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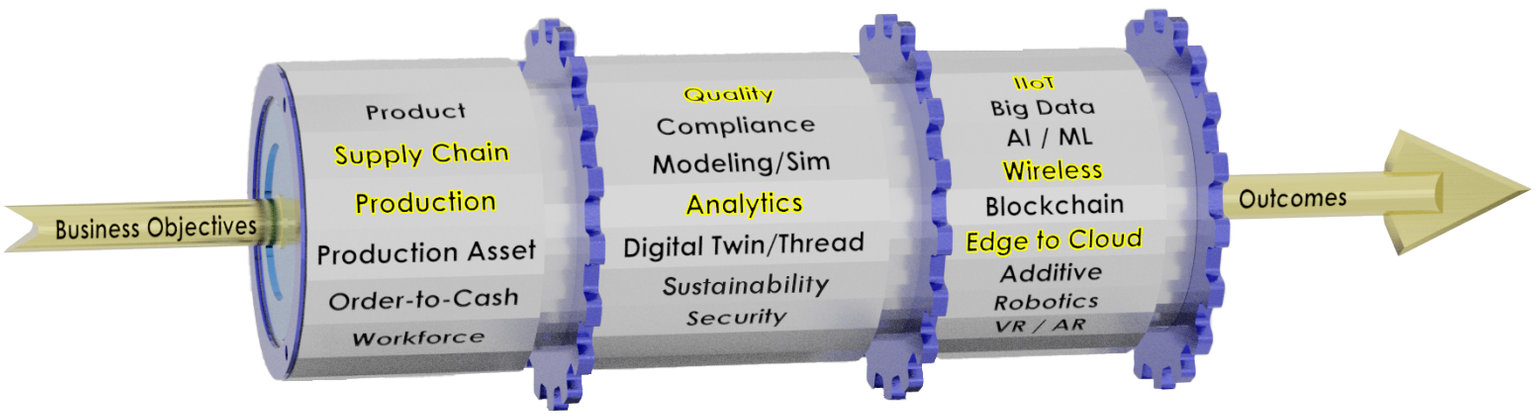
Where Manufacturing Meets IT

AUTOMOTIVE INDUSTRY



Smart Manufacturing Model Use Case #1 | December 2022

INTEGRATING SUPPLIERS' QUALITY & PRODUCTION IN REAL TIME TO OEM OPERATIONS

Variation in suppliers' quality increases the OEM's Cost of Quality. Lack of real time visibility of an impending supplier batch delivery's production status causes a blind-spot for OEM production.

SUMMARY

In a typical tiered system of multiple suppliers, the OEM incurs cost because every batch delivered needs inbound quality control. This may be due to the subjectivity and variance in supplier quality and/or the need for suppliers' conformance to the OEM's quality plan.

This use case illustrates a Smart Manufacturing implementation that established a real time Digital Thread between the supplier and the OEM, (a) eliminating the subjectivity and variance and (b) ensuring 100% conformance. The OEM can now access supplier quality inspection data in real time to evaluate batch quality and conformance before dispatching the batch from the supplier. As well, production delays at the supplier's end are flagged in advance.

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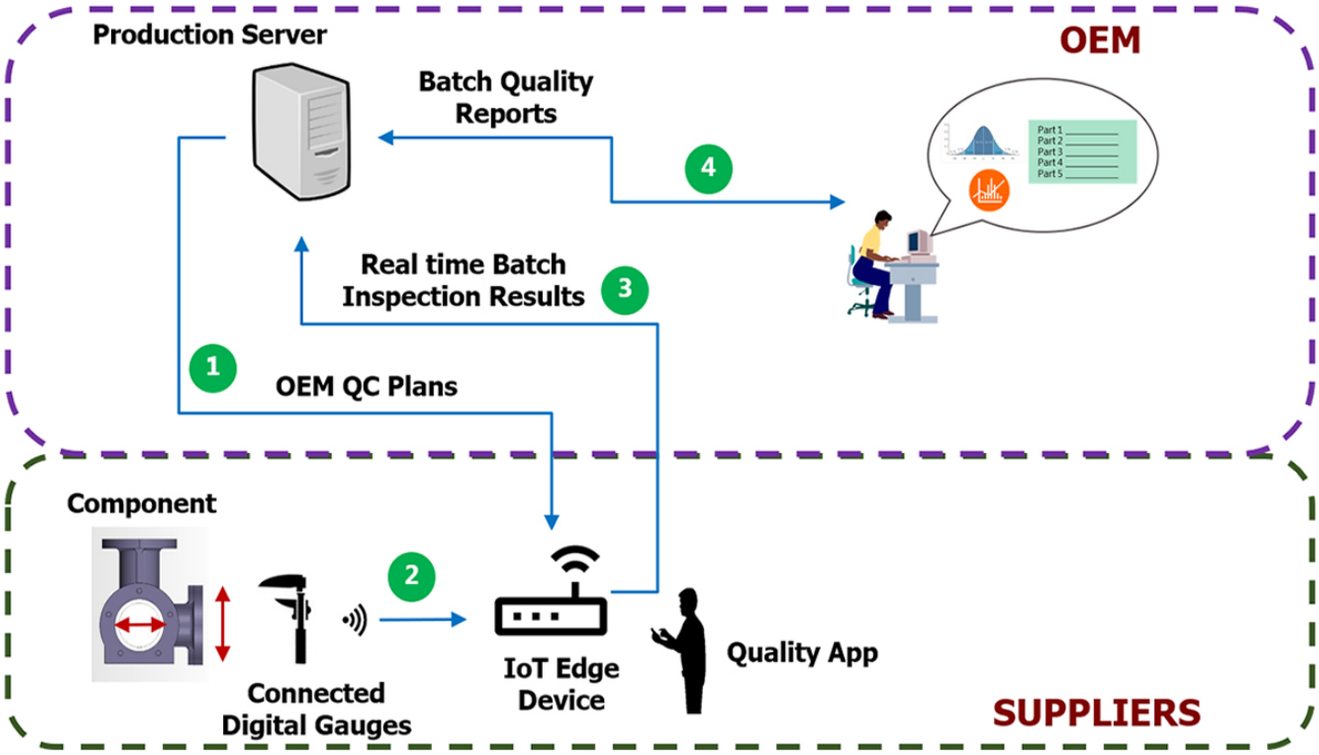
This use case illustrates the combinations of Lifecycles, Cross-Lifecycle Threads and Enabling Technologies as illustrated by the graphic above.

Find additional MESA Smart Manufacturing Model Use Cases at www.mesa.org/model.



Smart Quality Assurance of Supplied Parts to OEM Standards.

CHALLENGES

- 200+ parts suppliers; conformance variance to OEM's quality control plans
- Subjective quality inspection checks prone to errors and omissions
- Post-delivery checks at OEM found high number of defects: non-value-added labor, expensive and impacting production

SOLUTION

- A simple tablet app for quality inspectors that enforces quality plans for each part
- An objective dimensional inspection using the wireless tablet app connected to measurement devices that remove errors and omissions
- Real-time visibility and analytics (Cp/Cpk, X-bar, ppm, etc.) of batch quality by OEM prior to supplier dispatch
- Automated flagging of delays and non-conforming parts with reason code(s) assignments
- Production lifecycle of the supplier is integrated with the production and supply chain lifecycle of the manufacturer/producer using the quality lifecycle thread

BENEFITS

Standardization of quality across 200+ suppliers

OEM received zero defective parts per million within three months

Elimination of post-delivery checks at OEM (non-value-added activity)

Digitalization at suppliers led to improved labour productivity, training and quality practices

Remote visibility by OEM resulted in a smart supply chain, supplier part inventory and on-time delivery