Opinion piece: How Micro-Location, Geofencing and Indoor Location Are Driving The Retail Revolution

By Christian Carle, CEO and Co-founder of Pole Star

Indoor Location has become the holy grail of location based-marketing, bringing consumers from their home to the closest shopping mall or retailer, greeting them with a message as they enter the mall or the store, helping them navigate indoors, send product information and special promotions as they get closer, and finally allow them to pay for the items right from their mobile.

With the hype surrounding the launch of iBeacon in the Apple retail stores, proximity sensors, also called proximity detection devices or micro-location, increasingly feels like a revolution.

Since Apple launched iBeacon with the release of iOS 7 earlier this year, and Google finally upgrading Android to include Bluetooth Low Energy (BLE), the entire retail world is now excited by the opportunity of deploying BLE beacons to develop new retail services and create additional revenue sources.

As a consequence, the market is now flooded by tons of startups with BLE beacon prototypes, compatible or not with Apple's iBeacon specifications - nobody knows, actually - with each making the promise that deploying beacons will solve the main problem brick and mortars are facing (in their competition with e-commerce sites), creating a direct link with the end user who will tend to spend more money when they are in the retail store and not when they come back to the competitors web sites!

Capitalizing on the huge interest generated by these announcements, we now see many self-declared "domain experts" releasing reports identifying the growing number of startups announcing these next-generation beacons, that look much better - on paper - than those of established Indoor location experts but are limited in features and untested in the field.

A situation that makes it very hard for venue owners, retailers, shopping mall operators, etc., to get an overall picture of this mega trend, and decipher what is true from what is not.

Evolution or revolution?

Indoor location is definitively a key feature with immense value. Massive adoption is on the way and the market finally reached maturity, which is typical of mainstream adoption: established business models, clear competitive landscape, and consolidations …

Customers are not early adopters anymore and decisions are now driven by added value considerations. Improved end user experience (which is a critical issue for most venue owners in particular in their battle against e-tailers) and identified tangible ROIs are key drivers for the Indoor location market.

The maturity of the indoor location market is already impressive, simply by looking at requests coming every day from retail stores, shopping mall owners, department store manager, large airports, train stations, convention and exhibition centers, smart buildings…

In other words, the technology works. Which is why it's crucial for technology providers to set the right expectations, especially with the recent rise of point solutions that are very limited, both in functionalities and evolution. The key added value of an indoor location service is not in the Beacon itself but in the software intelligence that only Indoor location experts can bring to third parties, with easy to use deployment tools and an end-to-end platform.

For example, to make sure a user is inside an area or a shop in order to credit her with loyalty points, simple micro-location is simply not good enough. It lacks the additional intelligence to aggregate all the location data available (GPS, 3/4G, WiFi…) and provide the right location information in real-time. The main risk with unreliable systems is to alert users in a wrong area, flood them with irrelevant offers or discounts and at the end drive the interaction with the user completely inefficient.

Aside from the magic, the success of Indoor location can be attributed to 3 key levels of service:

- Indoor Location, like an indoor GPS, helps users find their way, with step by step navigation, offers the ability to discover the surroundings, can optimize their visit, locate their friends and colleagues, insure their security, and provide behavioral analytics to merchants on visitors' paths.
- Micro-location allows travelers, visitors and shoppers to interact with a specific item, a product on a shelf, an art piece…The presence of the consumer is only identified when they are close to a BLE 4.0 beacon and lost when she's far from it.
- Geofencing adds to the 2 previous approaches by bringing smart and reliable interaction. It acts as a virtual and invisible fence to send specific information when users enter or leave a specific area or venue. Geomarketing or loyalty-oriented interactions with context awareness are among the most common use cases.

Many new use cases are being developed for more personal use and these applications include in-storewalk-in detection, a partner or customer location during a show, guidance until the right gate with path time in an airport….

Another huge value these technologies bring to retail is to allow venue owners like retailers or shopping mall operators to track, in real-time, consumer behaviors to improve customer service and boost sales.

While knowing that someone is entering into a shop is interesting in itself, it still remains a very poor data compared to what a supplier of a holistic Indoor Location solution, like Pole Star, can offer today with a unique set of technologies and services, covering a large spectrum of use cases to lead the visitor in a personalized way.

In another example, in large buildings, the paths consumers use provide valuable insight into their behavior and interplay at different point of presences, and help the venue owner to optimize its venue and its overall sales and marketing strategy. Within a department store or a supermarket knowing the paths of shoppers throughout the venue will definitely help drive a more personalized user experience and improved customer relationships, as well as mobile context-aware advertising.

Which is why it doesn't make sense to consider micro-location as a standalone solution solving the complex requirements and use cases of Indoor location. Although micro-location is an important piece of the entire Indoor location value chain, the only solution to maximize the value for a venue owner is to be able to follow consumer behavior from their initial shopping intent, far before the final interaction at the point of presence.

The success in realizing the full value of Indoor Location, comes first by attracting people in the building, or the shop then assist and guide them according to what they intend to do. Similar to what the Google search engine does online, but in the physical world, Indoor Location is the only technology able to suggest user interactions, based on their geolocation in a particular area or close to a specific object or shelves.

This is no revolution. The technology exists and has been already deployed and used in many indoor locations (shopping malls, airports, museums…). The new ability brought by Apple with iBeacon is to wake-up the application when a BLE beacon is close from the user iPhone in order to engage with customers even if the app was not initially opened. However the big topic now is how to motivate end-user to download the venue or brand generic application? Innovation has to happen now in the service to consumers, with killer applications that satisfy both consumers and venue owners, and in how location data can be used to analyze users' indoor behaviors i.e. Big Data.

A global and holistic view of Indoor Location – not just micro-location - is essential to maximize the value of what it can bring to consumers, retailers and the society as a whole, as well as guarantee the satisfaction of venue owners.

About Pole Star

Pole Star, created in 2002 and based in Europe (France -Toulouse & Paris) and the United States (Palo Alto, California), is the pioneer and world leader in indoor location. Pole Star mission is to deliver high performance, scalable and long lasting quality of service to venue owners or mobile solution providers anywhere in the world. With over 64 million square feet covered by NAO Campus in 20 countries, Pole Star already has an impressive customer portfolio including airports, malls, department stores, convention centers and museums along with an extensive, trusted partner network. Pole Star solution includes a set of software tools allowing partners to offer a complete range of location based end-to-end solutions on a multi venue basis, integrating Pole Star's flagship product, NAO Campus.

For more information about Pole Star and its products, please visit: www.polestar.eu or www.polestarusa.com.

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In 2012, Gartner ranked Pole Star as one of the most promising companies in the indoor location market ("Competitive Landscape: Indoor Positioning Technologies", Annette Zimmerman, November 8th 2012)

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