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Dynamic Assignment of Flexible Service Resources. POM Vol. 19(3), 279-304

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CITATION

This paper generalizes a classic problem in operations concerned with the optimal commitment of dedicated and flexible resources to orders that arrive sequentially at a service facility over time. The basic question addressed is what orders to accept and what resources to commit to accepted orders. This problem has appeared in various guises in the OM literature over the years, including various forms of the dynamic knapsack problem as well as problems of yield management, priority scheduling and capacity reservation decisions in a dynamic environment. The authors provide a concise and thorough analysis of a general form of this problem and show that with flexible resources their proposed Bottleneck Capacity Reservation policy is near optimal. They focus on the workplace training industry as a motivating application, providing therewith both an important contextual anchor for their analysis as well as developing important managerial insights and usable rules for this industry.

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