

Back to the Data: Microsoft Fabric's Role in the Future of Manufacturing.

Lisa – Plant Manager



- Responsible for safety, throughput and downtime
- Makes decisions under time pressure
- Needs answers she can trust

The Problem: Why has production stopped?

Minutes matter – downtime is expensive

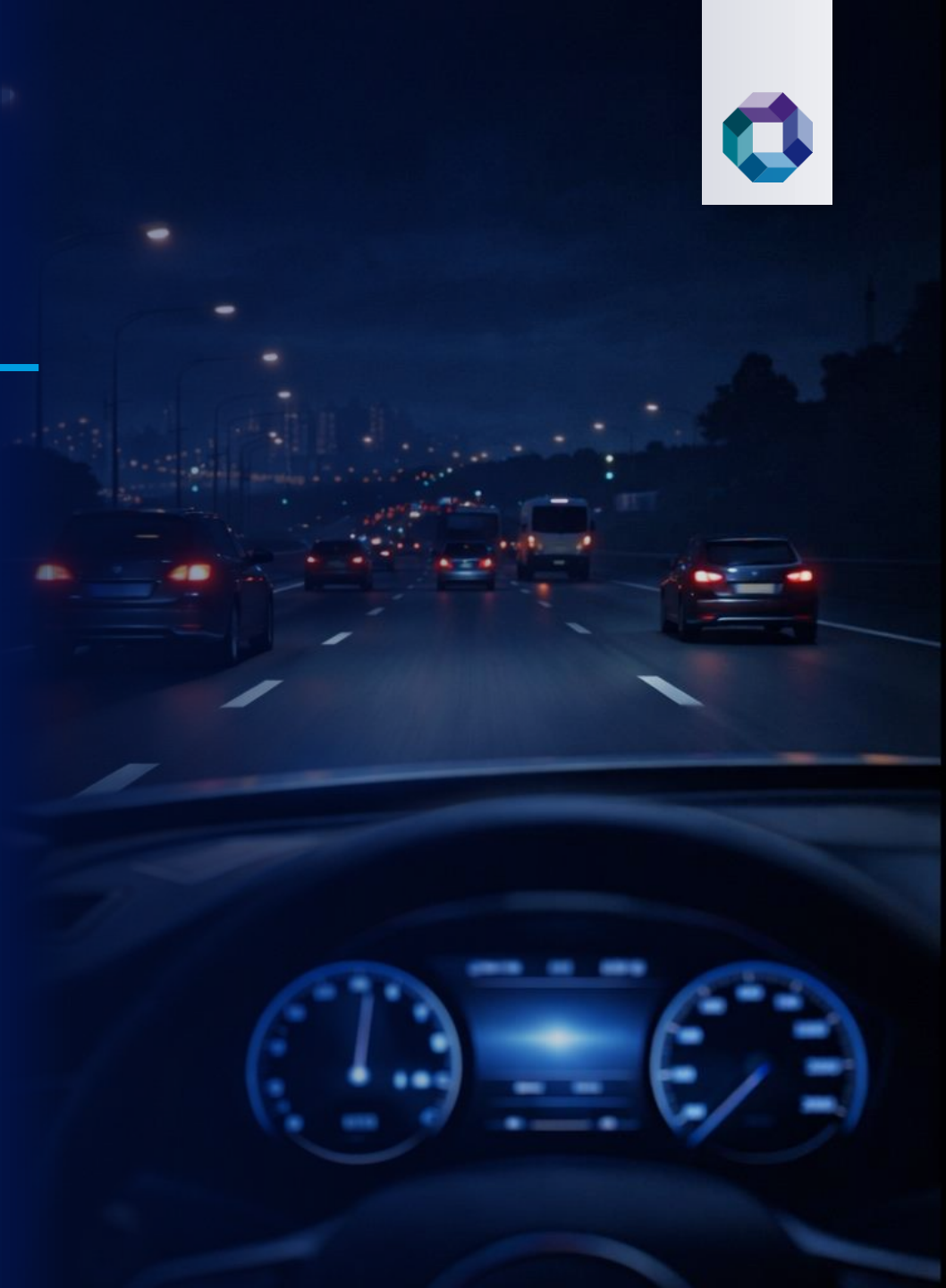
1. The first challenge is finding the truth fast
2. The second challenge is trusting it enough to act



The Drive: 25 minutes of guessing

Five systems. Five answers

1. OT signals (SCADA) don’t match IT Context (MES/ERP)
2. Data copies create multiple versions of the truth
3. Decisions take longer



“Back to the Data”: Where Fabric Fits

Fabric helps reduce the tool landscape and bring teams back to a trusted data view:

Unification

Bringing ingestion, engineering, and BI into one experience — fewer disconnected tools

Speed

Reducing handoffs and integration effort, so teams move faster from raw data to reusable datasets and dashboards (“data products”)

Trust

Enabling reuse, governance, and lineage — so that a consistent approach to a “single version of the truth” can be developed.

… Fabric is a Data and Analytics platform that tries to reduce tool sprawl and bring teams closer to a governed and shared data foundation.

What Lisa sees: signals with context

Unified View

Central overview with context to quickly gain insights and contact the right people.

- Direct insights into related sensor data.
- Related material data.
- Current process data.
- Warnings and Errors.



… She can narrow down the cause of the problem and contact the right people for help even before she arrives on site.

Reality Check: What Fabric won’t do

The limits of Microsoft Fabric and wrong expectations:

Replace OT

Fabric will not replace the central OT Applications like MES, SCADA and ERP Systems.

But it can connect the siloed data and enable the organization to gather new insights.

★★★ Increase Quality

Fabric does not fix poor data quality by itself. Chaos from the source systems will remain.

But it can help to gather clarity and integrate data governance.

Control Production

Fabric will not replace PLC’s, neither an Edge environment to take actions.

But it can enable new data and intelligent models on the Edge.

… Fabric is not magic — it’s a way to gain insights and make data work for you.

Real-World Mini Cases

Traceability & Condition Monitoring

Scenario

Monitor production processes and machines to react in milliseconds to abnormal events.

Microsoft Fabric's Role

- Combine OT signals (vibration/pressure/ temperature) with MES/ERP context.
- Provide a near-real-time incident timeline & root-cause view.
- Enable governed, reusable "incident & traceability" data products across plants.

Value

- Faster troubleshooting and shorter downtime duration
- Less scrap from unstable process windows
- Fewer repeat incidents through better learning loops

Vision-based Quality Inspection on the Line

Scenario

Use cameras to inspect parts in real time and react immediately.

Microsoft Fabric's Role

- Store inspection outcomes + image metadata in a unified analytics layer.
- Connect quality results to product/lot/shift/tooling context.
- Track defect trends and drill down to "when / where / why" in one view.

Value

- Improved first-pass yield and fewer customer complaints.
- Faster containment when defects appear.
- Reduced manual inspection effort and rework cost.

Predictive Maintenance

Scenario

Use historical data to build predictive maintenance models and use model inference for real-time scoring.

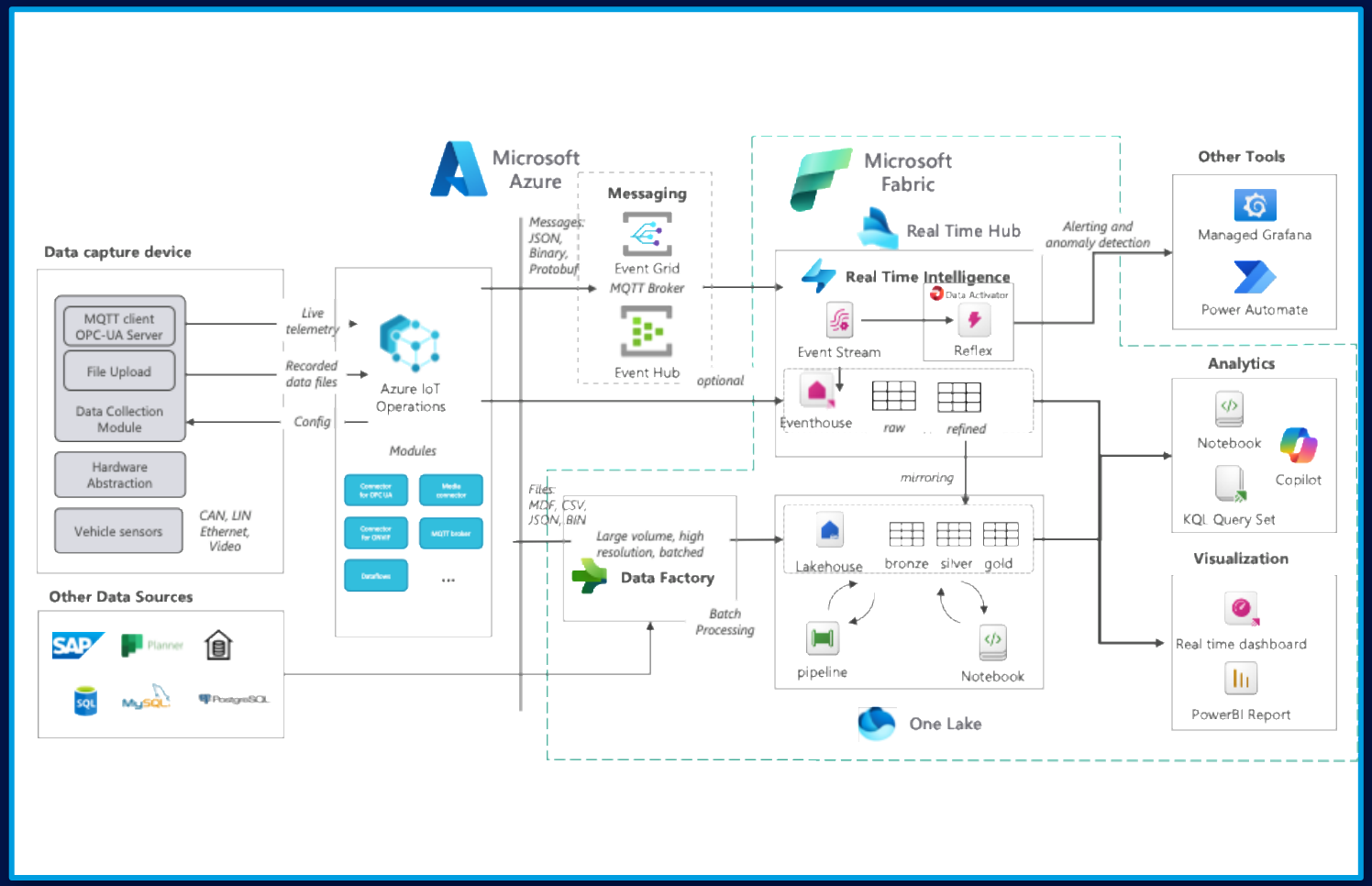
Microsoft Fabric's Role

- Merge sensor data with maintenance history, usage hours, and spare parts data.
- Enable reliability analytics (failure patterns, thresholds, leading indicators).
- Provide consistent asset health KPIs and prioritized worklists for maintenance teams.

Value

- Fewer unplanned stops and better OEE availability.
- Optimized maintenance schedules (less over-maintenance).
- Longer asset lifetime and lower total maintenance cost.

Takeaways: A Practical Adoption Path



Use Case first

Start with one Data Product.

Data foundation next

Unify OT signals and IT context.

Governance by Design

Consistent definitions, Lineage, Ownerships.

Security by Design

Privacy, permissions, compliance.

Scale the standard

Reusable templates across sites.

VIELEN DANK!



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