APPLICATION OF DATA MINING TECHNIQUES IN MANAGING INVENTORY POLICY IN MASS CUSTOMIZED PRODUCT MARKET

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Abstract:
In response to competition in terms of innovation or service delivery to customer, many companies have gradually adopt the concept of mass customization in order to offer variety of products or service to certain focused market. When the product variety keeps increasing the managing of components, sub-components and raw materials become more complex in particular when the company offer both standard and customized products. Since most of both standard and customized often share components, sub-components and raw materials while procurement policy focuses on finish product and often overlook 2nd or 3rd tier items. Therefore, this study proposed the application of data mining techniques to address this issue in order to increase efficiency in the procurement of components, sub-components and raw materials for mass customization product environment. This research is started from the study of mass customization theory which leads to choosing interesting factors. The main critical factors in determining material management policy are demand, product lead time (PDLT), Profit margin and Cost. Next, the researcher generated the necessary information such as making Bill of material of the products and other factors characteristics. The model is classified into 3 types which are 1) Theory model, 2) Company's model, and 3) Clustering model. All kinds of the models are analyzed in the part of products level, and then use the result for analyzing in the part of the components level. The result of the analysis is 3 kinds of mass customization which are MTS, ATO, and MTO and is transformed to a form of inventory cost and lead time in order to compare and analyze to find the most suitable model for decision making.

Keywords: data mining, managing inventory, policy, mass customized product market