

IoT to enhance customer experience in shopping centers

The annual digital value that the IoT technology creates across the global retail sector is worth almost 3 trillion \$US. Around 70% of retailers believes IoT will significantly impact how they do business in the future.

Revenue growth, cost reductions and business process optimizations are the most important benefits that IoT offers to retail market.

Additionally, IoT tools make it possible to **know customers better** than ever before and provide information to **tailor offerings accordingly**.



IoT tools make it possible to know customers better

The profitability of tracking customers in the store

With this in mind, **GoToDigital**, a computational design agency, has developed **Opportunity**, an IoT platform already integrated with Libelium IoT Devices such as Meshlium Scanner. The main objective is turning the data gathered into valuable and actionable information for the business through the Artificial Intelligence.

Meshlium Scanner is able to **know in real-time the position of the clients inside the store and sends this information to Opportunity which understands the customers' behaviour**, the path that the customer makes within and the time of global stay both in the complete market and in the different sections.

The improvement of the store experience has a direct impact on customer service and therefore on the increase of the average ticket, one of the most important KPIs in commerce.

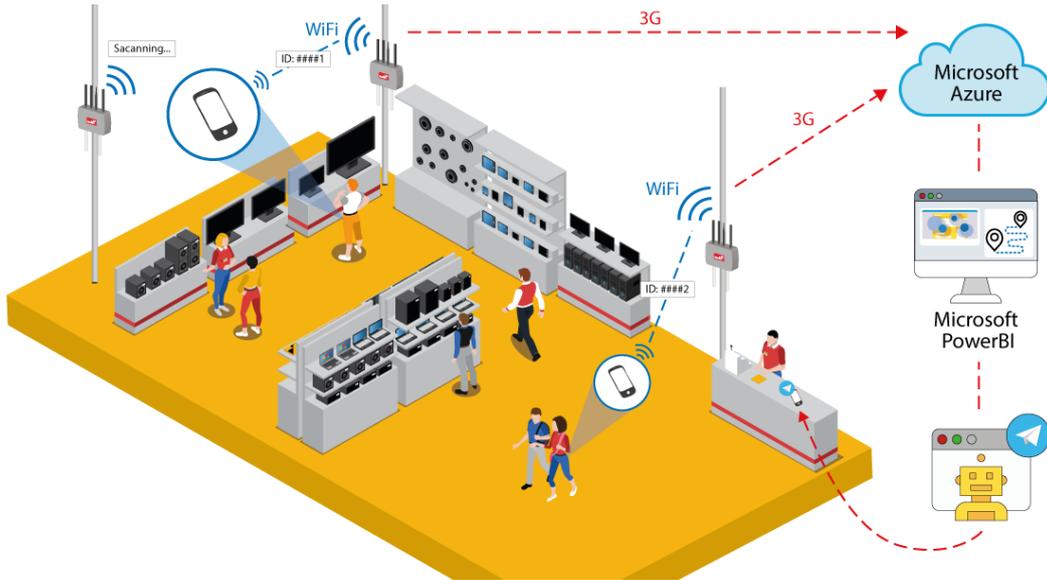


Diagram of an installation

Meshlium Scanner allows the **detection of iPhone and Android devices** and in general any device which works with WiFi or Bluetooth interfaces. With the latest improvements, WiFi real-time scanning has increased in 11%.

These devices can be detected even without being connected to a specific Access Point, enabling the detection of any smartphone, laptop or hands-free car kit device which comes into the coverage area of Meshlium.



Meshlium scanner installation

In a smart store, mall traffic can be analyzed across several zones to understand the entire shopping journey. Analyzing that information retailers can adjust store layouts for more efficient customer visits.

Current in-store **shopping experience can be customized** and improved by monitoring store traffic and customer demand in real time. That gives the opportunity to implement rich digital marketing inside the store or announce events to customers.

By measuring the anonymous data of mobile devices that scan Meshlium Scanner device, the retailer can understand customer behaviour through several indicators that are displayed on a dashboard:

- **Frequency of the customer journey** into the store and average, maximum and minimum time of permanence.
- **Customer flows** in the different areas of the store (heat maps).
- **Analysis and segmentation** based on customer behaviour.
- **Real-time responses** to improve the experience.
- **Operational management** of store staff (suiting the number of staff in the different areas and schedules, to accommodate to the patterns of customer behaviour and influx).

How to detect smartphones indoor

The Meshliums act as **MAC address scanner**. This data is used by Opportunity to **triangulate the position of the mobile phones into the store** as long as they have WiFi on.

The WiFi radio integrated with Meshlium Scanner allows scanning devices in real-time in a range of action up to 500 meters (depending on the line of sight conditions). Meshlium Scanner can detect devices in the 2.4 GHz and 5 GHz frequency bands.

To accomplish with current data protection regulations, **every MAC address is anonymized** inside the Meshlium scanner, giving it a temporary ID. The anonymous nature of this technique is based on the use of MAC addresses as identifiers. In fact, MAC addresses are not associated with any specific use account or mobile phone number not even to any specific vehicle (in case of hands-free devices detection).

How to generate business value

Opportunity platform helps to understand the experience in a space, such as retail areas, airports, malls or offices, measuring the volume of visitors, their experience, the journey and behavior into that area, and the consumption trends.



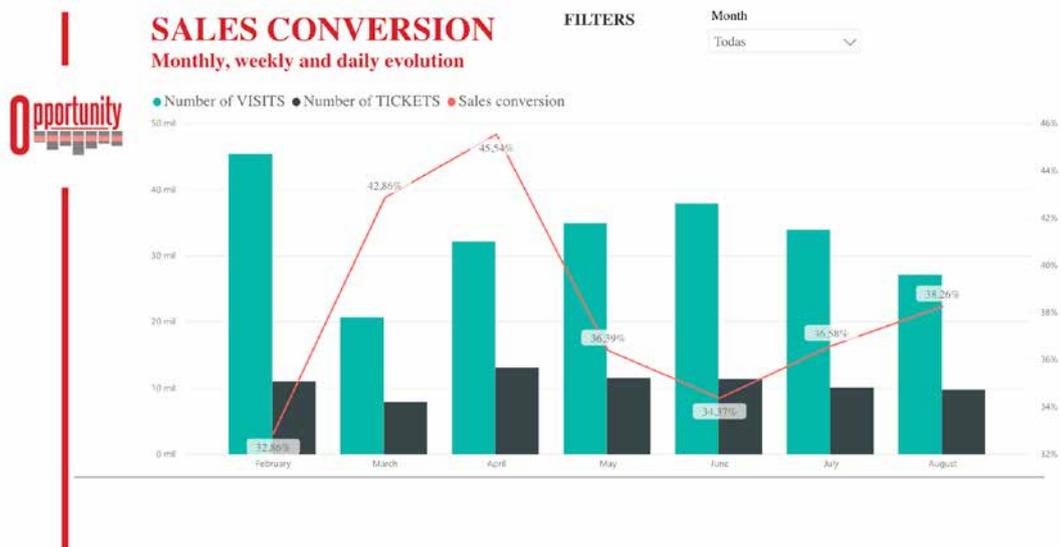
Screenshot of the application

The main objective is to generate business knowledge from the data coming from IoT devices. From a strategic and marketing perspective, the key objective is to gain business intelligence by measuring people to enhance user experience into a specific space.

What can be analyzed?

- **Traffic in the store** to know the volume of visitors in a period of time in stores and specific areas.
- **Behavior of the device** to know the behavior of the devices related to stores and zones.
- **Correlation with sales** to know the relationship between traffic in the store and the behavior of the devices with cash flows.
- **Correlation with labor force** to establish the relation between traffic in the store, behavior of the devices and cash flows with the performance of workers.

Additionally, Opportunity integrates a ChatBOT agent to help the store manager to understand on real time what's going on into the shop. This feature opens the opportunity to make operational decisions in real-time always with the aim to improve the user experience in the store.



Screenshot of the application

The integration of all the business knowledge and insights generated through Opportunity platform can provide a differentiating value for the marketing strategy.

- Increase consumer awareness.
- Be able to identify when the consumer is taking the decision to interact with them with the right message at the right time through proximity marketing actions.
- Identify, measure and analyze the behavior of consumers in the offline channel.
- Measure online and offline customer behavior.
- Know the locations that visit clients, when they do it and the time they stay there.
- Analyze the route within the store, frequency of visits and long-stay areas.
- Unify the channels (physical, website and app) identifying visitors from each channel.
- Have tools to communicate in-situ with the customer.

Return on investment

Gain business intelligence by measuring people and understanding their experience in a shopping area or any other public space provides both strategic and tactical advantages for a marketing manager.

At a strategic level, the IoT platform provides a very valuable source of knowledge for Marketing and Sales areas, with the aim of increasing the turnover:

- adapting the moment and content of your campaigns to the moment of purchase
- analyzing the type of users who arrive at the store or a specific space

- improving the alignment with the customer's shopping experience
- gaining operational efficiency thanks to forecasting the volume of customers
- providing better customer experience thanks to the knowledge about customers
- planning customer-oriented store management based on the data obtained
- offering better experience and quick reaction from operators or managers

Contact [Libelium Sales Department](#) for more information about our products.

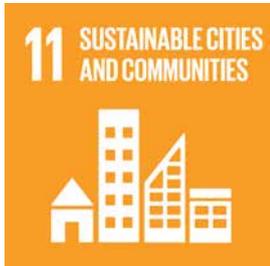
More info:

- For technical details on Meshlium Scanner: [Meshlium Technical Guide](#)
- Read more about Libelium sensor product lines in the [Waspote](#), [Waspote Plug & Sense! Sensor Platform](#) and [Meshlium Gateway](#) websites.
- [Smartphone detection scanner to identify volume of visitors and behaviors in United Kingdom trade fair.](#)
- [Smart Airport project: monitoring environmental conditions in Santiago de Chile airport.](#)
- [Detecting road modality and occupancy patterns to enhance urban planning in Dordrecht Smart City.](#)

References:

- Gotodigital: gotodigital.es
- Opportunity: opportunity.com.co

This case study helps to achieve the following Sustainable Development Goals:



More case studies at: <http://www.libelium.com/resources/case-studies>

TERMS AND CONDITIONS TO USE LIBELIUM CONTENT

Libelium is the owner of all images provided on the website and it can only be used quoting the source. Any video, photograph, diagram, infographic or logo cannot be used or transformed without Libelium authorization. You can request the files in high resolution to publish on your website or to insert in marketing flyers always using Libelium logo and linking with Libelium website.

If you are going to publish the article in a website or media or in a white paper or research study, it must be done including all the references and mentioning Libelium as the source of the content.

© Libelium Comunicaciones Distribuidas S.L. - www.libelium.com