Chapter XIX
Collecting Consumer Behavior Data with WLAN

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ABSTRACT

Knowing consumers' shopping paths is an essential part of successful retailing. Good space management requires accurate data about consumer behavior. Traditionally, these data have been collected through, for example, panel interviews, camera tracking, and in-store observation. Their nature is more or less subjective. Modern technology makes it possible to use more objective methods, such as wireless local area network (WLAN) and radio frequency identification (RFID). In this article we examine the possibilities WLAN provides information systems studies. The empirical data is collected from a large DIY (do-it-yourself) store. The results show that WLAN has great potential for accurate and objective data collection processes and modeling data in retailing.

INTRODUCTION

Most of the customer's in-store behavior is made in an unconscious state. Because of this, the customers are afterward unable to explain their purchase decisions in more detail. Most of the purchase decisions are made inside a store. The challenge of the retail business is to create an environment where the customer has a bilateral relation with the store, to optimize the customer's use of time, and to offer a buying experience that the consumer wants to renew later (Soars, 2003). The pleasure produced by the store environment is a significant reason for the extra time used by the consumer inside the store. In fact, in these occasions consumers spend more money than intended (Donovan, Rossiter, Marcoolyn, & Nesdale, 1994).

The purchasing behavior of a customer inside the store has been studied for several dozens of years. Various studies have been made on unplanned buying, store and product types, the demographic features of the consumer profiles, and the effect of the internal campaigns of the store. Also, the data-processing and decision-making processes, which take place in the store, have been researched. For example, Park, Iyer, and Smith (1989) studied how the time customer spends and his/her earlier knowledge of the store can affect the making of unplanned purchases. These can appear as failure in the making of planned purchases and changes in other purchasing behavior.

Consumers' buying behavior has been studied with in-store videos and interviews (Underhill, 1999). However, according to Larson, Bradlow, and Fader (2005), the results of these studies are limited to general recommendations, which only increase the convenience of the customers. Only a few studies, which contain really large data sets, have been conducted on the customers' complete shopping paths so far. This has not been possible earlier with traditional data collecting methods (Larson et al.; Sorensen, 2003).

From the retailers' point of view, space management is a significant factor in a successful store (Soars, 2003). A good store is one where the largest possible amount of products is in the sight of the largest possible amount of customers as long as possible. Also, the placement of the products must be realistic concerning logistic issues. As Underhill (1999) states, a good store is the kind where the products are placed along the customers' routes and sight in a way that makes the customer consider buying. Still, how can the retailer know where their customers really walk and spend their time?

The purpose of this study is to explore how information about customer traffic can be collected from a large DIY (do-it-yourself) store with the help of modern technology and how the collected data can be analyzed. The main focus is on collecting customer traffic data with the help of WLAN (wireless local area network) and analyzing them with different models using geographical information systems (GIS). A similar study has not been done before within the DIY context and Scandinavian service industry. Therefore, this study contributes to different practical solutions but also to theoretical discussion.

The empirical data of the study have been collected in a large, modern DIY unit located in Scandinavia. The store belongs to a large DIY chain. The study has been limited to concern the store in question and its customers in August 2006.

LITERATURE REVIEW

The consumer buying behavior process inside the store has been studied for several dozens of years. There have been attempts to research it in many different ways. For example, Köhne, Totz, and Wehmeyer (2005) use conjoint analysis, a classical technique, to identify consumer preferences in multi-attribute decision making for designing a new context in sensitive services. They evaluate consumer behavior by using a fictitious example of location-based services in a touristic setting.

In this article, four different data collecting methods are briefly discussed: WLAN, radio frequency identification (RFID), camera tracking, and in-store observation. These methods can also be combined. Another possible technique for collecting data on consumer behavior in the store is interviewing the customers as they leave. This kind of memory-based technique can lead to high inaccuracy in the results. However, this technique makes it possible to collect a very inclusive picture of the customers' shopping experience (Phillips & Bradshaw, 1991). This collecting method is not studied in this article as it clearly deviates from the other methods. Also, Bluetooth technology can be mentioned as a method for collecting consumer behavior data.