IMPACT OF LOT-STREAMING IN JOB SHOP PRODUCTION SYSTEM

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ABSTRACT

IN RECENT YEARS, OPTIMIZED PRODUCTION TECHNOLOGY (OPT) HAS BECOME AN IMPORTANT TOOL FOR PRODUCTION PLANNING AND SCHEDULING. LOT-STREAMING IS THE MOST IMPORTANT IDEA OF OPT. THE PURPOSE OF LOT-STREAMING IS TO SPLIT A PROCESS BATCH INTO SEVERAL TRANSFER BATCHES, AND PRODUCTION THEN CAN BE RUN SIMULTANEOUSLY ON DIFFERENT MANUFACTURING PROCESSES, THEREFORE, THE MAKESPAN CAN BE SHORTENED. ALTHOUGH THE CONCEPT OF LOT-STREAMING PHILOSOPHY, HAS BEEN WIDELY USED IN PRACTICE AND HAS SHOWN FAVORABLE RESULTS. UP TO PRESENT, MOST RELATED LITERATURE, HOWEVER, MERELY DESCRIBE THE CONCEPTS OF OPT AND VERY FEW FOCUSES PARTICULARLY ON THE QUANTITATIVE ANALYSIS OF LOT-STREAMING. IN THIS RESEARCH, WE FIRST STUDY DEVELOPS A HEURISTIC OF LOT-STREAMING MODEL FOR JOB-SHOP PRODUCTION SYSTEM. THE OBJECTIVE IS MINIMIZING TOTAL EARLINESS AND TARDINESS. EXPERIMENT RESULTS SHOW THAT LOT SPLITTING HAS PRACTICAL BENEFITS IN THE MANUFACTURING PROCESSES.

Keywords: LOT-STREAMING, PROCESS BATCH, TRANSFER BATCHE, OPTIMIZED PRODUCTION TECHNOLOGY, JOB SHOP, HEURISTIC, MINIMIZING TOTAL EARLINESS AND TARDINESS

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