scribble
Enrich

Shopping Paths at a National Mall Chain

a whitepaper

scribble Data

Introduction

The customer is a nation-wide premium mall chain that caters to upper middle class customers in Tier I and Tier II cities in in India. They required fine-grained and realtime understanding of the customers who come to their malls in order to plan for marketing, growth, and increased engagement.

Current solutions suffered from low adoption (required customers to download a mobile app), errors (visual analytics), and lack of behavioral understanding (transaction analytics). They needed a solution that was non-intrusive, operates at the granularity of individual customer, and is cost effective as it scales.

The customer deployed about 50 sensors (passive wifi loggers) across the entire mall, but needed a data platform to host and compute the data. The customer did not have the required big data infrastructure and team. Solutions from existing, well known data platform vendors were expensive, and unwieldy.

Implementation

Scribble Enrich was deployed on AWS on a t2.xlarge server. The server ingested data directly from the sensors and also consumed feeds from the sensor vendor. The volume is about 1GB per day and about 2M observations by 25 sensors. It tracks about 600K visitors, segments them based on their behavior, and compute 150 metrics about these visitors such as entry path into the mall, frequency of visits, and time spent at various locations. Scribble Enrich then probabilistically links the profiles to other datasets that the customer has. The system was deployed into production in two weeks, with five attributes (metrics) with four sensors, and rapidly evolved to handle 150 attributes and 25 devices.

ONE OF THE POINT-PROBLEMS SOLVED BY SCRIBBLE ENRICH

The Mall wanted to increase footfall in a particular section of the mall, so as to benefit from the uptake in revenue from the stores there, else those stores would not meet their targets and soon would shut down. There would be lost revenue from the rent opportunity while the mall looked for other brands to occupy the area. Also, the overall rent they could charge from any new store would fall because potential new renters could cite the lack of foot traffic as a reason for offering a lower rent, and finally, there would be reputational damage to the mall as a whole when customers would find empty storefronts.

POINT SOLUTION

The mall realised that the cost of acquiring net new customers (i.e. people who have not visited the mall, or visit so infrequently as to qualify as a new customer acquisition every time they visit) would be high. The alternative was to provide incentives to crowds already within the mall to hang out in these under-frequented areas. The Mall was able to use the Enrich solution to look

for patterns of footfalls to determine the timing and location of ads, and for the targeting of offers. This further led to providing more casual seating options, better lighting, and joint Mall-Store partnerships to provide offers that were advertised in the high footfall areas to get shoppers to come to those stores that were less visited. The eventual uptake in footfall was also measurable using the Enrich solution, contributing to a month-on-month revenue increase of 2% for the Mall.

ENRICH PLATFORM CAPABILITY	BENEFIT
Scalable enrichment pipeline	600K customers, 1GB/day, 150+GB of data Auditable and reproducible
Automated consumption	Feed datasets to their BI system
Background custom tasks	Built-in backup and other capabilities, Easy integration with device API
Background monitoring services	All devices and their data quality is monitored and any issues fixed in real time
API to ingest data	Eliminated cost of device data subscription
Multiple and flexible pipelines	Flexible ad hoc analysis

End Result

The system, built atop Scribble Enrich, is a live implementation, and has improved revenue for the mall. It is being rolled out to other malls in the chain to provide a unified interface, and to support a number of usecases such as establishment of a common performance benchmark.