How Does IoT Fit Into Your 70-year Old Factory Floor?

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VP, IoT & Big Data
Enterprises Are Ready To Engage IoT

“The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”

Mark Weiser, 1988
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“We review the key elements of the emergent technology of “Smart Dust” and outline the research challenges they present to the mobile networking and systems community,.. “

Pister et al., “Mobile Networking for Smart Dust”, 1999
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“U.K.-based Raspberry Pi Foundation has now sold 10 million of the things”
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2017
Lesson #0: Build a Plan For ROI

**Metcalfe’s law**: value of a telecommunications network is proportional to the square of the number of connected users of the system.

Residents simply sign up for ReachNow service and **pay only as they use the vehicles**. They then pay 41 cents per minute and there’s no sign up or annual fee.
Lesson #1: Secure Every Touchpoint

**TRUSTED DEVICES**
- Security mechanism provisions and manages trust relationships with devices – uses OAuth2
- Uniquely assigned device identities disallows reuse of security credentials across devices

**NON REPUDIATION**
- Enforces authentication prior to communication with any device or enterprise software, enabling proof of origin of data
- Short-lived authentication tokens with configurable expiration time

**SECURITY LIFECYCLE**
- Secure, managed state transitions to control access from devices
- Restricts types of IoT Cloud Service operations that device can perform in a given state

**DATA SECURITY**
- Transport level security for all communication to ensure data integrity
- Role-based access control to data-at-rest to ensure authorized access to data
Lesson #2: Reduce Risk With Turnkey Solutions

**Asset Monitoring**
- For monitoring assets, their utilization, availability, and data from connected sensors

**Production Monitoring**
- Manufacturing factory floor equipment monitoring and prognostics

**Fleet Monitoring**
- For medium sized business who have fleets of vehicles (trucks, buses, maintenance vehicles, delivery vehicles)

**Connected Worker**
- For tracking employees in Mining industry, Engineering and Construction industry
Lesson #3: Pick A Vendor With A Rich IoT Ecosystem

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<th>SI Partners</th>
<th>Connected Worker Smart Factory, Facilities Mgmt.</th>
<th>Fleet Management Smart Service Utilities</th>
<th>Connected Car Asset Management</th>
<th>Digital Field Service</th>
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Real-time OS & Device Management | OPC UA Industrial Connectivity | Building / Industrial Connectivity | Industrial Gateways | Industrial Gateways | Industrial Gateways and Sensors | Industrial Automation |
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IoT OS & Device Management | IoT Security | Smart City Gateway | Wireless Connectivity | Device and Technology Partners |
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Lesson #4: Reduce TCO for IoT Projects

Integration Cloud Service
- Rapid integration with wide range of cloud and on-premise applications
- Protocol conversions (e.g., RESTful to SOAP) and data transformations (e.g., JSON to XML)

Mobile Cloud Service
- New enterprise services/APIs for mobile consumption
- API abstractions for external consumption

Storage Cloud Service
- Secure, scalable, long-term storage of IoT data
- Integrate data for processing in big data analytics (Big Data Discovery Cloud Service) and big data processing (Big Data Cloud Service)

BI & Data Visualization Cloud Services
- Extend real-time analytics with powerful BI applications for agile analysis
- Create compelling data visualizations for fluid, interactive insights