Modular Data and Calculation Framework for a Technology-based Mapping of the Manufacturing Process According to the Value Stream Management Approach

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Abstract : Value Stream Management (VSM) is a widely used methodology in the context of Lean Management for improving end-to-end material and information flows from a supplier to a customer from a company's perspective. Whereas the design principles, e.g. Pull, value-adding, customer-orientation and further ones are still valid against the background of an increasing digitalized and dynamic environment, the methodology itself for mapping a value stream is characterized as time- and resource-intensive due to the high degree of manual activities. The digitalization of processes in the context of Industry 4.0 enables new opportunities to reduce these manual efforts and make the VSM approach more agile. The paper at hand aims at providing a modular data and calculation framework, utilizing the available business data, provided by information and communication technologies for automizing the value stream mapping process with focus on the manufacturing process.