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FROM DATA TO DECISION: UNIFYING PRODUCTION MANAGEMENT AND TPQC FOR OPTIMIZED STEEL PRODUCTION

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In today's steel production operations, seamless integration of the individual production steps, besides the optimization of the individual production units, is key to achieving operational excellence. While Production Management (MES) drives production efficiency by orchestrating plant-floor operations from customer order entry to shipment of the final product, Through-Process Quality Control (TPQC) ensures that the final product meets stringent industry and customer requirements. Integrating real-time quality information and even quality-based decision of TPQC into the Production Management is the logical next step to automatically organize steel production in a coordinated manner.
This paper proposes a holistic blueprint to integrate Production Management and TPQC. By tying together real-time process data from Production Management with data-based decision-making at quality checkpoints in TPQC, steel manufacturers can proactively respond to deviations, prevent costly rework, and improve first time right rates. When an out-of-specification process occurs, this integration allows immediate feedback loops, supporting efficient quality management. Additionally, smart intra-logistics integration within Production Management reduces unnecessary transport of products thereby increasing efficiency, streamlining logistics, and shortening overall production time.
By implementing these strategies, steel manufacturers can transition towards a truly integrated production management, logistics and quality control ecosystem, ensuring right quality products, optimized operations, and increased operational excellence.
This paper will elaborate on this integrated approach of production management and give examples of implemented use-cases.

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