

# Negotiating due-dates between customers and producers

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## Abstract

An important managerial issue in the coordination of the manufacturing-sales interface is the joint determination of order due-dates between customer and manufacturer, mediated by sales personnel. This paper presents a methodology for negotiating due-dates between customers and producers in complex manufacturing environments. This is accomplished by modeling the setting of due-dates as a leadtime forecasting problem, and using the empirical distribution of forecast errors as the basis for negotiating and setting due-dates with customers. These distributions provide the basis for accepting or rejecting customer due-date proposals, and allows the construction of managerially useful trade-off curves between customer due-dates and several alternative performance measures including cost and service-level measures.

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## 1. Introduction

An important managerial issue in the coordination of the manufacturing-sales interface is the joint determination of job due-dates between customer and manufacturer, a process which is often mediated by sales personnel. The problem of determining mutually satisfactory and achievable due-dates is ubiquitous in manufacturing, and is particularly acute in job-shops where it is impossible to hold inventory in anticipation of demand, but for which responsiveness to the needs of customers is paramount. In make-to-stock manufacturing environments as well, reliable leadtime estimates are critically important in minimizing inventory and maintaining customer service levels. Customers typically desire early due-date promises because of competitive pressures in their businesses,

and manufacturers typically prefer extended due-date leadtimes in order to better plan production schedules and balance workloads. The role of mediator often falls to the sales function, which must assist in negotiating order due-dates which are acceptable to both parties.

Recognition of the importance of working with customers to establish achievable due-dates is growing. During the 1980s, surveys of senior manufacturing managers showed them to be most concerned with quality-related issues, with less concern for customer service as measured by on-time delivery [1]. However, in a 1990 survey of manufacturing managers in Japan, Europe, and the US, each group ranked on-time delivery as the second most important competitive priority (behind conformance quality or product reliability) to be cultivated over the next five years [2]. This same study reported a 1992 survey of US managers which also ranked on-time delivery highly (third behind conformance quality and product reliability). These results indicate the increased importance

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