Executive Summary

The telecommunications industry is the backbone of modern connectivity, providing essential services to millions of businesses and households. However, as customer expectations rise and networks become more complex, the industry’s legacy approach to field technician task assignment is proving increasingly inadequate. Traditionally, task assignments are managed manually or through outdated systems, resulting in inefficiencies, slower response times, and a noticeable decline in customer satisfaction and network reliability.

This project proposes the design and deployment of an automated technician task assignment system. Leveraging modern data analytics and intelligent algorithms, the system will evaluate incoming service requests and dynamically match each job with the most suitable technician based on factors such as skill set, proximity, availability, and historical performance. By automating this process, the solution aims to eliminate human error, reduce scheduling bottlenecks, and optimize the use of field resources.

The anticipated benefits of this solution are substantial. First, customers will experience faster service and fewer delays, as the right technician is dispatched the first time, reducing the need for repeat visits. Second, the system will increase operational efficiency—technicians will spend less time traveling and more time resolving issues, leading to improved productivity and lower operational costs. Third, enhanced first-time fix rates and timely service delivery will boost customer satisfaction scores and strengthen brand loyalty.

From a business perspective, implementing this automated system is expected to result in measurable improvements. Key performance indicators such as average response time, first-time resolution rate, and customer Net Promoter Score (NPS) will be tracked and optimized. Additionally, the automation of task assignments can reduce overtime expenses and minimize service-level agreement (SLA) breaches, further improving the company’s bottom line.

In summary, by replacing outdated, manual assignment processes with an intelligent, automated system, the telecom industry can address current pain points, future-proof its operations, and deliver exceptional value to both customers and the business. This capstone project demonstrates a clear path to achieving these goals through innovative technology and a customer-centric approach.