



Expanding the Wireless Playing Field in In-Store Location Systems

By Luc Darmon — February 03, 2015

In the past few years there has been a lot of buzz surrounding "interactive shopping carts," in which devices are attached to shopping carts that give customers interactive services as they shop. These devices, bigger than a smartphone and attached in an easy-to-read position on the handle of a shopping cart, can offer better user experiences than smaller smartphone devices that are kept in customers' pockets.

Devices attached to shopping carts are not new. Almost ten years ago companies tried attaching devices with barcode scanners to carts, such as the Fujitsu U-Scan device (pictured right), enabling customers to scan items as they shopped. More recently Klever Marketing rolled out their KleverKarts, and just this year Hellman's entered the fray in Brazil.

One of the features that is often discussed for cart-mounted devices is tracking customer locations. The idea is very straightforward - showing where the customer is on a map on the device, on a screen that is big enough to show the store clearly, can enable users to find directions to particular products, receive promotions for nearby products, and at the same time support back-end analytics telling the store how customers walk around and where they dwell.

In the past year or so, many mobile applications have launched that aim to deliver this sort of in-store location-based service on customer smartphones. This enables more personalization, since the app is customized for the particular user and can maintain customer shopping lists, preferences, and so on.

There is, however, a big advantage to offering retail services on cart-mounted devices. While smartphone applications can typically only track locations indoors (where GPS doesn't work) to an accuracy of three to eight meters or more, customized devices can use more powerful technologies, such as ultra-wideband (UWB), to track locations much more accurately, to within 10 centimeters.

To understand the difference that high accuracy can make for a shopping application, consider the difference between five meter accuracy and 10 centimeter accuracy. If a smartphone can track location indoors to within five meters, the mobile app cannot be sure of whether the customer is walking along the right side of aisle four or the left side of aisle five. Even if the app knows which aisle the customer is in, five meters is not accurate enough to know which side of the aisle the customer is on or if the customer is in front of the high-end wine or the cheap beer.

With 10 centimeter accuracy, however, the app can know exactly which product (or at least which shelf of products) the customer is facing. In most stores this means distinguishing between the beer and the wine or the pasta and the rice.

The difference between indoor location tracking on smartphones and on dedicated devices isn't only one of accuracy. Many application developers have been frustrated with mobile location systems taking up to 20 seconds to know when the smartphone has reached a new location. With dedicated UWB technology, however, a cart-mounted device can track its location accurately and immediately.

If a store feels strongly about offering personalized mobile services within the store, a cart-mounted device, with its big screen and accurate location tracking, can interact with the customer's smartphone to personalize the experience. All the customer has to do is let their smartphone tell the cart who they are, and the cart can offer as personalized a service as a smartphone.

Today's mobile generation wants mobile applications to accompany them in all of their activities. With bigger screens, easy accessibility while walking, and pinpoint location tracking, cart-mounted devices have the potential to offer the kinds of retail services that stores dream of offering their customers.