

國立東華大學應用數學系 專題演講

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講 題：Dynamic Pooling of Make-to-Stock and Make-to-Order Operations*

時 間：100年12月16日(星期五) 15:10-16:50

地 點：理學院A324會議室

摘 要

It has become increasingly common for companies to offer make-to-stock (MTS) and make-to-order (MTO) versions of the same product through different sales channels. To satisfy these two distinct demand streams, one strategy is to produce both the MTS and MTO items in a single “hybrid” facility partially comprised of flexible servers or machines. We develop a multi-server queueing model of this system, where a subset of the servers or machines is dynamically switched between MTS and MTO production via a congestion-based switching policy. We develop analytical formulae for quantifying all major performance measures of the system. We also present a search procedure to find the optimal capacity and inventory control parameters which minimize the total costs of the system while satisfying the customer service constraints. Numerical results are used to illustrate the general behavior of the dynamic hybrid system and to compare its performance to that of a more conventional static hybrid facility with dedicated MTS and MTO servers. While the dynamic system does not outperform the static system across all performance measures under all circumstances, for high levels of traffic intensity the dynamic system can provide superior customer service for both sales channels with lower finished goods inventory levels.



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