

Process Modelling and Analysis of Discrete Part Manufacturing for System Integration

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The research was carried out is essentially about system integration of discrete parts manufacturing industry. The main objective of the research is to process modelling and analysis for system integration for manufacturing organization of PVC pipes. Value Stream Maps of both current state and future state map and Pareto analysis were used to identify the problems within the environment. IDEF0 tool and Petri net structure was used to model the functional architectural and logical background behind information technology architecture respectively. At initial study it was identified the main cause was the excess inventory of raw materials make the limited access to different locations in production floor, later it was found the lack of communication was the highest rate 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 was carried out separately. The PAC life cycle model was developed and process layout was analyzed and new layouts were proposed for smooth functioning of the manufacturing process. The pack life cycle model and the best layout were selected based on statically test.

Keywords: Process Modeling, System Integration, Pareto Analysis, Layout Planning

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