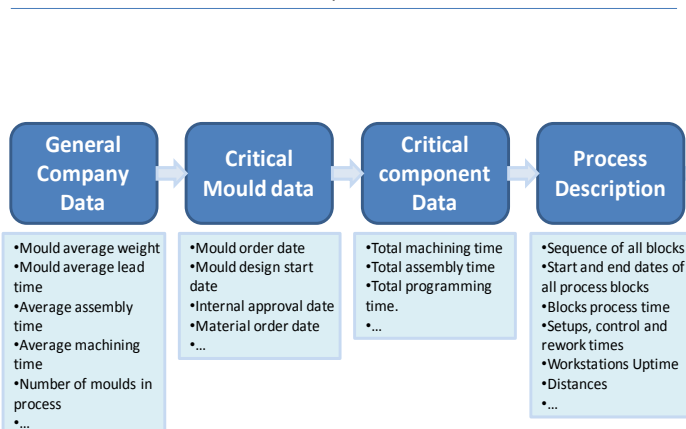




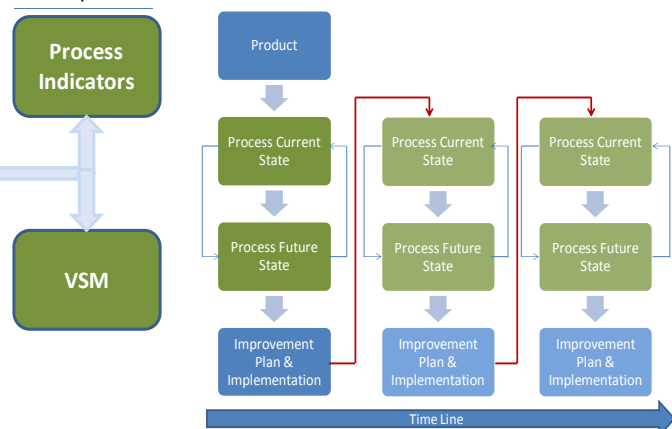
André Costa<sup>(1)</sup>, Elsa Henriques<sup>(1)</sup>, Mercedes Domingues<sup>(2)</sup> and Paulo Peças<sup>(1)</sup>

**Abstract:** This paper presents the results of a project aiming to understand the viability of value stream mapping techniques on the “one of a kind production” context typical of mould making industry. More than having a representation of a standard process, the idea is to use the mapping techniques to support the analysis and the discussion of the time-oriented performance of the whole manufacturing process. The project involved the creation of a VSM application tool which improves the analysis of the mould making critical processes, the automatic calculation of the main process indicators, and the generation of the value stream map of each process under analysis. Several mould makers were involved to support the design of the tool and to evaluate its potential in guiding purposeful improvement actions. The results presented are quite satisfactory. Even if the process is not a repetitive one, its time-oriented performance analysis reproduces repetitive time waste patterns in each company. Moreover, the visual nature of VSM techniques facilitates the process understanding and leads the improvement teams in focusing towards the global improvement.

Input data



Outputs



Study of benchmarking on seven mould making companies

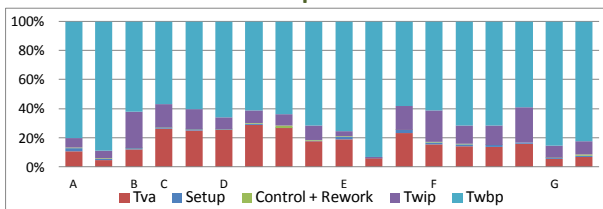


Figure 5 - Lead time distribution of the moulds core components

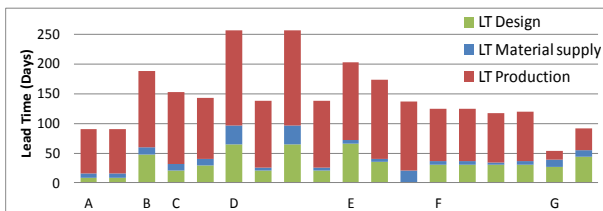


Figure 6 - Lead times of design versus production.

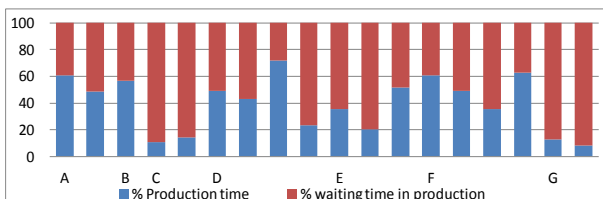
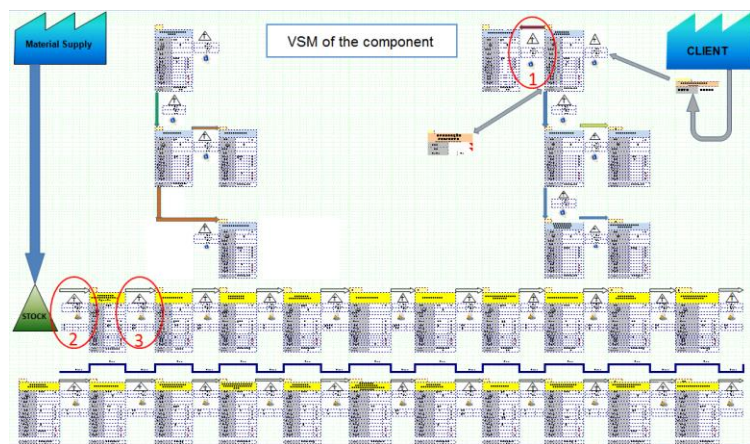


Figure 7 - Production lead time distribution.



Waiting time between (Twbp) and within (Twip) process steps can go from near 70% to more than 90% of the total lead time

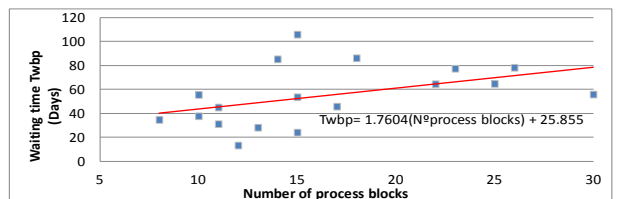


Figure 8 - Number of process steps versus waiting time analysis.

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