

IN-STORE MARKETING VIA MICRO-LOCATION

SHINING THE SPOTLIGHT ON THE BEACON

Reaching consumers at the right place,
at the right time and with the right message,
right in the store.



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TO BEACON OR NOT TO BEACON

INTRODUCTION

For many years, in-store marketing focused mainly on trade marketing operations, in-store events and shop windows.

With the introduction of smartphones, new behaviour in real-time and in-store technology have begun to radically transform in-store marketing, making it more digital, more personalised and more geared toward real-time data and scenarios where interaction with the consumer is integral.

The new generation of in-store marketing is seeking to create a varied (digital and analogue) customer experience, combining the benefits of the store with digital enhancements. This includes practices like digitised shop windows, digital in-store coupons and an entire range of customised digital services.

The aims of in-store digital marketing follow three main themes: #1 customer experience / service / product enhancement, #2 larger

average shopping basket and higher in-store conversion, and #3 improved customer knowledge and personalisation.

In this document, we will discuss mobile's ability to reach consumers in the right place, at the right time and with the right message, all right in the store itself. We are talking about micro-location and in-store marketing (or proximity marketing) to help marketers recognise opportunity and use highly accurate targeting mechanisms, while recovering as much data as possible in order to continually enhance the in-store experience.

According to MDGadvertising, investment in geo-location marketing services is expected to reach \$2.3 billion in 2016, and part of this growth is to be generated by in-store services.



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Now everyone is talking about “iBeacon”. It’s the talk of the town, and with BLE (Bluetooth Low Energy) technology it’s finally possible to target customers in the store, on all mobile platforms and at a lower cost. This is both true and false.

BLE is a promising technology for brands and distributors, but it is important to understand its advantages and disadvantages before rolling it out. This analysis covers the range of Beacon solutions and the differences between in-store BLE, NFC, QR code, Wi-Fi, and GPS beacons for in-store marketing, because it’s hard to achieve clarity across the market.

For us, the three major uses of beacons are:

- *Primarily for situations involving mobile interaction (with push notification)*
- *Indoor (and outdoor) geo-location and geofencing*
- *Gathering data and using it to enhance customer knowledge*

Apple’s keynote speech in September 2014, introducing Apple Pay, which uses near-field communication (NFC), did not kill interest in iBeacon, since NFC is deliberately restricted to work only in the context of payment.



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MOBILE INTERACTION

There are a wide range of technologies with various levels of maturity co-existing in the market for creating opportunities to interact with consumers on their mobile phones in store: Beacon, NFC, QR codes, and ultrasound. What are they, and how do they work?

QR codes have existed for many years, and their use has grown at a steady pace via systematic use on product packaging, in the press, on media materials, and on outdoor panels.

The interaction to be undertaken may include enhancing an item or product, a direct link to a website, or something else.

Near-Field Communication (NFC) is a Radio-Frequency Identification (RFID) allowing data to be exchanged between two equipped devices within a space of 10 cm. NFC most often exists in the form of a smart chip and is integrated into media such as smartphones, payment cards (most new generation payment cards support near-field communication), or public transport cards.

This technology makes it possible to carry out a number of actions (exchanging information between two smartphones, mobile payments, unlocking car doors, etc.).

Apart from in Apple Pay, Apple has never implemented this in its iPhones. Without having Apple on board, there is no widespread use (despite the implementation of near-field communication in most Android smartphones).



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MOBILE INTERACTION

During a presentation in 2013, Apple announced that its mobile operating system (OS) was compatible with Bluetooth Low Energy (BLE) technology. They named it an “iBeacon” framework, often confused with Beacons and BLE in general. In this document, we will use the term BLE to refer to Bluetooth 4 technology and Beacon in referring to terminals which transmit a signal. This is wireless technology, but unlike NFC, which works only within a few centimetres, a Beacon has a reach of over 20 m.

This technology has been available on Apple devices since the iPhone 4S, and is on the latest Android mobile phones. BLE has a tremendous advantage over the old Bluetooth, which is its ability to create interactions without having to be paired first with the terminal. The other new feature BLE offers is its low energy consumption, which applies to both Beacons and smartphones. The previous version of Bluetooth was known to quickly drain smartphone batteries.

Beacons offer a great advantage over other technologies because they work even if the app is closed (iOS version 7.1 and later), running as a background task.

We have classified these technologies according to seven criteria:

- *The type of interaction: push versus pull*
- *The technology*
- *The advantages and disadvantages for brands and distributors*
- *Coverage by operating systems and equipment*
- *Types of consumer usage*
- *Consumer usage constraints*



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	BEACONS	NFC	SOUND	2D CODE	LIGHTING
TYPE OF INTERACTION	CONTEXTUAL PUSH PULL	CONTEXTUAL PULL	CONTEXTUAL PUSH PULL	CONTEXTUAL PULL	CONTEXTUAL PUSH PULL
TECHNOLOGY	BLE (BLUETOOTH LOW-EMISSION)	NEAR-FIELD COMMUNICATION	ULTRASOUND / AUDIO TAG RECOGNITION	IMAGE RECOGNITION	LIGHT TAG RECOGNITION
ADVANTAGES	<p>COMPATIBLE WITH ANDROID, IOS AND WINDOWS</p> <p>HARDWARE AND ROLL-OUT COSTS</p> <p>INTEGRATES WITH CRM PROGRAMS (INTERACTION SCENARIO)</p> <p>THE ONLY SOLUTION WHICH CAN SEND PUSH NOTIFICATIONS WITHOUT HAVING THE APP OPEN</p>	<p>THE CHIP'S THICKNESS AND UNIT COST, NO REQUIRED APP</p>	<p>COMPATIBLE WITH ANDROID AND IOS FOR PULL</p> <p>PUSH NOTIFICATION POSSIBLE ON ANDROID WITHOUT HAVING THE APP OPEN</p>	<p>EASY TO IMPLEMENT</p> <p>COMPATIBLE WITH ANDROID AND IOS</p>	<p>USES THE EXISTING LIGHT INFRASTRUCTURE</p> <p>COMPATIBLE WITH ANDROID AND IOS</p>
DISADVANTAGES	<p>REQUIRES AN APP</p> <p>SIGNAL RELIABILITY</p>	<p>AVAILABLE ONLY ON ANDROID</p> <p>INTERACTION LIMITED TO A FEW CENTIMETRES FROM THE TERMINAL</p>	<p>REQUIRES AN APP</p> <p>SIGNAL RELIABILITY</p>	<p>REQUIRES AN APP (A 2D CODE READER)</p> <p>ONLY AT A FIXED, LIMITED POINT</p>	<p>REQUIRES AN APP</p> <p>SIGNAL RELIABILITY</p>
USES	<p>A VARIETY OF IN-STORE INTERACTION SITUATIONS (DOOR ENTRY, PRODUCT INTERACTION, PUSH-IN SHELVES, ETC.)</p> <p>PERSONALISED INTERACTIONS BASED ON CUSTOMER PROFILE (IN-STORE CRM)</p>	<p>PULL INFORMATION, OPEN URL, PAYMENT</p>	<p>A VARIETY OF IN-STORE INTERACTION SITUATIONS (DOOR ENTRY, PRODUCT INTERACTION, PUSH-IN SHELVES, ETC.)</p> <p>PERSONALISED INTERACTIONS BASED ON CUSTOMER PROFILE (IN-STORE CRM)</p>	<p>PULL INFORMATION, OPEN URL</p>	<p>A VARIETY OF IN-STORE INTERACTION SITUATIONS (DOOR ENTRY, PRODUCT INTERACTION, PUSH-IN SHELVES, ETC.)</p> <p>PERSONALISED INTERACTIONS BASED ON CUSTOMER PROFILE (IN-STORE CRM)</p>
SUPPORTED DEVICES	<p>IOS 7+</p> <p>ANDROID 4.3+</p>	<p>ANDROID 2.3+</p> <p>IPHONE 6 AND 6+</p>	<p>IOS (PULL ONLY), ANDROID</p>	<p>IOS</p> <p>ANDROID</p>	<p>IOS</p> <p>ANDROID</p>
USER RESTRICTIONS OF USAGE	<p>BLE ENABLED AND APP OPEN IN THE BACKGROUND FOR IOS <7.1</p>	<p>FOR USE IN VERY CLOSE PROXIMITY (10 CM)</p>	<p>APP OPEN FOR IOS</p>	<p>APP OPEN</p>	<p>APP OPEN</p> <p>REQUIRES THE FRONT-FACING CAMERA TO NOT BE HIDDEN</p>



MOBILE INTERACTION

To conclude, there is a wide range of technologies for interacting with customers in store. Some of these technologies can work together instead of competing with one another.

Due to its active range, near-field communication (NFC) is restricted to product or service interactions and hence will be more secure. The QR code, which requires action on the part of the customer and breaks the channel, is a marketing tool for enhancing products.

Beacons however offer a new area for development for marketers:

- *Beacons have the potential to develop a transformational technology for marketing and physical trade.*
- *We can now target personalised digital content and digital experiences based on proximity and the real world.*
- *Beacons create a link between the real world and the digital world and create a convergence between the online and offline world (digital allocation of traffic or sales in a store).*
- *They are affordable and easy to deploy, which allows for quick industrial deployment, without heavy IS requirements.*
- *Beacons can also be compatible with corporate customer relationship management (CRM) systems, and their support for multiple platforms makes them attractive to brands and distributors.*

That said, the push mode used by beacons may sometimes create too much marketing pressure, especially with standardised messages, which is often the case in early deployments. Also, beacon manufacturers are not all as good as each other.



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INDOOR

GEOLOCATION

Indoor geolocation has existed for many years and can be used to find your way around a shopping centre.

Indoor geolocation uses technologies which are able to reproduce a GPS location system inside buildings in order to locate visitors, offer them services, and target them with sales offers.

The same technologies (Beacons, Bluetooth, NFC, etc.) can solve the issue of indoor geolocation (Wi-Fi is another possible solution).



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MICRO-LOCATION & INDOOR GEOLOCATION

BY MAXIME FAURE OF INSITÉO

Since iOS7 was released in September 2013 and iBeacon was launched, there has been growing talk of proximity detection and indoor geolocation, sometimes confusing the two concepts. But in fact these are two separate solutions, each addressing specific needs.

Indoor geolocation involves accurately locating a user at a given location. Current technology (based on Bluetooth Low Energy) can identify a position within two metres. This is called the user's "absolute" position.

Reverse proximity detection provides only a "relative" position in relation to a given

terminal. We know that the user is within a certain radius of the terminal, but we don't know exactly where he is.

Once we can make this distinction, we will be able to understand more effectively the uses making each solution different. Proximity detection works well in situations where accuracy is less important, but where we want to create an interaction between the user and a specific area. With iBeacon, the feature offered by Apple (and therefore available only on iOS), it is also possible to open an iOS app.

So this can increase in-store use by sending a notification when the user enters a store.

Indoor geolocation allows mapping and navigation services to be deployed, which only work where the user's exact position is known. Even better, in retail for example, we are talking about push devices which are able to display a promotion or coupon in the app right when the consumer walks in front of the product.



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	WI-FI	NFC	BEACON	BLUETOOTH <4	SOUND	2D CODE
LOCALISATION TYPE	GEOPOSITION BY TRIANGULATION	ACCURATE MICRO-LOCATION	ACCURATE MICRO-LOCATION	GEOPOSITION BY TRIANGULATION	ACCURATE MICRO-LOCATION	ACCURATE MICRO-LOCATION
TECHNOLOGY	WI-FI TRIANGULATION	NEAR-FIELD COMMUNICATION	BLE (BLUETOOTH LOW ENERGY)	BLUETOOTH	ULTRASOUND / AUDIO TAG RECOGNITION	IMAGE RECOGNITION
ADVANTAGES	USES THE EXISTING WI-FI INFRASTRUCTURE (+ OPTION OF ADDING NEW TERMINALS AS NEEDED). AFTER CONFIGURATION THERE IS THE OPTION OF IDENTIFYING THE USER'S ABSOLUTE POSITION COMPATIBLE WITH ANDROID AND IOS	THIN CHIP DOES NOT REQUIRE AN APP	RUNS IN THE BACKGROUND COMPATIBLE WITH ANDROID AND IOS	RUNS IN THE BACKGROUND COMPATIBLE WITH ANDROID AND IOS	COMPATIBLE WITH ANDROID AND IOS	EASY TO ROLL OUT COMPATIBLE WITH ANDROID AND IOS
DISADVANTAGES	REQUIRES AN APP	REQUIRES USER ACTION	REQUIRES AN APP	REQUIRES AN APP	REQUIRES AN APP IMPRECISE	REQUIRES AN APP
USES	INDOOR LOCATION	NON-CONTINUOUS INDOOR LOCATION	RELATIVE INDOOR LOCATION	ABSOLUTE INDOOR LOCATION	NON-CONTINUOUS INDOOR LOCATION	NON-CONTINUOUS INDOOR LOCATION
SUPPORTED DEVICES	ANDROID	ANDROID 2.3+	IOS 7+ ANDROID 4.3+	IOS ANDROID	IOS ANDROID	IOS ANDROID
USER RESTRICTIONS OF USAGE	ACTIVE WI-FI	REQUIRES THE SCANNING OF AN NFC CHIP FOR USE IN VERY CLOSE PROXIMITY (10 CM)	BLE ENABLED	BLUETOOTH ENABLED HIGH SMARTPHONE BATTERY USAGE		REQUIRES THE SCANNING OF A 2D CODE

The main players in indoor geolocation tend to use a combination of Wi-Fi and Bluetooth. Theoretically, beacons which triangulate signals should be able to provide the user's absolute position but that is clearly not yet their main use. Currently, identifying the relative position is sufficient to implement in-store interactive marketing operations.



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DATA & IBEAICON

Indoor geolocation and opportunities for interacting with consumers open up new possibilities for marketers to collect behavioural data, expand knowledge about customers, and target consumers more effectively.



As with indoor geolocation, there are many technologies poised to track consumers in store (cameras, NFC, beacons, etc.).

Going beyond interaction situations, iBeacons can provide information about in-store customer behaviour, based on their ability to identify the number of visits (and returns to the shop), their length, the customers' path through the shop (depending on the number of beacons deployed), and the consumer profile (if the person is a customer, the mobile app has this information).



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DATA & IBEACON: A VITAL PAIRING

BY FRANÇOIS KRUTA OF UBUDU

New data management and mobile technologies allow retailers and advertisers to create a personalised dialogue with their customers right where they are when they are ready to make a purchase. These are known as contextual mobile interactions.

This new frontier of connected shopping (and not just shopping) implicitly involves sending useful messages to the user related to a purchase. Relevance is key. It assumes that the best use has been made of the data collected about the user and the data in the customer relationship management system, and it also uses information about the geographical area and time.

In addition, users approaching Beacons, the visible and invisible actions on the mobile, and user reactions may all enhance client knowledge and refine marketing campaign strategies.

Equally but less obviously, this functionality can also be used internally by the company to improve and update internal databases. For example, a specialised retailer has integrated iBeacon technology into an app for scanning products in order to associate each product scan (thousands of scans are registered each day in a sales outlet) to the area of the shop where it is kept in order to collaboratively build a map of product families and promotions, which may be shared with customers.

In practice what information can be captured and reported?

- *Data related to the detection of a beacon and its context, including the beacon's identification, proximity (or relative position on the 2D map if an indoor geolocation solution is involved), location, and time.*
- *Data related to triggering an action for a user (for example, triggering a notification message) and the user's reaction (e.g., opening the message).*



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DATA & IBEACON: A VITAL PAIRING

BY FRANÇOIS KRUTA OF UBUDU

- *The length of time the consumer stayed in an area (dwell time).*

In many cases, it is critical to report this data in order to understand the frequency of interaction with the user, and to gradually optimise the relevance of messages sent to that user.

The benefit of mobile iBeacon technology is that it can produce data associated with a specific customer. The general philosophy is to make in-store marketing into a tailor-made experience.

Data Management Platforms which collect data should not simply provide compiled statistics. Instead, they should save the data and pull out

insight to enable customers to be better served and help them to experience improved quality of service.

Of course, this raises the basic, sensitive subject of privacy protection for users, and their willingness to use this type of new technology. This is closely related to the customer value proposition, which is central to any mobile strategy, as recently stated by Forrester in “The Mobile Mind Shift”.

For applications that analyse aggregated streams of data, there are other technologies, such as video analysis and Wi-Fi mac-probing, which can collect a massive amount of data with fewer limitations.

To conclude, having optimised e-mail campaigns and display ads, creating opportunities for these contextual interactions is the new frontier of automated marketing.

We should expect these elements to be integrated in the near future into multichannel communication strategies, where multiple technology companies (Criteo, Neolane, Exact-Target, etc.) and non-technology companies (agencies, public companies) will position themselves as major players in optimising digital delivery of messages for brands and retailers to end customers.

As a leading RTB technology executive said, “The beacon is like the pixel of the real world.”



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HOW DOES IT WORK? **BEACON**

BLE enables interaction between an application and a location (one or more beacons). There must be an app on the user's smartphone, and geolocation must be turned on.

Here we are talking about the beacon, but in practice it is not just about the beacon. There are six separate components here:

- 1. The beacon**
- 2. The smartphone's BLE chip**
- 3. The operating system's BLE implementation**
(iBeacon for Apple and Bluetooth for Android)
- 4. The SDK**
(beacon supplier software installed in the app)
- 5. The CMS**
(Campaign Management System)
- 6. The app**



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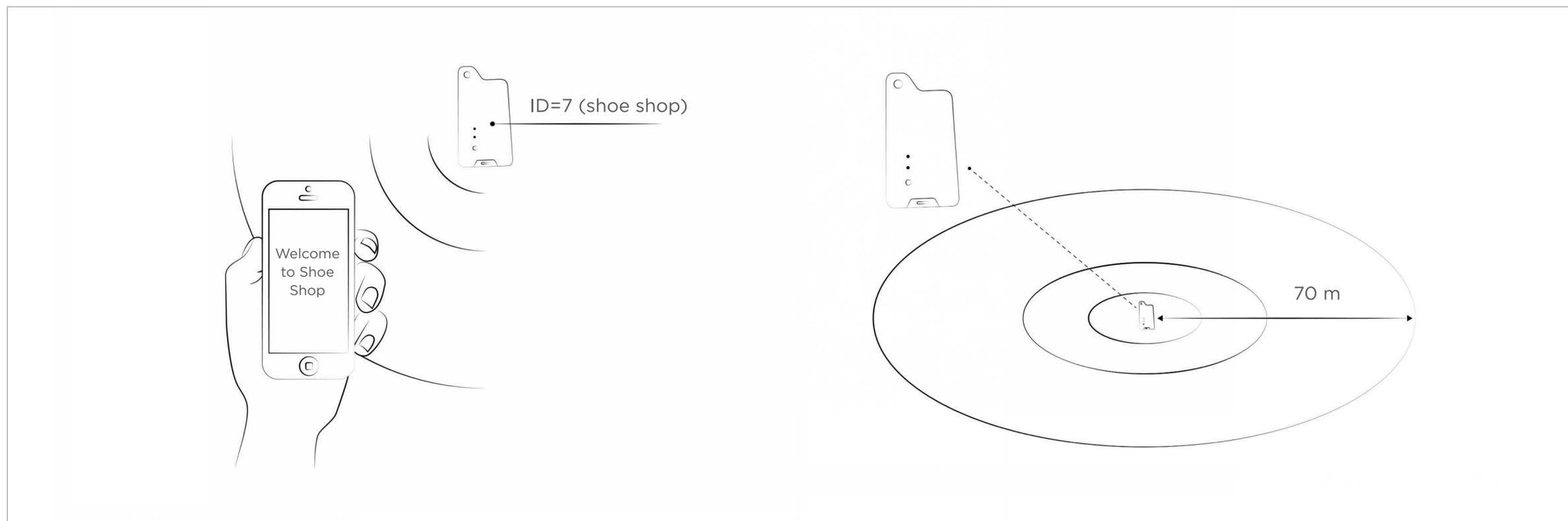
THE BEACON

The beacon transmits a signal every 100 milliseconds containing its ID. This signal is picked up by smartphones within the active radius. That's where the beacon's work ends.

Each tag is unique and contains three IDs:

- *An UUID: This is a unique identifier, such as the MAC address on each computer.*
- *A major ID: This ID is used to identify a zone.*
- *A minor ID: This ID is used to identify a beacon.*

Why have a major and minor ID? Let's consider an example involving a shop radius with multiple interactions. In this situation, the major ID is used to gather statistics about shoppers within the radius, and the minor IDs help provide statistics about the most popular zone. The major ID can also be used to send a push notification when the customer enters the area, depending on where the user is coming from.



THE SMARTPHONE'S BLE CHIP

The BLE signal from the beacon is captured by the Bluetooth chip in the smartphone. The chip transfers the IDs from the beacon(s) to the operating system.

THE OPERATING SYSTEM'S BLE IMPLEMENTATION

What Apple calls iBeacon is often confused with BLE or beacons. For Apple, the iBeacon is responsible for calculating the distance between the smartphone and the beacon.

There are three areas of interaction:

- *Immediate: 0 to 5 cm*
- *Near: 5 cm to 1 m*
- *Far: 1 m to 50 m*

For Android, no calculations are performed, and the beacons are directly accessed by the SDK.

THE SDK

The SDK consists of a kind of software supplied by the manufacturer of the beacon solution. The SDK is installed in the app. The SDK serves as an interface between the application, the beacons, and the CMS (Campaign Management System). It transfers the beacon IDs to a CMS, receives information from the CMS about actions to be performed and sends that information to the app.

THE CMS

The CMS is a beacon campaign administration interface. Creating a campaign involves first defining the criteria to trigger an action and also determining what that action will be.

There are lots of criteria varying from platform to platform, but we commonly encounter the following criteria:

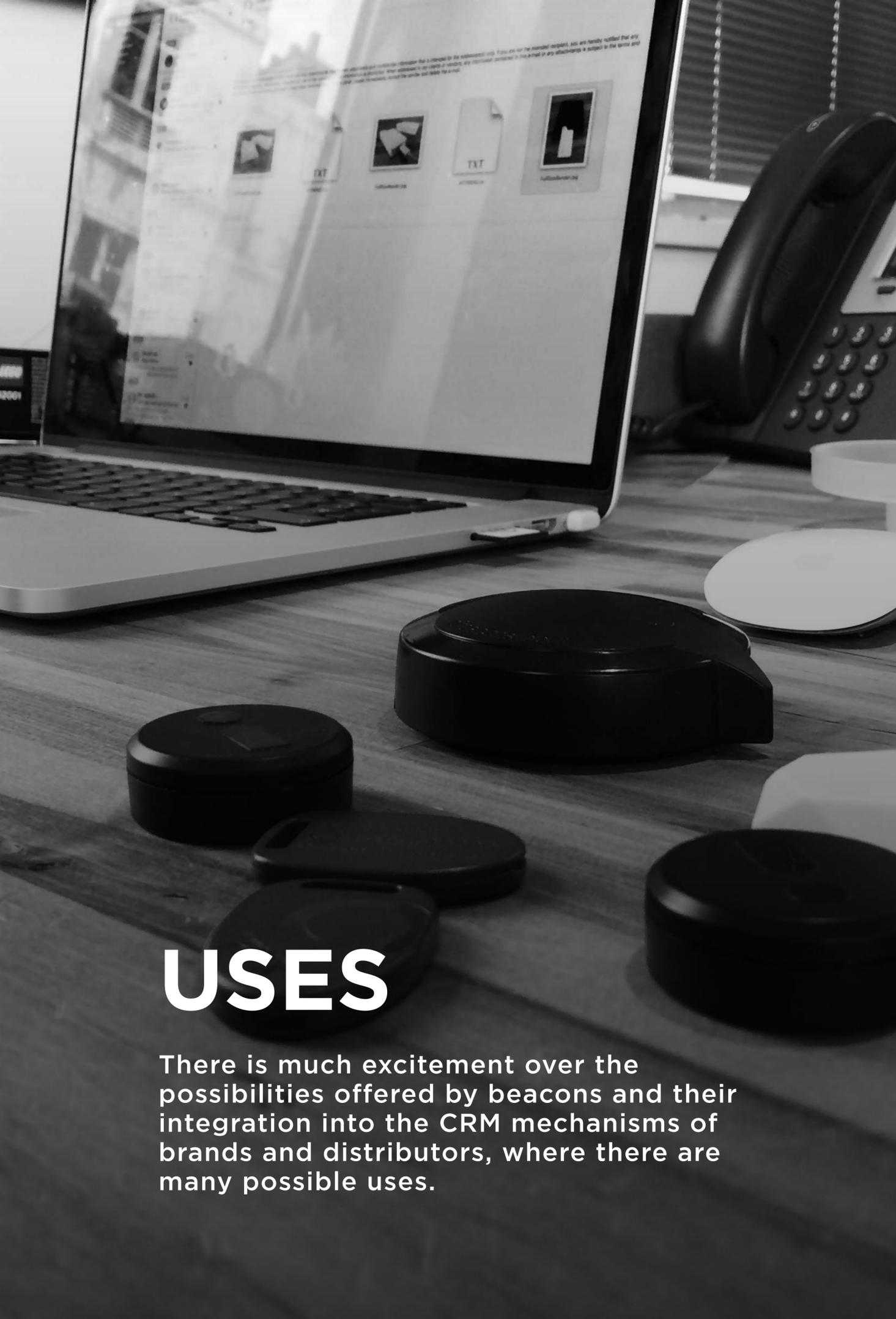
- *The beacon's major ID*
- *The beacon's minor ID*
- *Start date and end date*
- *Proximity (Immediate, Near or Far)*
- *Maximum number of times the event applies to the same user*

There are three types of action:

- *Push: Send a notification to the mobile*
- *Display a web page*
- *Redirect to a section of the app*

THE APP

The app will be used to display contact, display a coupon, or suggest an interaction.



USES

There is much excitement over the possibilities offered by beacons and their integration into the CRM mechanisms of brands and distributors, where there are many possible uses.

More than 50% of the top 100 US retailers are experimenting with this technology (according to Business Insider, August 2014) and testing interaction scenarios before a massive roll-out.

These inside marketing technologies open up new options to attract consumers via personalised services, such as product location, product enhancement, personalised services and promotions.



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PRODUCT ENHANCEMENT AND CONTEXTUAL CONTENT



One of the major uses for beacons is to provide contextual information to consumers. For example, a product video could launch on your smartphone when you are close to the beacon or the current list of promotions could be displayed when you reach a particular shelf in a supermarket. In a museum, the description of a work could appear when you approach it.

iBeacon can also provide e-commerce scenarios for cross-selling and up-selling. For example, the interaction associated with a television could provide product reviews from the e-commerce site's recommendation engine.

A company in the UK has deployed an app that allows shop customers and passers-by to learn about the clothing sold at the shop and which pieces can work together to create a look. It provides information (pricing), adds clothing to the shopping cart, and then allows the user to complete the purchase online or find the items in the shop.



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OFFERS AND **PERSONALISED SERVICES**

Lots of retailers are experimenting with “generic” push notifications, which describe the shop’s offers when the consumer comes through the door. It’s a start, but there is an associated risk of being impersonal and of appearing to be intrusive. Consumers are not technophobes, but they are much more inclined to accept technology when it leads to them enjoying a personalised service or deals.

As part of the DigitasLBI 2014 “Connected Commerce” research, in response to the question “Would you be willing to use a system that could automatically identify you in a shop in order for you to receive special offers or premium services?”, 62% of French people said that it would make them come to the shop, 64% would be willing to use it, and 50% said it would influence their purchasing intention.

That’s why there are a wide range of scenarios, depending on the knowledge of the customer (CRM profile or application data):

- *Personalised promotions when entering the shop based on past purchases either online or offline*
- *Personalised services based on the consumer’s segment*
- *Ability to send a message if the customer returns to the store display multiple times or based on how much time they spend there*

- *Beacons also allow brands and distributors to offer personalised non-monetary services. For example, US Major League Baseball installed beacons in stadiums to help visitors find their seat.*

The US department store Macy’s, which has used beacons since 2013, announced this autumn that more than 4,000 iBeacons would be rolled out in all its retail outlets. Among the services being offered were notifications and personalised offers, as well as suggestions for cross-selling.

In France, the largest experiment was carried out by Darty, with a test deployment involving more than 200 French stores. The pilot focused on taking part in a contest to test the technological know-how and the willingness of the French to accept and make use of the interaction scenarios. In France there has not yet been a really massive roll-out involving CRM and business interaction scenarios.

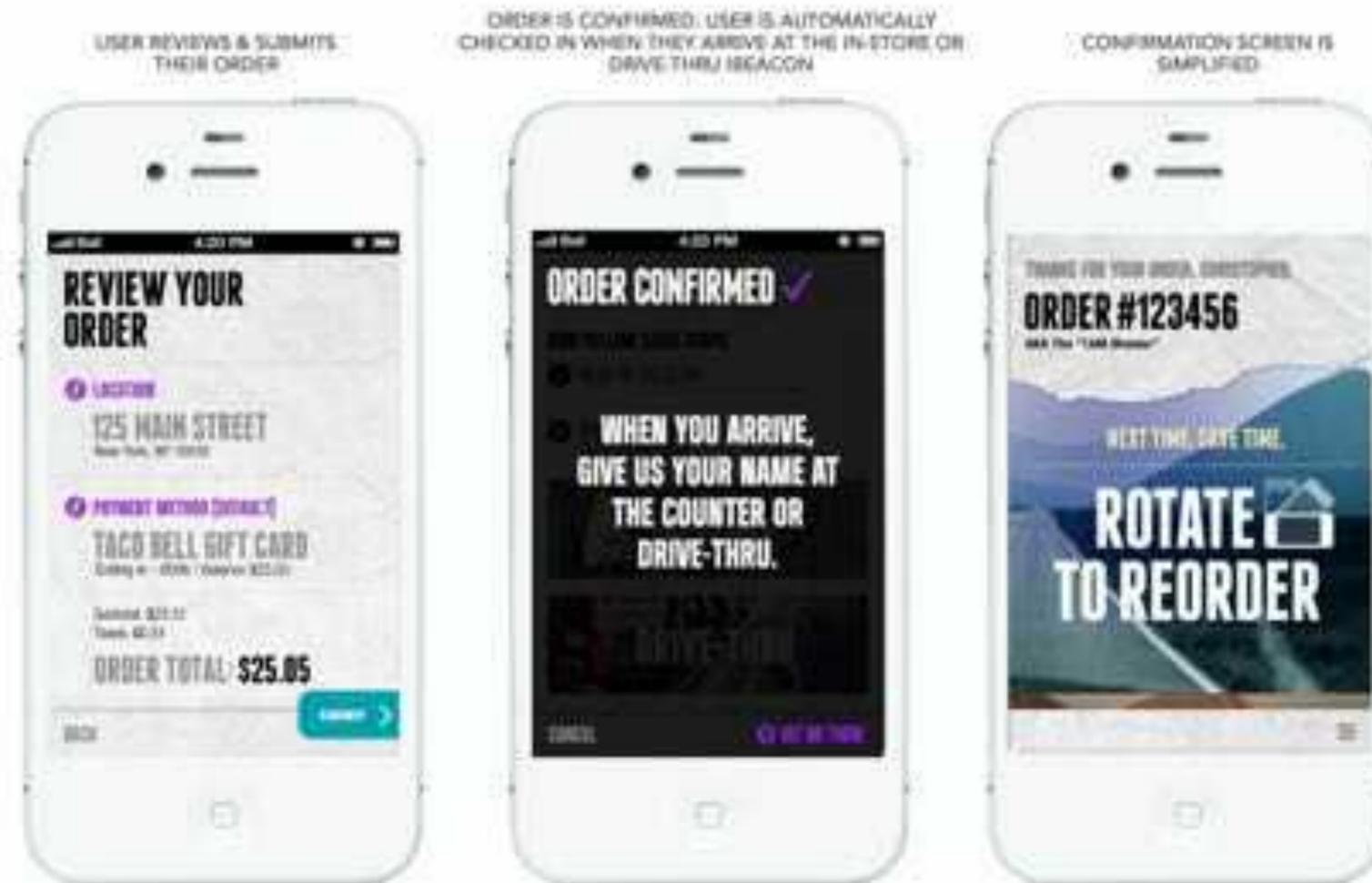


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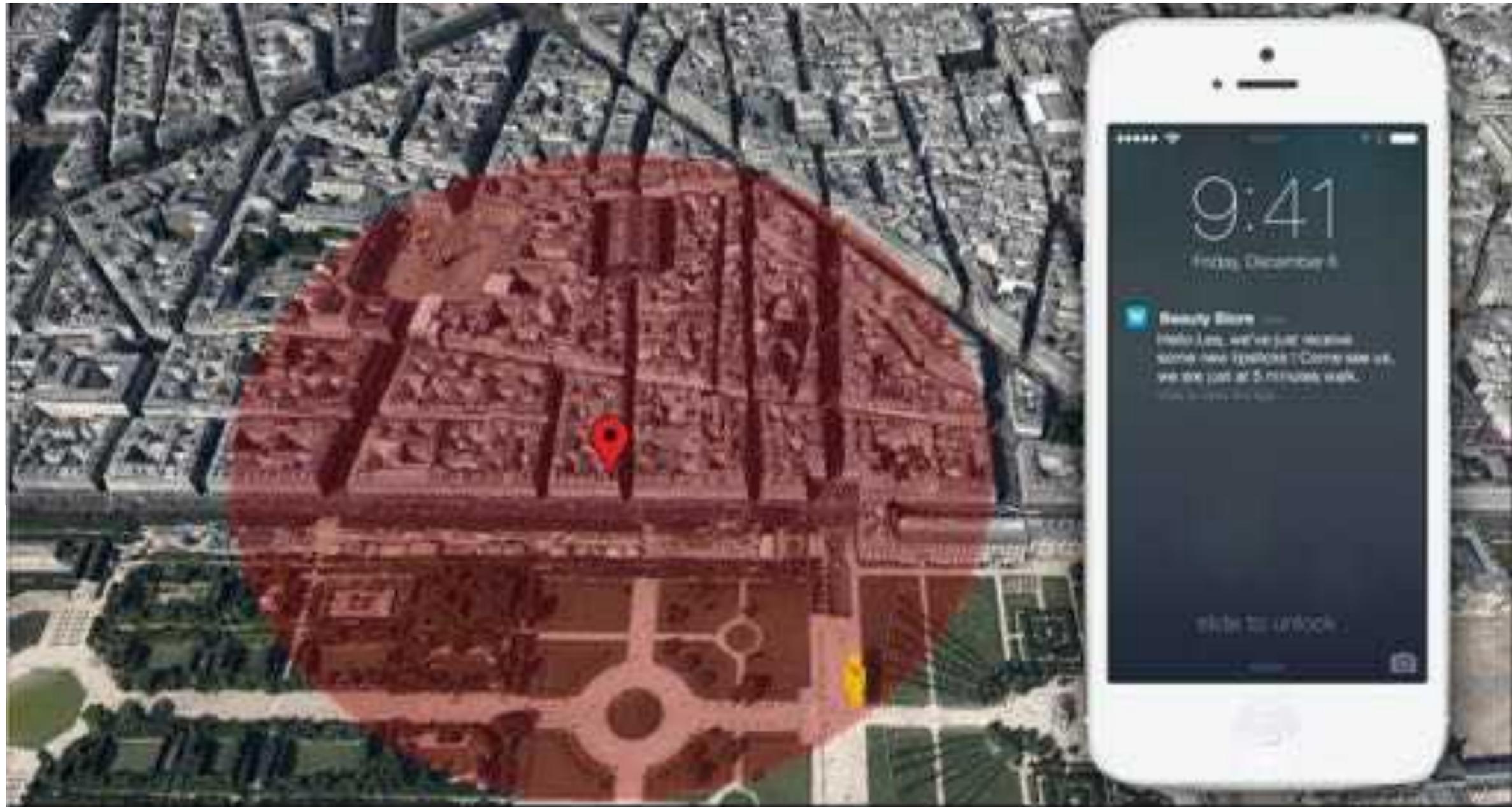
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CLICK & COLLECT



Beacons can also provide a connection between the offline and online worlds. In the United States, DigitasLBI has deployed beacons inside Taco Bell fast-food restaurants. Consumers can place an order online, and when they enter the restaurant, the beacon recognises them and sends their order without the consumer having to do anything, so the order is ready when the consumer reaches the counter (by contrast, in order to pick up an online McDonald's order in France, the consumer must identify himself at an electronic terminal.)

MOBILE GEOFENCING



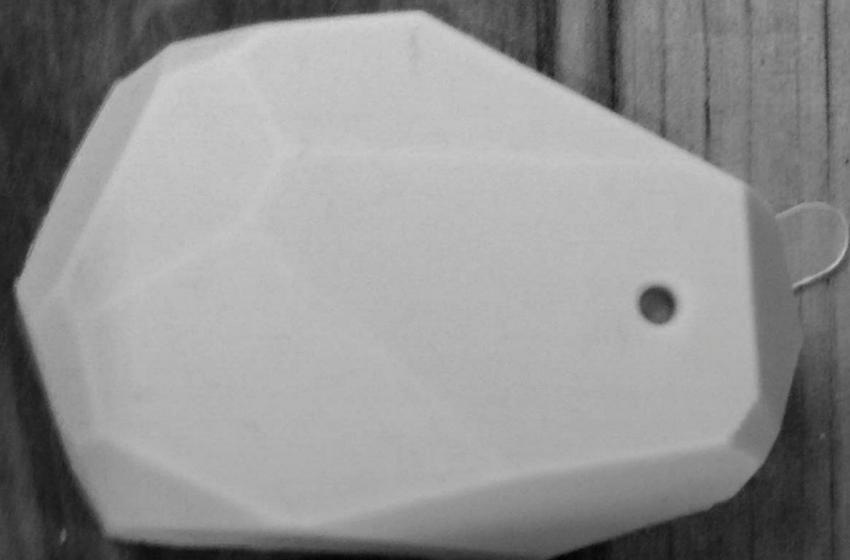
To use a beacon-compatible application, the user must allow geolocation. Beacon geolocation uses the same procedures as GPS geolocation. We can therefore send messages to the user based on his or her GPS position, if the user allows geolocation in a beacon app.



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WHICH BEACON SHOULD YOU **CHOOSE?**

Many factors should be taken into consideration when selecting beacons.

It is best to utilise not only the choice of beacon, but instead the full solution involving beacons, the SDK, and the CMS. The top criteria to consider, based on your needs, include:

- 1. The beacon specifications.** We have described some significant variations among the beacons we have tested. A less accurate beacon cannot support all scenarios.
- 2. Action types.** Does my beacon solution support push, pull, and geofencing?
- 3. Do I need a beacon for a one-time operation or over the long term as part of my CRM strategy?** For long-term operation you need to consider the issues of changing or recharging the battery.
- 4. What are my security needs?** Many beacon solutions are not secure and can easily be hacked.



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WHICH BEACON SHOULD YOU **CHOOSE?**

5. Functionality offered by the CMS. Some beacons require the administration of a specific CMS, which adds tasks and new issues to the administrator regarding the management of scenarios (who decides and deploys the interaction scenarios?).

Some beacon SDKs are now integrated into content management system solutions (such as Adobe Campaign), which makes it possible to centrally manage all user scenarios (text, beacons, email, notifications, etc.).

Then you make your choice depending on cost: What is the total cost of owning the solution?

Cost of the beacons, cost of deployment and set-up, maintenance costs, solution costs (CMS).

- *A beacon costs \$10-50. The price lowers as the volume increases.*
- *Deployment and set-up costs are determined on a case by case basis (depending on the project).*
- *For the cost of the solution, there are various methods, depending on the software provider.*

a. For example, calculated based on the number of active beacons in the month.

GIMBALL EXAMPLE

0-9,999	FREE
10,000-124,999	\$0.06 PER ACTIVE USER
125,000-999,999	\$0.05 PER ACTIVE USER
1,000,000 AND MORE	\$0.04 PER ACTIVE USER

b. Calculated based on the number of monthly users

UBUDU EXAMPLE

NUMBER OF ACTIVE USERS PER MONTH	MONTHLY COST
1 - 1000	FREE
1,001-10,000	\$49.95/MONTH
10,001-25,000	\$499.95/MONTH
> 25,000	BASED ON QUOTATION



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WHICH BEACON SHOULD YOU **CHOOSE?**

	PUSH/PULL	GEOFENCING	CMS	iOS SDK	ANDROID SDK	ACCURACY	COST	SECURITY	BATTERY MANAGEMENT
ESTIMOTE	X		X	X	X	...	\$\$\$		X
ROXIMITY	X		X	X	X	\$\$\$\$		
GIMBAL	X	X	X	X	X	\$		
BLUECATS	X		X	X	X	..	\$\$		
UBUDU	X	X	X	X	X	\$\$\$	X	X

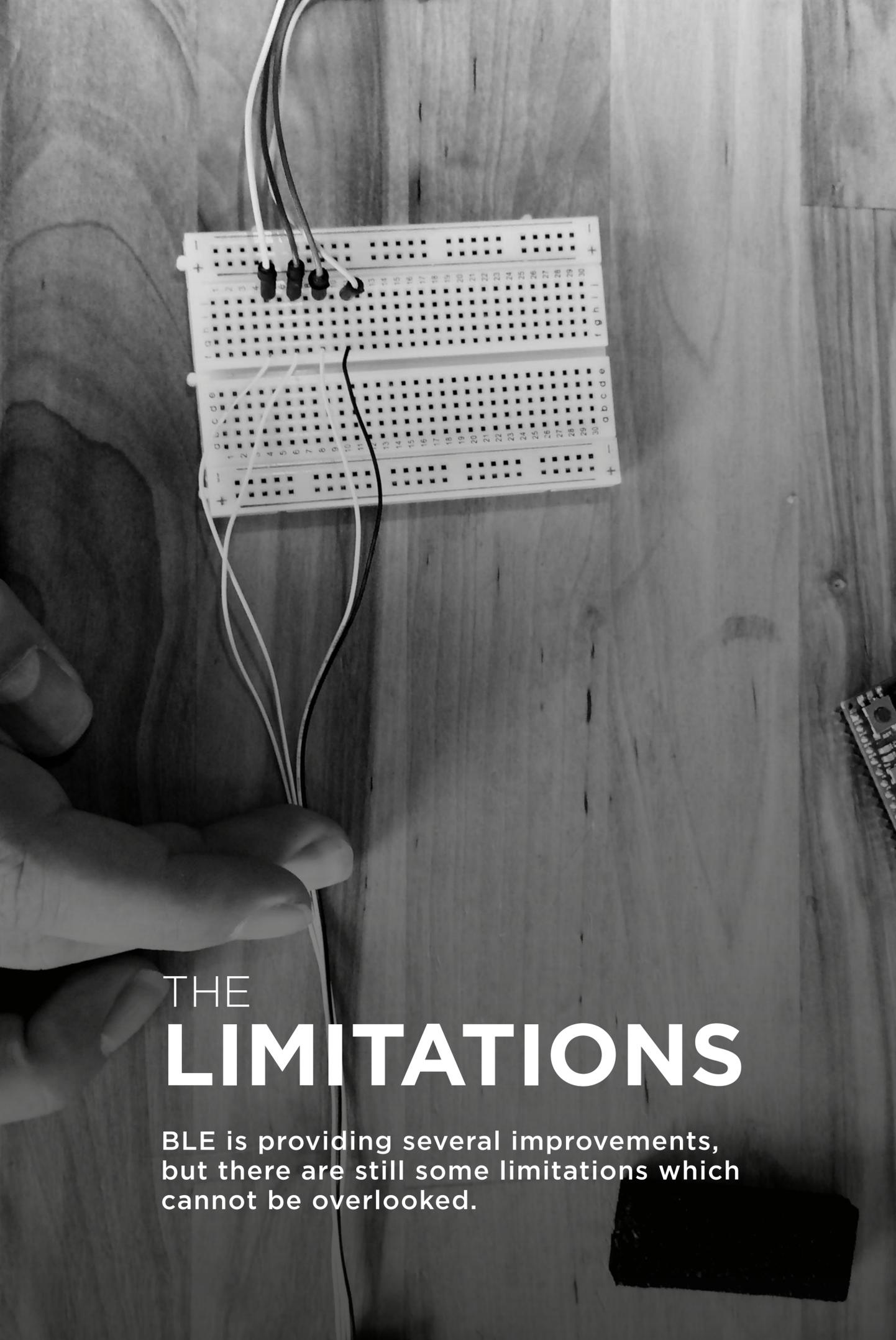
Based on our platform tests, Ubudu appears to be the most complete solution due to its detection accuracy, the security of its beacons, and its battery management system, which allows beacons to be turned off during periods when they are not in use.



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THE LIMITATIONS

BLE is providing several improvements, but there are still some limitations which cannot be overlooked.

Accuracy

Distance is calculated based on the strength of the Bluetooth signal. The signal can be disrupted by the environment (other signals, visitors in the area, mobile, wind, temperature, etc.).

Batteries

Beacons transmit a signal every 100 ms 24/7. Even if the BLE consumes less energy, our tests have shown that a battery lasts approximately six months. Depending on the manufacturer, it may or may not be easy to change the battery. UbuDu has developed battery management systems that allow the beacon to switch to standby when the store is closed, and Estimote is currently working on a similar solution.

Security

Most beacon solutions do not provide any security systems, which can have serious repercussions. For example, it is possible to use an application to change beacon IDs, which would make them unusable with the app for which they were programmed.

Without security, it is also possible for another application to interact with the beacon. For example, a competing brand could interact with a customer.



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CNIL AND **BEACON**

“Frequency measurement and consumer
behaviour analysis in stores”

Indoor geolocation, in-store consumer tracking, and beacon technology led the CNIL (Commission nationale de l'informatique et des libertés [French Data Protection Authority]) to write an article on 19 August 2014 about consumer privacy:

<http://www.cnil.fr/linstitution/actualite/article/article/mesure-de-frequentation-et-analyse-du-comportement-des-consommateurs-dans-les-magasins/>

Specifically relating to tools for measuring and tracking consumer behaviour, measurements must be done anonymously. For example, “data transmitted by the mobile phone must be deleted when the user leaves the store, or the anonymisation of algorithms in use should provide a high collision rate, meaning that a database ID should correspond to multiple people. Using this kind of algorithm also makes it possible to estimate the return rate of individuals into a store, with a non-prejudicial error rate for the merchant, while protecting the privacy of its customers.” It is especially important to ensure that customers have provided their consent upfront, which is the main challenge of in-store marketing, in particular providing a strong enough promise to the customer so that he or she agrees to be tracked in the store in exchange for personalised promotions and services.



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OUR **CONCLUSION**

BLE has enormous potential for creating an in-store experience, guiding conversions, and gathering data.

BLE technology has enormous potential in terms of creating an in-store experience, guiding conversions, and gathering data. American brands and retailers are beginning to experiment with these tools on a large scale, (according to Business Insider, the number of beacons in use is expected to reach 4.5 million active beacons by the end of 2018). It is crucial that French brands begin to forge their own learning curve straight away!

However, although the technology is available, affordable, and fairly easy to use on a small scale, creating a large-scale deployment strategy is still complex and requires serious planning, including the technological choice of beacon, its integration into the company's information system, and the customers' ability to accept push messages.



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OUR CONCLUSION

In-store digital technology and in-store marketing have a bright future, but that future is still to be invented. Today's top beacon deployments offer rather simplistic interaction scenarios, but there is a wide range of options available to us:

- **Personalisation (customer and prospect).**

The ability to be able to recognise a customer when he is entering a store (and not just when he reaches the till) will create a new paradigm in customer loyalty programmes, due to the ability to contact the customer in the store and provide personalised messages based on the customer profile (purchase history, profile, etc.) and therefore increase average sales per customer. This personalisation will also apply to prospects based on an online/offline attribution (recognition of a web visitor and the corresponding browsing behaviour and the ability to send targeted messages) or the ability to construct complex interaction scenarios: for example, if the prospect walks by the shelf twice and stops in front of the product for more than five seconds, sending a targeted message with a promotion related to that product in order to trigger a sale.

- **Payment?**

Beginning in 2013, examples of payment solutions using beacons have popped up on the web (i.e. PayPal beacon), but it has to be admitted that no mature solution exists today, probably due to the level of competition in the market and the security associated with the beacons themselves. We do

not believe that beacons will replace contact-free payment solutions, such as NFC, but new payment scenarios may emerge. In 2014, a restaurant chain implemented a register management solution using beacons, which allows customers to use their smartphones to order and pay for their food. The presence of the beacon only validates their physical presence.



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ABOUT

DigitasLBI

We are the agency transforming businesses for the digital age. Digital is no longer “a new communication channel”. It is the new hub for business, social, and cultural interaction, fostering relationships between brands and people. That’s why we believe that transformation is central to our mission. Our role is both simple and ambitious: To accelerate the digital transformation of brands so they become the top choice of consumers. We always start by having a complete understanding of who the new consumers of the digital age are, and what they are doing.

WHAT’S NEXT: We share our ambition and drive with brands that are committed to embark on their journey of digital transformation. There is no question mark in our “WHAT’S NEXT” because it is not a question. We create a strategic vision for and with each and every one of our customers, always placing the new consumer at the heart of our discussions.

DigitasLBI France’s 350 employees come from a wide variety of backgrounds and career paths. That’s our strength, this diversity of creative, technological, and marketing expertise which we call on to offer the most complete and most relevant solution to assist brands in their digital transformation.

DigitasLBI Lab

DigitasLBI Lab is the technology scouting, consulting, and prototyping department serving DigitasLBI (six labs worldwide), integrated within our ecosystem of innovation. In order to support brands and retailers facing changes in consumer behaviour, DigitasLBI Labs Paris has designed prototypes as part of “Connected Commerce”, demonstrating the impact of technology on how shopping will work in the future. In France, it is represented by three creative technologists, who coordinate more than 20 agency experts (SEO, media, back office, and front office).



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ABOUT

Connected Commerce

This provides a unique and diverse means of coordinating digital, creative, and technological expertise, including architecture, sales, innovation, technological infrastructures, merchandising, branding, shopper behaviour psychology, and e-commerce. To develop this offering, Digitas brought together the skills and expertise needed to drive these technological and strategic changes. A network of partners will work together on global projects, but may work individually with DigitasLBI, depending on the issue.

DigitasLBI Paris is responsible for nine key products

- *Creation of the e-commerce platform*
- *Performance optimisation*
- *Store locator and click and collect*
- *Mobile geofencing*
- *Social to store*
- *Local media & SEO*
- *iBeacon in-store marketing*
- *Digital support for sales/retailers*
- *In-store recommendation engines*

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