



## **Chapter 2**

# **On-Line User Interaction with Electronic Catalogs: Language Preferences Among Global Users**

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*In this paper we study the behavior and performance of bilingual users in using an electronic catalog. The purpose of this research is to further the knowledge required for building electronic commerce systems that operate in multiple languages in global settings. We describe a bilingual electronic catalog that can be used by online retailers for selling products and/or services to customers interacting in either English or Chinese. We investigate into the nature of user interactions in multilingual electronic catalogs. We have defined three different groups of users: only Chinese speaking, only English speaking, and bilingual. We are specifically interested in investigating into the language preferences of the third group of users. In order to test language preferences, we have selected two types of products: office supplies and ethnic food. We hypothesize that bilingual users will exhibit differential language preferences for the type of products and the tasks performed in using the electronic catalog. Furthermore, learning curves and interaction effects are also tested. Three different task categories have been designed: browsing, directed search, and exact matches. In the first case, the user is a general browser who is looking for what is available in the catalog. In the second case, the user is looking for a class of products but is unsure of the exact item. In the third case the user knows exactly what item he/she is looking for. We propose to test the efficiency of usage by measuring the time*

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*as well as studying the path followed by the user in retrieving product information. This research will shed light on the important issue of designing multilingual electronic catalogs for both local and global applications.*

One of the major challenges facing organizations involved in electronic commerce today is to organize and summarize information in such a way that end-users can effectively and efficiently search for and analyze relevant information. Users can look for both structured as well as unstructured information in a system designed for electronic commerce. An example of structured information is the price of a specific product. Unstructured information, on the other hand, is one that is not well specified, or can have multiple specifications. For example, the user may be looking for spices for cooking a shrimp dish, where they can choose from a number of options, may have individual preferences<sup>1</sup> for the selection of spices, and may not know exactly how the information can be found in the system.

The problem of finding relevant information is exacerbated in global information management, especially in global electronic commerce. While globalization is presenting new opportunities for people and businesses worldwide, several challenges must be addressed in order to realize its full potential. Examples of these challenges include differences in culture and language, which can be an obstacle to unrestricted and free access of information, as well as the disorganization of the potentially precious knowledge asset. While language technology (Nirenburg, 1992; Onyshkevych and Nirenburg, 1995; Sheremetyeva and Nirenburg, 1996) is making rapid progress, much research is needed in managing and accessing multilingual information in order to reach full potential of global electronic commerce (e.g., Malhotra 1997, 1998).

The purpose of this research is to further the knowledge required for building information systems that operate in multiple languages. Specifically, we focus on studying user behavior in performing various tasks in a multilingual system. In order to study user behavior and performance in a multilingual electronic commerce setting, we have designed a bilingual electronic catalog which can be used by on-line retailers for selling products and/or services to customers interacting either in English or Chinese.

An electronic catalog is a graphical user interface that presents product and/or service information to users, typically using the World Wide Web. An electronic catalog is a key component of electronic commerce that has been used for business-to-consumer commerce as well as business-to-business commerce (Adam et al. 1998). Although the term electronic catalog might sound like an electronic extension of paper catalogs, it offers features that are far beyond those found in paper catalogs. Such features include computational services such as efficient browsing and searching, online order processing such as checking out products

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