



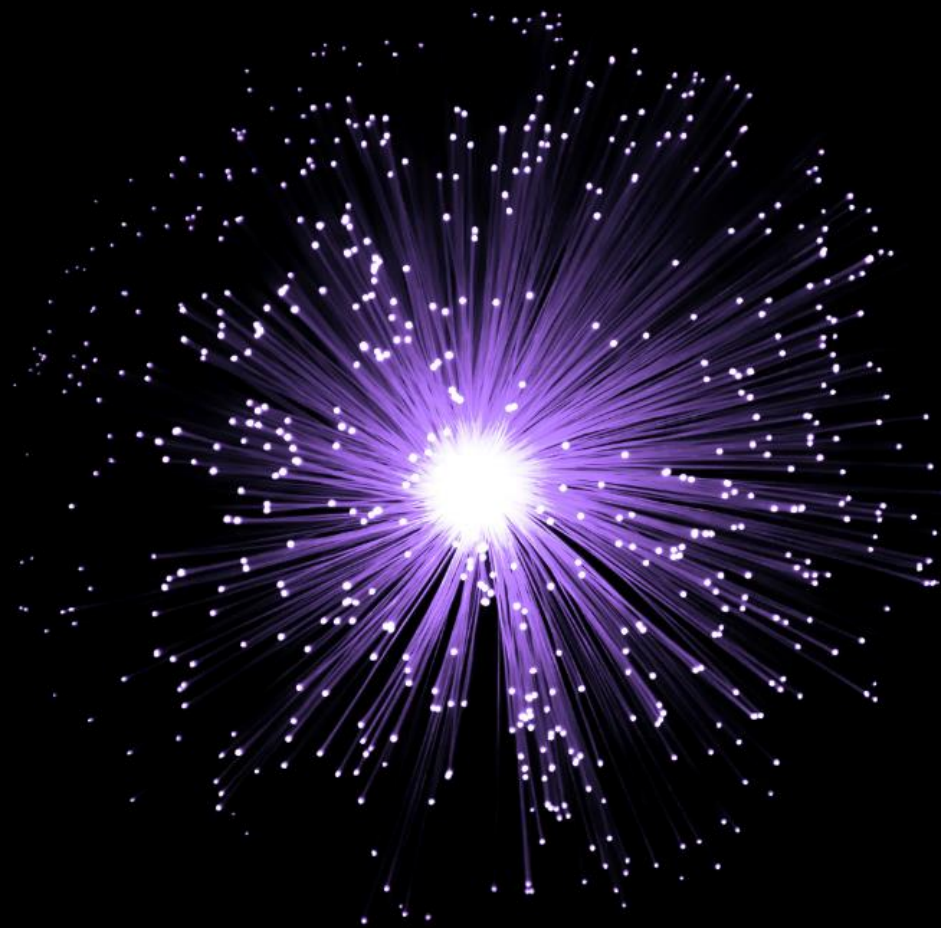
IEEE 4th World Forum on Internet of Things
05-08 February 2018 – Singapore

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

Deloitte.



Industry IoT: Reshaping the future

February 2018

Evolution of Industry IoT

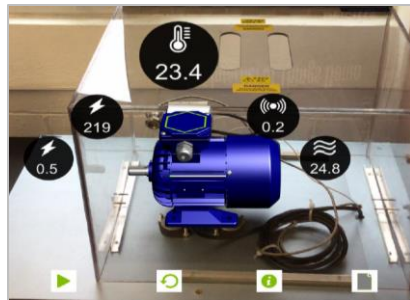
By 2020 IoT Related Hardware **▶** • **Spend Estimated \$3T from \$2T in 2017**
 Source: [Gartner](#)

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](#)

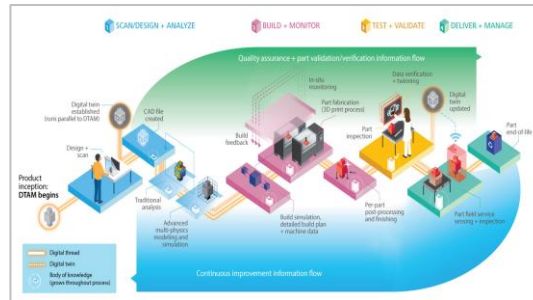
By 2022 **Pressure and Temperature sensors** will account for 62% of all globally enabled IoT sensors. Source: Statista, Projected global Internet of Things enabled sensors market in 2022, by segment.



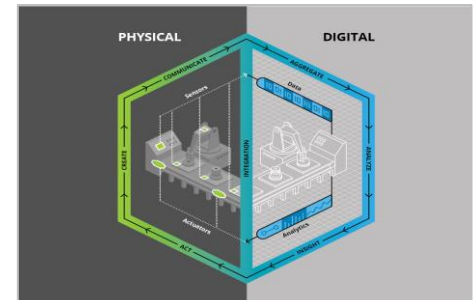
Sensor Based Logistics



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 of production, cybersecurity risks and requirements



Business Case

Strong understanding of supply chain, cost and value dynamics



Digital Thread

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



Talent/Workforce/Organisation

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



Data Ownership/Standards/Management

Clear roles, decision rights, and policies and clear sets of standards



Process

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



Industry IoT Business Capabilities

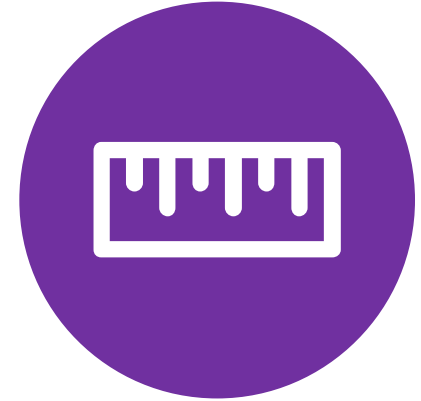
Getting started...



Think big



Start small



Scale fast

Anchor in to core strategy



Issues / Opportunity Identification

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

Explore the art of the possible



Digital Immersion

Plan for success



Digital Strategy

Test an idea



Solution Prototype

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

Expand success



Solution Industrialisation

- **Industrialise** and build
- **Monitor** return on investment

Change the organisation



Enterprise Integration



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Comprising approximately 330 partners and 8,000 professionals in 25 office locations, the subsidiaries and affiliates of Deloitte Southeast Asia Ltd combine their technical expertise and deep industry knowledge to deliver consistent high quality services to companies in the region.

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Panel discussion

TOSHIBA

Leading Innovation >>>

Thursday, 8 February 2018- 13:30-15:30, Room 4203

**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

Energy

Social inf

Distribut

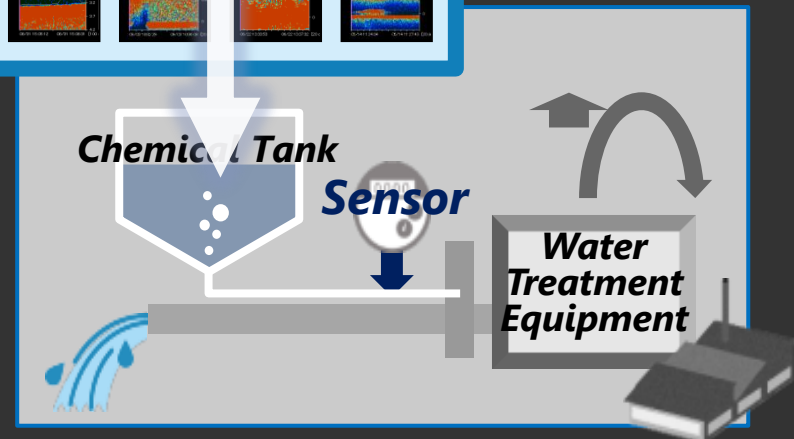
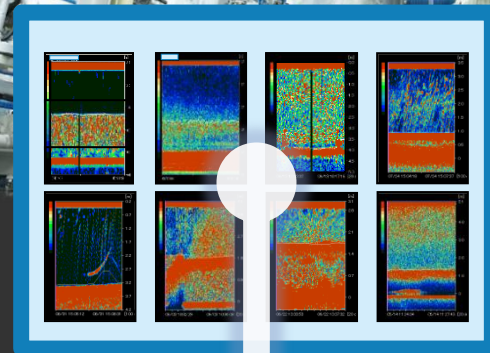
Building

Manufact

Behind the Scenes; State of Art Technologies



Industry IoT cases: things



Industry IoT cases: human



Digital Twin

to provide accurate emulation and simulation of things

DIGITAL

Digital Twin

Cyber

Reflect learning results and evolve dynamically

Environment

Temperature,
Pressure, Humidity,
Vibration, etc.

Calculated value

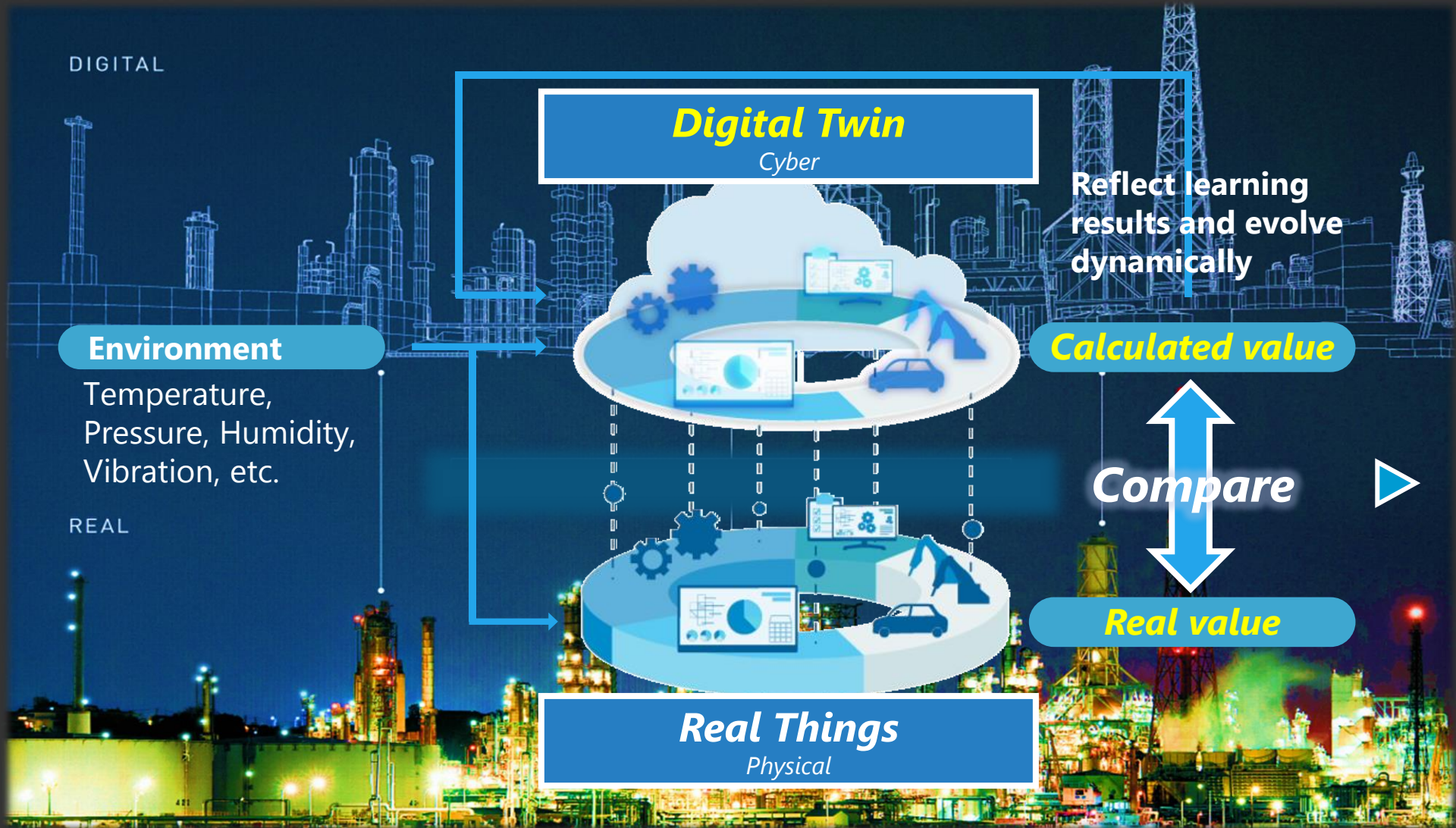
Compare

REAL

Real Things

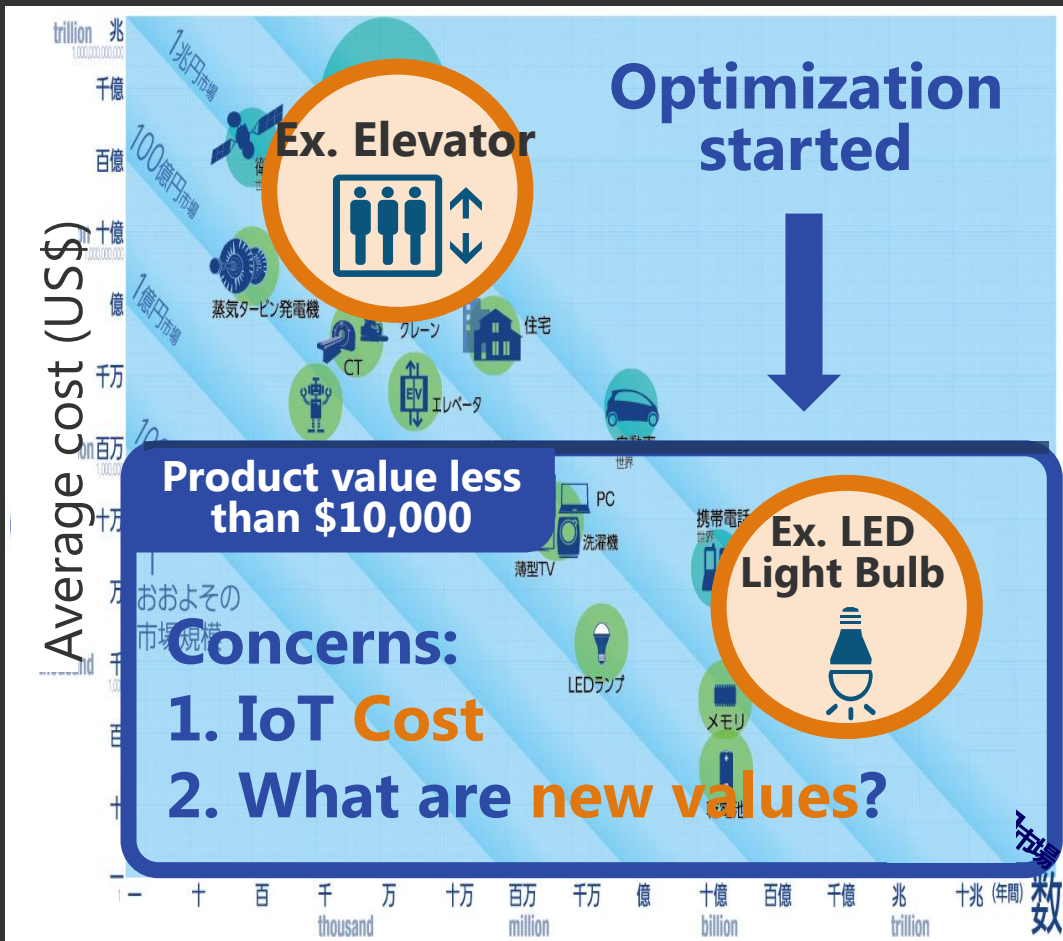
Physical

Real value

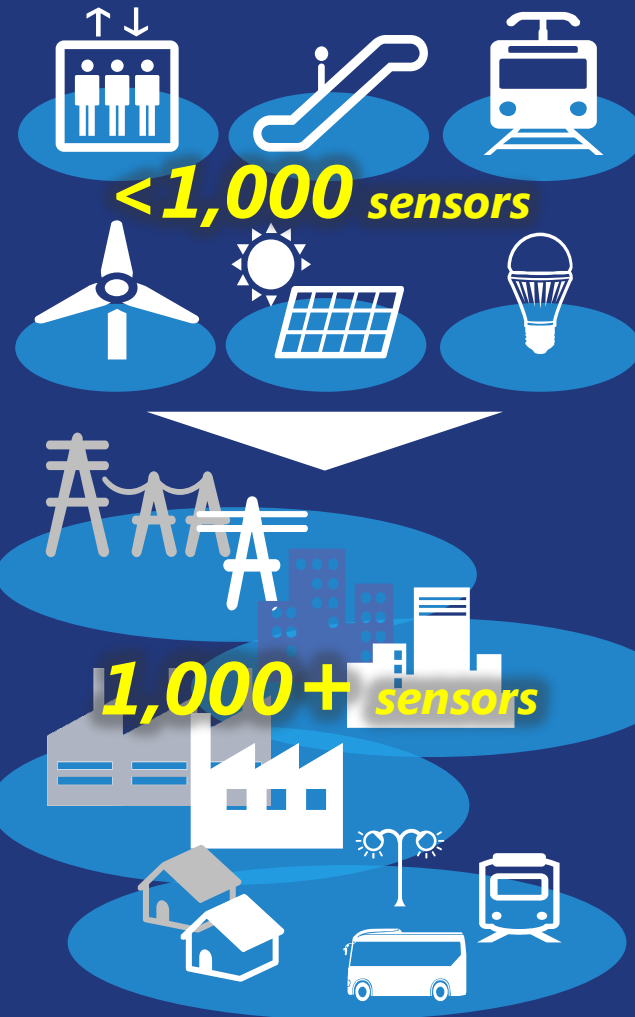


"DigitalTwin + AI" provides new value of IoT

Concerns when IoT started to take off



Not local, but entire



IoT Case: Smart Building



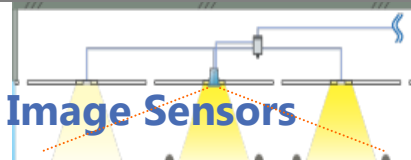
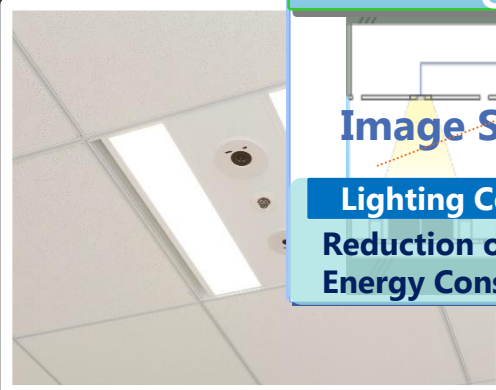
Elevator Control based on Congestion Monitoring



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%**

Sustainability Operation



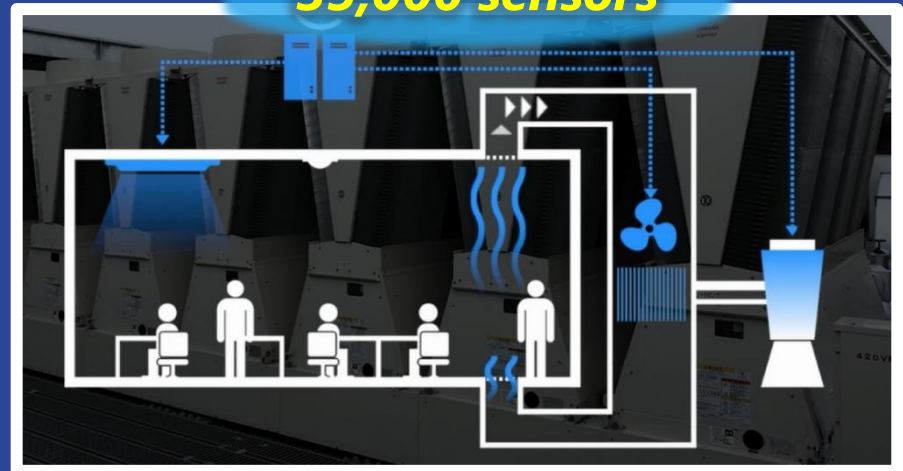
Building Operation Model



Deep Learning



35,000 sensors



Industry Initiatives – Global & Japan

Industrial Internet Consortium (IIC)

Deep Learning Platform



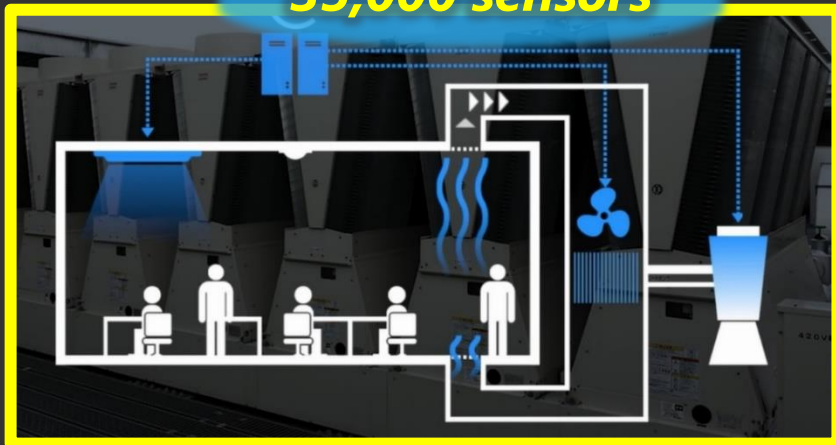
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DELL EMC

IoT Testbed w/ Deep Learning

Deep Learning

35,000 sensors



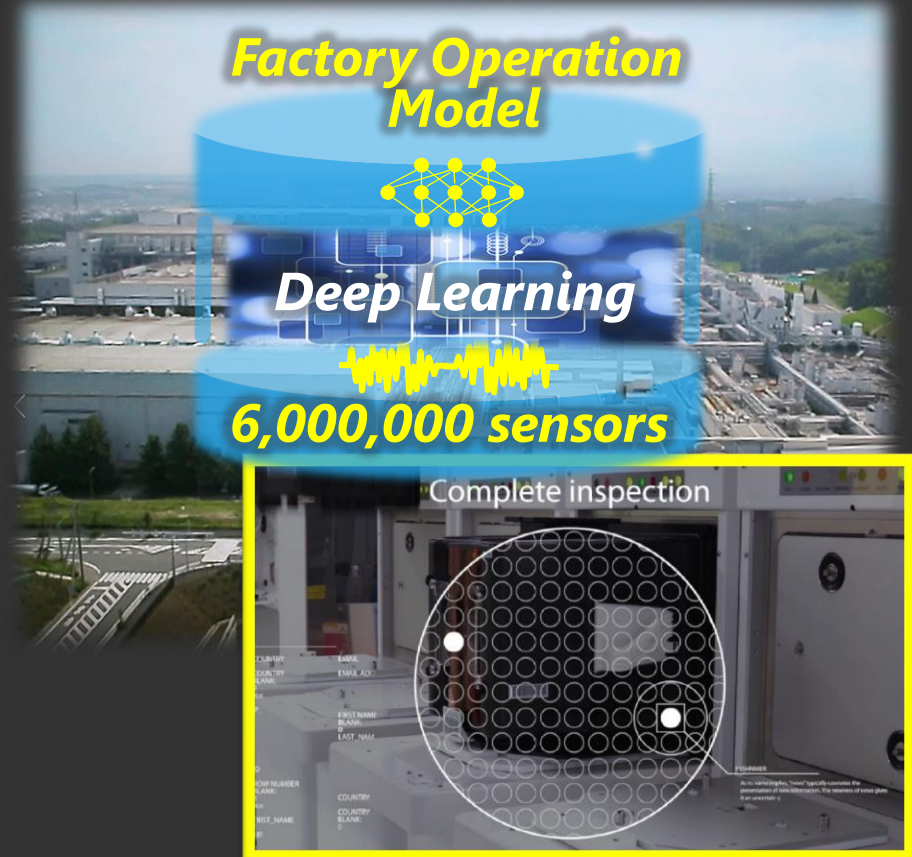
Industrial Valuechain Initiative (IVI) - Bring Factory IoT to SMB

Factory Operation Model

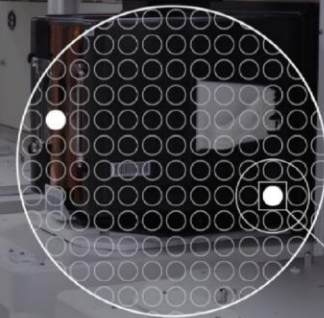


Deep Learning

6,000,000 sensors



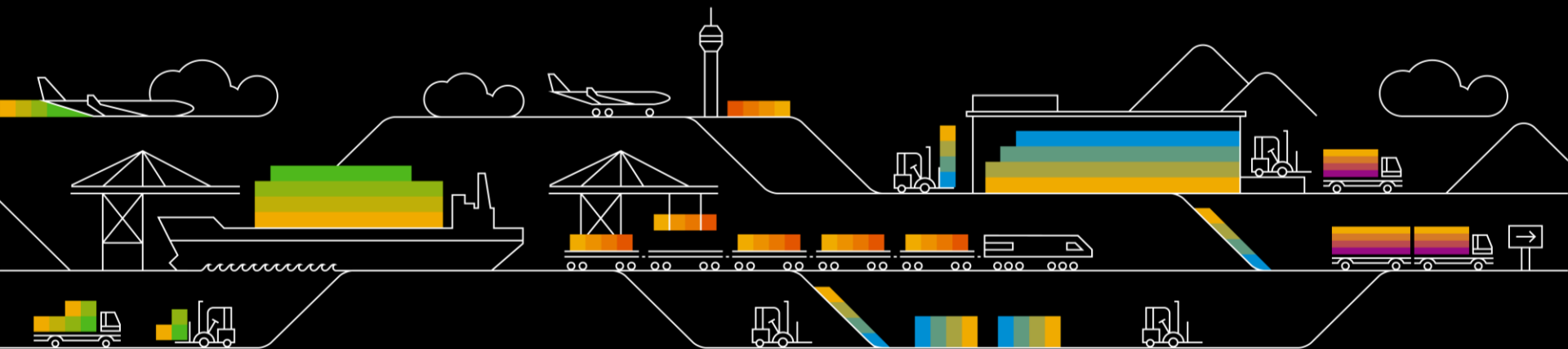
Complete inspection



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Leading Innovation >>>

Panel discussion

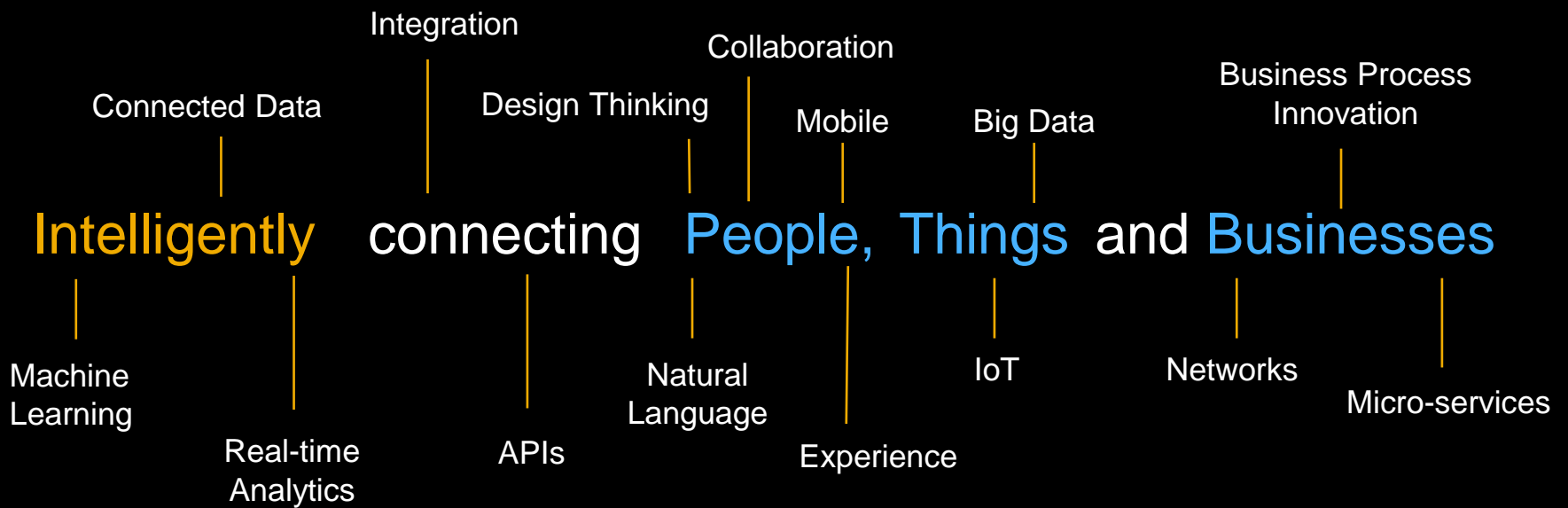


IEEE World Forum

IoT: Creating Value

Shailendra Kumar, Chief Evangelist, SAP
February, 8, 2018

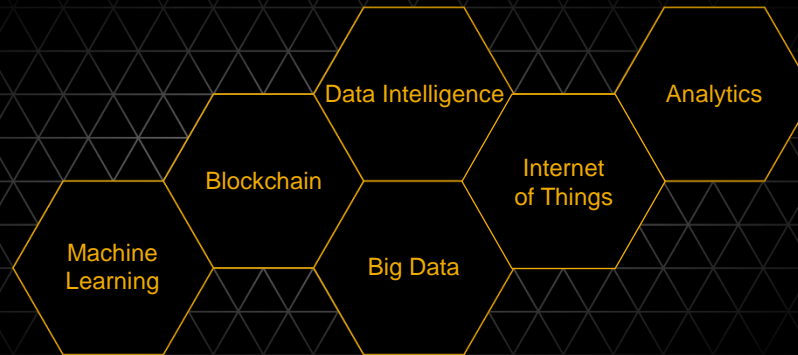
INTERNAL



SAP Leonardo Digital Innovation System

Design Thinking Services

SAP Leonardo
Technologies



SAP Cloud
Platform

Microservices | Open APIs | Flexible Runtimes | Integration

Multi-Cloud
Infrastructure

SAP Data Center



Google Cloud Platform

Microsoft Azure



SAP Leonardo Digital Innovation System

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Multi-Cloud
Infrastructure

SAP Data Center



Google Cloud Platform

Microsoft Azure



IoT Applications



Connected
Products



Connected
Machines



Connected
Fleet



Connected
Infrastructure



Connected
Markets



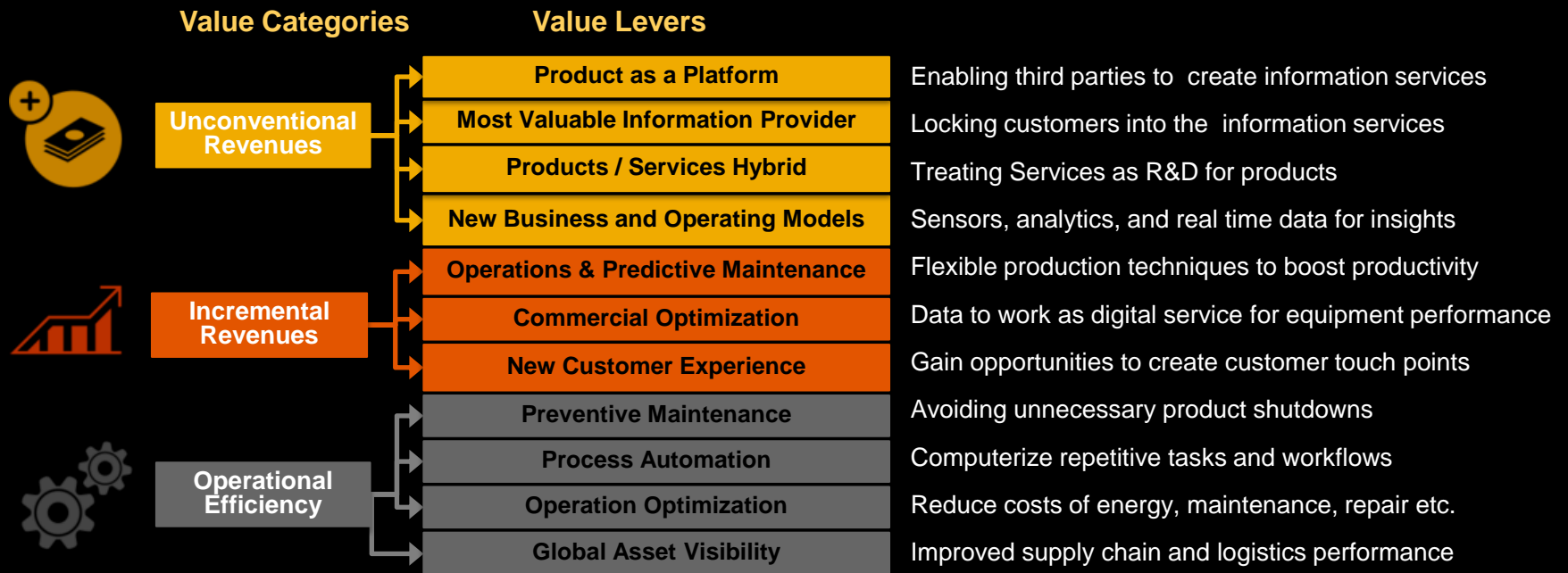
Connected
People

SAP Edge Services

SAP Leonardo
IoT Foundation

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.



SAP saving lives with IoT



Thank you.

Contact information:

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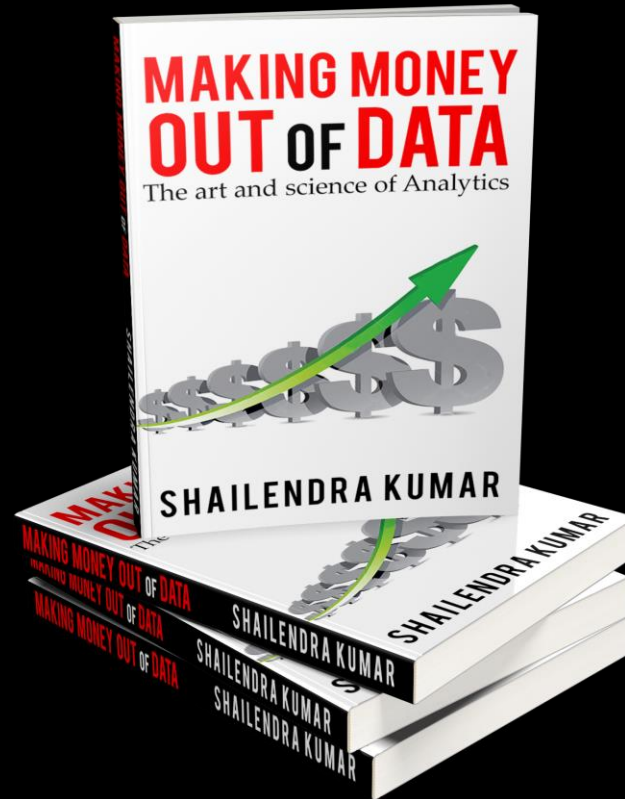
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Run Simple

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

DELL Technologies



Innovative devices, services and solutions designed for the way people work (and play).

DELL EMC

Transforming the data center with industry-leading servers, storage and converged infrastructure

Pivotal

Leading intersection of Big data, PaaS and agile development leveraging data on one cloud-independent platform

RSA

Premier provider of security, risk and compliance solutions solving your most complex challenges

SecureWorks

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

virtustream

Leading enterprise-class cloud software and solution provider

vmware

Most trusted virtualization solution for desktop, data center and applications

The **Internet of Things** is not a thing.
It's a **concept**.

Sensors

Data

Connections

Compute/Storage

+ Analytics

Business value

The value is clear, getting to value can be challenging

Business Case



Stakeholder Alignment



Interoperability



Scaleⁿ



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Analytics



Security and Manageability

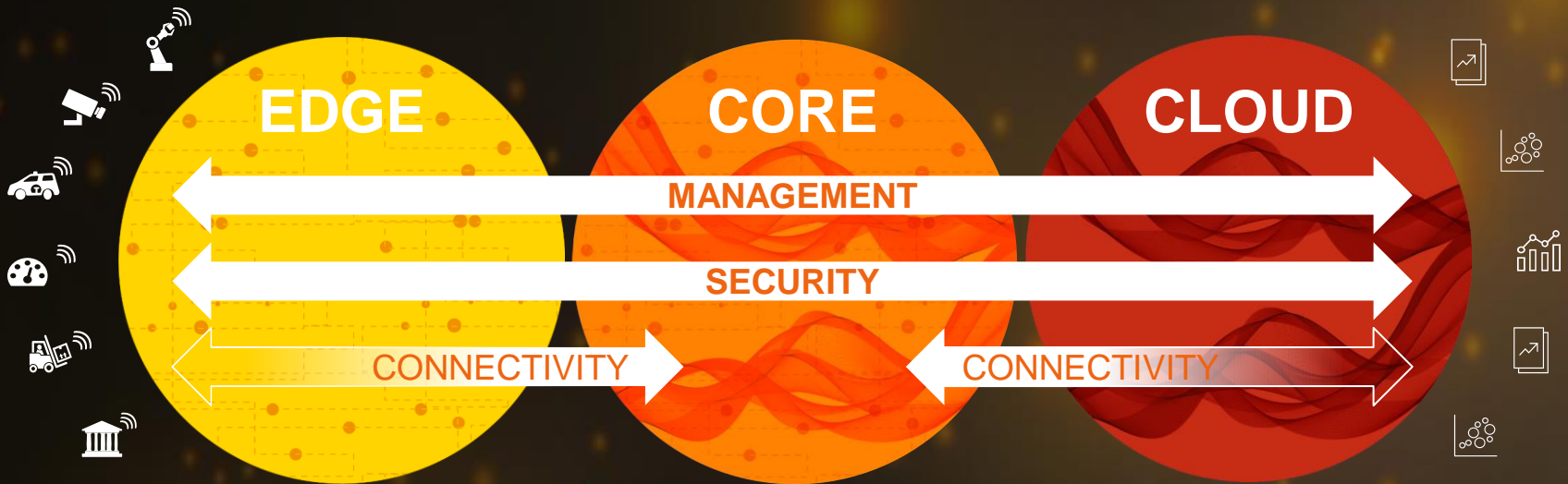


The swing between centralized and distributed

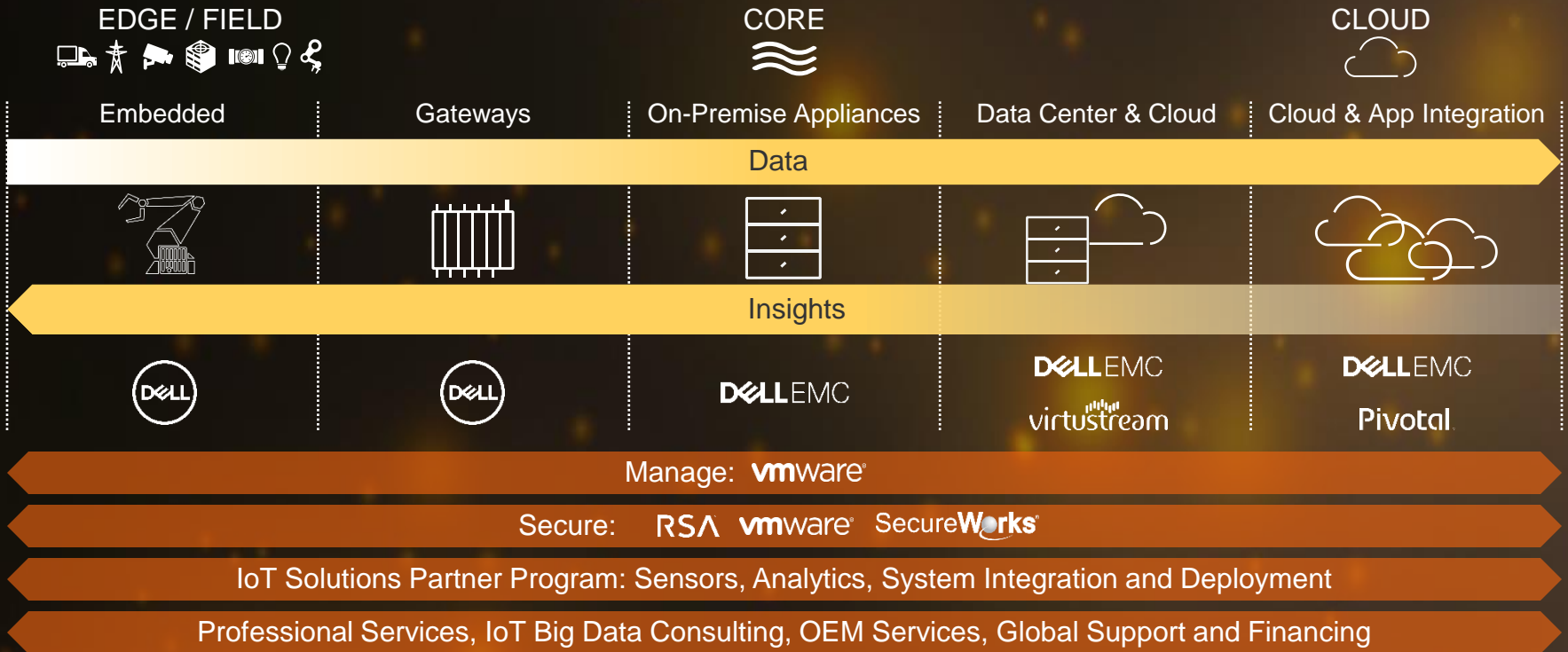


With IoT, the sheer scale of devices makes distributed a necessity...

Architect for management, security and scale



Maximize your choices across the IoT continuum



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

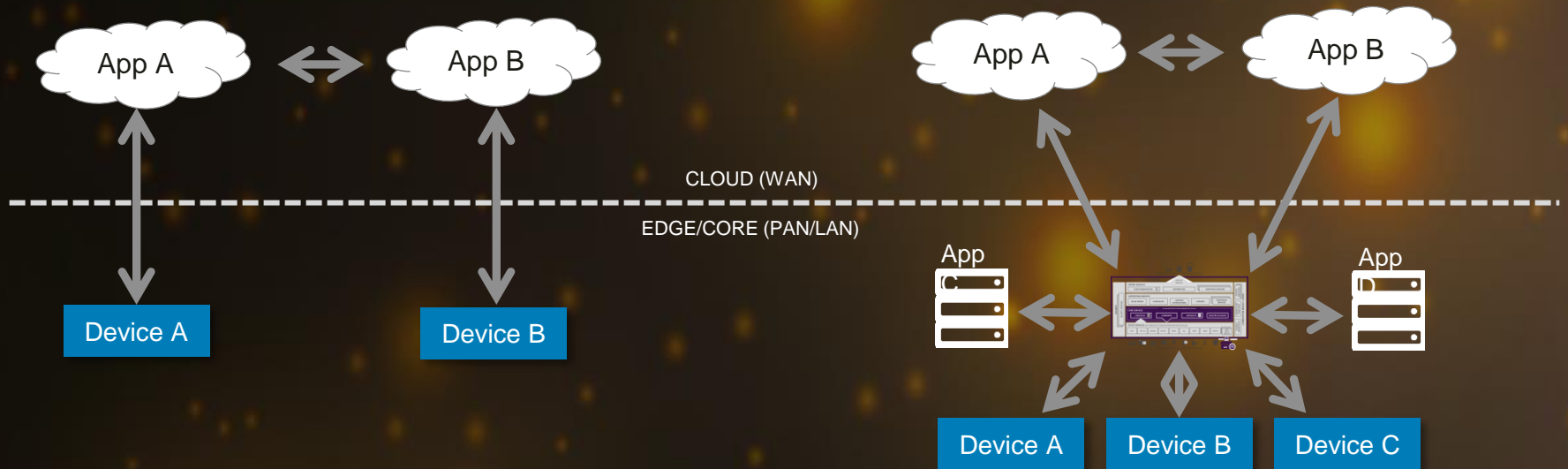




EDGE X FOUNDRY™

The Open Interop Platform for the IoT Edge

Using EdgeX to Decouple Things and Applications



Panel discussion

The next era of
human|machine
PARTNERSHIPS



EMERGING TECHNOLOGIES' IMPACT
ON SOCIETY & WORK IN 2030



INSTITUTE FOR THE FUTURE

DELL Technologies

<http://www.delltechnologies.com/en-us/perspectives/realizing-2030.htm>

Thank
you!

Prepare now to
leverage the huge
opportunity that lies
ahead!



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on Internet of Things

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