Customer Case for Retail

The Customer - A Scandinavian Retail (Supermarket) Chain

The customer is a well-established Scandinavian retail chain, which was founded more than 50 years ago and has since grown rapidly to over 100 stores within Scandinavia. The product range covers food and drinks to beauty products as well as homewares and furniture items, primarily targeting the middle-class mass market (i.e. general public of all ages).

Stores are specifically designed to encourage visitors to follow the main path that passes by every shelf to optimize their chances for additional sales. As part of this strategy, the customer needs as much insight as possible on the customer journey and behavior inside the stores. Also, the marketing costs of the customer are relatively high (often accounting for up to **14%** of the total revenue) - but their effect/impact is uncertain and hard to measure.

Fig 1: Illustrative Floor Plan of Customer Retail Store

Customer objectives

In-store optimization is the process of understanding visitor behavior to increase profit, improve operations, and enhance the in-store shopping experience in physical stores. To achieve this optimization, it is vital to have fact-based and accurate data. After evaluating the market and available technologies and providers of footfall analytics, the customer chose Bumbee Labs's Footfall Analytics service for its high accuracy, trustworthy data collection, well-documented GDPR compliance, and due to the reliable partner/reseller in contact with the customer, who also offers a wider range of Wi-Fi and analytics services.

The customer was primarily interested in the answers to the following questions:

- **How many visitors do we have in the store?**
- How does this vary during the day?
- What percentage of total walk-ins are potential customers?
- What is the average conversion rate?
- When would we expect and plan for different amounts of visitors (e.g. staffing)

- **How long do our visitors spend in the store?**
- How does this vary during the day?
- What does it say about customer experience?
- How do we best allocate staff between e.g. the shop floor and cashiers?

- **Where in the store do our visitors stay the longest?**
- Where are the hot and cold zones within?
- Are there any bottlenecks or dead zones?
- How do we best plan and locate in-store marketing activities?
- From where do visitors come and where do they go after their visit?

- **How do these numbers vary from store to store?**
- What can we learn from the best (and worst) stores?
- How can we profit from these insights across the retail chain?

- **Marketing budget savings.** The customer felt that a significant part of their marketing budget was spent ineffectively so they wanted fact-based data on what marketing works and which doesn't, in order to make significant savings by just not doing activities with no effects on visitor numbers, dwell time or behaviour.

To answer these questions camera/sensor systems and other IoT devices are often not very accurate. The areas involved are large, there are many entries/ exits needed to monitor, and many visitors leave the area and return several times during the day in what should be counted as only one 'actual visit'.

Bumbee Labs' Wi-Fi-based technology and analytics were seen as a way of answering these questions despite the difficulties involved. Raw data from the mobile phones of visitors is collected through the cloud controllers of the Wi-Fi installations and ingested into the BBL data processing engine. The incoming data is first filtered to eliminate the effects of a MAC randomization also identifying and excluding employees, stationary devices, etc from the sample to be processed. A highly sophisticated statistical method is then used to produce very robust and accurate metrics on visitor numbers, dwell-time, and behavior, published in a simple-to-use API. The metrics in this API were then used to create dashboards visualizing the business intelligence needed by the customer in a highly customized dashboard, presenting slightly different intelligence in slightly different ways for different groups of stakeholders in the company.

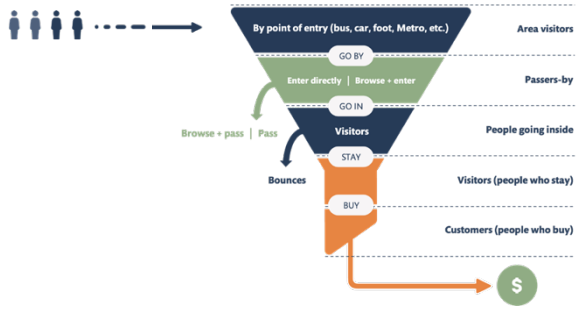

Fig 2: The Conversion Funnel

The Solution

In the initial meetings with the customer, Bumbee Labs received a list of stores with basic information including the floor plans and information on existing Wi-Fi hardware and network installations. Recommendations were provided to the customer on which access points were best to use for the analytics service in each store as not all deployed access points were needed for accurate data. Some of the stores needed an additional 1 or 2 access points deployed - typically where data on people passing by outside the stores were of interest as stores normally do not have deployed access points outside their stores. These (few) additional access points were the only hardware investments needed to roll out the analytics functionality.

Once the data of the store had been shared, Bumbee Labs could verify the installations were suitable and adhered to the simple requirements instructions provided to the customer, and store roll-out started. Bumbee Labs remotely connected to almost 1200 access points in more than approximately 100 stores within two weeks. The installations were configured in the BBL Backoffice system and data from the stores started to accumulate. After 1-2 weeks, depending on the number of visitors in each store, the data output was validated by the customer and BBL staff jointly, following simple validation instructions. Once validated the customized dashboards were made available to the different stakeholder groups through a web interface in the form of downloadable diagrams, charts, tables, and maps. This data was also delivered directly to the customer's own BI system via Bumbee Labs well-documented API.

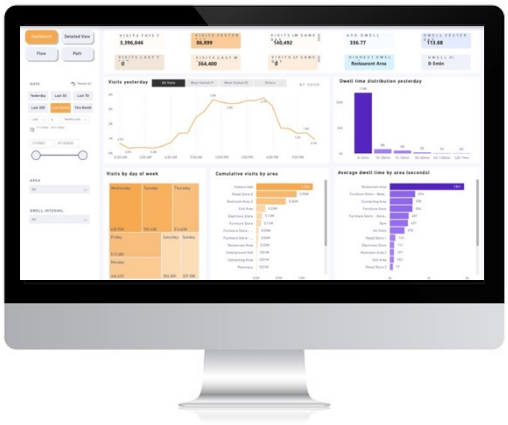

Fig 3: Dashboards for Retail (Crowd Insights)

Each store installation takes about 1 - 2 hours to connect and configure (remotely) provided all the prerequisites have been managed. The customer is only invoiced at the time they start receiving the business intelligence.

Due to privacy regulations, Bumbee Labs do not have direct access to these dashboards nor to the customer data itself (which is stored on AWS servers in Germany). Bumbee Labs service is only to provide the data processing and provide the resulting metrics in their API. How the customer finally makes use of these metrics, and how that use is changed over time, can - but must not - involve Bumbee Labs, depending on the agreement between BBL and the end customer or partner.

This customer was specifically interested in focusing on **savings for marketing** - which meant identifying hot zones within the stores. In a survey of 1,000 marketers worldwide by Rakuten Marketing, respondents estimated that they waste an average of **26%** of their budgets on ineffective channels and strategies. By having a better understanding of hot zones, i.e regions where customers spend most of their time, in-store marketing effectiveness can be improved significantly. Retail stores become better at placing their marketing and in-board signages after they understand where customers spend most of their time and which paths they specifically travel in what numbers. By doing so, the customer can reduce their overall marketing costs by allocating fewer resources to areas that have low footfall traffic.

Also, marketing costs and efforts in general, such as advertising campaigns, discount offers, and billboard marketing can be evaluated using footfall analytics in the stores. If a campaign, for example, shows no effect on either the number of visitors or their dwell time or behavior in-store the effectiveness of the campaign can rightly be questioned.

The Results

Through Bumbee Labs' insights, the customer was able to optimize its business operations by changing the following:

1. **Significant marketing cost savings**
2. **Opening Hours.** By having a better understanding of the frequency of pedestrians passing by certain stories, the customer was better able to optimize store visits.
3. **Staff Scheduling**. By knowing the peak and non-peak hours, the customer was able to replan his staff's schedule i.e optimize the amount of staff needed at any point in the given day.
4. Identified in-store **hot spots** and made better use of those areas for marketing and campaign messages.
5. Adapted **best practices** from some stores to others improving the overall performance of regions and the chain total.
6. Enhanced **customer experience** by readjusting the main path in some stores.

The customer also realized they were able to use the statistics provided by Bumbee Labs to predict when maintenance, deliveries, cleaning, and other maintenance-related jobs should be done to disrupt the customer experience as little as possible. With Bumbee Labs's powerful statistical engine the customer can now identify best practices for product placement, staff schedules, open hours, eliminating dead areas and, optimizing bottlenecks.

From using footfall analytics, the customer reported:

1. Reduced costs savings of approximately 10% in Marketing
2. Improved customer experience in-store
3. Increased profitability by better management of the conversion funnel
4. Optimized placement of products, cashiers, and other things in store
5. Improved results of marketing and effectiveness of window displays
6. Elimination (or partial elimination) of dead zones and bottlenecks

What happened after?

The customer is now evaluating the possibility of an integration of footfall data with the cashiers and point-of sales (PoS) system to better understand consumer experience and conversion to customers. There is a lot of interest in investigating the following metrics:

- Average sales amount per visit
- Average sales per visited hour and/or minute
- Average number of visitors per staff
- Optimal staffing levels per store

Installation of cameras and the combination of these is also being investigated as this can both provide real-time data on occupancy levels, as well as improve the footfall analytics data accuracy over time using the Machine Learning algorithms integrated into the Bumbee Labs footfall analytics service.

Bumbee Labs

WHO WE ARE:

Bumbee Labs was established in 2011 in Stockholm, Sweden. Today, Bumbee Labs is the proud global leader in intelligent footfall data and analytics using Wi-Fi to measure visitor count, dwell times, as well as visitors movement and behavior. Bumbee Labs provides valuable analytics, business intelligence and predictions on footfall traffic and visitor behavior. Bumbee Labs works with global partners in a wide range of end user verticals where business intelligence on large amounts of visitors is important for successful operation of a business.

Key customer industries are retail, transport, smart cities and city centers, food & beverage and hospitality. The service works by collecting the probes sent out by visitors smart phones and filtering and processing the incoming data to produce metrics made available in Bumbee Labs API. The API and the metrics in it are used to create customized dashboards where the end user can track the performance of their business, work to increase revenues and reduce costs in their business, and avoid risks of crowding.

WHY US?

Privacy. We hold to the highest privacy standards and have confirmed GDPR compliance in a European court of Law.

Accuracy

- Large sample collected (>80% of visitors).
- Robust data filtering & extrapolation.

Trust

- Thousands of installed access points
- Validated by customers and partners
- Statistically robust approach
- Competent global network of Partners
- Validated privacy compliance in European court of Law
- Proven high value of the services and intelligence provided
- Wide range of customer references available

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