Thursday, 8 February 2018- 13:30-15:30, Room 4203
IF05 – Exponential Changes of Industrial IoT Space, Now and Future

Panel:

• Muralidhar, M.S.K, High Tech Industry Leader, Deloitte
• Shigeyoshi Shimotsuji: GM, Software & AI Technology Center, Toshiba Digital Solutions
• Shailendra Kumar, Vice President & Chief Evangelist, Analytics | Leonardo, APJ&GC, SAP
• Christoph Theisinger, Vice President, Systems Engineering, APJ, Dell EMC
Evolution of Industry IoT

By 2020

IoT Related Hardware

- **Spend Estimated $3T from $2T in 2017**
  
  *Source: Gartner*

By 2021

Global IoT

- **Spend Estimated $1.4T in hardware, software, services, and connectivity. WiFi and Bluetooth low energy (BLE) are top contenders as preferred IoT connectivity mechanisms.**
  
  *Source: IDC*

By 2022

- **Pressure and Temperature sensors** will account for 62% of all globally enabled IoT sensors. *Source: Statista, Projected global Internet of Things enabled sensors market in 2022, by segment.*

Sensor Based Logistics  Predictive Maintenance Workflow  Digital Thread  Digital Twin

**Industry IoT**  **Industry 4.0**
Deloitte Global Study on impact of exponential technologies

Are the leaders of businesses and government agencies ready to harness the full potential of Industry 4.0 to benefit their clients, their people, their organizations, their communities and society more broadly?

To answer this question, Deloitte Global, in conjunction with Forbes Insights, surveyed more than 1,600 C-level executives worldwide. Here’s what we found.

Four major areas of impact

**Society**
Executives seem to view technology fearlessly, as the great equalizer that will provide more access to education, jobs, or financing across different geographies and social groups. And a large majority of executives see businesses—both public (74 percent) and private (67 percent)—as having the most influence on how Industry 4.0 will shape society, with government a distant second.

**Strategy**
Many continue to focus on traditional near-term business operations, rather than longer-term opportunities to create value for their direct and indirect stakeholders. We found that 57 percent of CXO respondents put developing business products as their top issue, with increasing productivity at 56 percent.

**Talent**
Many executives don’t seem to feel the urgency of tackling the challenge of the future of the workforce—even though only a quarter are highly confident they have the right workforce composition and the skill sets needed for the future.

**Technology**
Only 20 percent of CXOs we surveyed consider their organizations highly prepared to handle new business or delivery models, and less than 15 percent believe they are highly prepared for smart and autonomous technologies.
Building blocks for Capabilities

Risk, Quality, Security
Validating the quality and consistency production, cybersecurity risks and requirements

Talent/Workforce/Organisation
Shift in mind-set, requirement for new competencies, skills, talent infrastructure, and workforce planning

Business Case
Strong understanding of supply chain, cost and value dynamics

Process
Integrated set of process and activities designed to achieve an effective output

Digital Thread
Additional technologies (i.e., IT) and tools required

Data Ownership/Standards/Management
Clear roles, decision rights, and policies and clear sets of standards

Industry IoT Business Capabilities
Getting started…

Think big

- **Imagine** the possibilities
- **Identify** the initial product, process, or service line

Start small

- **Pilot** a program
- **Manage** expectations

Scale fast

- **Industrialise** and build
- **Monitor** return on investment
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Panel discussion
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IF05 – Exponential Changes of Industrial IoT Space, Now and Future

Shigeyoshi Shimotsuji
Director Vice President
GM, Software & AI Technology Center
Toshiba Digital Solutions
Industry IoT: IoT Everywhere

Behind the Scenes; State of Art Technologies

- Energy
- Social info
- Distribute
- Building
- Manufacture

Cyber/Physical System
Digital Twin

Sensing
Action

Deep Learning

Fog Server
Gateway

New Architecture

Smart Edge & Fog Computing

Data Analysis
Powered by AI

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Industry IoT cases: things
Industry IoT cases: human
Digital Twin to provide accurate emulation and simulation of things.
"DigitalTwin + AI" provides new value of IoT

Concerns when IoT started to take off

Optimization started

Product value less than $10,000

Ex. LED Light Bulb

Concerns:
1. IoT Cost
2. What are new values?

Ex. Elevator

<1,000 sensors

1,000+ sensors

Not local, but entire

Source: MIC of Japan; WHITE PAPER Information and Communications in Japan, IDC, Cisco
**IoT Case: Smart Building**

- **Elevator Control based on Congestion Monitoring**
  - Elevator Control by Sensors
  - Reduction of Longest Waiting Time: 20%

- **Sensor-based Lighting Control**
  - Lighting Control by Sensors
  - Reduction of Energy Consumption: 11%

- **Model based HVAC Control**
  - Annual Power Reduction: 12%

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- **Sustainability Operation**
  - Building Operation Model
  - Deep Learning
  - 35,000 sensors
Industry Initiatives – Global & Japan

Industrial Internet Consortium (IIC)

Deep Learning Platform

TOSHIBA

IoT Testbed w/ Deep Learning

35,000 sensors

Deep Learning

Industrial Valuechain Initiative (IVI) - Bring Factory IoT to SMB

Factory Operation Model

6,000,000 sensors

Deep Learning

Complete inspection
Panel discussion
IEEE World Forum

IoT: Creating Value

Shailendra Kumar, Chief Evangelist, SAP
February, 8, 2018
Intelligently connecting People, Things and Businesses

- Machine Learning
- Connected Data
- Real-time Analytics
- Integration
- Design Thinking
- APIs
- Natural Language
- Collaboration
- Mobile
- Big Data
- IoT
- Experience
- Business Process Innovation
- Networks
- Micro-services
- IoT
- Business Process Innovation
- Networks
- Micro-services
SAP Leonardo
Digital Innovation System

SAP Leonardo Technologies

Machine Learning
Blockchain
Big Data
Data Intelligence
Internet of Things
Analytics

Design Thinking Services

SAP Cloud Platform

Microservices | Open APIs | Flexible Runtimes | Integration

Multi-Cloud Infrastructure

SAP Data Center
Google Cloud Platform
Microsoft Azure
Amazon Web Services
There are multiple ways to extract business value from the Internet of Things

The ability to define new products and new business models, however, translate into market shares and new power over your industry’s value chain.

Value Categories

Unconventional Revenues

- Product as a Platform
- Most Valuable Information Provider
- Products / Services Hybrid
- New Business and Operating Models

Operation Efficiency

- Preventive Maintenance
- Process Automation
- Operation Optimization
- Global Asset Visibility

Value Levers

- Enabling third parties to create information services
- Locking customers into the information services
- Treating Services as R&D for products
- Sensors, analytics, and real time data for insights
- Flexible production techniques to boost productivity
- Data to work as digital service for equipment performance
- Gain opportunities to create customer touch points
- Avoiding unnecessary product shutdowns
- Computerize repetitive tasks and workflows
- Reduce costs of energy, maintenance, repair etc.
- Improved supply chain and logistics performance
SAP saving lives with IoT
Thank you.

Contact information:

Shailendra Kumar
Chief Evangelist Analytics | Leonardo

@meisShaily
linkedin.com/in/shaily
CognitiveToday.com
shaily.kumar@sap.com
Panel discussion
The Data Center Is coming to the Edge

IEEE Forum on Internet of Things
Singapore, 8th February 2018

Christoph Theisinger
Vice President, Systems Engineering, Dell EMC

Follow me @ctheisinger
A collective force of innovative capabilities

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Elite and trusted intelligence that strengthens security and reduces risk in a dynamic landscape.

Most trusted virtualization solution for desktop, data center and applications.

Leading enterprise-class cloud software and solution provider.
The **Internet of Things** is not a thing. It’s a **concept**.
The value is clear, getting to value can be challenging.

- Business Case
- Stakeholder Alignment
- Interoperability
- Scale
- Analytics
- Security and Manageability
The swing between centralized and distributed

With IoT, the sheer scale of devices makes distributed a necessity…
Architect for management, security and scale
Maximize your choices across the IoT continuum

- **EDGE / FIELD**
  - Embedded
  - Gateways

- **CORE**
  - On-Premise Appliances
  - Data Center & Cloud

- **CLOUD**
  - Cloud & App Integration

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**Data**
- **Insights**
  - Data Insights

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- **Dell**
- **Dell EMC**

- **Manage:**
  - VMware

- **Secure:**
  - RSA
  - VMware
  - SecureWorks

- **IoT Solutions Partner Program:**
  - Sensors, Analytics, System Integration and Deployment

- **Professional Services, IoT Big Data Consulting, OEM Services, Global Support and Financing**
Accelerate ROI with our curated IoT partner program

**Technology**
- Analytics
- Data Visualization
- Wide Area Connectivity
- Security
- Sensors

**Services**
- Domain Expertise
- Software Development
- System Integration
- Deployment
- Field Support

**Use Case-Specific Solution Blueprints**
The Open Interop Platform for the IoT Edge
Using EdgeX to Decouple Things and Applications
Panel discussion
Thank you!
Prepare now to leverage the huge opportunity that lies ahead!
IEEE 4th World Forum on Internet of Things
05-08 February 2018 – Singapore