PHILIPS

Indoor Positioning
White paper

Unlocking the value of retail apps with lighting

For over 100 years, Philips – the global leader in lighting – has been helping retailers around the world to save energy and to create comfortable and attractive ambiances in their stores. Today, with lighting becoming an integral part of the Internet of Things, our vision is to help retailers grasp new opportunities by offering systems and services that deliver value beyond illumination.

The digital transformation of the retail industry and the ascendance of the Millennials generation are shaping a new reality for retailers worldwide. In today's world of 'always on' connectivity, mobile and social media, shopping has become a rich, multilayered process, with multiple touch-points between the retailer and the increasingly empowered consumer.

The advent of the internet brought about a paradigm shift in retailing, with shoppers orientating themselves at home before going to the mall or store. Now, with mobile technology, this is continuing while shoppers are on the move. A study carried out by Google in 2013[1] found that 79% of US smartphone owners are 'smartphone shoppers', using their phones to support their shopping while in-store. This trend will only become stronger as the Millennials generation – today's young adults in their 20s and 30s – take center stage. They constitute the first truly digital generation, having grown up after the internet, social media and mobile became the norm. Already a significant force today, Millennials are projected to represent 30% of total retail sales in the US by 2020[2].

Retailers therefore need to adapt to new shopping behaviors and needs, most notably the expectation of a consistent and personalized experience for each customer, at every touchpoint, anytime and anywhere.

[1] Google Shopper Marketing Agency Council, Mobile In-Store Research: How in-store shoppers are using mobile devices, April 2013
[2] Accenture Outlook, Who are the Millennial shoppers? And what do they really want?, 2013

Retailers with physical stores actually have an advantage over purely online retailers, provided they combine the power of their street presence with a seamless online and mobile presence and experience. This is an opportunity many retailers have yet to fully exploit. While it will require investment and new, different capabilities, retailers – under pressure from fierce and increasingly global competition – will have to keep improving their cost efficiency if they are to survive and prosper.

Philips Lighting's innovation agenda for retail is therefore designed to help retailers drive operational efficiencies, rejuvenate physical spaces, and better engage the digital shopper. The opportunity is very real. LED lighting fixtures can be connected and enhanced with sensing, transmission and communication capabilities. Thus, for the store, granular digital instrumentation goes hand-in-hand with significant energy savings and better light quality.

Through its lighting, Philips can create a hyper-accurate, wall-to-wall indoor positioning solution that enables retailers to provide personalized location-based services via their store app.
To help illustrate the value such an indoor positioning system can deliver, we commissioned research among shoppers in the US, France and the Netherlands in an effort to identify what shoppers value in retailers' mobile store apps, and what indoor location services they would like to see included in these apps.

Carrefour installed a Philips connected lighting system with indoor positioning when it renovated its hypermarket in the Euralille mall in Lille.
"We are always on the lookout for innovations to facilitate customers' navigation in our stores and meet consumers' expectations," says Céline Martin, Director of Commercial Models and Innovation for Carrefour hypermarkets in France. "Thanks to this new application, which uses Philips technology, we are now able to provide our customers at the EuraLille Carrefour with a new service, enabling them to quickly search and locate their preferred promotions or detect all the promotions around them when in-store. A real time-saver for an urban customer base!"

Find out more.

Philips LED-based indoor positioning technology is easy to scale, foot-level (30 cm) accurate, does not require additional investments besides the light fixtures themselves, and offers at least 50% energy savings.

In-store product finding

Simon and Jeannette are in their late-20s, both holding down busy jobs. They don't have a lot of time to do things like grocery shopping. Sometimes it takes them ages to find those last few items on their shopping list – time they can't really afford. They don't like the feeling of uncertainty this creates, and it can take a while before a customer service employee is available to show them where a product is. With the Philips Indoor Positioning System, Simon and Jeannette use the store app on their smart-phone to help them find the products they need. They choose the option to search for a specific product and the app shows them where it can be found. And off they go, happy they're not losing time.

Philips Indoor Positioning – **how it works and the benefits it offers**

The Philips Indoor Positioning System consists of LED fixtures that not only light up the store with energy-efficient and high-quality light, but also use patented Philips Visible Light Communications (VLC) technology to send out a unique code that can be detected with any smartphone camera. The system also features a Philips software and cloud solution that identifies the code and exactly determines the position of the smartphone on the shop floor. In addition to VLC, which provides the real-time and hyper-accurate (30 cm/1 ft) positioning needed in the grocery aisle, the Philips Indoor Positioning System also features in-luminaire Bluetooth Low Energy (BTLE) beacons to enable in-pocket notification and tracking of the customer path while the phone is stowed away, without the hassle of an additional install and the maintenance that these beacons usually require.

The Philips Indoor Positioning System can support a range of location-based services – e.g. way-finding, product finding, and personal couponing – that make shopping a more interactive, personalized and enjoyable experience, ultimately driving sales and encouraging brand loyalty.

Indoor positioning can also add value for retailers in terms of offering better service, improving staff efficiency, and assessing shopper traffic/routing. For example, order pickers receive efficient routing instructions, or customer flow data reveals dead zones in the store.

Research to understand shopper preferences regarding mobile store apps

In our drive to help retailers determine what value indoor positioning could offer them, Philips commissioned research among 3,000 shoppers. The objective was to understand what shoppers value in retailers' store apps and what location-based services should be included in these apps.

The research, conducted in the period August-September 2015, consisted of three parts:

1. Literature research into shopper segmentation and in-store smartphone and app usage.
2. Online survey of 3,000 shoppers (both Grocery and DIY channels) in the US, France and the Netherlands to explore their preferences with regard to potential indoor positioning use-cases; this survey was conducted together with Kantar/TNS.
3. Interviews with around 50 shoppers who had actually experienced the Philips Indoor Positioning System.

The use-cases presented to shoppers outlined a wide variety of indoor positioning-enabled service propositions designed to increase shopper convenience and engagement. The best-known of these is in-store wayfinding and product finding (see case description below), but other areas of shopper interest were also assessed, such as product information, promotions, loyalty benefits, and getting assistance.

Key **take-aways**

Our research shows:

1. There is a major opportunity for retailers to significantly increase shopper engagement by offering personalized, 'right place, right time' location-based services that are truly relevant to the needs and wishes of shoppers.

2. Integrating location-based services will unlock the power of store apps, increase usage and improve the shopping experience, as well as enabling more efficient and effective store operations.

3. In the Grocery segment, those surveyed preferred location-based services that help them to save time or money. In this segment we also identified an opportunity for reward-based 'gamification', adding an element of fun and social entertainment to the shopping experience.

4. In the DIY segment, shoppers preferred location-based services that help them to get the right product, good assistance and advice.

Different shoppers, **different needs**

Recognizing that no two shoppers are the same, and reflecting the importance for retailers to understand the preferences of their target customers, we asked the shoppers in the online survey to reveal their shopping preferences and habits, so that we could differentiate the results over various shopper types. To this end we used the shopper type definition introduced by Burnett[3] that basically distinguishes three types of shoppers ('Thinkers', 'Feelers' and 'Doers'), further subdivided into six archetypes:

Thinkers
- The Strategic Saver layers strategies to get the most value for their money.
- The Quality Seeker wants to make an informed decision and gather information from several channels.

Feelers
- The Opportunistic Adventurer is always in for a sweet deal.
- The Passionate Explorer is always on-trend and looking for new products.

Doers
- The Dollar Defaulter looks for the lowest price to simplify decisions.
- The Habitual Sprinter buys the same products in order to get in and out of the store quickly.

It is important to note that one person can behave like several different shopper types in different situations, but they usually have a preferred type that suits them best.

[3] L. Burnett, Global shop, 2013

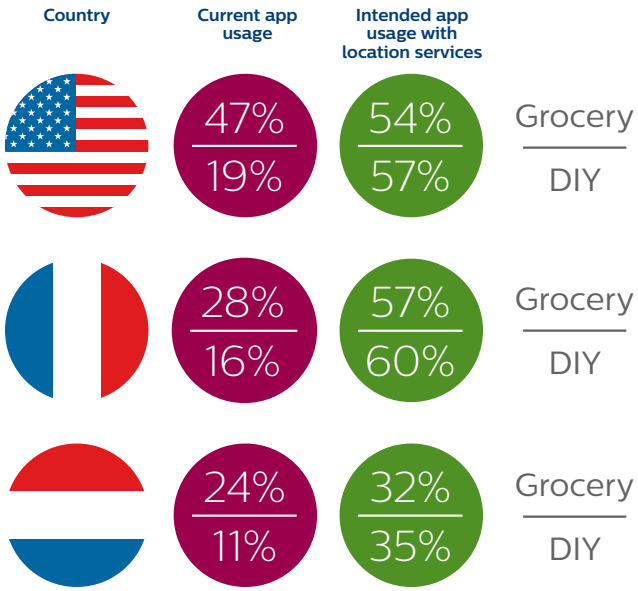
Key findings from our research

Relevant location-based services hold the key to increased app usage

Our research and other studies[4] indicate that the usage of retailers' store apps is still relatively low. The percentage of Grocery shoppers shopping at a specific store who have the store's app on their phone ranges from a strong 47% in the US to 28% in France and 24% in the Netherlands. Scores with DIY shoppers were lower across all three markets. Based on our findings, we see a major opportunity for retailers to significantly increase shopper engagement – by adding personalized, 'right time right place' location-based services that are truly relevant to the needs and wishes of shoppers.

Among the shoppers we surveyed, the intention to use mobile apps enhanced with location-based services was significantly higher than actual usage of retail apps. This suggests that the addition of relevant location-based services to the store app holds the key to increased app usage. In the US and France, more than 1 out of 2 shoppers expressed the intention to use an app that gives them the benefits of location-based services. In the Netherlands this figure was higher than 1 in 3.

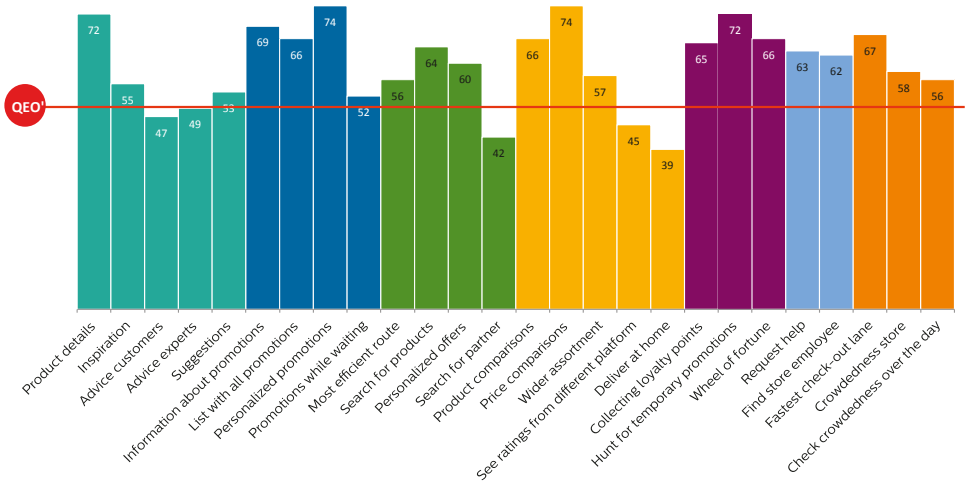
Increase app usage with location services



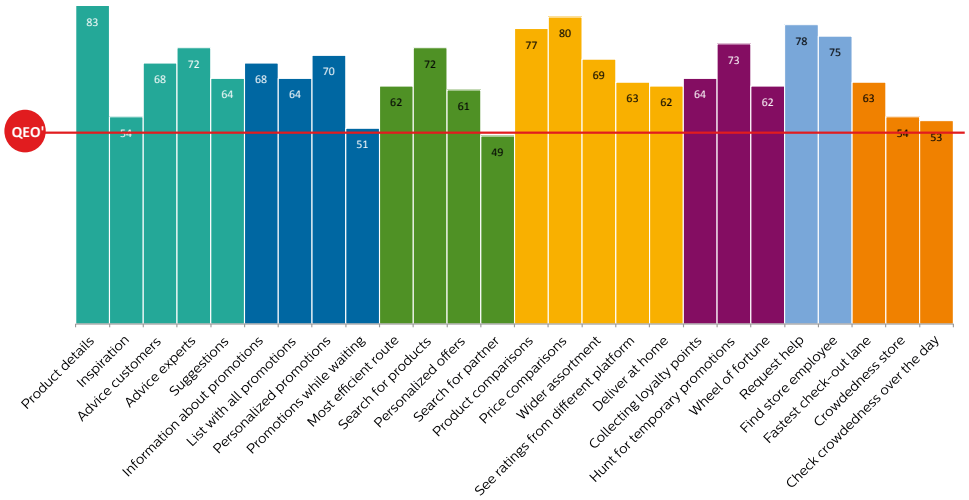
[4] http://digiday.com/brands/state-retail-mobile-apps-5-charts/
http://www.statista.com/statistics/220288/leading-retail-mobile-apps-and-sites-reach/

Shoppers have a genuine interest in location-based services
Based on the use-cases presented to those surveyed, we concluded that shoppers have a genuine interest in location-based services. In 21 out of 26 use-cases presented to Grocery shoppers, more than half of those surveyed expressed an interest in the respective proposition. In DIY, the numbers were even more convincing: only one of the 26 use-cases attracted less than half the shoppers.

Location-based services
are in demand with grocery shoppers



and with DIY shoppers



We found five categories of use-cases that resonated well with the shoppers we surveyed:

The first category is use-cases that involve receiving location-relevant promotions and being able to find them easily. In fact, receiving location- and shopper-relevant promotions was the highest-rated use-case for Grocery shoppers.

In addition, we found significant evidence that shoppers are open to enhancing their shopping experience with some excitement and fun. All use-cases that relate to deals and loyalty points and had an element of gamification, like a treasure hunt or wheel of fortune, scored above-average marks.

The third category of use-cases for which we found great interest related to product search: being able to search for products in the catalogue, select them and find them on the store map.

Specifically in the DIY segment, shoppers appreciate the help of location systems for fast and easy access to product and pricing information. The use-case of requesting a store assistant to come over and help also scored high in the DIY segment.

In summary: in the Grocery segment those surveyed preferred location-based services that help them to save time and/or money, while in the DIY segment shoppers preferred services that help them to get the right product, good assistance and advice.

> This application seems really useful and completely changes the way to shop. **I find this modern and revolutionary."**
>
> Quote from surveyed shopper

The needs of the different shopper types were also apparent from the scores awarded to the use-cases. In general, the Opportunistic Adventurer, Passionate Explorer and Dollar Defaulter were most interested in using location-based services for Grocery. The Habitual Sprinter, who reduces complexity by sticking to the same choices over and over, was least interested in location-based services. For the DIY segment, the Quality Seeker and Passionate Explorer stood out.

How best to deploy location-based services

Retailers can significantly improve the shopping experience and increase shopper engagement by enriching their store app with indoor positioning-enabled location-based services that address the real needs and wishes of shoppers. However, successful deployment requires reliable, accurate and real-time positioning, otherwise the shopper will lose confidence and patience.

Knowing how best to deploy a reliable, accurate and affordable indoor-positioning infrastructure in their stores has been a headache for retailers for some time. Popular technologies such as Wi-Fi or Bluetooth beacons do not deliver the 'product-level accuracy' required by retailers, and involve an additional install in the store as well as a lot of effort in terms of deployment and maintenance.

At Philips Lighting, we believe that turning the lighting infrastructure into a wall-to-wall positioning system holds the key to successful deployment. The Philips Indoor Positioning System enables retailers to have instant and hyper-accurate (30 cm/1 ft) positioning without the need to add or maintain additional hardware, and allows customer flow tracking and in-pocket notifications.

It also comes with a pay-as-you-go pricing scheme, which means that the uplift for the lighting infrastructure is limited and the retailer only pays as and when he decides to use our service. Not to mention the improved light quality and ambiance, plus significant energy savings, that LED lighting brings.

When it comes to delivering on this exciting proposition, Philips Lighting can offer much more than 'just' energy-efficient, low-maintenance LED lighting and the Philips Indoor Positioning System. With our deep understanding of shoppers' needs, we can also provide retailers with the dedicated application expertise to help them engage and delight their customers with personalized, value-adding location-based services, thereby driving sales (larger basket size) and increasing brand loyalty. And through our partnerships with industry leaders in product search, digital store maps and retail IT we are able to offer retailers a comprehensive service package that enables them to unlock this value.

Learn more at **www.philips.com/indoorpositioning**

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