Case Study

Optimizing Network Operations for Seamless Performance

Summary

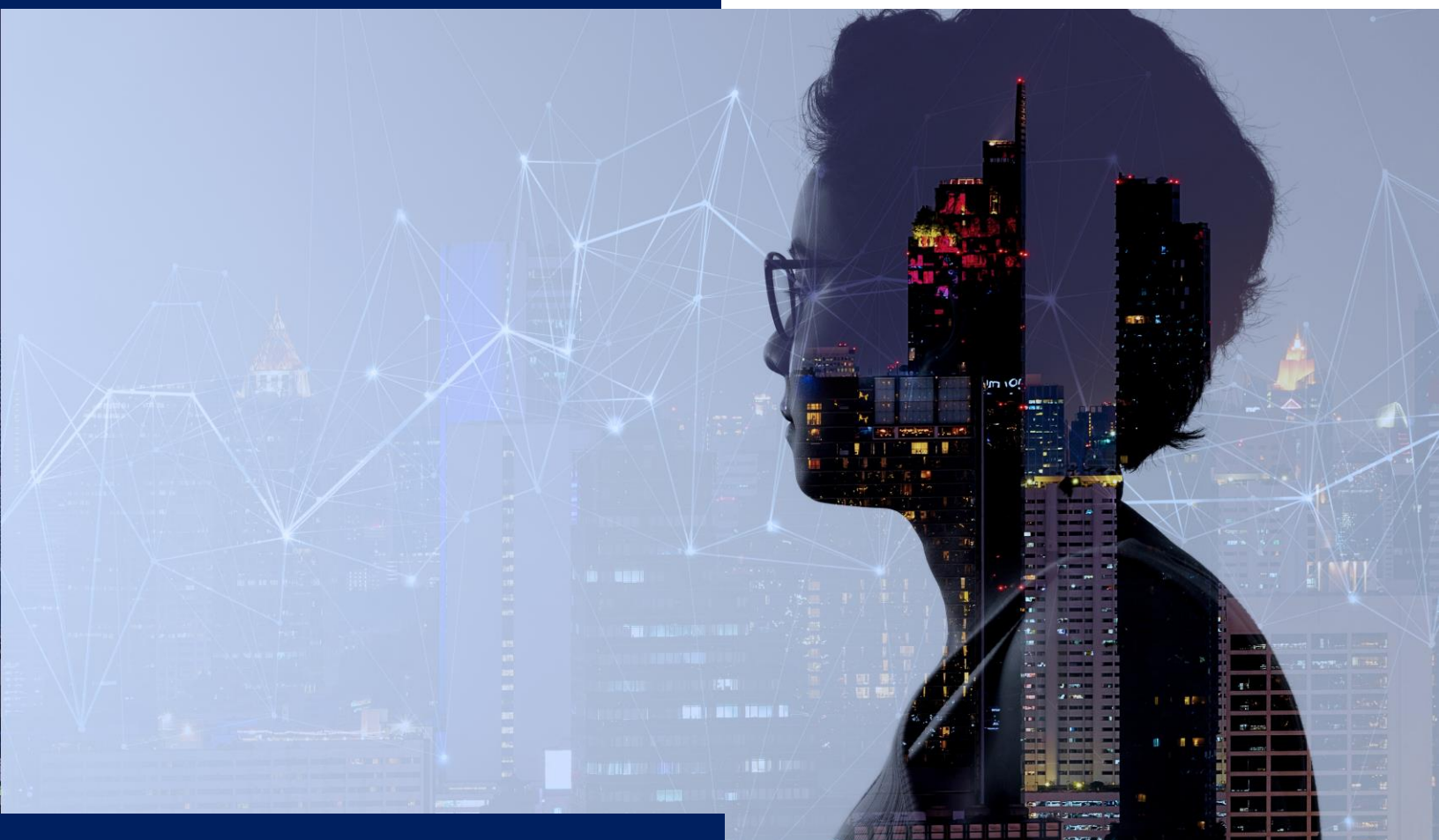
One of the largest global communication technology companies sought to enhance the end-to-end (E2E) performance of network devices by leveraging big data analytics and AI-driven anomaly detection. The initiative aimed to improve network efficiency, reduce operational risks, and provide real-time insights for better decision-making across multiple KPIs, including device performance, network stability, application efficiency, and customer experience.

Scope

- Develop an integrated dashboard to consolidate and analyze data from various sources, including Call Detail Records (CDRs), network logs, and real-time monitoring systems.
- Ingest and process large-scale data using a big data platform to provide performance insights across key metrics such as device health, network quality, applications, and customer service.
- Implement AI-driven anomaly detection to proactively identify performance bottlenecks and service disruptions.

Challenges

- Managing and processing vast amounts of unstructured network data from disparate sources.
- Ensuring real-time analytics capabilities for anomaly detection and rapid incident resolution.
- Providing actionable insights in an easily consumable format for executives, data scientists, and network engineers.
- Automating alert mechanisms to notify stakeholders of performance anomalies in real-time.



Solution

- Developed a real-time performance dashboard with automated reporting and analytics.
- Implemented AI-powered anomaly detection and notification systems for proactive issue resolution.
- Enabled daily reporting and anomaly notifications via email to key stakeholders.
- Integrated advanced analytics for:
  - 5G Device Model Trends
  - 5G Network Radio Anomaly Detection
  - 5G Device Point of Sale Returns Analysis
  - Executive and Network Device Analytics
  - 5G Customer Premises Equipment Analytics
  - Device Feature Performance Analytics (DFPA)

Business Value

- Accelerated speed to market for 5G NR and anomaly detection programs, improving decision-making at the executive level.
- Enhanced predictive analytics capabilities, enabling deeper insights into network performance trends.
- Automated anomaly detection and alerting, allowing stakeholders to proactively address potential issues.
- Improved data accessibility and visualization, empowering engineers and executives to make data-driven decisions efficiently.

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