ENERGY DIGITAL TRANSFORMATION

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AEC Conference – New York, NY
March 28, 2018

TRANSFORMING YOUR ENERGY SYSTEM

% improvement

Reduce Energy Waste

Improve Energy Profile

Automate Energy Processes

Change

Produce your Electricity

Electrify your Processes

Share & Monetize Excess Energy

Not your 20th century energy system…

- ✓ More granular data and real-time visibility
- ✓ Higher security, reliability and availability
- ✓ Easier to install and use
- ✓ Integrate with legacy equipment and systems
- ✓ Satisfy the Internet society

DIGITIZING THE ELECTRIC POWER VALUE CHAIN

Microgrid

Distribution Automation

Smart Meters
Home Energy Mgt
PV / Storage
EV Charging

Smart Buildings

Smart Substation

Cogeneration

Connected Crews

Utility IT/OT

Drones

Solar Farm IT/OT

Wind Farm IT/OT

Hydro Plant IT/OT

Fossil Plant IT/OT

TAKE ADVANTAGE OF TECHNOLOGY TRENDS

1. Source: IDC; 2. Source: IMC/EDC: The Digital Universe of Opportunities; 3. Source: Goldman Sachs 4. Cost per Gigabyte Update 5. Gartner

6 TENETS OF DIGITAL TRANSFORMATION

Big Data

Insights

Efficiency

Trusted

Interoperable

User Experience

INDUSTRY STANDARDS – ARE YOU INVOLVED?

Key to digital Transformation Success

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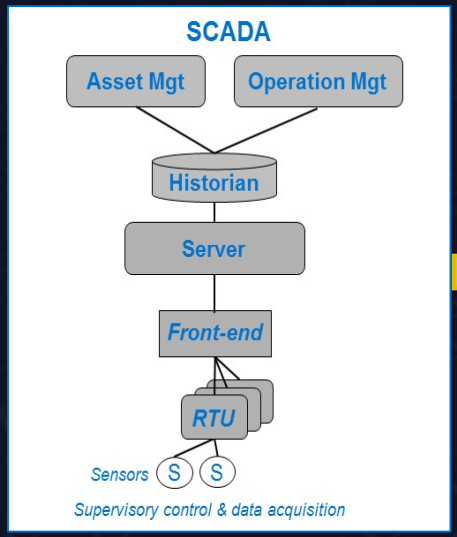
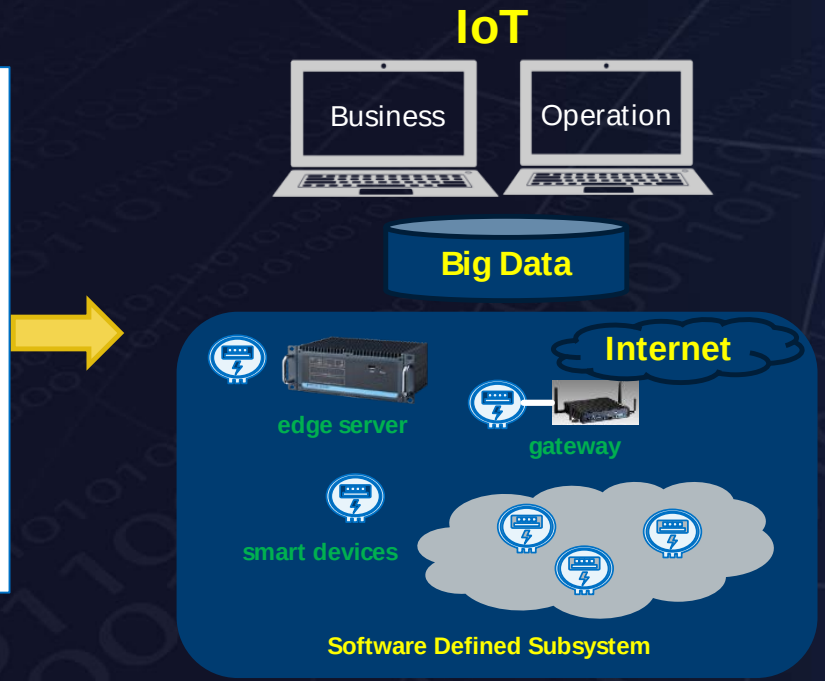
EVOLUTION OF OT ARCHITECTURES TO IoT

FROM SILOED OT SYSTEMS TO SCALABLE AND SECURE IOT SYSTEMS





1. Secure connectivity
2. Distributed computing
3. Virtual systems
4. Advanced analytics

CYBERSECURITY IS KEY FOR DIGITAL TRANSFORMATION

END TO END SECURITY STARTS WITH HARDWARE SECURITY FOUNDATION

Industry perspective

73% increase in worldwide IoT spending until 2019[1]

47% of IOT developers name security as their top concern[1]

36% CAGR for global IoT security market 2016 to 2021[1]

35% CIOs cite security as top barrier to IoT success[2]

27% fear (a security breach) will lead to physical safety issues[1]

Common issues Today

Default Passwords

Delayed Image updates

Poor, Manual Device provisioning

Lack of Security Designed into HW

Device Lifecycle Security & Manageability

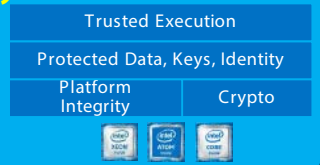
- Intel® Secure Device Onboarding
- Wind River Helix Device Cloud
- Enabling security services

Security Solutions Rooted in HW

Harden Edge | Secure Comms | Device Management

Consistent security foundation

Simplified & Unified Tools



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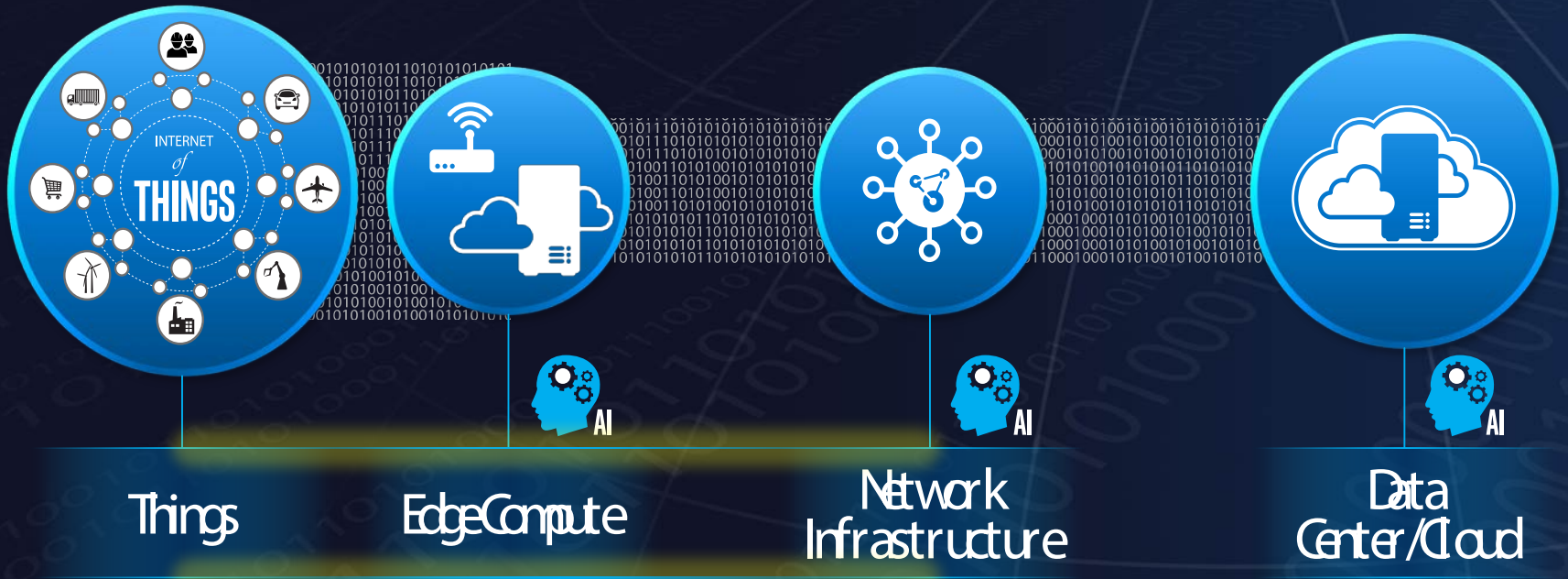
1. Infographic Sept. 2016, GSMA (Link)
2. 2016 IoT Backbone Survey, Gartner

DISTRIBUTED COMPUTING

REDUCE NETWORK COST, INCREASE SYSTEM AUTONOMY



VIRTUAL INDUSTRIAL SYSTEMS

reduce hardware cost, increase software flexibility

Sensing & Workload Consolidation

Virtualization Orchestration

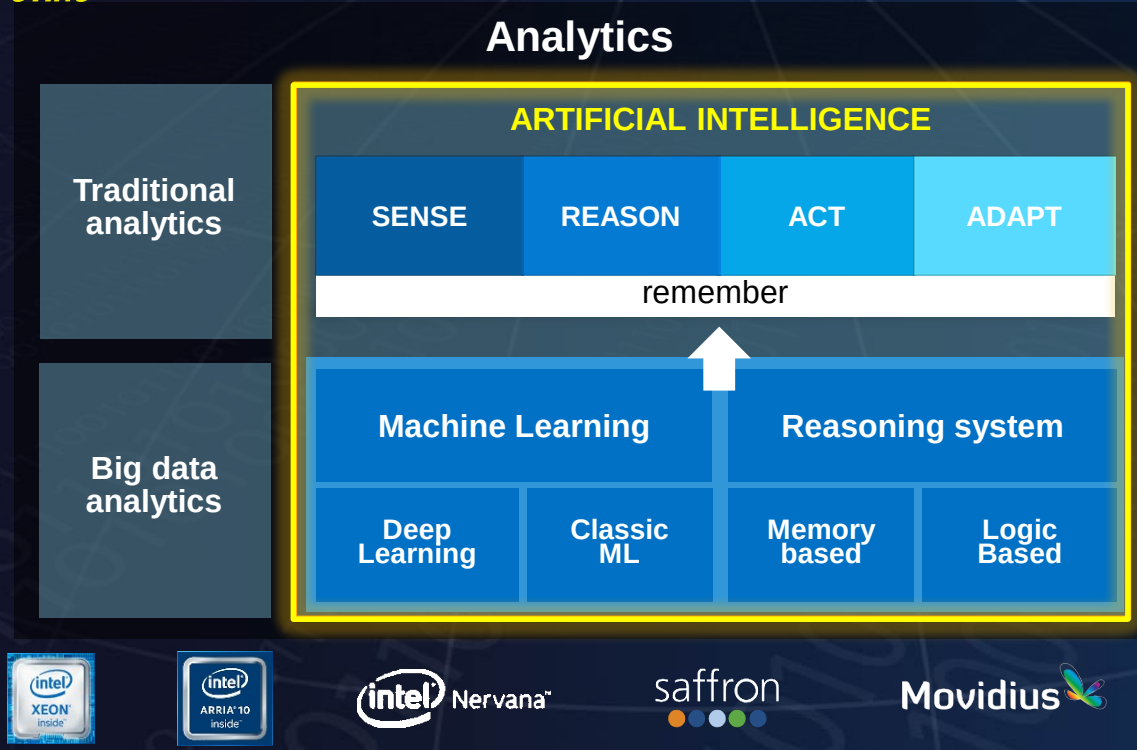
- Manufacturing Management System
- Substation Management System
- Microgrid Management Systems
- Building Management Systems

ADVANCED ANALYTICS

ARTIFICIAL INTELLIGENCE - THE NEXT BIG WAVE IN COMPUTING

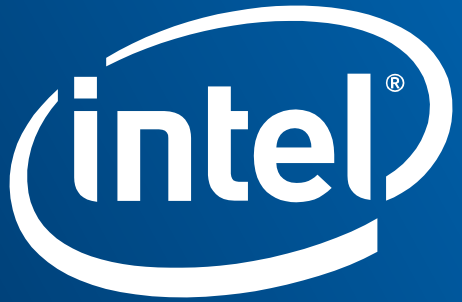
Energy Applications

- Consumer Intelligence
- Supply / Demand Optimization
- Energy Trading
- Maintenance Strategies
- Diagnosis & Prevention
- Machine Vision
- Video Surveillance



Getting Started

Start small with a clear roadmap for future evolution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