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The Role of Inventory Classification in Supply Chain Responsiveness in a Build-to-Order and Build-To-Forecast Manufacturing Environment: A Comparative Analysis

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Abstract : Companies strive to improve their forecasting methods to predict the fluctuations in customer demand. These fluctuation and variation in demand affect the manufacturing operations and can limit a company's ability to fulfill customer demand on time. Companies keep the inventory buffer and maintain the stocking levels to reduce the impact of demand variation. A mid-size company deals with thousands of stock keeping units (skus). It is neither easy and nor efficient to control and manage each sku. Inventory classification provides a tool to the management to increase their ability to support customer demand. The paper presents a framework that shows how inventory classification can play a role to increase supply chain responsiveness. A case study will be presented to further elaborate the method both for build-to-order and build-to-forecast manufacturing environments. Results will be compared that will show which manufacturing setting has advantage over another under different circumstances. The outcome of this study is very useful to the management because this will give them an insight on how inventory classification can be used to increase their ability to respond to changing customer needs.

Keywords : inventory classification, supply chain responsiveness, forecast, manufacturing environment
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