

## Application of machine learning techniques for supply chain demand forecasting

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**Resumen:** Abstract: Full collaboration in supply chains is an ideal that the participant firms should try to achieve. However, a number of factors hamper real progress in this direction. Therefore, there is a need for forecasting demand by the participants in the absence of full information about other participants' demand. In this paper we investigate the applicability of advanced machine learning techniques, including neural networks, recurrent neural networks, and support vector machines, to forecasting distorted demand at the end of a supply chain (bullwhip effect). We compare these methods with other, more traditional ones, including naïve forecasting, trend, moving average, and linear regression. We use two data sets for our experiments: one obtained from the simulated supply chain, and another one from actual Canadian Foundries orders. Our findings suggest that while recurrent neural networks and support vector machines show the best performance, their forecasting accuracy was not statistically significantly better than that of the regression model. [Copyright &y& Elsevier]

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