

AN INTEGRATED MANAGEMENT INFORMATION SYSTEM FOR SMALL AND MEDIUM PRINTING INDUSTRY

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Abstract

Printing industry is dominated by commercial printing organizations where the typical product is of made-to-order type. High level of customization makes the printing process a combination of serial job shops where each job has its typical combination of operations. Also the printing industry is replete with Small and Medium Enterprises which often operate in a very volatile condition and often need to re-plan the production schedule either as a result of changing priorities with typically extremely short lead times or due to disturbances like machine breakdown, lack of materials or labor. Because of the typical characteristics of this industry, with multi-phase processes having multiple units per phase (parallel machines), and different planning horizons with different production requirements for each phase, control of the system becomes very complex. The pre-press operations like film-making and plate-making are dominated by short setup time and small batches, the printing presses are pre-dominated by relatively large set-up time and very large batches and the post-press is dominated by relatively low setup time and large batches.

Technologies in all areas of printing industry are changing rapidly. Thus a commercial printing press may have machines of various ages and technological and production capabilities. Since the printing presses are the most expensive equipment used for the printing process, the entire planning process in a printing organization revolves around the maximum utilization of the installed machine capacities moderated by customer requirements. Therefore obtaining full utilization of the installed capacities of pre-press, press and post-press

operations are difficult to achieve. The escape route of such problem lies with the use of outsourcing and the printing organizations have used moderate to extensive outsourcing at different stages of the process. At the same time, across the three stages of pre-press, press and post-press operations, jobs can be split up and run parallel.

Enterprise Resource Planning (ERP) software is being widely used for integrated information management across the organizations. But the high cost and huge amount of effort with low amount of skill availability regarding the involvement of the information technology in streamlining the processes has made the successful implementation of ERP difficult in printing industries.

The objective of the present research paper is to propose a model of an integrated management information system for effective functioning of commercial printing organizations. The commercial printing organizations are dominated by variety of products to satisfy the demands of a large number of customers. The system is developed keeping in mind the complex nature of the medium sized commercial printing organizations having different types of processes and variety of end products like books, forms, continuous stationary, security printed products and advertising materials.

Keywords: Integrated Management, Information Technology and Enterprise Resource Planning