Process Modelling and Analysis of Discrete Part Manufacturing for Enterprise Integration

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The research was carried out is essentially about system integration of discrete parts manufacturing organization. The main objective of the research was to process modelling and analysis for system integration for discrete parts manufacturing section. Physical observations, interviews with different level of management team were used to identify the problems within the environment and they were analysed with Pareto analysis, Value Stream Maps of both current state and future state map. IDEF0 tool and Petri net structure was used to model the functional architectural and logical background behind information technology architecture respectively. At the initial study it was identified the main cause was the excessive inventory of raw materials which make the limited access to different locations in production floor and storage area in the premises. It was found that the lack of communication was the highest percentage in Pareto analysis and further TOC and Value stream mapping gave the solution for company information technology architecture to perform effectively and efficiency. The concept of hybrid Production Management system was suggested to implement MRP/ OPT and JIT approaches. The main task of design of production environment and coordinate of production flow was identified and factory level control task and production environment design werecarried out separately. The PAC life cycle model was developed and process layout was analysed, and new layouts were proposed for smooth functioning of the manufacturing process.

Keywords: Process modelling, System integration, Layout planning