Article Abstract

Title:	Implementation of an online scheduling support system in a high mix manufacturing firm
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Abstract:	Scheduling is an important decision making processes in any manufacturing industry. One of the key objectives of scheduling is minimizing the makespan. Generating the best job shop schedule with the makespan criterion for a multi-product manufacturing industry in a reasonable time remains a challenging task, due to its NP hard nature. In this context, this paper discusses the implementation of an online scheduling support system for a high mix manufacturing firm. The firm is a world-class leader in turbine manufacturing, based in India. The production planning and control (PPC) department of firm has to schedule the jobs, on the available special purpose machines (SPMs), respecting the capacity constraints and most importantly the priority of work orders. The system is developed in two phases. The first phase involves the development of a scheduling support system. A priority based heuristic for minimizing the makespan is presented. The heuristic considers a host of real world issues, like resource breakdown, utilization, recirculation of the jobs on the machines etc. The crux of this paper is to present an approach to smoothen the work loads viz., under loads and over loads, that occur on various machines due to the lack of integration between capacity planning and generated schedule. The second phase involves integrating it with World Wide Web (WWW) which allows the decision makers with the flexibility of distributed decision making.
Keywords:	Job shop scheduling, makespan, capacity planning, World Wide Web (WWW)