NVIDIA GPUs FOR ACCELERATED ANALYTICS
INDUSTRY SPOTLIGHT: TELCO

Telco companies store, process, and analyze massive amounts of clients and sensor data on a daily basis. They create more data in a day than their legacy analytics platforms can process in a week. With the slow compute limitation, telco companies struggle to gain valuable insights fast, monetize the data, enhance customer experience, optimize operational efficiency, and prevent fraudulent attacks all at the same time.

Advantages of GPU-Accelerated Solution

Massively parallel GPUs consist of thousands of smaller, more efficient cores designed for handling multiple tasks simultaneously. Telco companies leverage multi-GPU multi-node systems to analyze their disparate data all at the same time with extreme speed and precision.

GPU-accelerated solutions enable telecom companies to determine a subscriber's lifetime value, generate ideas for brand improvement, reveal cross-channel insights, optimize the network, and avoid customer churn.

INDUSTRY CHALLENGES

The traditional CPU-only solutions create the following challenges for customers:

> **Lengthy Time to Insights**

> > Waiting for minutes or hours to derive insights from the SIM card or Data Over Cable Service Interface Specification (DOCSIS) data, telco companies only ask questions they know the answers to.

> **Delayed Response to Cyber Threats**

> > Issuing iterative queries takes too long, limiting teams in their exploration of data and potentially allows fraud and malware go undetected.

> **Curtailed Analyst Creativity**

> > Not able to do more with existing data discourages telco analysts' creativity and impacts financial bottom line negatively.

Telco Industry Accelerated Analytics Use Cases

Data Monetization	Rationalize and Prioritize Infrastructure Investment
> Leverage real-time heat maps to analyze subscriber data (shoppers' visit to a store, browsing data, subscribers' locations) to provide customers with targeted ads, or help them determine where to open new retail locations. > Tailor advertising offers to mobile users in the vicinity of an advertiser's auto dealer showrooms or possible patrons in the area of a local music festival.	> Track and visualize the real-time usage and status of telecommunications networks/towers to gauge performance levels and identify any bandwidth or maintenance issues. > Identify equipment before it fails, (predictive maintenance), for lower service disruptions and lower maintenance costs. Cell phones can be "polled" on demand to determine the health of the cell phone network.
Fraud Detection and Prevention	**Smart Cities, Cars, and Homes**
> Leverage real-time data (customer account data, location-specific data and usage data) to enable the development of predictive models that can flag and proactively prevent fraudulent activities (Subscription Fraud, Clip on Fraud, Call Forwarding, Cloning Fraud, Roaming Fraud, and Calling Card). > Visualize and analyze data (voice recording of suspects, phone numbers, start and stop times, number of calls per hour, ANIs, and IP addresses) to prevent Telecom Denial of Service (TDoS), where fraudsters make a huge number of phone calls, keeping them up for long durations, and overwhelming the capacity of an organization's phone network.	> Collect, analyze, and visualize IoT data from sensors, smart cars, and home to inform city processes and improve the delivery of urban services and the management of infrastructure. > Understand general traffic patterns, intelligent road signs for better communication of traffic issues with car and home water system sensor data for detecting the water quality and leakage to provide more services with less while enhancing livability.

Get Started with NVIDIA

NVIDIA ISV Analytics Partners' solutions—running on NVIDIA® Tesla®-based systems, NVIDIA DGX™ Systems and GPU-accelerated cloud platform allows customers to leverage the massive computational power to derive insights from vast volumes of complex and streaming data in milliseconds.

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