Enabling Data-Driven Network Prioritization for a Large U.S. Telecommunications Organization

The Business Challenge

Telcos invest a significant amount of time, resources, and capital to improve their 4G networks. Superior coverage can be the difference between retaining a customer or seeing them leave for a competitor. A major US telco, wanted to leverage its business and network data to more accurately analyze potential network infrastructure sites to maximize coverage, customer satisfaction, and ROI.

Previously, the telco was using legacy analytics and GIS tools to make network planning decisions. The results would be executed in a batch process on a bi-weekly or monthly basis and would take hours and even days to execute. Analysts also weren't allowed to make ad-hoc or dynamic requests of the data due to the scale and complexity of the geospatial and business data. For example, if management saw a spike in network utilization in a given area and a corresponding reduction in service/performance, they couldn't interrogate the details including what types of devices were used or what sort of content/services they were consuming. The telco wanted a real-time solution where users could interact dynamically with the data to better understand their network.

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The Active Analytics Solution

This top 3 US telco uses Kinetica to make the best possible, highest ROI, 4G network improvement and site buildout decisions. Our Active Analytics Platform is able to analyze massive geospatial and network data sets and visualize them at scale to enable interactive, real-time network planning and prioritization.

The telco blends 3rd party data with their own proprietary network performance data with over 5 billion signal events to understand how their network performance impacts existing and target customers. This information is then aggregated to a hex-grid data layer that overlays their target markets, displaying key metrics within each 'bin' of the grid to indicate how well they perform in those areas. The telco can then compare the network with locations of their customers as well as the target demographic profiles of the users in those areas. This can help to determine whether or not they should invest in network infrastructure improvements to either support the existing customers (prevent churn and provide better quality of service) or potentially target other carriers' customers. Active analytics delivers results in seconds as opposed to hours. The telco can now dynamically query the data to get granular details on changes in the network, and more accurately calculate ROI for different network and infrastructure investment scenarios, quickly identifying where it would be most profitable to put new towers.

One Kinetica application for the telco involves overlaying road network data with millions customer phone signal events, a large scale, complex analysis. This was previously impossible using legacy analytics and geospatial solutions. Kinetica enables the telco to optimize where to place cell towers to improve customer satisfaction, retention, and acquisition. The telco can also use this information to offer services to businesses near cell towers and identify areas to open new retail stores where users travel the most.

Network Prioritization

Road Network Data

90 billion customer phone signals

Massive scale geo operations (billion × billion)

Customer data overlaid on traffic data

Network plan optimized to customer travel patterns

Identify businesses to offer services to

Select new retail store sites

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