



Research School for Operations
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Optimal control policies for configure-to-order systems in a high-tech environment

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Configure-to-order (CTO) system is a popular strategy for production firms that want not only to have a quicker response to customer's demand, but also to increase the diversification of end-products and decrease the cost of production, simultaneously. In general, in the CTO strategy the whole manufacturing process is divided into two production and assembly stages. In the second stage, each end-product is assembled instantaneously, based on customer's preferences from a special subsets of components which have been produced in the first stage by production facilities ahead of customer's demand and are kept in-stock. In this system, we have an inventory holding cost for components and penalty cost for delay in response to customer's demand. Assembly process for an end-product is started as soon as relevant customer's demand is realized if all the required components are available in-stock. Due to the fact that this system is an aggregated production-inventory system, managers have a lot of challenges related to analysing it. The main goal of our research is providing some significant insights into managing the CTO system in a high-tech environment by developing optimal production and inventory control policies.