Chapter II
Product Classifications Systems in E-Commerce Organizations

Sven Abels
FlexaDot Information Systems, Germany

Axel Hahn
University of Oldenburg, Germany

ABSTRACT

This chapter presents the results of an empirical study recently performed in e-commerce organizations. The purpose of this empirical study was to figure out the usage of electronic product catalogs and especially their systems used for product classification, such as UNSPSC or eCl@ss. The study was performed with the help of a survey, which was sent out to a selection of those product suppliers and manufacturers where product catalogs are crucial for business. This chapter first presents the necessary fundamentals needed for understanding the results of the survey. Afterwards, it presents the results and identifies problematic areas that should be improved. It will furthermore give some advice for e-commerce organizations, standardization committees, and further research activities to foster the usage of modern classification systems in electronic product catalogs.

MOTIVATION

In recent years, the meaning of e-commerce increased not only for IT companies but also for traditional organizations, not originating from IT environments. Because of the increasing stress of competition, coupled with the need to reduce costs continually, it is most important for companies to develop new business areas and to cooperate with potential business partners. Electronic product catalogs can be a flexible way of cooperating with new business partners in business-to-business (B2B) and business-to-consumer (B2C) environments. One of their advantages

compared to traditional product catalogs is that it is possible to automate the integration of product data into existing systems (Handschuh, Schmid, & Stanoevska-Slabeva, 1997; Jeusfeld, 2004). Within the important area of B2B, it is crucial for all participating organizations to minimize their costs for the integration of new business partners and to integrate new product data seamlessly into the product range. Classification systems can be used to classify different products within a homogenous product catalog. They can order products and describe the domain of a product, therefore be used to group a product with other similar products. Standardized classification information can be stored in different formats. Examples for these formats are the classification systems eCl@ss or UNSPSC (eCl@ss, 2001; UNSPSC, 2001). This information can also be used for creating a semantic order even if products are described with different natural languages, for example, English, German, French, or Spanish. In combination with electronic product catalogs, such as BMEcat (Renner et al., 2001), they offer a high potential for supporting modern e-commerce. Hence, a high number of catalog formats are able to embed classification information of various classification formats in their product descriptions. They enable a usage of this information without changing or enhancing the existing format specification.

Despite the technical maturity and the availability of current standards, a high inconsistency exists in this domain. In the inquiry presented in this chapter, over 96% of all enterprises indicated that they expect an increasing relevance of e-commerce but the survey has also shown that the high potential of e-commerce is often not (yet) used or only used fragmentarily.

To analyze the current situation in organizations and to get an overview about the practical state of the art, a survey was performed during August and September 2004 as an empirical study. This survey aimed at examining electronic product catalogs and especially the usage of classification systems, such as UNSPSC or eCl@ss used in this domain. The survey was sent to companies where electronic or traditional paper-based product catalogs have a high significance for business.

Structure of This Chapter

The following section gives an overview about fundamental definitions needed for the empirical research. It explains concepts and notations and correlates them with a main focus to electronic catalogs and product classification systems. The relevance of those technologies for the e-commerce domain is emphasized. The next section describes the purpose, focus, and execution of the survey itself. The profile of participating companies is described as well as the questions, chosen for the query, which is important to define the validity of the survey as well as the negotiability. The interpretation and the presentation of the results of these surveys are performed in the following section and describe the current situation of the participating organizations. Afterwards, the last section looks at problematic areas identified by these surveys. Moreover, it derivates a call for actions for research and standardizing organizations, needed to foster the usage of modern classification systems in e-commerce environments.

PRODUCT CATALOGS AND CLASSIFICATION SYSTEMS

For storing different products in a common electronic catalog, several different standards and formats were developed in the area of e-commerce. Those formats are not only used for storing different products but also to store the structure of several products by defining product groups. Furthermore, different information such as the product description, the properties of a product, or the manufacturer can be stored (cf. Abecker,