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## Value Stream Mapping Demonstration on Real Case Study

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### Abstract

The aim of this article is a practical demonstration of Value Stream Mapping method (VSM) for visualization and rationalization of processes and its use in the context of a real enterprise. Own philosophy of a method lies in a view of the value-chain “from doors to doors” among all important transportation and transformation processes flowing in a company since receiving of raw materials and semi-finished products from suppliers to final delivery of finished products to a customer. Processes within VSM are strictly separated in to the two groups: Value-Adding Processes (VA) and Non-Value-Adding processes (NVA). The outcome of a VSM method is a diagram presenting a value flow in a company. Trough VSM is possible to identify places of piling inventory, calculate a lead time and realize how many percent of a time are Value-Adding and how many are not. The VSM flow diagram and its calculated indicators are used in next step not only as a tool of communication in problem solving processes, but also as a clue for improvement, visualization and description of a future state. The importance of a VSM method is rising together with the level of management. With help of VSM it is possible to generate small and continuous improvements of operative character or to generate huge and capital intensive strategic projects which lead the company directly to fulfilment of all its stated goals and mission. VSM is primarily an analytical method which purpose is to identify bottlenecks and potentials for improvement at all levels of the process.

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### 1. Process management and its overlaps into strategic management

Nowadays successful companies commonly use methods of lean management with the aim to eliminate waste and find significant cost savings. There is no guarantee of maximum savings and efficiency in simple

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implementation of lean management methods for the company [2,7]. Maximum savings can be achieved only by long term process management. The process should be systematically measured, their performance analysed, there must be an adequate response to the identified anomalies and finally current set up of processes must be continually improved. In recent years the process management became one of the most effective tools used by enterprises to struggle with consequences of the last economic crisis, which resulted in decrease of consumers' demand and into change of consumers' behaviour [15]. Nowadays, surviving enterprises are heading to implement lean management methods. But only by implementing all of these techniques and methods into business processes and business culture we cannot ensure the bright future for our enterprise [1,7]. If we want to dramatically increase our chance to success it is important to standardize properly all important business processes, measure and analyse their performance, react correctly to detected anomalies and malfunctions and finally continually improve current process setup [6]. The last mentioned thing is also the main reason why the process management was developed.

From management point of view every important business process should have at least one performance indicator (so-called Key Performance Indicator, KPI) [12], which purpose is to assess real process performance according to its goals in real time. Identified differences between these two states (real vs. optimal) subsequently initiate a process improvement. There is no strict rule about an optimal manageable number of KPIs, but all of them have to be connected with strategic goals of a company, because they reflect company's connection with inner and outer circumstances and they set a direction to future state of company according to its mission. All of these strategic goals are usually transformed from their strategic level into operational level by sophisticated management methods like Balanced Scorecard, EFQM and more [1,3,4,6,9,10].

## 2. . Value Stream Mapping

### 2.1. VSM principles and its mission

The Value Stream Mapping (VSM) method was introduced in a second third of twentieth century by the Toyota Motor Company and after that promptly became one of the fundamental methods of the lean management [8,15,16]. Its philosophy stands on graphic presentation of value chain flow from door to door within a company – in other words from receiving customer's demand through all logistic and transformation processes to delivery of final product. The VSM method strictly divides all processes into two groups: Value Adding (VA) and Non Value Adding (NVA). The outcome of a VSM is chart presenting value flow across whole company, where is subsequently possible to identify a place of heaping inventory, find out a total manufacturing lead-time or realize how many percent of this time are VA in other words how long are inventory items inactive and stored in warehouse shelves. On the one hand the VSM map itself may work as a clue in following decision making and process-improvement processes. On the other hand it may be used as a future state visualization tool, see Fig. 1 [16].

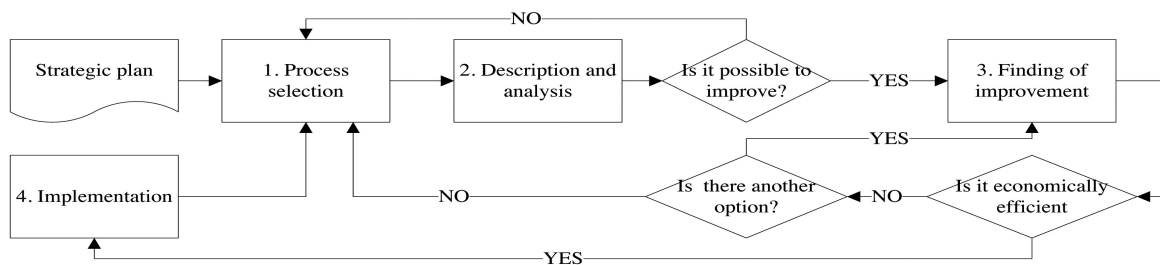


Fig. 1. Process improvement procedure [16].

The VSM is a graphic method using rich amount of icons presenting each important element within value chain. Whole procedure stands on realizing of customers' tact time (customer demand in time flow), which is subsequently compared with a current production performance. Calculation of VA time is simply done by sum of VA processes continually from the first to the last. Same procedure is also used in calculation of NVA time.

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