Luxury Furniture Stores

CASE STUDY

2XL: Human Flow Monitoring & Optimal Product Placement

CHALLENGE

2XL Furniture and Home Décor is an Emirati retail company for luxury home furnishings. 2XL Home is a well-known company and the leading retailer of luxury furnishings across UAE, with many stores within the country.

To understand their customers and the trends of human flows in their premises, 2XL was in need of a data and analytics service. In more detail, the intention of 2XL was to better use their resources, e.g. space, equipment, staff, to both offer better service and increase profits. Paranthetically, increase in customer satisfaction leads to more sales and consequently to more revenues and profits. Moreover, amongst others, 2XL Home was interested in;

- The popularity of their products in their stores

- How and how much time the customers spend in the premises of 2XL Home at each time instant – dwell time and

- The number of people entering the stores and human flows in the areas of interest

SOLUTION

2XL Furniture and Home Décor adopted the technology of Ariadne to solve their challenges. By deploying the unique surveyor devices in the sections of the stores, namely bedroom furnitures, vases, sofas, tables, couches, the entrance and the cash register, Ariadne have started generating data in real time and immediately analyzing and visualizing in a customized dashboard for 2XL Home.

To allow 2XL Home to optimize operations and increase profits, Ariadne analyzed the customer flows, store layout, popularity of locations and more. This, in return, enabled 2XL Home stores to;

- Place their products in line with scientific data for the best return

- Design their layout for higher dwell time and engage the customers more

- Measure product success

- Optimally allocate labour resources

- Make the best use of their spaces and much more
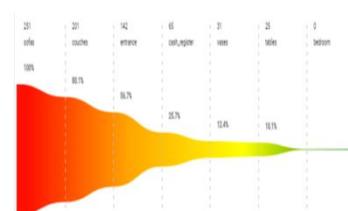
Conversion funnel helps identify the success of products and places
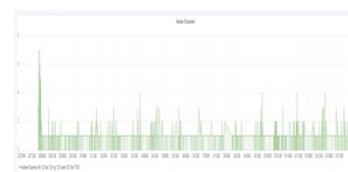
Time customers spend in the store

Ariadne

ANALYTICS

Ariadne surveyor system, and its combination with Ariadne Precise Localization and Dashboard, enabled 2XL Furniture and Home Décor acquire meaningful information about their customers and improve their businesses.

Based on the anonymously collected data, Ariadne generated meaningful information for 2XL Home and visualized it in the dashboard on the right. Some of many analytics Ariadne provided were;

- Dwell time
- Conversion funnel
- Heat map
- Occupany of places
- Number of customers and
- Transition flows between products

CONSULTATION

With the acquired data and generated analytics, Ariadne consulted on ways to optimally allocate resources, such as staff and space, in addition to finding solutions to increase customer conversion rate. Ariadne has provided information on;
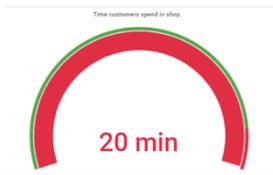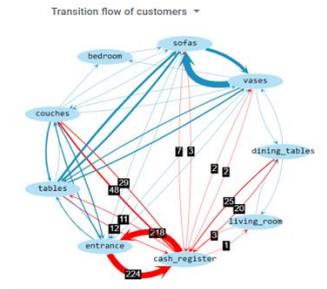

- The threshold time to engage with customers in the store (expert help)

- When to allocate how many staff during the day

- Where to place products for higher return

- Actions to be taken for the products (e.g. replace or reduce price)

- How to increase visibility and optimize the distance between products

TECHNICAL DESCRIPTION

Technology:	RF localization Based: Difference Time of Arrival
Scanning Frequencies	
- **Surveyor Type A**	2.4 GHz & 5 GHz
- **Surveyor Type B**	500 GHz – 5 GHz
Power Connection	5V Micro USB
Current	330mA
Size:	12 cm x 2.4 cm x 9 cm
Operation Temperature:	0° – 70°

ABOUT ARIADNE MAPS

Ariadne enables infrastructure owners to optimize their space by precisely and anonymously tracking the location of their visitors. Precise tracking is being achieved through our patented technology that enables the fusion of electromagnetic signals emitted by smartphones in frequencies varied between 500MHz to 5GHz. The signals are captured through our proprietary hardware technology and estimation of the distance is performed based on the signal attenuation as well as the time difference of arrival, of the same signal to reach our surveyors. We do not need to interact with the user in order to track her. We do not require application installations or network connection, while we anonymize the user data via mathematically proven anonymization algorithms optimized for spatial streaming data. Our product does not require large upfront investment and long installation procedures. Each of our surveyors can be installed by the user in less than two minutes, making it a real plug-and-play solution.

HOW DOES IT WORK?

Ariadne enables the anonymous, non-invasive, precise and real-time passenger location and tracking through our advanced, patented artificial intelligence solution, applied on sensor fusion from data freely emitted to the environment by smartphones. Ariadne is the only solution available that efficiently fuses radio-magnetic signals, captured by its surveyor devices with the geometry, topology and semantics of an area. A collection of Ariadne surveyor devices can provide real time precise location tracking immediately after their installation. Ariadne surveyors require the minimum installation time since each surveyor can be installed in less than two minutes making it a real plug-n-play solution.

One Ariadne surveyor can monitor presence in up to 1000m^2 area, while with one sensor per 50m^2 ultimate tracking accuracy can be achieved. Each device can be installed next to power plugs, without being limited to explicit location for installation. The devices do not have to be visible and hence will not affect the appearance of the walls or ceilings, and more importantly, they do not give the sense of surveillance to customers, like cameras.

Ariadne devices detect signals emitted in frequencies varied between 500MHz and 5GHz, and is the only available device that can track locations of visitors to all communications channels, such as GSM, LTE, WiFi or Bluetooth.

Visitors are localized throughout their entire journey inside the building and most popular trajectories of visitors can be mined. Staff can be easily excluded, even by opt-out or by dynamically identifying and assigning their role.

Ariadne can recognize unusual long queues or even predict them before happening. Ariadne surveyors can guarantee 95% correct customer counting and tracking, and 97% correct waiting times estimation.

Ariadne devices can also be powered via power over internet using exclusively ethernet cable for data transfer and as electricity source. Data sensed by Ariadne surveyors are anonymized on the fly, following mathematically proven anonymization techniques, respecting the privacy of your customers. Ariadne location computation can be executed on Ariadne Cloud or in your private edge or cloud, providing the ownership of the data to the customer.

Ariadne