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Installed Base Forecasting in Inventory Networks

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Spare parts often show an intermittent demand behavior, making it hard to achieve a high forecasting accuracy by solely basing forecasts on historic demand information. Thus, a more promising approach seems to be the usage of a broader range of data related to the installed base and the characteristics of a specific spare part for forecast generation. The aim of this research is to build upon existing installed base forecasting approaches by improving their applicability to inventory networks. The research is inspired by the case of a manufacturer in the medical device industry, where a high forecasting accuracy for the storage locations within the inventory network is particularly desirable. This is because over-forecasting can result in unnecessarily high investments in inventory for costly spare parts, whereas under-forecasting could lead to understocking and hence to waiting times for customers in need of a specific part to repair a machine that is critical for the operation of their hospital.