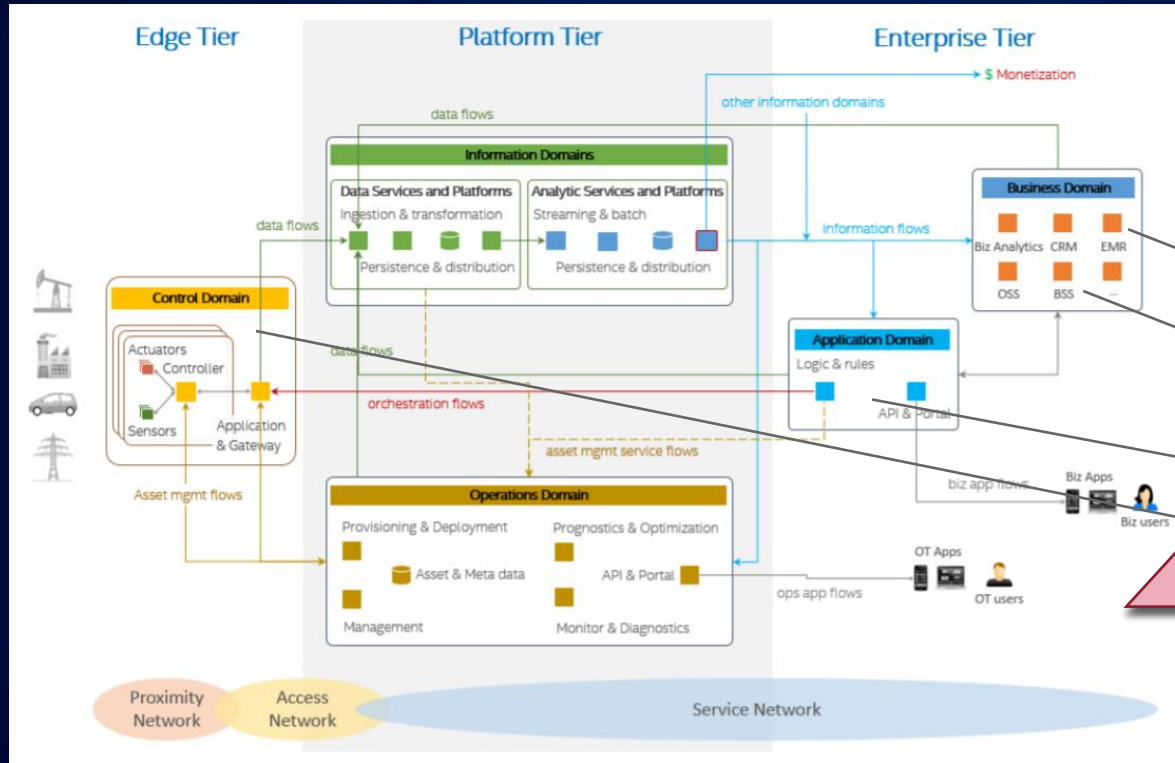
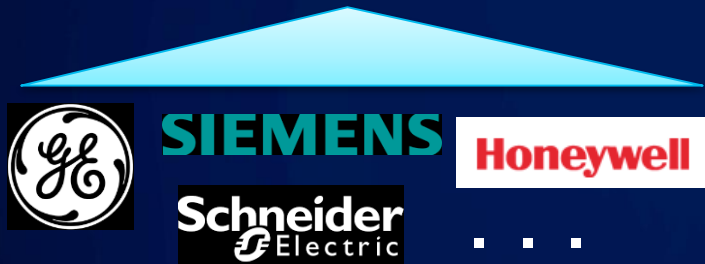


Abb. Aus Präsentation Tauchnitz/Klettner, NAMUR HS 2016

Source: Industrial Internet Consortium: <https://www.iiconsortium.org/IIIRA-1-7-ajs.pdf>

Evolution of the Architecture

Integrated Platform



Platform of Platforms

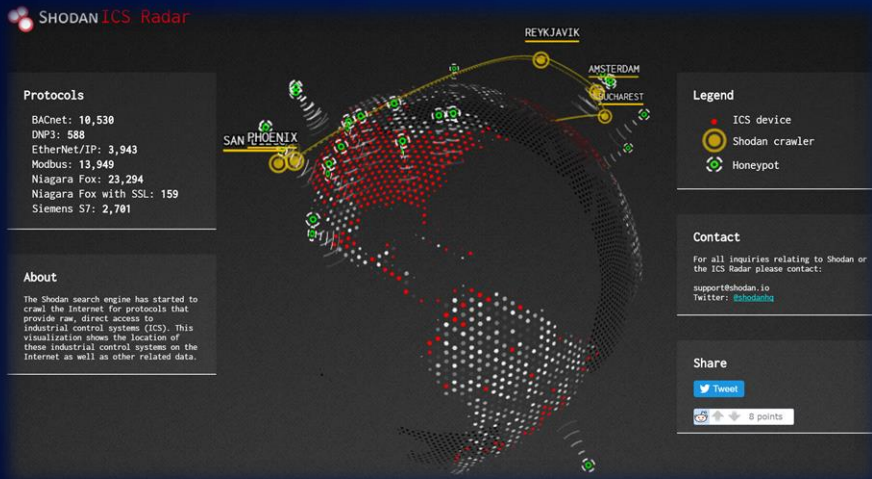
- Loosely Coupled Platforms
- “Google” approach



Analytics at the Edge

- Management at scale
- Long term evolution
- Integrated Security

Other key considerations



<https://ics-radar.shodan.io/>

Security

- System breakdowns
- Human lives



Ethical and Responsible Computing



THANK YOU

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