techwave

Intelligent Predictive Site Maintenance Schedule for America's Leading Telecom Infrastructure Provider

About Client

The client has been one of America's leading telecommunications infrastructure providers for over three decades—owning, managing, and leasing shared wireless infrastructure. Prospering its name among the Fortune 500 companies, the client offers diverse services, including tower leasing, small-cell solutions, wireless coverage, smart city solutions, custom fiber optic networks, and advanced technologies to over 10,000 customers. The client has over 40,000 cell towers and approximately 85,000 route miles of fiber, generating an annual revenue of more than $5BN.

Executive Overview

To maintain their leading position and continue growing shared infrastructure business, the client needed to optimize their field operations for mandatory service and maintenance visits to a vast network of cell towers. However, their existing scheduling and resource allocation processes were inefficient and predominantly based on past experiences, leading to slow improvements over time.

Vertical:
Telecom

Company Size:
5000+ Employees

Annual Revenue:
US $5 Billion+

Region: North America

Key Challenges:
Inefficient scheduling and resource utilization, inability to scale operations, invisibility in field locations, and increase in maintenance time.

To address these challenges, the client partnered with Techwave to develop a cloud-based analytics platform that would leverage big data and predictive analytics to optimize their unified field force, ensuring continuity of service without disruption in the North American market.

Business Challenges

Inefficient scheduling and resource allocation for mandatory service and maintenance visits to over 40,000 cell towers across the U.S.

Existing processes were based on past experiences, leading to inefficiencies and slow year-over-year improvements.

Lack of visibility into optimal locations for field personnel and potential opportunities for outsourcing in rural areas.

Difficulties in evaluating and implementing optimizations due to limited analytical capabilities.

Techwave's Strategy and Solutions

Techwave Consulting implemented a cloud-based analytics platform leveraging advanced data science techniques, cloud architecture, and predictive analytics using AI and machine learning:

Statistical modeling and clustering techniques to develop multiple what-if scenarios for site visits

Cloud-based architecture provides scalability and flexibility to work with large, complex data sets

Visualization tools for easy consumption of data insights and actionable decision-making

Iterative design approach delivering actionable data sooner for rapid time-to-value realization

The solution involved mapping cell tower locations, applying rules-based modeling to develop logical clusters, and determining optimal routes and schedules for site visits by analyzing multiple scenarios using artificial intelligence and machine learning.

Business Outcomes

The cloud-based analytics platform enabled the client to achieve the following outcomes:

Identified up to 60% optimization potential for field personnel performing site visits to North American locations

Enabled ad-hoc and on-demand analysis for data-driven decision-making

Provided data visualization for easy consumption of insights and actionable decision-making

Maximized efficiency through predictive analytics, data science, and what-if scenario modeling

Featured Technologies

aws partner network

About Techwave

Headquartered in Houston, TX, Techwave provides Global Technology and Engineering Services and Solutions to more than 600+ clients across 5 continents. Our expertise in Data & Analytics, Software Engineering, AI/ML, Cloud Engineering Services, and Strategic Sourcing provides the end-to-end digital capabilities that empower our clients to maximize the value realization from their digital investments. Our CMMI Level 5 and ISO 9001:2015 certifications demonstrate our ability to deliver excellence to all our clients.

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