Discovering shoppers' journey in retail environment by using RFID

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Abstract: Understanding the customers' needs is becoming more and more important in retail as it may provide valuable information that can be used to improve customer's shopping experience and product sales. Knowing about customers' behaviour within the store can provide information for improving customer relationship management and including real-time capabilities. This paper presents an experimental system for shopping path tracking and analysis that uses RFID for positioning shopping baskets. The collected data is used for determining customer presence and movement through a store, as well as time spent in specific store segments. The field trial of the proposed system in a real store is presented.

Keywords: Shopping journey, customer tracking, RFID

1. Introduction

Increasing business demands in the retail sector of fast-moving consumer goods places challenges on how to increase the level of consumer satisfaction, especially within large stores. Is it suitable to apply the same, standardized, retail layout across all geographic regions? Do customers really have the same habits regardless of geographical areas they live in? Do we even know exactly how much time the customer spends within the sales area, what are his or her interests in certain categories of goods, and similar? It is difficult to measure the sale potential of certain goods if it is not known how many customers have decided not to purchase a product due to the lack of information, ignorance, unavailability of qualified staff or something else.

For example, consider a customer who spends above average time in one visit to the store, differing from his or her usual time per visit. It may be that the customer noticed a new model of an LCD TV in the technical equipment department and he or she is spending more time there in order to get more information about the product. However, the customer finally leaves the store without actually buying the television. If the store management had the ability to measure and visualize customer movement and observe the time spent in the department, it would enable them to detect that the