

Predictive Modelling Approach to Identify Spare Parts Inventory Obsolescence

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Abstract : Factory supply chain management spends billions of dollars every year to procure and manage equipment spare parts. Due to technology -and processes changes some of these spares become obsolete/dead inventory. Factories have huge dead inventory worth millions of dollars accumulating over time. This is due to lack of a scientific methodology to identify them and send the inventory back to the suppliers on a timely basis. The standard approach followed across industries to deal with this is: if a part is not used for a set pre-defined period of time it is declared dead. This leads to accumulation of dead parts over time and these parts cannot be sold back to the suppliers as it is too late as per contract agreement. Our main idea is the time period for identifying a part as dead cannot be a fixed pre-defined duration across all parts. Rather, it should depend on various properties of the part like historical consumption pattern, type of part, how many machines it is being used in, whether it- is a preventive maintenance part etc. We have designed a predictive algorithm which predicts part obsolescence well in advance with reasonable accuracy and which can help save millions.

Keywords : obsolete inventory, machine learning, big data, supply chain analytics, dead inventory

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