

Telco Location Data Monetization



A global telecommunications company opened a new revenue stream selling anonymized geolocation data and made it profitable within two years.

Practice Area:

Data Science | Data Engineering | Data Visualization

Objectives

01 Create and implement data monetization strategy

02 Create and implement relevant toolset and methodology

03 Help ensure a quick ROI for data monetization practice



Business Impact



New, quickly profitable revenue stream



Optimized data management

Technologies

Python

Spark

PySpark

Impala

Scala

Hive

GeoSpark

Mapbox

Kepler GL

QGIS

Power BI

Background

Telecommunications companies day-to-day business activities produce massive and unique anonymized data sourced from mobile devices in the hands and pockets of end-users. Our client, a global player in the telco industry, had traditionally used this data to optimize their network and operations, but as modern data

platform capabilities made it easier to monetize data for extra revenue, they began taking exploratory steps in this direction. The company had previously relied on HCLTech as a trusted partner for a variety of projects, including their agile transformation.

Challenge

The client relied on HCLTech to set up data monetization operations that would not only enable the client to meet future demand at any scale but also quickly become a profitable additional stream of revenue. With insufficient in-house technical or strategic precedent to build on, this meant that the team would have to define, develop and implement the company's data monetization strategy, pipeline and methodology from the ground up. At this early stage, there was a lack of clear focus regarding what kind of data could and would even be provided to external parties, as well as how to optimize relevant operations in a way that would ensure the expected ROI the new practice. This would necessitate creating and implementing tools and generalized procedures that would ensure high-quality data that could be easily productized in ways that would appeal to customers.



Solution

The four-person project team comprised data science and engineering expertise from HCLTech and project management from an external partner. Relying on limited-scope proof of concept as well as early interest from potential buyers and a request from the EU for data for pandemic response purposes, the project team defined location data — potentially enriched with anonymized demographic data — as the primary focus for monetization efforts. This helped set the scope and direction for the strategic and technical elements of the project and led to the practice of offering packaged data sets, analyses and continuous data feeds for buyers, as well as map-based visualizations and adaptable, reusable PoCs.

One of the primary tools that the team developed to facilitate the location data monetization effort was a so-called “location enabler.” In essence, it is a schema with tables that get filled daily or even multiple times a day with a compressed version of the client’s location data stream. It includes various kinds of hot points showing the most typical locations of different devices. The location

enabler serves as a foundation and accelerator for all location-data-based analysis packages that get monetized, alongside proprietary scripts and functions that serve as building blocks containing repeatable steps to further improve delivery speed. With such tools in place, the team was able to introduce accurate hot point calculation and, in turn, enable origin-destination analyses from discrete location data.

Since the business value of the monetized packages and feeds is largely dependent on how clean and accurate the data is, the team also implemented new data quality assurance practices. In addition to algorithms to clean, organize and aggregate data, they designed monitoring dashboards, scripts and updates for geolocation data sources that promote data quality via real-time outage detection. The team also introduced a noise filtering process to ensure cleaner location data went hand-in-hand with the development of new compression practices that, as an added benefit, made it possible to store data more efficiently by only eliminating noise, and never valuable information, to save space.

Outcome

Thanks to the comprehensive data monetization strategy, toolset and methodology that HCLTech developed and implemented, the client was able to introduce a mature set of data offerings that became a profitable stream of revenue in just two years. This has made the client a pioneer in the local market and future-fitted their operations for a likely boom in demand for externally-sourced data sets, feeds and analyses.

At a higher strategic level, the synergy between the range of monetized offerings and the relevant toolset make it possible to quickly and accurately allocate the resources necessary to satisfy requests from the client’s customers. This has proven to be invaluable for ensuring swift delivery of value to an expanding roster of buyers, many of

whom have become regulars. The most prominent industries to utilize the service have been retail, tourism, Big Four consulting and urban planning, who have used data purchased from the client to optimize a variety of processes — including adjusting physical advertising strategy to pedestrian patterns and tailoring traffic planning to accommodate residents’ transportation habits as revealed by city-level traffic matrices created by the HCLTech team.

As an added benefit, the innovations that drove the data monetization enablement project have also helped the client manage their data more efficiently. The new location data compression practices have made it possible to improve data retention time from two weeks to two years.