

Active Analytics for Telecommunications

Telecommunications organizations are looking to evolve from merely providing the infrastructure for the digital economy to powering it. Competition and consolidation are pressuring telcos to develop new revenue streams. Simultaneously, many telcos are spending a significant amount of time and effort managing a hodgepodge of big data solutions that struggle to deal with the large geospatial and analytical workloads that telcos work with. This makes predictive, dynamic analysis for mission critical initiatives like 5G planning nearly impossible. Telcos that don't take an active analytics approach

risk making suboptimal investments that reduce ROI, or may miss opportunities for new revenue generating services.

Telcos can leverage the massive volume of data available to them to digitize core applications and develop new data-powered products and services. Market forces combined with the rise of 5G and IoT drive demand for new active analytical solutions that can help telcos accelerate their transformation. That's why leading global telcos including Telkomsel and Softbank choose active analytics.

The Kinetica Active Analytics Platform

Kinetica is a GPU-accelerated data platform that unites historical analytics and streaming analytics, location intelligence, graph analytics, and machine learning to tackle massive scale data challenges. By leveraging the power of the Kinetica platform, telcos can accelerate their digital transformation, capitalize on the 5G opportunity, and gain a significant competitive advantage in the years to come.

ROI-DRIVEN NETWORK PLANNING

- Blend large, complex geospatial and network datasets and dynamically visualize it at scale to compare network coverage, existing assets, and plan future investments.
- Apply predictive models around activation, churn, RF propagation, and network prioritization to improve network planning decisions and scenario analysis for 3G/4G/5G.
- Perform high accuracy ROI projections across geographies and gain real-time visibility into the impact of potential infrastructure on coverage and subscribers.

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

A major US telco leverages Kinetica to make more accurate ROI projections for potential network infrastructure sites using a predictive model based on customer churn and activation data. Kinetica's parallel processing power enables the telco to assess decision factors across multiple dimensions by blending massive data sets of streaming, historical, and location data, previously impossible with the legacy technology stack. The telco can compare coverage with customer location and profiles to better understand if they should invest in network infrastructure improvements. These results are executed in seconds, in real-time, compared to batch as it was previously. 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 investments.

5G SMALL CELL NETWORK PLANNING

- Accelerate 5G rollout with interactive, network visualization at scale, line-of-sight analysis, and predictive modeling of small cell network coverage to optimize decision making.
- Run real-time scenario analysis leveraging RF propagation models to predict the impact of adding or moving 5G cells, consider more deployment configurations, maximize ROI, and minimize risk.
- Apply predictive analytics and machine learning to enhance insight when considering 5G network design, planning, and deployment in a dynamic urban environment.

Interactive 5G Small Cell Network Planning for a Large U.S. Telecommunications Organization

Kinetica helps a major US telco to better understand where to place 5G small cells by modeling their impact on coverage of customers and households. This is accomplished by blending large RF propagation models and building datasets and visualizing them to understand various 5G coverage scenarios in seconds compared to hours. The ability to more rapidly model deployment options helps the telco to maximize the ROI of small cell placements and understand where they can provide reliable coverage.

NETWORK PERFORMANCE ANALYSIS

- Blend network data with third party datasets at scale to understand how network performance impacts existing and target subscribers.
- Dynamically visualize and analyze network performance in real-time instead of having to run the process in batch, leading to delayed results.
- Model and visualize factors like home, work, and route coverage to help prioritize network buildout and improve customer experience.

ADAPTIVE COVERAGE

- Leverage real-time and predictive analysis to make informed network coverage decisions at high-demand locations such as sporting venues and convention centers.
- Demonstrate and model how network investment decisions change and impact the customer experience in dynamic, high traffic areas.
- Perform real-time scenario analysis to view and analyze network activity at high traffic venues over space and time and adjust infrastructure and resources accordingly.

COMMERCIAL PLANNING

- Build network economics models using datasets previously too large or difficult to process, to drive logistics, real estate and marketing decisions.
- Blend massive geospatial insights across multiple metric sets to make more targeted B2B investments and more accurately project ROI for new site investments.
- Kinetica can analyze billions of mobile signal data points in real time for network coverage analysis and user trend analysis.

REVENUE REPORTING

- Accelerate and enhance revenue reporting to gain a continuous view of revenue flows and trends and make more accurate, data-driven decisions around campaigns, infrastructure spending, and more.
- Visualize revenue data with detailed, interactive dashboards that enable granular analysis of marketing campaigns and more accurately determine their ROI.

IOT-ENABLED APPLICATIONS

- Collect and analyze streaming and location data from connected devices in real-time, compare it to historical data, and apply machine learning to understand trends.
- Apply active analytics to Industry 4.0 initiatives enabled by 5G like smart factories and smart cities to improve operations, increase efficiency, and maximize value.

CYBERSECURITY AND FRAUD DETECTION

- Ingest and analyze massive amounts of streaming network data in real-time to spot anomalies and identify bad actors. Apply machine learning to enhance human analysis and improve cyber defense.
- Leverage historical, location, and graph analytics for fraud detection to better understand relationships between different subscribers and spot unusual trends and behaviors.