

NAR – IEN (Network Equipment) AI&D



Overview

The project aimed to track, monitor, and analyze the health of iEN (Intelligent Edge Network) inventory equipment to maintain network efficiency, scalability, and capacity for seamless data traversal across the customer network. AI and data analytics were utilized to enhance service reliability and prevent disruptions.





Scope

The project encompassed the design, development, and implementation of a Network Analytics Platform for Intelligent Edge Network, focusing on:

- **Intelligent Edge Network Circuit Validation & Analysis**
Ensuring operational efficiency and resilience of iEN circuits.
- **Intelligent Edge Network Equipment Inventory Analysis**
Monitoring the performance of network equipment.
- **Service Assurance (SA) Validations**
Ensuring high-quality service across the network infrastructure.

The platform involved dashboard and database enhancements, utilizing big data for Intelligent Edge Network circuit reporting and Business Intelligence (BI) solutions.



Challenges

- **Data Integration**
Integrating data from various network vendors with differing formats was a challenge. An ETL process was implemented to standardize the data.
- **Scalability**
As data volumes grew, ensuring scalable performance was key. Big Data architecture and cloud solutions were used to maintain efficiency.
- **Real-Time Processing**
Data processing delays impacted timely service assurance. Optimizing the pipeline enabled faster, near real-time insights.
- **User Adoption**
Resistance to new tools was addressed with targeted training and showcasing early successes to encourage adoption.



Solution

To meet the project objectives, the following solutions were implemented:

- **BI Analytics & Reports:** Comprehensive reports were developed to provide actionable insights into network performance and capacity.
- **Tableau-Based Intelligent Edge Network Equipment Report:** A Tableau dashboard visualized the status and health of network equipment for better monitoring.
- **NE Reports & Dashboards:** Interactive dashboards provided real-time visibility into network performance.
- **Network Test Data for Service Assurance:** Test data was prepared for fault isolation and service assurance using industry standard testing protocol.
- **Intelligent Edge Network Circuit Inventory Validations:** Automated validations ensured that network inventories were up-to-date and optimized.
- **Network Engineering Collaboration:** Worked with CoE, Workforce Management and Network Build teams to align best practices and validate network equipment before moving to production.
- **Cisco & Ciena Device Validation Enhancements:** Enhanced validation processes for Cisco and Ciena devices to ensure smooth migrations.



Business Value Delivered

The solution provided several key benefits:

- **Enhanced Intelligent Edge Network Circuit Inventory Reporting:** Improved reporting capabilities helped track, provision, and monitor network equipment efficiently.
- **Data Models for Network Equipment:** Robust data models enabled advanced analytics and real-time insights into network health.
- **Continuous Network Health Monitoring:** Ongoing monitoring ensured proactive identification of potential issues, reducing downtime and improving service reliability.
- **The solution significantly boosted network performance, optimized resources, and ensured the client's operational success.**



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