aws FOR TELECOM

Is Your Dream Smart Factory Really Worth the Cost?

Mobile World Congress

February 2024

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Industrial manufacturing organizations realized value in four main business areas after migrating to the cloud

Optimizing manufacturing operations

- **16%** improvement in manufacturing overall equipment effectiveness
- **39%** reduction in IT downtime

Improving supplier management

- **33%** increase in sourcing savings
- **20%** reduction in full-time equivalent staff per million dollars of spending

Delivering sales efficiency and customer satisfaction

- **42%** improvement in revenue per sales professional
- **34%** improvement in customer satisfaction

Increasing business agility and innovation

- **22%** improvement in speed to market for new products
- **16%** improvement in orders completed on time in full
- **21%** reduction in lead times

Source: Business Impact of Cloud Adoption for Industrial Manufacturers, The Hackett Group, 2023

The smart factory data aspiration

Increase Enterprise OEE Visibility

Improve Asset Availability and Reliability

Improve Quality Yield

Achieve Supply Chain Transparency

Data is put to work locally

Analytics and ML accelerate better decisions, automate workflows, and drive new innovations

Data is accessible globally

Enterprise visibility, available easily and securely for anyone who needs access to it

Data is an organizational asset

No longer kept in silos or as the property of individual departments

Plant 1

Plant 2

Plant 3

Plant 4

The smart factory data pitfalls

Visibility to ROI is limited locally

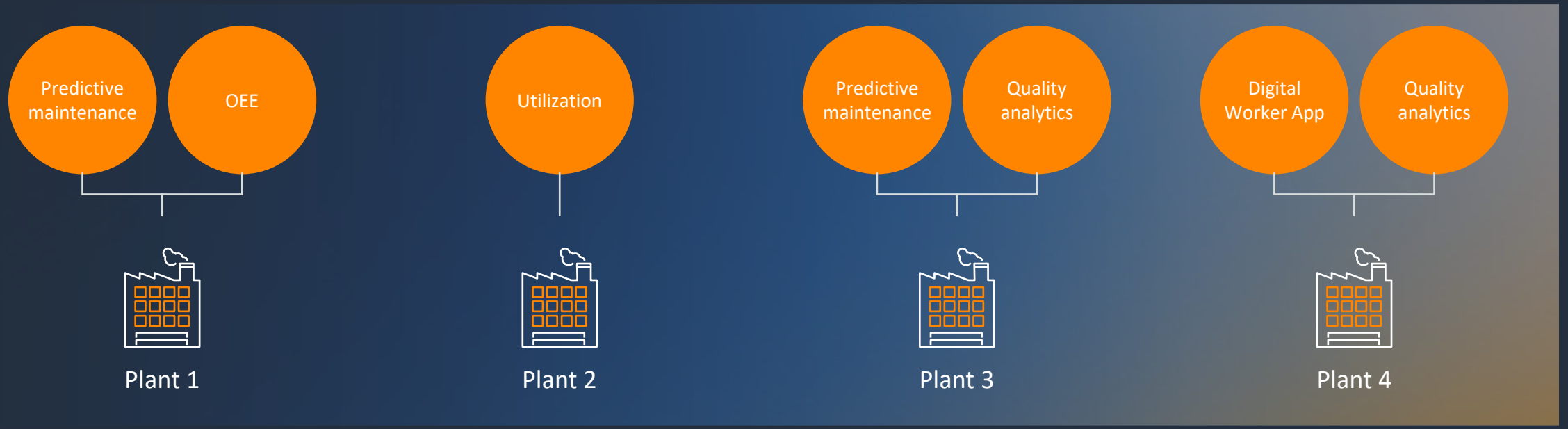
Analytics and ML deployed as bespoke point solutions

Each use case feels like a re-build

Limited repeatability, sub-optimized processes

The enterprise IT<>OT divide persists

Data silos in the cloud limit ownership and integration



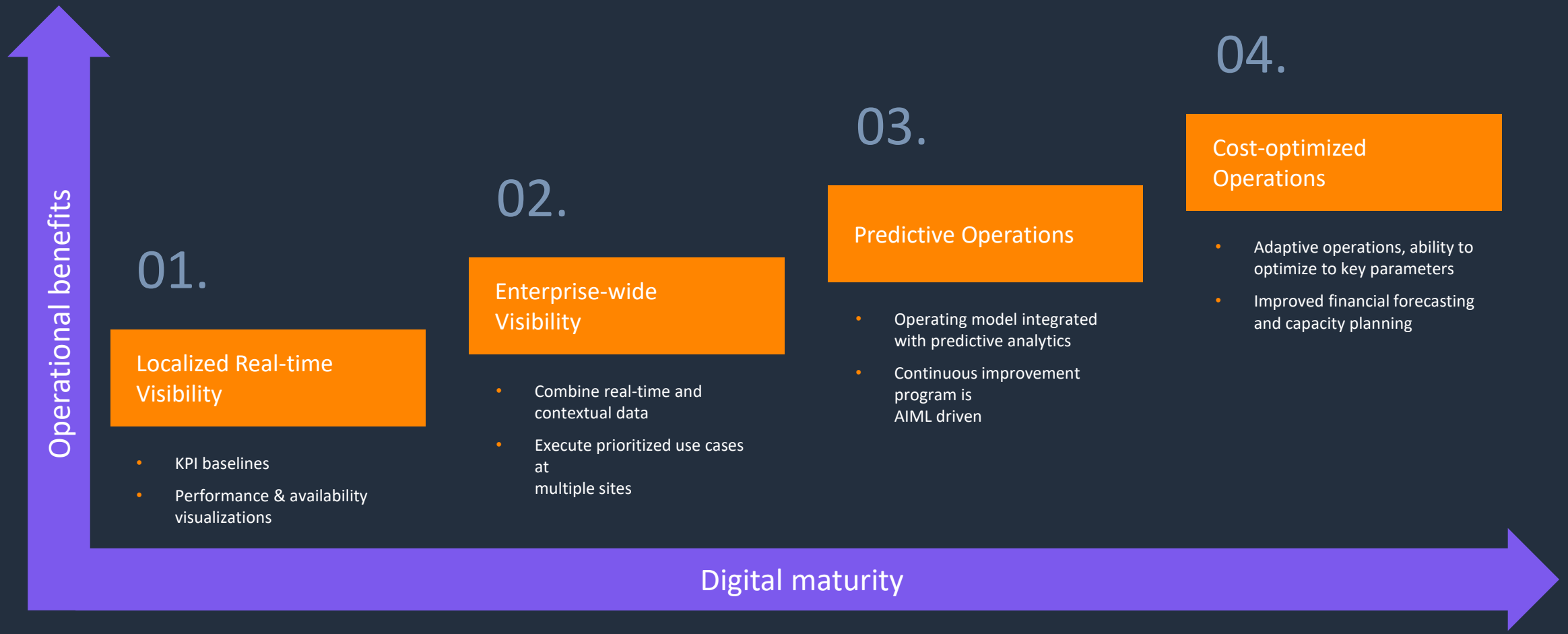
Common challenges persist as root cause

More data than ever is being generated across disparate OT systems

Machine learning adoption is challenged by lack of skills and organizational inertia

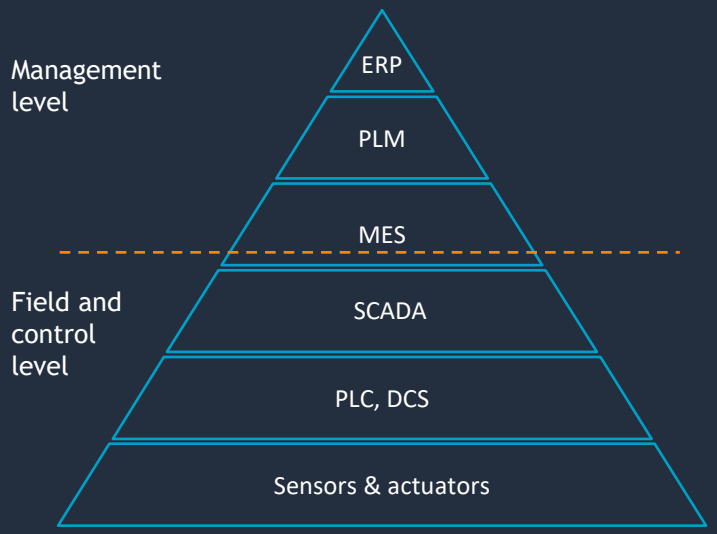
Culture of continuous improvement, lack of standard KPIs and productivity targets

Data-driven operations maturity curve

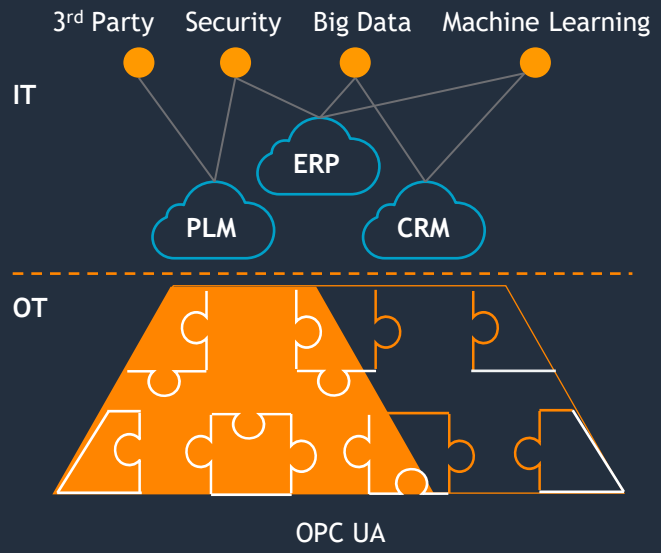


Execute a modern data strategy: evolving to Industry 4.0

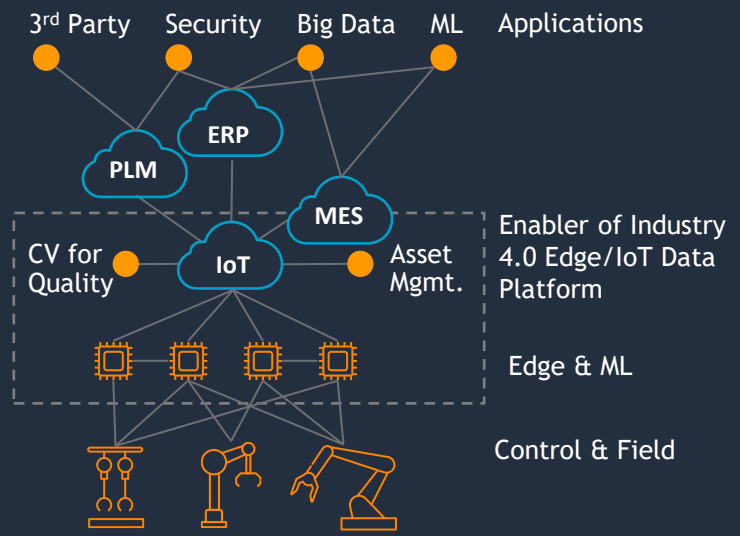
Today



Today/Tomorrow



Near Future



Monolithic Pyramid

- Standalone applications
- Data silos
- Poor upstream/downstream communication
- Disparate proprietary protocols

Converging IT and OT

- Cloud computing revolutionized IT
- Flexible shop floor connectivity
- Descriptive protocols
- System integration

Smart Factory

- IT - OT border is gone
- Any to any communication
- Data transparency and de-coupling
- Edge / Cloud hybrid model

Case study: T-Systems Portable Quality Inspection

Use case and solution

- Obtain early detection of defects
- Simplify visual quality inspection in a low-cost solution
- Portable use at any line-point
- Objectively make decisions
- Using a mobile phone, connected to the cloud

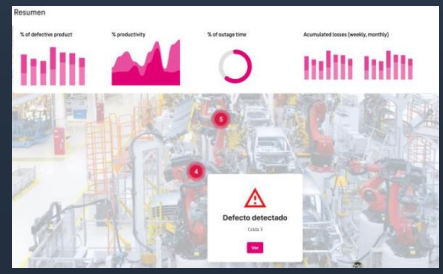
How the solution was built

- 2-day joint T-system and AWS effort to create PoC
- Exploration and value proposition
- Selection of AWS Lookout for Vision
- Created user interface to interact
- PoC with “worst case” conditions

Amazon Lookout for Vision

What were the results

- initial algorithm can be generated in only 30 minutes
- 90.3% confidence after 1 refinement
- 93.3% precision of parts categorization



Case Study: Accenture's private 5G AI Vision

Client request:

Client is dedicated to continuous innovation for their customers and are looking to deploy 5G in their manufacturing sites to unlock value and operational efficiencies:

Current context:

- The manufacturing process at the site is labor and manual intensive and the **rack and test process can take anywhere from 2 to 16 hours**
- Client **assembles 70 units** per day with a **target to get to 90** units per day.
- **Testing failures** can result in **entire servers** having to be **disassembled and** the process is restarted
- Client is in need of a solution that can **process data relatively quickly across the manufacturing line**.

Accenture's approach:

Accenture partnered with Client to stand up a 5G next-gen network platform to deliver use cases and unlock value:

Deployed a private 5g network using Verizon 5G infrastructure. Greater than 3 GB service

Tested, deployed and installed COTS video cameras over a wireless 5G Network. Resulting in >95% accuracy.

Analytics running locally on an AWS snowball edge.

Built a 5G 'aaS' commercial model and support structure with a predictable monthly cost.

5G AI vision use case:

AI vision solution focused quality and supply chain optimization:

Deployed custom synthetic data visual inspection platform

Connected 5G to an "all wireless solution" streaming camera data processed locally at the client site

Dashboard connected data to spot defects in the supply chain.

Processed ML / AI models on the edge with a high degree of success a

Ecosystem Components: Jabil + > + verizon + aws + ERICSSON

Smart Manufacturing

Next Steps

Solution Architects

- Engage with a solution architect dedicated to your account and industry
- Brainstorm use cases and get support for solution implementation

ML and IoT Solutions Lab

- Identify key areas where machine learning could help you with an AI or IoT expert
- Let AWS experts build POCs and custom solutions for your industrial use cases

AWS Professional Services

- Discovery, Advisory and Implementation services working along with Partners
- Training workshops and hackathons for builders in your organization

AWS Partner Network

- Let AWS validated partners help you with the POC and build integrations with your current systems to productionize
- Industrial domain-specific expertise

Thank you!

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