

# The Emergence Of Beacons In Retail

by Adam Silverman, March 12, 2014

## KEY TAKEAWAYS

### **Bluetooth Low Energy Is Powering The Next Generation Of In-Store Location Services**

BLE-powered beacons are becoming the de facto standard for location-based services in stores. Most smartphones sold today contain the appropriate hardware and software needed to leverage this energy-sipping location technology.

### **The Benefits Of Beacon Technology Go Far Beyond Push Notifications**

Use cases such as marketing attribution, authentication, and enhanced service in-store are on the horizon and may offer greater value to retailers than simply sending push notifications to customers in-store.

### **Implementing A Scalable Beacon Solution Requires Robust Technology**

Although small beacon deployments can be effectively managed without enterprise commerce technology, eBusiness leaders who wish to deploy beacons across the enterprise will need to leverage campaign management, device management, and customer relationship management (CRM) systems.



## The Emergence Of Beacons In Retail

Early Implementations Lack Depth, But Future Integrations Have The Potential To Transform The In-Store Customer Experience

by [Adam Silverman](#)

with [Zia Daniell Wigder](#), [Peter Sheldon](#), [Tony Costa](#), and [Rebecca Katz](#)

### WHY READ THIS REPORT

It is impossible to read retail news today without hearing about another implementation of beacons, a technology based on Bluetooth low energy (BLE) that allows smartphones to interact with sensors embedded within physical locations. For consumers, beacon technology allows for enhanced experiences that are contextual based on location. For retailers, beacons unlock additional customer insight and targeting capabilities that drive both revenue and improved service. However, surrounding the hype is a lack of clarity on consumer benefits, the business case, and the work needed to deploy and maintain a beacon platform in-store. This report aims to provide eBusiness leaders with an understanding of beacon technology and how beacon-based location services within brick-and-mortar stores will transform the customer experience.

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### Notes & Resources

Forrester interviewed 16 vendors, including Branding Brand, InMotion, Motorola Solutions, PayPal, shopkick, and Swirl Networks.

### Related Research Documents

[You Are Here: Location Analytics And The Rebirth Of Customer Experience](#)  
February 11, 2014

[A New Generation Of Clienteling](#)  
November 4, 2013

[Next In Tech: Indoor Positioning](#)  
January 23, 2013

[The Always Addressable Customer](#)  
September 26, 2012

[The Digitization Of The In-Store Experience](#)  
February 7, 2012

## LEVERAGE BEACON TECHNOLOGY TO ENHANCE ENGAGEMENT AND SERVICE

Today, beacon technology offers a low-cost and widely adopted method for smartphones to interact with other Bluetooth low energy devices, such as other smartphones, and dedicated beacon transmitters within the physical store.<sup>1</sup> These interactions provide customers with rich product information based on the location where they are standing, allowing for relevant and contextual content to be delivered right to their digital device. In addition to providing content, beacons can validate a customer's location when authenticating a payment in-store, enabling frictionless payment without the need to swipe a credit card. Retailers' reluctance to develop mobile location capabilities based on existing technologies such as near field communication (NFC) has waned, and with BLE, adoption of a standard and effective location technology is finally here.

To determine the right deployment of beacon technology, eBusiness professionals must understand the benefits and requirements of the technology in order to execute in-store campaigns that meet the needs of customers. For example, eBusiness leaders must understand that:

- **Beacon's BLE technology streamlines communication between mobile devices.** Unlike classic Bluetooth, BLE technology doesn't require a complex pairing process and doesn't require a significant amount of power to create a connection between devices. Streamlining the connection between mobile devices enables customers to interact with retailers and brands digitally and with little effort, increasing engagement and convenience.
- **The right hardware and software are required to leverage beacons.** Beacons require hardware and software that can communicate using BLE to send and receive beacon signals. iPhone hardware has had BLE capabilities embedded in the chipset since the iPhone 4s release, and Apple has incorporated the ability to communicate with this BLE hardware into iOS 5, and communicate using the iBeacon protocol since iOS 7.<sup>2</sup> Devices running the Android operating system are also able to communicate via BLE starting with the launch of the Android 4.3 operating system.<sup>3</sup> Currently 30% of US smartphones are enabled to connect to beacons using BLE. This number is expected to grow to 80% in the next 18 months as older phones are traded in for more modern smartphones (see Figure 1).<sup>4</sup>
- **Deployment of BLE-enabled mobile apps can be sped up by using the iBeacon protocol.** iBeacon is simply a BLE protocol developed by Apple to help streamline the development of indoor location capabilities within mobile applications. This protocol enables mobile devices and hardware that are BLE-enabled to speak the same language as mobile applications that leverage BLE. Having this protocol established helps developers accelerate creation of mobile applications that leverage beacons, allowing new functionality to be released more quickly. In addition, the iBeacon protocol is used to leverage some of the location functions found within the iPhone, such as waking up an application when the phone nears a beacon (see Figure 2). Although iBeacon refers to a specific BLE protocol, industry press and even BLE vendors

use the term iBeacon incorrectly to represent the entire concept of BLE location technology. Nonetheless, iBeacon has become a rapidly growing term used within the commerce technology space (see Figure 3).

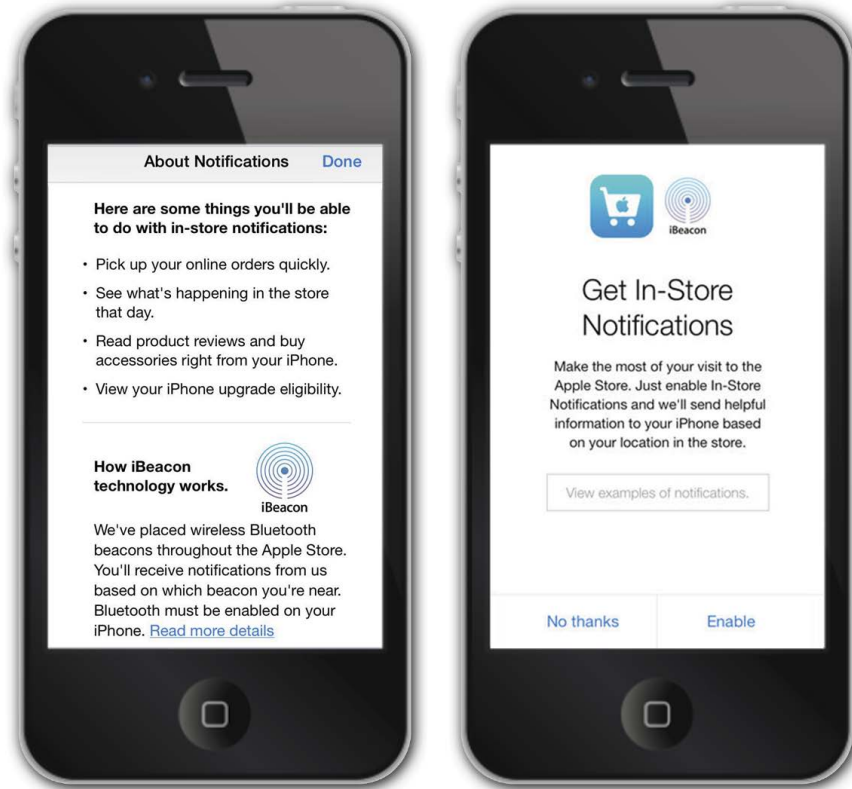
**Figure 1** Devices Equipped With Bluetooth Low Energy Are Rapidly Growing In Number

	<b>Windows Phone</b>	<b>Android</b>	<b>Apple</b>	<b>BlackBerry</b>
Devices	Nokia Lumia (520, 525, 620, 625, 820, 920, 925, 928, 1020, 1320, 1520)	<ul style="list-style-type: none"> <li>• Asus (Nexus 7)</li> <li>• Casio (G'zOne Commando 4G LTE)</li> <li>• HTC (One, One mini, One max, Desire 300, Desire 601, Desire 500, Desire X, Butterfly s)</li> <li>• LG (Nexus 4, Nexus 5, Optimus G, 4X, G2 and up)</li> <li>• Motorola Moto X and Moto G</li> <li>• Sony (Xperia V, Xperia Z, Xperia SP, Xperia L, Xperia M, Xperia Z Ultra, Xperia Z1, Xperia C)</li> <li>• Samsung (Galaxy S3, S3 Mini, Galaxy S4, S4 Mini, Galaxy Gear, Note 2 and Note 3)</li> </ul>	<ul style="list-style-type: none"> <li>• iPhone 4s, iPhone 5, iPhone 5c, iPhone 5s</li> <li>• iPad (third generation) and later</li> <li>• iPad Mini (first generation) and later</li> <li>• iPod touch (fifth generation)</li> </ul>	<ul style="list-style-type: none"> <li>• BlackBerry Z10</li> <li>• BlackBerry Q10</li> <li>• BlackBerry Q5</li> <li>• BlackBerry Z30</li> </ul>
Operating systems	Windows Phone 8	Android 4.3 and later	iOS 5 and later for Bluetooth low energy; iOS 7 for iBeacon	BlackBerry 10

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Source: Forrester Research, Inc.

*Figure 2* Apple Has Embedded Beacon Technology Into Its Hardware And Software

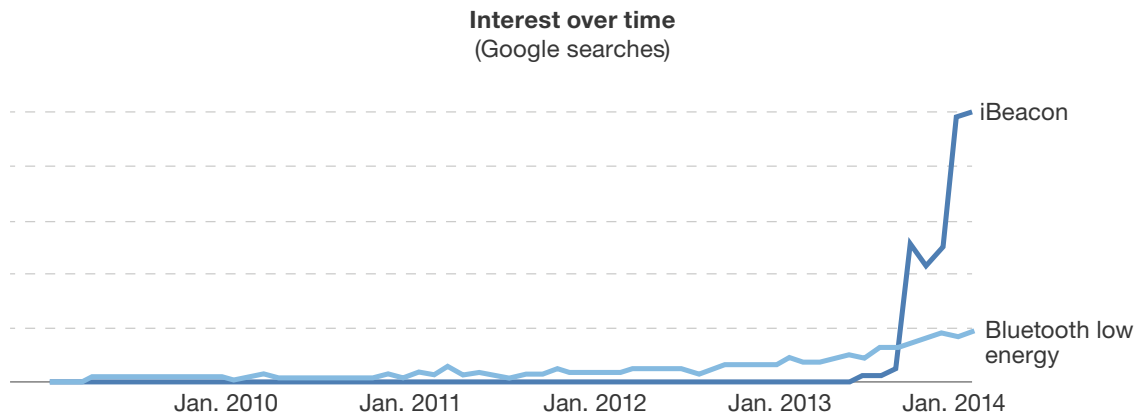


Source: Apple website

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Source: Forrester Research, Inc.

**Figure 3** Interest In iBeacon Is Growing Rapidly



Note: Values represent trend of search term and do not show absolute search term traffic.

Source: Google Trends website

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Source: Forrester Research, Inc.

## IMPLEMENT BEACON SOLUTIONS THAT GO BEYOND PUSH NOTIFICATIONS

A popular use case cited by vendors implementing beacon technology is the ability to push offers to consumers as they near certain products. However, push notifications are not the only example of how beacons add value. Beacon technology can add value when retailers:

- **Improve the quality of service delivery and experience by enabling customers as beacons.** Most use cases today highlight the customer's mobile device as a receiver of beacon signals. However, mobile devices can also act as a transmitter, communicating with other customers or associates with mobile devices who are nearby. When consumers begin to broadcast their location using beacons, retailers and other industries can respond with enhanced services. For instance, a customer in a store can request assistance from within the retailer's branded mobile application, and an associate can locate the customer based on the beacon signal being sent from the customer's smartphone. In hospitality, beacons can eliminate the need for hotel check-in by programmatically checking in visitors as they enter the hotel. In fact, Starwood Hotels & Resorts is currently implementing beacon technology to allow guests to securely open a room door with their smartphone.<sup>5</sup> In this scenario, a guest simply has to open the hotel's mobile application and walk straight to his or her room, creating convenience and saving time.
- **Provide mapping and directions to guide customers through the store.** A promising use case for BLE and beacon technology is enabling robust in-store navigation. By understanding a shopper's location within the store, retailers can provide clear turn-by-turn directions to the

products that customers are looking for and augment existing implementations of static store maps. However, this use case may only be appropriate in larger-format stores with aisle layouts, multiple floors, and a large product assortment.

- **Leverage analytics to refine store layouts.** Retailers can leverage location data from beacons to generate insight and analytics on customer behavior in-store. This insight can lead to improvements in store layout or associate engagement techniques that drive higher conversion rate. For instance, retailers can calculate the conversion rate of departments within their store by comparing both the traffic and sales from a specific department. Retailers can then adjust the depth or breadth of the assortment as well as the floor layout to improve conversions and drive incremental revenue in the store.
- **Implement location technology to improve authentication and secure transactions.** Beacons placed near the register can interact with a customer's mobile device, confirming the shopper's identity to the cashier. An example of this technology being piloted today is the PayPal Beacon.<sup>6</sup> Customers who have checked into a store using the PayPal application are essentially notifying the retailer that they have entered the store. When checking out, the PayPal Beacon attached to the register interacts with the PayPal application on the customer's smartphone and confirms the identity of the customer. The cashier simply collects payment from the customer's PayPal account, and the customer can leave the store without pulling out a credit card.
- **Enable mobile marketing attribution, creating additional value for marketers.** One of the biggest challenges in the advertising industry is connecting the dots between smartphone ads and in-store purchases. Beacons present a solution to this conundrum. Companies like Branding Brand offer a mobile commerce platform that also offers capabilities to manage beacons.<sup>7</sup> By having both solutions managed by a similar set of software, it is possible to close the loop and connect a mobile ad to an in-store visit. For instance, clicking on a mobile advertisement allows a mobile commerce platform to understand the source of click. Once in the store, the same mobile commerce platform can capture a customer's location based on proximity to a beacon. Coupling this data can create insight into the effectiveness of mobile marketing campaigns.
- **Create new revenue streams at the shelf.** Shelfbucks' in-store mobile marketing platform allows consumer packaged goods (CPG) companies to deliver coupons to customers standing in front of specific shelves. To determine which coupon is offered, CPG companies bid on the opportunity to display their coupon in the aisle using the Shelfbucks platform, thus creating a new revenue stream for both the retailer and the in-store marketing platform.<sup>8</sup>

## DEPLOYING AND OPERATING BEACONS REQUIRES SOME HEAVY LIFTING

Measuring the volume of media mentions of beacons, BLE, and iBeacon, it might seem that this technology has no downside. Although the technology represents a new frontier in location capabilities, successfully deploying beacons requires that:

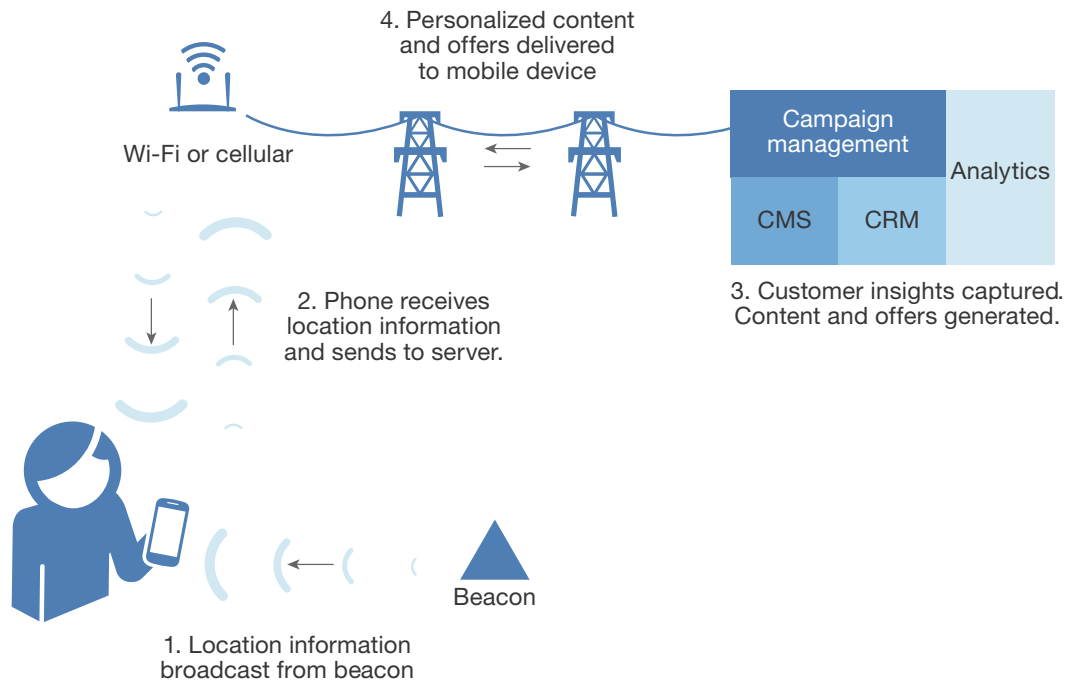
- **Customers enable Bluetooth on their smartphones.** Even if a customer's smartphone contains the appropriate hardware and software, Bluetooth must be enabled on the device in order for communication to occur between beacons and mobile applications. Privacy fears or a desire to save battery life often cause smartphone users to disable Bluetooth. Retailers should offset this barrier by messaging the benefits of enabling Bluetooth as customers shop retail stores.
- **Beacons interact with mobile applications.** In order to pair a beacon transmitter with a beacon receiver, an app must be installed on the customer's phone that will interact with the BLE hardware within the device. This means that customers must have a mobile application installed and running for their smartphone to interact with beacons. The benefit of this requirement is that retailers are able to identify the customer who is interacting with a beacon and can therefore provide personalized and relevant content to that customer. The drawback of targeting only those customers who have installed the retailer's branded mobile application is that capabilities such as in-store analytics will only be able to generate insight from a select few customers and may not reveal a broad enough picture of overall customer behavior in-store.
- **Campaign management and CRM systems deliver relevant experiences.** Since beacons predominantly transmit only basic location information, it is up to a campaign management system to understand the customer's location and to couple this information with customer data to trigger relevant and contextual content, offers, and services (see Figure 4). Without a campaign management system, beacons are unable to leverage CRM data and therefore cannot provide customer contextual experiences.
- **Device management is employed to maintain the health of beacons.** One of the main benefits of beacon hardware is the relatively low cost compared to other location devices such as radio frequency identification (RFID) or Wi-Fi. Due to the low cost, retailers are able to deploy many beacons in each location, but the numbers can add up: A national retailer with 500 stores and 20 beacons per store would have to actively manage the battery health and location of 10,000 beacons! Some beacon vendors such as GPSshopper enable beacon management with a proprietary platform to help them maintain oversight of the growing number of beacons many retailers are deploying.<sup>9</sup> For retailers and eBusiness leaders who are considering deploying beacon technology throughout the enterprise, beacon device management is a must-have feature.
- **In-store Wi-Fi or LTE connection is available to deliver content.** Although beacons communicate with mobile applications and devices via BLE, robust Wi-Fi or cellular connectivity is required to deliver the appropriate content from the content or campaign



management server. This requirement is needed since beacon communication packets can only be 47 bytes in length. Therefore, the role of the beacon is to pass basic location information to the mobile application, and it is the role of the mobile application to interface with enterprise services to determine the appropriate content to display based on the location. For retailers such as Macy's and Target that have invested in guest Wi-Fi, being able to serve rich content to customers near beacons will augment their business case for Wi-Fi.<sup>10</sup> For companies like JCPenney that opted to remove guest Wi-Fi or currently don't offer guest Wi-Fi, enabling beacon technology to enhance the customer experience and improve store operations will be limited to serving content that already exists on the customer's device or delivering content over a cellular connection.<sup>11</sup> This limitation may prevent robust personalization or real-time offers based on a customer's profile if connectivity is not available within the retail store.

- **Consumers allow the sharing of location information.** Recent deployments of in-store location technology have created heightened awareness of privacy issues surrounding location technology. Most notably, Nordstrom had to scuttle its in-store analytics pilot in 2013 due to backlash from shoppers who were not aware that the retailer was tracking their activity covertly.<sup>12</sup> Similar reactions occurred back in the '90s when cookie tracking was first introduced, but over time, consumers have accepted the practice due to the enhanced services offered such as retaining items in a shopping cart. As consumers learn the benefits of location-based services, and as retailers evolve location services to provide greater value and convenience, acceptance of location tracking will increase.
- **A dedicated staff is accountable to make it all work.** In order to set up and maintain beacon campaigns as well as monitor and maintain the health of the physical beacons, retailers need to carve out dedicated staff to operate a beacon initiative. For instance, creating segmentation and content rules to be triggered by proximity to a beacon requires an eBusiness team member to configure and deploy these mobile campaigns. Since mobile strategy is often the domain of the eBusiness leader, it is commonplace for eBusiness teams to also manage the deployment and operation of beacon campaigns.
- **Security is in place to prevent spoofing.** Apple's iBeacon protocol does not inherently provide security or encryption to mask the data being transmitted from the beacon, since it is designed to be an open standard. This means that retailers that deploy iBeacon platforms are susceptible to "free riding," a term used to describe the emulation of a beacon signal to show a competitor's ad. To address this security issue, beacon vendors are creating their own BLE protocols with encryption designed to mitigate security issues.

**Figure 4** Beacons Require Connectivity To Back-End Systems



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Source: Forrester Research, Inc.

### BEACON DEPLOYMENTS ARE EARLY STAGE BUT INCREASING RAPIDLY

Retailers and vendors alike are leveraging higher mobile adoption, deploying pilots designed to showcase beacon technology while seeking to build a solid business case for future deployment. Of US online consumers who access the Internet through their mobile phone, 61% do so in store (while shopping).<sup>13</sup> The following are a few examples of companies leading the pack in beacon deployment:

- **Apple stores deploy beacons to provide product content and gain customer insights.** In March 2013, Apple deployed a chainwide implementation of beacon technology leveraging the iBeacon protocol within its stores. Beacons are enabled near the accessory wall as well as near select devices such as the iPhone 5c. As the customer approaches these beacons with the Apple App Store mobile application installed and running, the beacon instructs the mobile app to present additional product information to the customer on his or her mobile device. Along with providing this additional product information, Apple disclosed that it is using beacons to track the in-store behavior of its customers.<sup>14</sup>

- **Shopkick employs beacons in Macy's and American Eagle to encourage mobile app usage.** Historically, mobile loyalty application shopkick leveraged ultrasound to determine a customer's location within a store. Without the shopkick mobile application actively running, the shopkick application was unable to hear the unique ultrasound code indicating that a customer was in the store, and therefore could not reward customers for visiting that store. Now, beacons can instruct customers through alerts on their home screen to open up the shopkick application even without the application actively running. This use case drives more customers to open up the shopkick application, creating greater engagement between shopkick and the customer.
- **InMarket rolls out beacons in supermarkets to provide product messages and offers.** A common use case for beacon technology is the display of offers while a customer is near specific products. This example is often used to drive awareness of a new product or to extend an offer to encourage a purchase. Recently, it was reported that inMarket, a mobile marketing platform provider, deployed beacons to over 200 Safeway and Giant Eagle grocery stores, allowing the beacons to interact with inMarket's suite of consumer mobile applications such as List Ease and CheckPoints.<sup>15</sup> This deployment establishes inMarket as a location platform for advertising, providing another media option for CPG companies within the grocery store.

### Results Are Positive, But Preliminary At Best

Even though the frequency of press mentions and pilots has increased dramatically, results from these pilots have not been widely published. However, during our research, Forrester has uncovered the following benefits:

- **Higher CPM rates.** In-store beacon ads garner much higher cost-per-thousand (CPM) rates than mobile banner ads, indicating the efficacy of these personalized ads in stores.<sup>16</sup>
- **Increased open rates on offers.** Both open rates and redemption rates for mobile coupons triggered by beacons have skyrocketed. Swirl, a beacon solution provider, highlighted that its pilots with major retailers yielded 75% open rates for mobile offers as well as 35% redemption rates for these offers.<sup>17</sup>

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## RECOMMENDATIONS

### BEACONS ARE TRANSFORMING THE IN-STORE EXPERIENCE

Beacon technology is significantly transforming the in-store experience, providing a level of context and service not practical with other location technology. The capabilities go far beyond the delivery of promotional offers, and eBusiness leaders have an opportunity to help transform the in-store experience by surfacing more meaningful beacon business cases and creating a road map for deployment. eBusiness leaders moving forward with a beacon deployment must:

- **Define the business case and customer experience upfront before deploying a beacon initiative.** Resist the urge to jump on the beacon bandwagon without a solid plan that focuses on the needs of customers rather than the need to deploy new technology. Leverage Forrester's POST methodology: a systematic, four-step method for building and launching digital engagement strategies.<sup>18</sup> POST stands for people, objectives, strategy, and technology. Leveraging this framework guides eBusiness leaders to understand the needs of store shoppers before defining strategies and deploying technologies that meet these customer needs.
- **Build the infrastructure needed to support beacon technology.** Creating a scalable and robust campaign requires many commerce systems to work in harmony. eBusiness leaders must ensure that campaign management, beacon management, and Internet connectivity at the store is in place. Leaders from marketing, store operations, eBusiness, and business technology need to come together to orchestrate the execution of these systems.
- **Leverage beacon platform vendors to create and deploy pilots.** Some vendors that offer beacon capabilities were born from mobile commerce platforms, giving them an advantage by offering a platform that can help with both campaign and beacon management. eBusiness leaders should employ a test-and-learn approach and leverage these vendors to establish a beacon infrastructure quickly and cost-effectively.
- **Deploy and manage beacon campaigns from within the eBusiness team.** Since beacon initiatives are deeply embedded into a mobile application strategy that tends to reside within eBusiness, the eBusiness team is often in charge of beacon campaigns. However, as retailers begin to connect enterprise marketing campaign management and CRM systems to a beacon infrastructure, marketers and store operations leaders will become a part of defining and executing beacon strategies. eBusiness leaders should begin to lead initial deployments while simultaneously educating the organization on benefits and challenges with beacon-based location marketing.

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## SUPPLEMENTAL MATERIAL

### Companies Interviewed For This Report

BestFit Mobile	GPS shopper
Branding Brand	iMobile3
ByteLight	Index
Digby	inMarket
Estimote	Motorola Solutions

Nomi	Swirl Networks
PayPal	Vibes
Shelfbucks	WillowTree Apps
shopkick	ZBD
Siteworx	

## ENDNOTES

- <sup>1</sup> The cost of beacons is relatively inexpensive, with providers like Qualcomm offering beacons for as little as \$5 each. Source: Christian Zibreg, “Qualcomm launches Gimbal, its own \$5 iBeacons,” iDownloadBlog, December 10, 2013 (<http://www.idownloadblog.com/2013/12/10/qualcomm-gimbal/>).
- <sup>2</sup> To learn more about the BLE capabilities within iPhones and iPads, visit Apple’s developer website. Source: iOS Developer Library ([https://developer.apple.com/library/ios/releasenotes/General/WhatsNewIniOS/Articles/iOS5.html#//apple\\_ref/doc/uid/TP30915195-SW1](https://developer.apple.com/library/ios/releasenotes/General/WhatsNewIniOS/Articles/iOS5.html#//apple_ref/doc/uid/TP30915195-SW1)); “iPhone 4s Tech Specs,” Apple (<http://www.apple.com/iphone-4s/specs/>); and “iOS: Understanding iBeacon,” Apple (<http://support.apple.com/kb/HT6048>).
- <sup>3</sup> To learn more about the BLE capabilities within the Android operating system, visit Android’s developer website. Source: “Bluetooth Low Energy,” Android (<http://developer.android.com/guide/topics/connectivity/bluetooth-le.html>).
- <sup>4</sup> The number of beacon-enabled smartphones today as well as an estimate of future penetration was provided by Cyriac Roeding, CEO of shopkick, on January 8, 2014.
- <sup>5</sup> Starwood Hotels & Resorts recently announced a pilot program testing the efficacy of using Bluetooth low energy to unlock guest rooms. A guest must have a BLE-enabled smartphone and have the Starwood Preferred Guest mobile application running. Source: Craig Karmin, “Smartphones to Open Doors at Some Hotels,” The Wall Street Journal, January 26, 2014 (<http://online.wsj.com/news/articles/SB10001424052702304856504579339130820876304>).
- <sup>6</sup> Source: PayPal (<http://paypal.com/us/webapps/mpp/beacon>).
- <sup>7</sup> Source: Branding Brand (<http://brandingbrand.com>).
- <sup>8</sup> Source: Shelfbucks (<http://shelfbucks.com>).
- <sup>9</sup> Source: GPShopper (<http://gpshopper.com/products/ibeacons/>).
- <sup>10</sup> Along with Target and Macy’s, other retailers have deployed guest Wi-Fi in-stores. To learn more, check out the following article. Source: Tom Ryan, “Free WiFi Quietly Becomes Widespread at Retail,” RetailWire, December 19, 2012 (<http://www.retailwire.com/discussion/16470/free-wifi-quietly-becomes-widespread-at-retail>).

- <sup>11</sup> In September 2013, JCPenney opted to remove guest Wi-Fi from stores in order to save an estimated \$7 million annually. The rationale was that customers were not using the service while in stores. To learn more about JCPenney's decision to remove guest Wi-Fi, check out the following article. Source: Sapna Maheshwari, "J.C. Penney Eliminates Free In-Store Wi-Fi To Save \$7 Million A Year," BuzzFeed, September 18, 2013 (<http://www.buzzfeed.com/sapna/jc-penney-eliminates-free-in-store-wi-fi-to-save-7-million-a>).
- <sup>12</sup> Although Nordstrom was leveraging location analytics from Euclid in 2013, Nordstrom halted the practice of tracking customers in the summer of 2013. To read more about location analytics, privacy, and Nordstrom's decision to remove location analytics, check out the following article. Source: Stephanie Clifford and Quentin Hardy, "Attention, Shoppers: Store Is Tracking Your Cell," The New York Times, July 14, 2013 (<http://www.nytimes.com/2013/07/15/business/attention-shopper-stores-are-tracking-your-cell.html>).
- <sup>13</sup> Source: North American Technographics® Online Benchmark Survey (Part 1), 2013.
- <sup>14</sup> For more information on Apple leveraging beacons to track customers, check out the following blog post. Source: Aaron Pressman, "Privacy advocates worry over new Apple iPhone tracking feature," The Exchange, January 10, 2014 (<http://finance.yahoo.com/blogs/the-exchange/privacy-advocates-worry-over-new-apple-iphone-tracking-feature-161836223.html>).
- <sup>15</sup> To read more about inMarket's deployment of beacon technology, check out the following article. Source: Matthew Panzarino, "inMarket Rolls Out iBeacons To 200 Safeway, Giant Eagle Grocery Stores To Reach Shoppers When It Matters," TechCrunch, January 6, 2014 (<http://techcrunch.com/2014/01/06/inmarket-rolls-out-ibeacons-to-200-safeway-giant-eagle-grocery-stores-to-reach-shoppers-when-it-matters/>).
- <sup>16</sup> Source: Phone interview with Todd Dipaola, inMarket CEO, on January 30, 2014.
- <sup>17</sup> Source: Phone interview with Rob Murphy, Swirl Networks vice president of marketing, on January 16, 2014.
- <sup>18</sup> Forrester invented the POST methodology to help interactive marketers implement successful social strategies. The four steps align perfectly with the upfront planning steps in corporate collaboration strategy. We published the original report in 2007 and recently updated it. See the October 1, 2013, "[The POST Process Drives Social Success](#)" report.

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