TS03: Operational Excellence by Leveraging Internet of Things Technologies

Virendra Chaudhari - Industry Solutions – Manufacturing- Microsoft
Imtiaz Javeed – Product Manager -Visualization & Information Software Suite- Rockwell Automation.
Is a lot of things
An Entire Internet of Things & Connected Enterprise
$14T VALUE AT STAKE

INDUSTRIAL
Internet of Things
$3.8 Trillion

<table>
<thead>
<tr>
<th>Industry</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Trade</td>
<td>11%</td>
</tr>
<tr>
<td>Information Services</td>
<td>9%</td>
</tr>
<tr>
<td>Finance &amp; Insurance</td>
<td>9%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>27%</td>
</tr>
<tr>
<td>Other Industries</td>
<td>44%</td>
</tr>
</tbody>
</table>

SOURCE: CISCO
Enabling Technologies

INDUSTRIAL Internet of Things

- Machine to machine coordination – high speed
- Mission critical assets – safety
- Integrated Control and Information

Smart Things
Data Analytics
Scalable Computing/Cloud
Mobility
Security
The Connected Enterprise
The Industrial IoT at work for Industrial Applications

- **Contextualizing and analyzing data**
  - Smart devices create more ‘things’ to be analyzed

- **Reliability, support, and disaster recovery**
  - Shift from CapEx to Flexible & Scalable OpEx

- **Access to actionable information**
  - Workforce is Mobile during typical work day
Create The Internet of Your Things in manufacturing

Virendra Chaudhari
Date: 11 Feb 2015
What is the Internet of Things?

Things  Connectivity  Data  Analytics
Microsoft’s view

The Internet of Things starts with your things

- Build on the infrastructure you already have
- Add more devices to the ones you already own
- Get more from the data that already exists

Stop just running your manufacturing business. Start making it thrive. Start realizing the potential of the Internet of Your Things.
Why manufacturers need IoT

- Build smarter operations
- Increase business agility
- Drive product innovation
- Enable new business opportunities
Microsoft makes the Internet of Things real today

Microsoft supports a diverse ecosystem of partners and solutions

Microsoft has the technology that brings the Internet of Things to life
Your things. Our services.

You have things...

You have data...

Microsoft Azure IoT services:

- Improve efficiency
- Enable innovation
- Transform your business
Drive business transformation by offering managed services on products you produce and sell and generating new revenue.

Enable innovation by leveraging product performance and customer usage data to inform R&D efforts.

Improve efficiency by remotely monitoring asset health and utilization across the globe in real time.

Azure IoT services – Manufacturing

MANUFACTURING PLANT

GLOBAL FACILITY INSIGHT

CUSTOMER SITE
Making the Internet of Things real today

| Improved access to production and supply chain data worldwide, reducing costly downtime and maintenance, and increasing productivity. | Connected on-board sensors to a data center and 55 remote offices to improve safety, gain new insights from existing data, and drive new business opportunities. | Increased reliability and reduced costs through rich, real-time data analytics, predictive maintenance, and rapid, remote diagnostic capabilities. | Designed an Intelligent System solution that controls robots and supports nodes that can connect with approximately 60,000 devices on the shop floor to produce 700 car bodies each day. | Improved connectivity and boosted revenue by 70% and increased productivity by 30% with automated, streamlined solutions. |

**Rockwell Automation** | **FLOATEL** | **ThyssenKnapp** | **KUKA** | **Lider Strom**
Making the IoT Real - Videos
The right partners to help you succeed

Top systems integration partners

CGI
accenture
Infosys
Cognizant
WIPRO
SOGETI
TATA
Microsoft Services
Capgemini
Avanade
Get started today!

• Learn more about how to create the Internet of Your Things
• Ask us how to assess what your company needs to get the most out of IoT
• Explore Microsoft Azure IoT services today at www.InternetofYourThings.com
The Internet of Your Things

<table>
<thead>
<tr>
<th>CHALLENGE</th>
<th>SOLUTION</th>
<th>BENEFITS</th>
</tr>
</thead>
</table>
| Rockwell Automation is the world’s largest industrial automation and information firm with 22,500 employees and customers in more than 80 countries. Rockwell Automation wanted to strengthen its competitive advantage and open new business opportunities in the oil and gas industry by automating the collection and analysis of data from remote installations—often in rugged conditions—across the petroleum supply chain. | Rockwell Automation created a solution to monitor expensive capital assets and use that data to improve efficiency, drive better performance and enable innovation. Based on Microsoft Azure Internet of Things services, the solution collects, integrates, and organizes sensor data from remote equipment across global supply chains to support real-time insight, predictive analytics, and preventive maintenance. | • Improves access to production and supply chain data worldwide, reducing costly downtime and maintenance, and increasing productivity.  
• Accelerates and supports business growth with a highly scalable cloud platform.  
• Spurs innovation and builds a competitive advantage with easier development and faster time-to-market with new features. |
Proof Point

Real-time Visibility to Remote Assets

M.G. Bryan Equipment Co.

Windows Azure
Connected Enterprise
Collaboration of People, Process, Technology

Connecting...

People
Process
Technology

... to achieve Operational Excellence
The Internet of Your Things

**CHALLENGE**

Kongsberg Maritime, a provider of dynamic positioning and automation systems for ocean vessels, wanted to improve operational knowledge by replicating and sharing data with onshore analysts. Customers like Floate International wanted to take advantage of new data insight to improve operational performance and safety on accommodation vessels that house approximately 500 oil-rig workers at a time.

**SOLUTION**

Kongsberg worked with Attunity to design a new communications platform that connects existing on-board sensors and control systems with an onshore data center and 55 remote offices. Floate International has gained valuable insight into data, enabling real-time decisions and improving operational performance and safety on vessels.

**BENEFITS**

- Gains new insight into existing data
- Improves safety
- Enables strategic, real-time decisions
- Supports performance analysis
- Provides new business opportunities
The Internet of Your Things

CHALLENGE
Leading global manufacturer ThyssenKrupp Elevator maintains more than 1 million elevators worldwide, including those at some of the world’s most iconic buildings. ThyssenKrupp wanted to better compete in their industry by offering dramatically increased uptime, taking preventative maintenance a step further to predictive and even preemptive service.

SOLUTION
ThyssenKrupp teamed up with Microsoft and CGI to create a connected asset monitoring system based on Microsoft Azure IoT services including Azure Machine Learning and Power BI for Office 365. The solution connects thousands of sensors and systems in its elevators to the cloud and draws this data into a dashboard available on PCs and mobile devices for a real-time view of key performance indicators.

BENEFITS
- Increases reliability through predictive maintenance and rapid remote diagnostic capabilities
- Reduces costs for ThyssenKrupp and their customers
- Rich, real-time data visualization
- Data continually feeds into dynamic predictive models
- Two-way flow of data enables diagnostics mode and remote elevator commands

www.InternetofYourThings.com
The Internet of Your Things

**CHALLENGE**
KUKA—designer of the first industrial robot in 1973 and one of the world’s leading suppliers of robotics—sought to design an automated manufacturing process capable of producing 8 different Jeep Wrangler bodies on the same production line without interrupting production flow.

**SOLUTION**
KUKA implemented a solution built on Microsoft technologies that connects 259 assembly-line robots with a controller, over 60,000 devices points, line-of-business applications, and back-end systems to deliver continuous uptime and produce over 130 car bodies each day. All the control tasks, including creating and running programs and diagnostic processes, can now be performed directly on the robots from the control panel’s interface.

**BENEFITS**
- Rapid adaptation supports multiple models and helps produce a car body every 77 seconds
- Continuous uptime enables 24 hours of production per day for over 8 years
- Familiar interface improves efficiency and reduces training time

www.InternetofYourThings.com
The Internet of Your Things

**CHALLENGE**
Lido Stone Works, a manufacturer of high-end stone installations for architectural firms worldwide, wanted a more automated production environment so that it could improve efficiency, as well as remote assistance to reduce downtime.

**SOLUTION**
Lido teamed with Breton to connect machines on the factory floor with back-end servers. The solution uses ASEM remote assistance software and Microsoft Azure to connect Lido’s machines and servers to Breton’s control center. And connecting other things such as handheld barcode scanners to existing back-end inventory and management systems has greatly streamlined inventory operations.

**BENEFITS**
- Boosts revenue by 70% and increases productivity by 30% with automated, streamlined solution
- Improves manageability and saves €400,000 (US$524,000) annually in travel costs
- Increases business volume and results in 67% growth in workforce
- Better connectivity empowers innovation

www.InternetofYourThings.com
证明点

Plantwide Visibility and Analytics

TOYOTA

Viscosity into loss of production faults lead to root cause identification

- Allows all to access EPA data
- Oven temperatures accessed real-time
- # of Re-coats reduced due to real-time alerts

- >$300k/yr Eliminated by Contract Dispatch
Proof Point

Real-time Visibility to Remote Assets
Thank you for participating!

Your feedback is valuable!
Please complete the session survey.

E-Mail us – indiamarketing@ra.rockwell.com
Global Solutions
Bringing you a world of experience

Consistent methodology deployed in all locations
The right team for your project from our worldwide talent
All major industries
Any production environment
Combining technology & application knowledge
Based on PMI® PMBOK®
Certified project managers
Repeatable, measurable, auditable
Risk management

Helping you exceed your business goals