State-of-the-practice in product configuration – a survey of 10 cases in the Finnish industry

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Abstract

The design and production of goods that satisfy the special needs of individual customers are of central interest to the European industry. A major trend is to improve customer specific adaptation with configurable products. We are interested in the methods, practices and tools that support product configuration tasks. The research described in this paper is meant to guide our future work. We have 1) established a framework for understanding the problem area of product configuration in a fairly wide sense by identifying a number of factors and 2) carried out ten actual case studies using the proposed framework.

Our framework consists of five problem areas that are further refined into a number of factors characterising the areas. The problem areas cover the *economic importance* of product configuration, the complexity of the *configuration task*, the nature of the *configuration process*, *long term management of configuration related product knowledge* and the *interfaces* to other processes and systems. These areas and the included factors are quantified and qualified with "metrics" to help in analysing and comparing configuration problems. The preliminary results indicate that configurable products and the related configuration processes are very important to many companies. The main reasons for using configurable products are the ability to meet a wide range of customer requirements, the increased control of production and the reduced lead times in the delivery process. However, configuration activities and related knowledge are usually not systematised. The case companies are not yet using computer based configurator tools, but nearly all of them intend to have computer support within the next few years. There is considerable variation in the maturity of the companies to make this transition. The long term management of products and product knowledge are considered risk factors.

Keywords

Product configuration, conceptual framework, survey, industry, delivery process