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Beyond beacons: How retailers can understand the customer journey

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Luca Criscuolo is head of mobile and Web product at Retale

By Luca Criscuolo

Beacon technology is touted as the long-sought way for retailers to connect the dots of the customer journey from mobile browsing and online shopping to the FMOT, or First Moment of Truth, when a shopper picks a product from the retail shelf.

And it is not just hype. An estimated 4.5 million beacons are projected to be in active use by 2018. Retailers are set to invest more than $2.5 billion on Internet of Things technology. Much of that will be allocated to beacons, so the future of the technology looks bright.

But beacons alone will not shine a light on the full customer experience picture, from mobile to in-store. The technology is still limited and may prove difficult to scale.

Here are some ways for retailers to overcome these challenges to connect the dots to understand their customers better.

Bluetooth offers location accuracy, but drawbacks are clear
Beacons are unparalleled when it comes to precision of location data, but they depend on Bluetooth technology, which means that the user must have Bluetooth activated, with location sharing enabled.

Also, Bluetooth technology impacts battery life, especially when connected to beacons.

Even though the current generation of Bluetooth Low Energy devices (BLE) is much more efficient than the previous, a recent study by AisleLabs showed that an iPhone 5S connected to only one single beacon will use almost 6 percent of a battery's power per hour. This might seem like a tiny amount, but in a world where 33 percent of consumers are looking for improved battery life, any app that guzzles power and does not present an improved experience is at risk of being turned off or overlooked.

Scaling Bluetooth requires investment
While buying and installing a few Bluetooth devices in a single shop is easy, building and maintaining a network in a hundred stores around the country is a completely different story.

To make matters more challenging, retailers who embrace beacons are faced with an important decision: whether to build their own Bluetooth infrastructure or join an already existing one.

Each has its own set of complications and benefits.

Building infrastructure requires a significant commitment. One must select the right BLE hardware, set it up and

install devices in hundreds of locations, and bear the costs of monitoring and maintaining the entire network.

While this is costlier route, the advantages are clear. Retailers who build their own infrastructure will have direct access to their own data. They might also choose to outsource certain aspects of the construction to cut costs in a best-of-both worlds scenario.

Joining an existing network has its own advantages. It will almost certainly save on setup time and cost.

Moreover, by tapping into one of these networks, retailers can attract and engage new users through a variety of independent apps within it, creating a wider dataset and a fuller picture of a customer's digital and in-store journey from beginning to end.

But information that depends on indirect sources instead of a retailer's own application or site is likely to be less reliable than first-party data.

Furthermore, its quality rests on how users engage within network of apps. The result may be a spotty or piecemeal picture of customer behavior. More data is not always better data.

User friction limits insights
But the greatest operational issue around beacons is likely to be what they require from the user.

Beyond downloading the app, the customer must opt in to the beacon campaign and engage with the app. It is only through that engagement by the shopper, like the creation of shopping lists, that brands can gain the insight needed for the most effective offers and ads.

Although beacons are seeing high adoption rates among certain consumer segments such as millennials, many older shoppers balk at what they see as the intrusiveness of the technology.

According to the USC Annenberg Center, 56 percent of millennials are willing to opt in and share information with retailers, while only 42 percent of consumers 35 and older would do the same.

These limitations don't mean that beacon technology will not continue to flourish. Rather, it implies that a combination of emerging technologies work together to help retailers serve customers and market appropriately.

Geofencing boosts beacon technology
Investment in geofencing is set to hit $300 million by 2017, and it is easy to see why.

For a retailer, a beacon without geofencing is like a television program with commercial breaks but no ads. It is simply a missed opportunity.

Geofencing technology lets retailers build local fences so that customers are engaged with a notification, reminder or deal when they step into the right area.

As a software technology, geofencing requires no hardware setup and is relatively easy to embed in mobile apps. This makes it even more attractive as an added resource.

Geofencing does have limitations. It relies mainly on the GPS receiver, which is influenced by the geometry of the surrounding objects and can therefore be unreliable. For example, high buildings can create signal distortions that generate errors in the position.

However, when overlaid with beacon technology, geofencing gives a far more complete view of customer behavior. Beacons offer precision, while geofences can give context around engagement.

The expansion of geofencing data to detect store visits could validate it as a secret weapon to generate an extraordinarily useful image of the cross-channel customer journey.

Given the simplicity of the implementation and efficiency of interaction, this hybrid approach is a promising avenue worthy of further exploration.

Cross matching
There are yet more sophisticated ways to gain insights from disparate data about customer behavior, both online and in-store.

For example, complex matching algorithms can be applied to ad impressions, time stamps, location data and other user data, enabling retailers to extrapolate and act upon store visit information. But doing so requires an investment in data science and may be outside the scope of a given retailer's operational business.

THE BOTTOM LINE is that there is no one ideal way to achieve a full and transparent look at how customers interact online and in-store.

According to IDG's recent Enterprise Study, "83 percent of organizations are prioritizing structured data initiatives as critical or high priority in 2015."

So look for retailers to go beyond beacons to invest more deeply into data science and emerging technologies, and to use multiple data sources mobile, Web, beacons and ad engagement to better allocate marketing budgets and, above all, to better serve customers both in-store and online.

Luca Criscuolo is head of mobile and Web product at Retale, a location-based mobile and digital company.