

MANUFACTURING POLICY SELECTION USING DATA CLASSIFICATION TECHNIQUE IN ENTERPRISE RESOURCE PLANNING ENVIRONMENT

Manassara Tanasamrit,
Faculty of Engineering, Kasetsart University, Thailand

Bordin Rassameethes
Faculty of Business Administration, Kasetsart University, Thailand

Pornthep Anussornnitisarn
Faculty of Engineering, Kasetsart University, Thailand
fengpta@ku.ac.th

Abstract:

In an enterprise resource planning system (ERP), the material movement transaction and change in formula e.g. raw materials, components and finish products are recorded for further analysis. Due to ever increasing competition, 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 (often referred as dependent item. This research intended to use one of big data technology called deata classification techniques to address this issue in order to increase efficiency in the procurement for enterprise resource planning environment like SAP or Oracle. The main critical factors in determining manufacturing policy are demand, product lead time, profit margin and cost. Using simulation, the necessary information such as making Bill of material of the products and other factors characteristics are generated. The procurement 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 three types of manufacturing policy under finished product level which are make-to-order (MTS), assembly-to-order (ATO), and make-to-order (MTO). The results show potential impact in providing insight information to often ignored component items which sometime used by many finished product and monitored by several personals.

Keywords: Enterprise resource planning, manufacturing policy, data classification, big data technology