

# Leveraging the Industrial IoT to Increase Production Efficiency & Streamline Operations

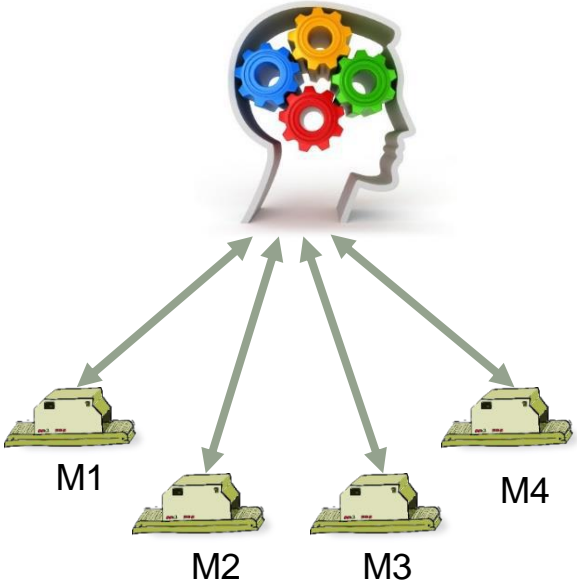
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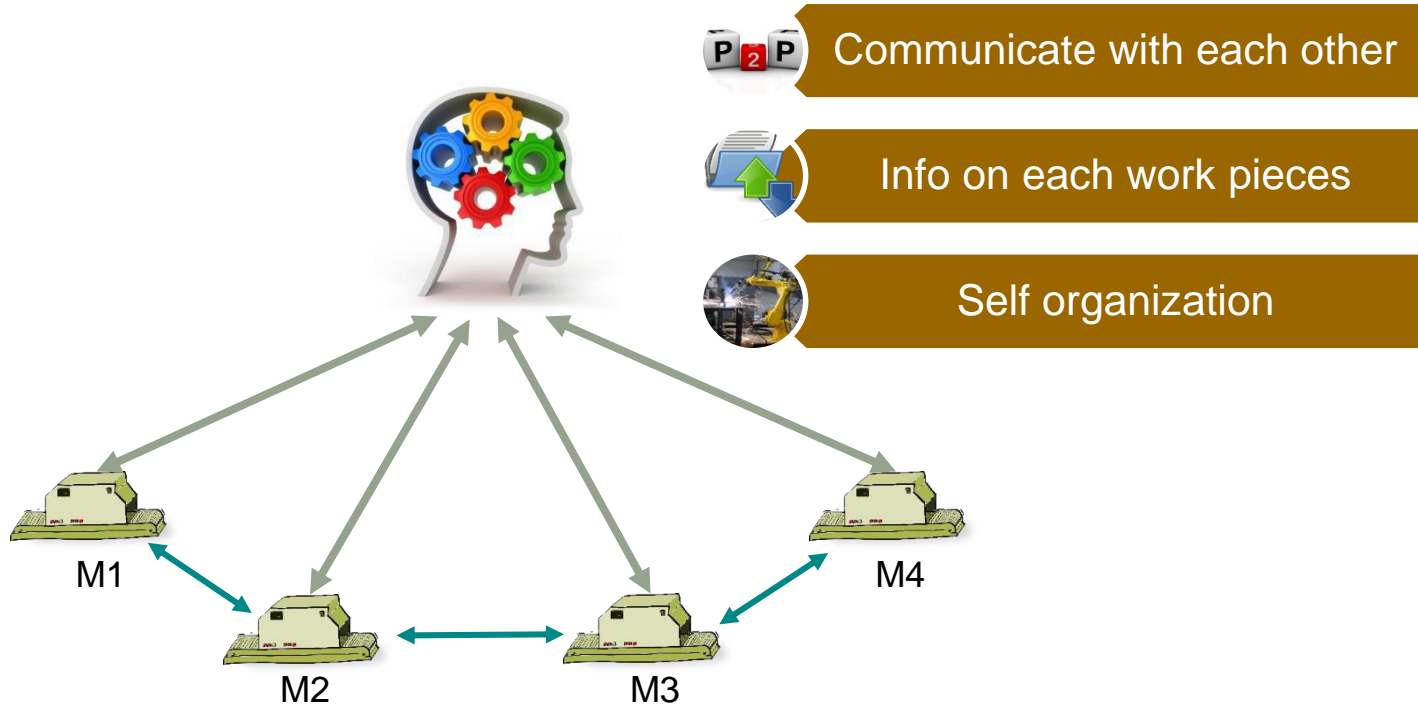
# Agenda

- Reasons to upgrade legacy to smart factories
- How Industrial IoT and Industry 4.0 play out
- Challenges of integration and implementation
- Technology trends and open standards
- Best practices
- Q&A

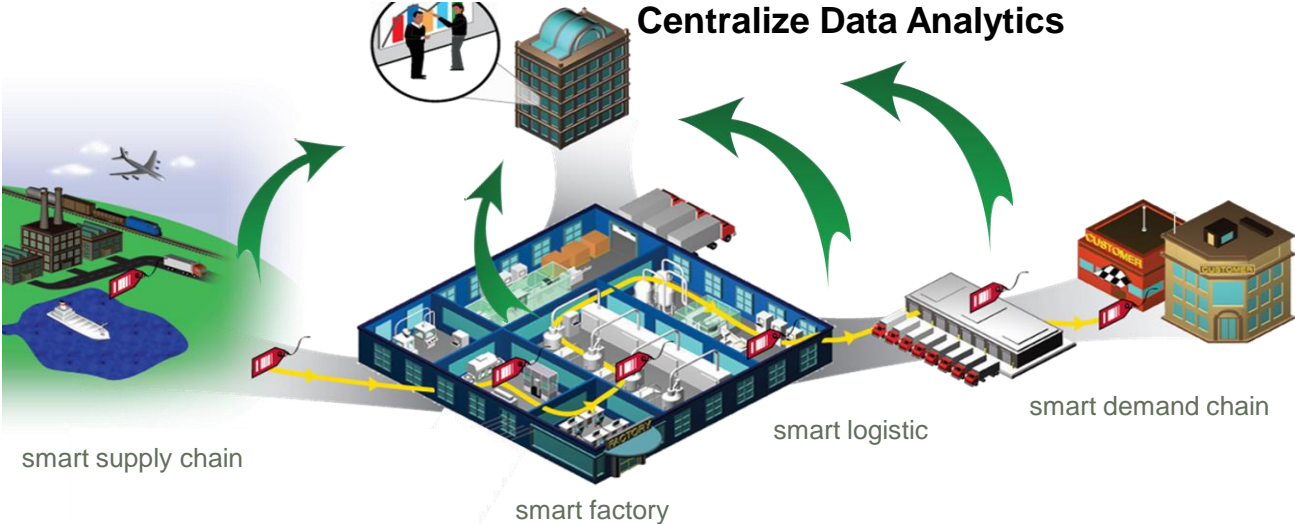
# Legacy Factories



# Smart Factories & Industry 4.0



# Turning Smart Factory into Smart Manufacturing



# Predictive Analytics Enhances the Value of IIoT



## Smart Supply Chains

- Risk analysis
- Delivery optimization
- Supplier assessment



## Smart Manufacturing

- Predictive maintenance
- Quality improvement
- Anomaly detection
- Asset optimization
- Root cause analysis
- Machine learning



## Smart Demand Chains

- Demand planning
- Customer experience
- Social sentiment
- Warranty analytics

# Tech Trends & Open Standards

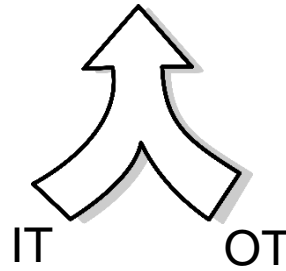
– the industrial landscape is changing



More Data

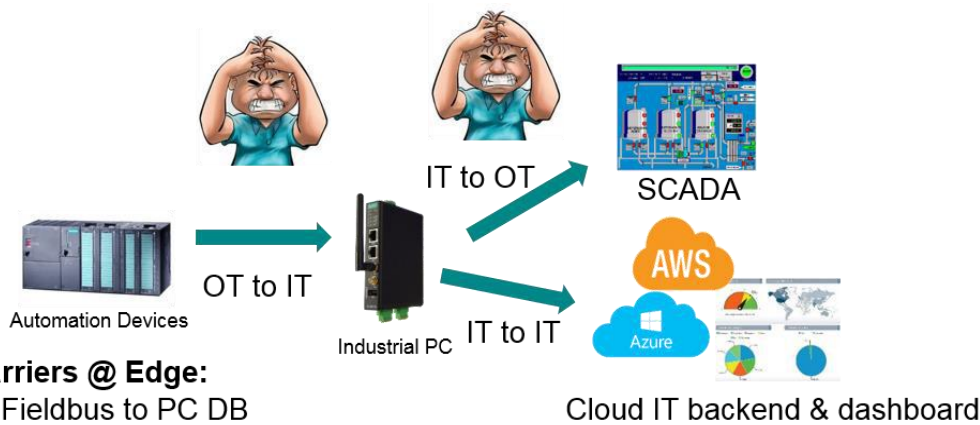


Data Sharing  
Across the World



Cloud Infrastructure

# Data Challenges: OT > IT > OT



## Barriers @ Edge:

- Fieldbus to PC DB
- Knowledge about sensors
- Edge networking (wireless?)

## Barriers @ Core:

- Connecting with legacy SCADA
- Uplink protocols and efficiency
- Uplink media management
- Remote device management
- Integration with IT backend



# Data Challenges: Integration With IT Back Stages



# Common IIoT Protocols

- Publish/Subscribe



- Client/Server

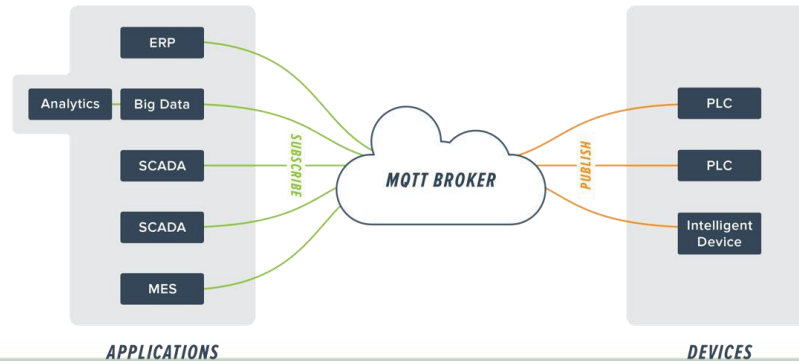


# MQTT for IIoT

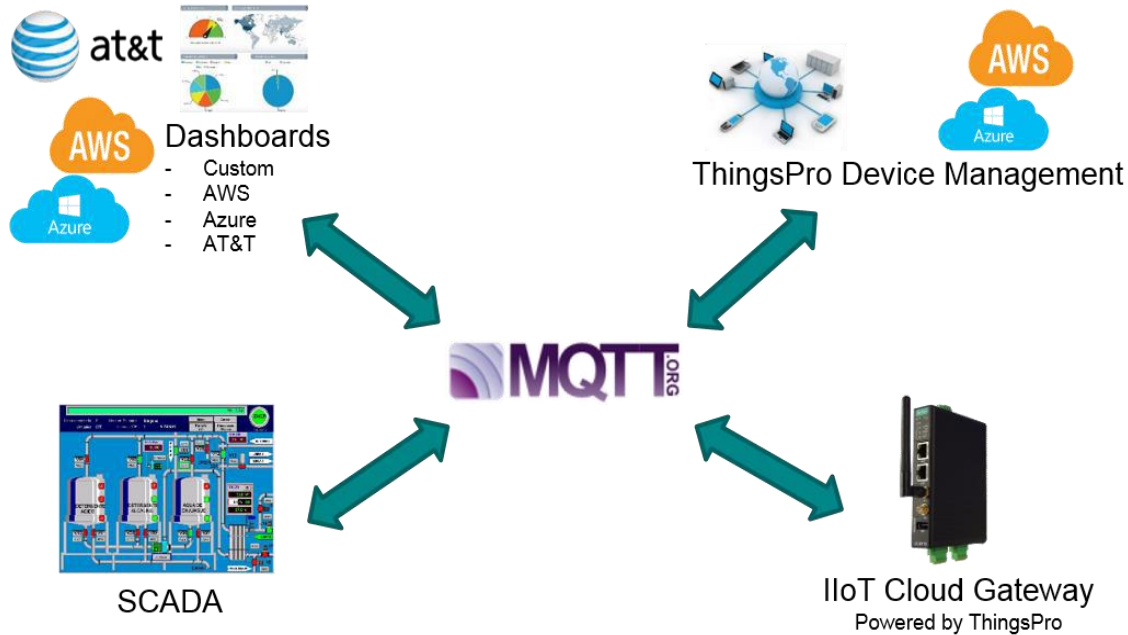
- Choose MQTT As Your IIoT Messaging Protocol
  - Developed 18 years ago by Arlen Nipper and Dr. Andy Stanford-Clark
  - Originally designed as a message transport for real-time SCADA systems
  - Developed for oil & gas companies
  - Adopted for IoT and IIoT purposes
- MQTT is more than a IIoT protocol; it's an architecture for IIoT



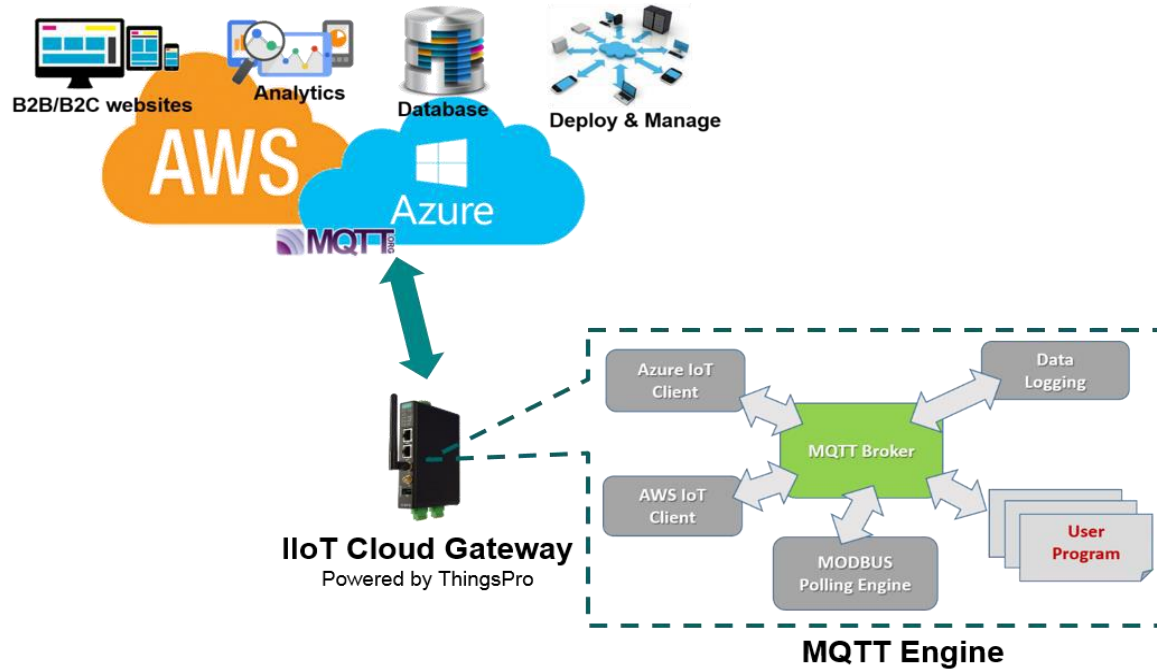
*DECOUPLED APPLICATIONS & DEVICES*



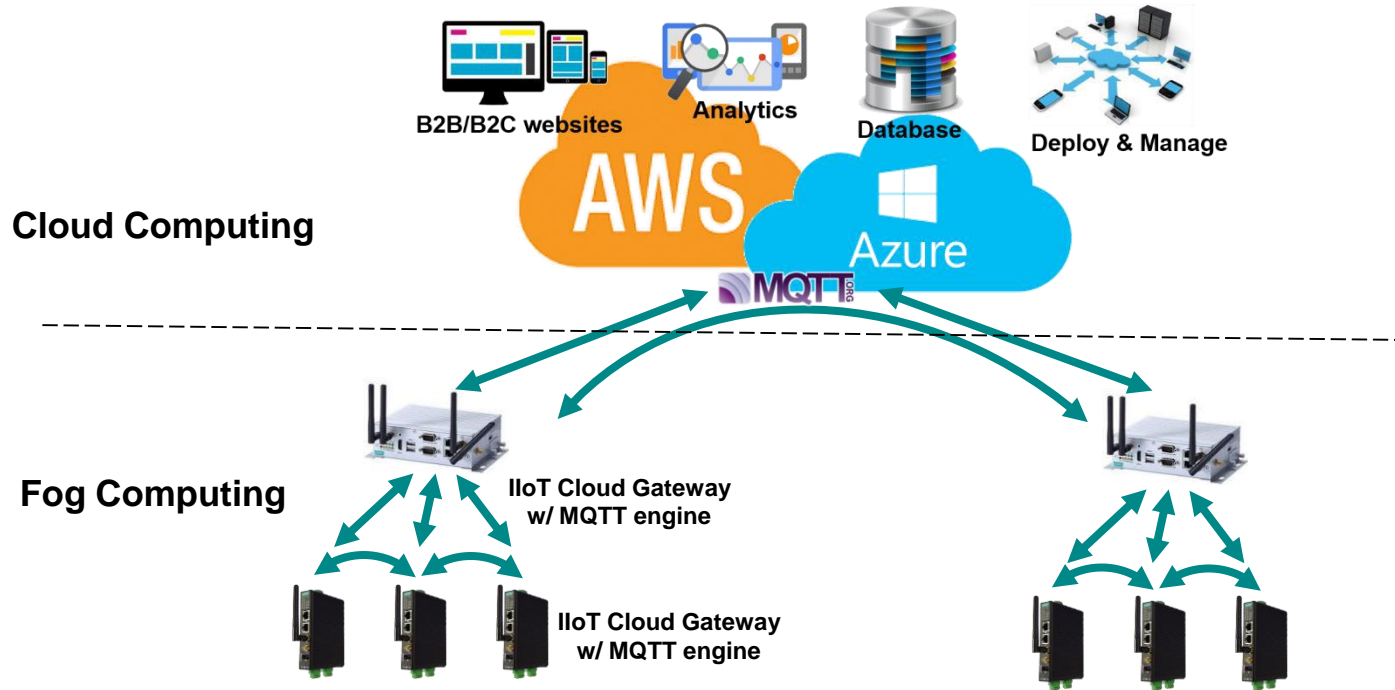
# Best IIoT Practices One Infra Data for Everything



# Edge IoT Gateway MQTT Engine Implementation



# Cloud & Fog Computing in One Infrastructure



# Thank You

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