The Future of IoT

Don DeLoach
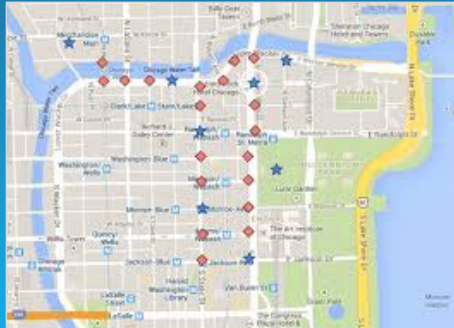
President & COO, Centri Technology

Co-Chair, Midwest IoT Council

IoT COUNCIL

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The "Array of Things" Project

The Future of IoT

- The market will shift from a focus on IoT-enabled products to the IoT-enabled Enterprise

- The key role of data and in particular:
  – Considerations regarding governance, ownership, and stewardship

- The keys to leverage will be the deployment architecture with particular regard to data primacy and analytics
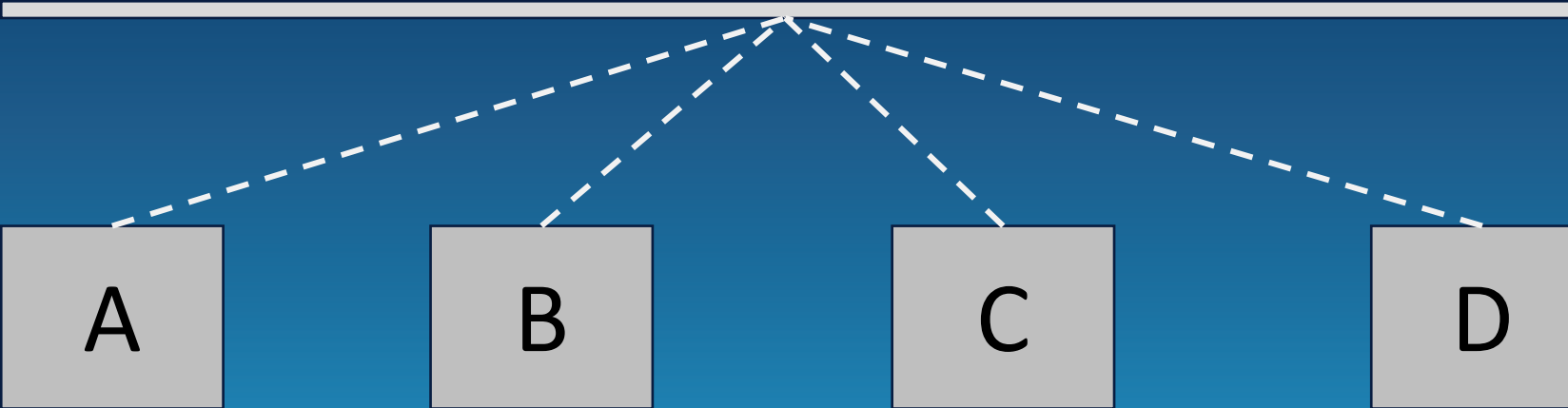

The Future of IoT

Leveraging the shift to a data centric world

DON DELOACH, EMIL BERTHELSEN AND WAEL ELRIFAI

IoT will is changing everyone's world

Including Logistics and the Supply Chain

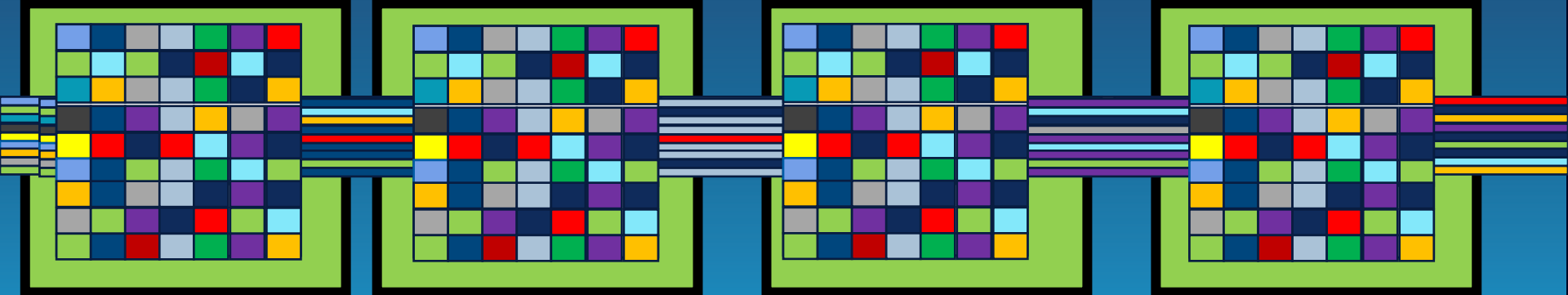# Including Logistics and the Supply Chain

Supply Chain without IoT

A   B   C   D

IoT Allows You to Increase Connections in the Supply Chain

Supply Chain with IoT

Significant Increase in Visibility

Minimize Waste

Better Compliance Management

Reduce Costs

More Responsive

Determine and Use Additional Capacity

Getting There is Easy?

Key: Enterprise View

What do we "know"?

IoT has been driven by the Capital Equipment Providers

But what outcomes do Enterprises want from the
Internet of Things?

Enterprises will demand leverage from IoT data

They will do this by driving deployment architectures capable of best accommodating this for all constituencies

But...

"You don't want to be in the device driver business…"

"That kind of architecture could be very complicated..."

Doing it Right

First Level IoT

Most IoT deployments are centered around capital equipment and are closed loop silos
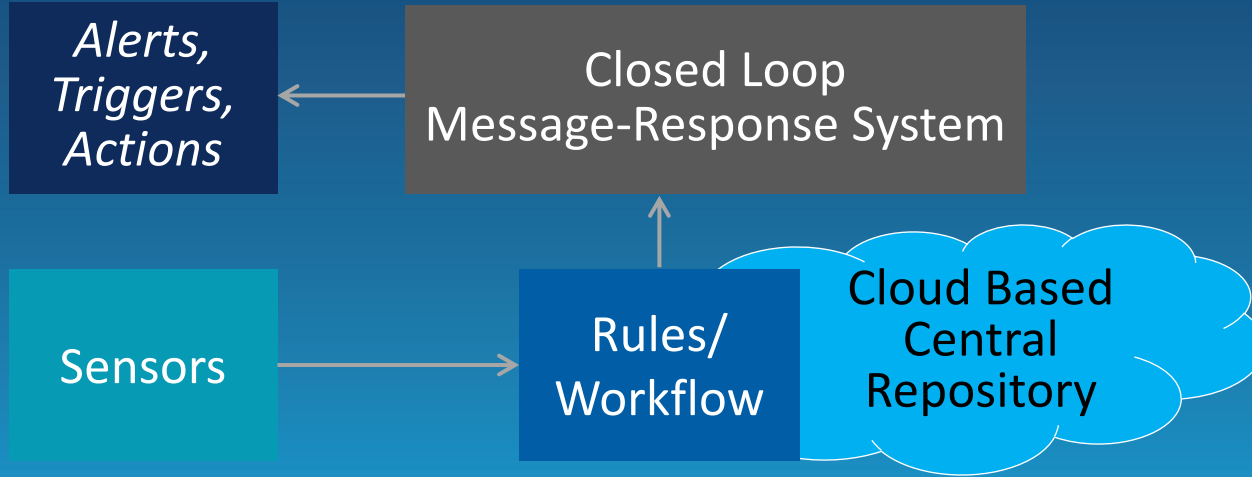
Data is mostly owned and controlled by the vendors

The First Receiver
This will begin to call into question who owns and controls the data

Alerts, Triggers, Actions

Closed Loop Message-Response System
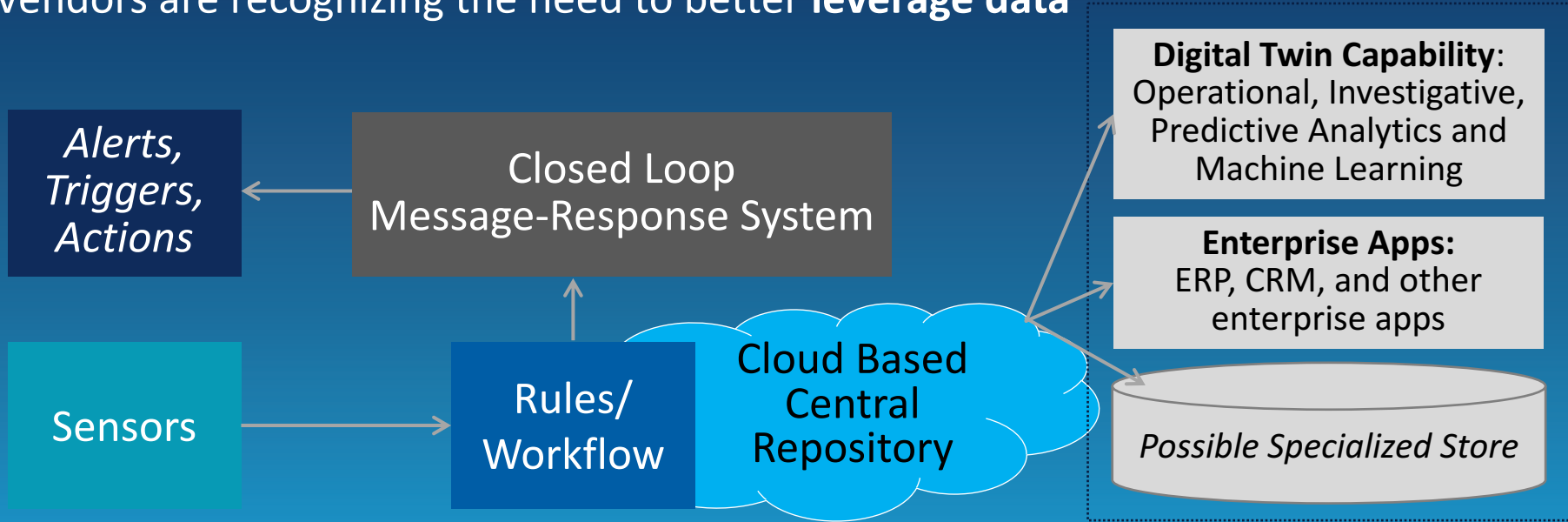
Sensors

Rules/ Workflow (& Filtering)

Edge

Rules/ Workflow

Cloud Based Central Repository

Digital Twin Capability: Operational, Investigative, Predictive Analytics and Machine Learning

Enterprise Apps: ERP, CRM, and other enterprise apps

Possible Specialized Store

- ✓ Edge / Apply rules and workflow against that data
- ✓ Edge/ Take action as needed
- ✓ Edge/ Filter/cleanse data exhaust (increasing payload)
- ✓ FR / Store local data for local use
- ✓ FR / Enhance security & Privacy
- ✓ FR /Provide governance admin controls

The Elephants in the Room
Security, Privacy, and Governance

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Market Direction

Technology Delivery / Data Focus is on the **Enterprise:** "How do we effectively leverage all of these smart connected products?"

Products

Smart Products

Smart Connected Products

Product Systems

System of Systems

Technology Delivery / Data Focus is on the **Product Providers:** "How do we deliver smart connected products customers will love?"

Illustration of the Progression

- McDonald's Hypothetical

- Array of IoT-Enabled products operating as individual silos

McDonald's today: IoT data goes to capital equipment providers
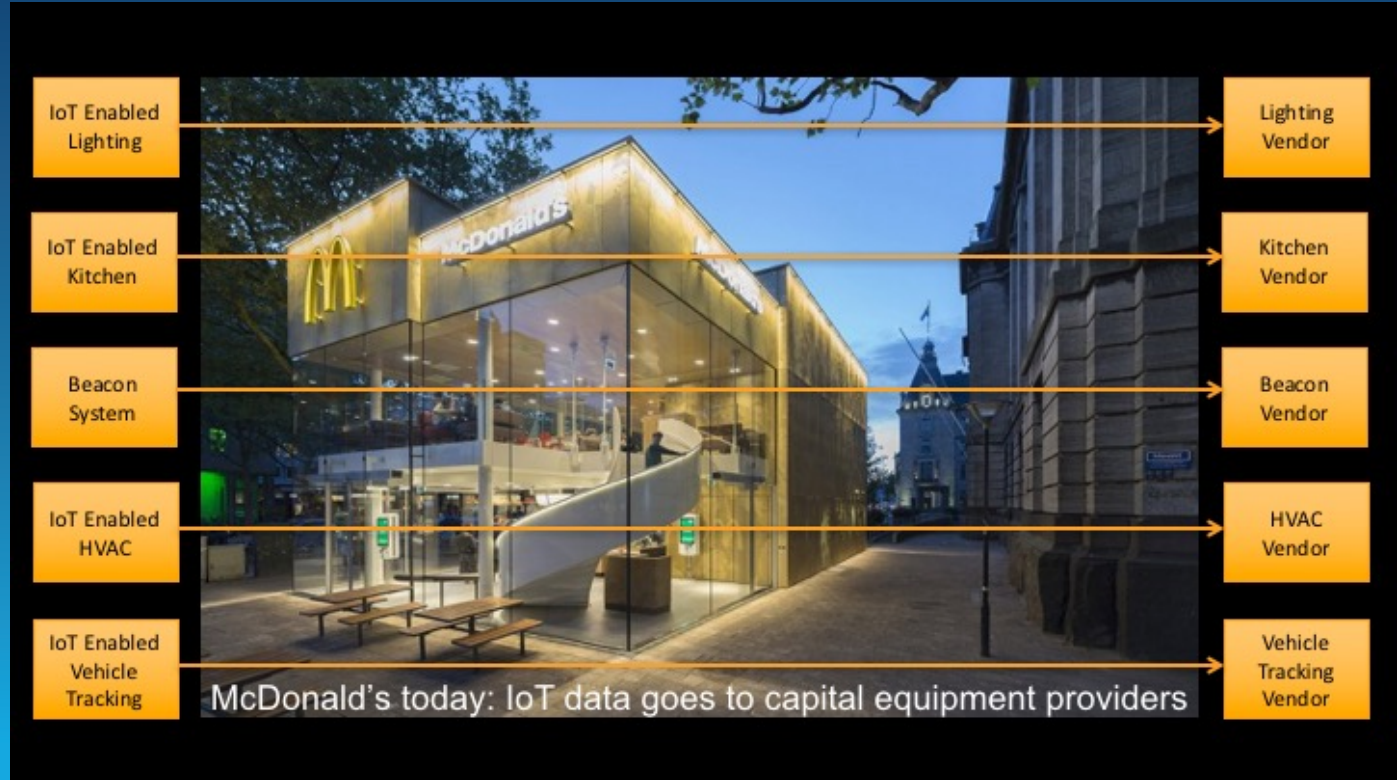
The First Receiver to Leverage Data

- McDonald's Hypothetical

- Array of IoT-Enabled products leveraged via First Receiver architecture

The right architecture provides local use and accommodates constituents
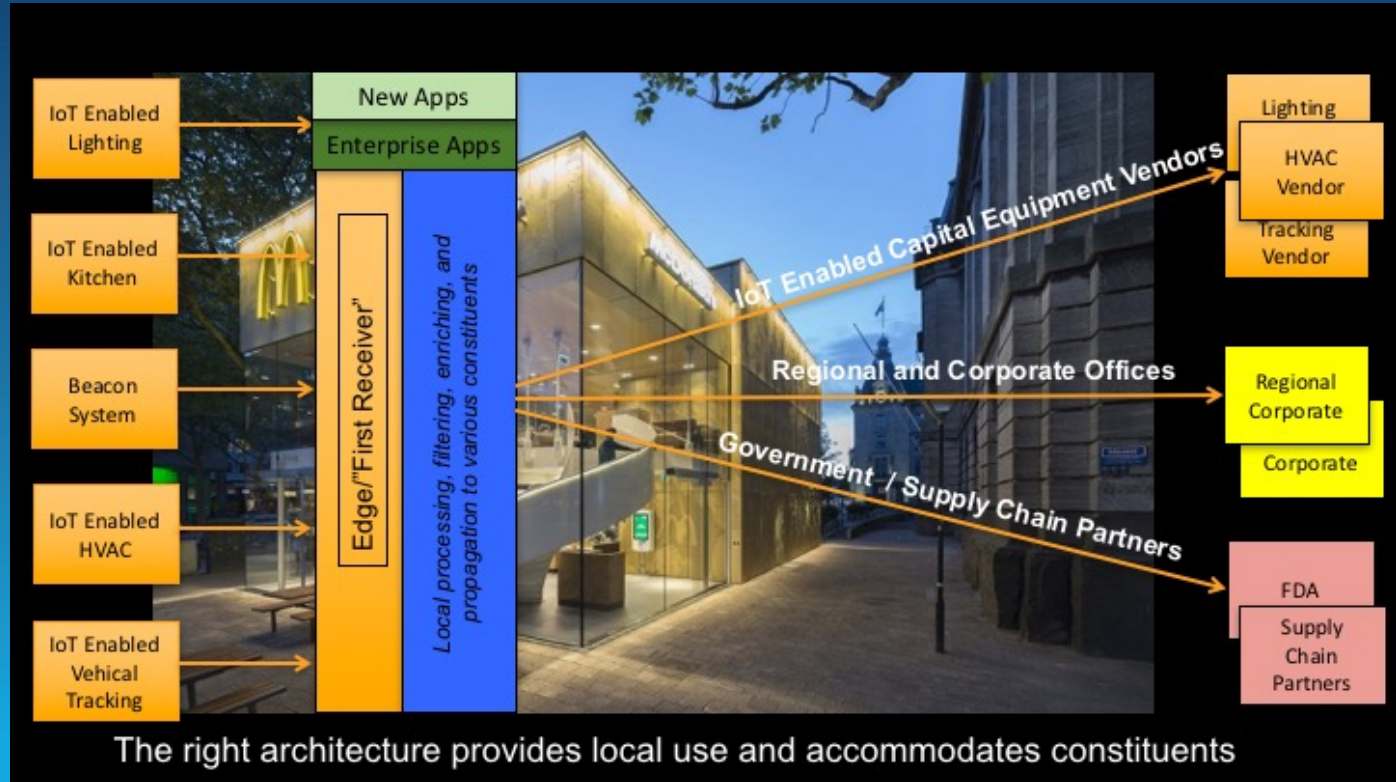
What is new about this?

Data governance?
Time Tested

Pub-Sub Architecture?
Time Tested

Device Drivers?
Time Tested

Utility Value of Data?
Time Tested

All of This...
Time Tested
Nothing Really New

The Last Elephant in the Room..

People and the Organizational Processes

Key Takeaways

- We are moving from "Smart Connected Products" to a "System of Systems"

- The market drivers will shift to the users of multiple IoT-enabled products
  - They want to become *IoT-enabled Organizations!*

- The key value in IoT is in the data

Key Takeaways

- Supply chains will be massively impacted by IoT

- The increased granularity will provide better insights, betters actions as a result, and many benefits

- These will include reduced waste, increased adaptability, better margins, better compliance, more effective utilization of resources and more…

Key Takeaways

- Maximum leverage of the data – thus maximum value – requires the right architecture

- This is possible using time tested and proven technology - but requires some re-thinking of the delivery

- If done right, everyone wins – with the right data delivered in the right way to the right constituent at the right time.

Thank You