

Engineering Consultancy

Empowering Engineering Excellence

From Intranet to Internet: Wi-Fi 6
Transforms Connectivity at EIL Mumbai



Background

Engineers India Limited (EIL) is a prominent Indian engineering consultancy and EPC (Engineering, Procurement, and Construction) company established in 1965. Holding the prestigious title of "Navratna PSU" (Public Sector Undertaking), EIL significantly contributes to India's industrial development, especially within the hydrocarbon sector. Under the ownership of the Government of India, EIL provides design, engineering, procurement, construction, and integrated project management services across diverse sectors including oil and gas, petrochemicals, refineries, pipelines, metallurgy, and infrastructure.

With over five decades of experience, EIL has successfully executed projects in over 100 countries, solidifying its reputation as a global player in the engineering consultancy domain. The company's commitment to quality, innovation, and sustainable development has earned it numerous accolades and certifications, including ISO 9001, ISO 14001, and OHSAS 18001.

Headquartered in New Delhi, EIL has a strong presence across India, with several regional offices and project offices. To cater to the growing demand for engineering and consultancy services in the western region of India, particularly in the oil and gas, petrochemical, and fertilizer sectors, EIL Mumbai office was set up. The Mumbai office provides a wide range of services, including feasibility studies, design and detailed engineering, project management, procurement, construction supervision and commissioning assistance for various industrial projects. EIL Mumbai has been involved in several major projects in the region, including Bharat Petroleum Corporation Limited (BPCL) Mumbai Refinery Expansion Project, Hindustan Petroleum Corporation Limited (HPCL) Mumbai Refinery Modernization Project, GAS Authority of India (GAIL) Dahej-Vijaipur Pipeline Project, and many more. EIL Mumbai office serves a diverse client base, including public sector undertakings (PSUs), private sector companies, and international clients in the Middle East and Africa. Additionally, EIL Mumbai leverages state-of-the-art technology and software tools to deliver high-quality engineering solutions.

The global engineering services outsourcing market size was estimated at USD 1.81 trillion in 2023 and it is expected to hit around USD 10.2 trillion by 2033 with a registered CAGR of 18.9% from 2024 to 2033.¹

The EPC (engineering, procurement, and construction) consulting market size is expected to reach US\$ 20.32 Bn by 2030, from US\$ 11.40 Bn in 2023, exhibiting a compound annual growth rate (CAGR) of 8.6% during the forecast period.²

Overview

We are honored to have successfully completed our third deployment for Engineers India Limited (EIL), this time at their Mumbai office. This achievement is a reflection of the trust EIL has placed in our solutions and services, following previous deployments at their Gurgaon and Delhi branches. Our team worked diligently to assess EIL's unique requirements and deliver a tailored connectivity solution that equips their Mumbai office with reliable, scalable, and secure network infrastructure. We are grateful for the opportunity to support EIL's digital transformation journey and look forward to continuing our partnership, driving innovation and success together.

Bhuvnesh Sachdeva
(Associate Vice President, Communications)

The Mumbai office of EIL plays a crucial role in delivering engineering and design services for a wide range of projects across various sectors, including oil and gas, petrochemicals, infrastructure, and more. In today's fast-paced business environment, seamless Wi-Fi connectivity is a critical enabler for productivity, collaboration, and innovation. At EIL Mumbai, employees heavily rely on technology to carry out their day-to-day tasks, which include design and modeling, project management, collaboration with clients and partners, and accessing critical business applications. A robust and reliable Wi-Fi network is essential for the team to work efficiently, share large files, conduct virtual meetings, and meet project deadlines.

Wi-Fi connectivity allows employees to stay connected and productive, regardless of their location within the office premises. With the ability to seamlessly roam across different areas, team members can easily engage in impromptu discussions, brainstorming sessions, and client meetings without being tethered to their desks. This flexibility enhances teamwork, facilitates quick decision-making, and ultimately leads to improved project outcomes.

Moreover, a robust Wi-Fi infrastructure is crucial for supporting the increasing number of connected devices and applications used by employees. From laptops and smartphones to tablets and smart devices, the modern workplace relies on a wide range of technologies to streamline workflows and boost efficiency. A centralized Wi-Fi solution ensures that all these devices can connect seamlessly to the network, access necessary resources, and perform optimally.

Recognizing the critical role of Wi-Fi connectivity in enabling a productive and secure work environment, EIL Mumbai decided to upgrade their network infrastructure. The objective was to implement a state-of-the-art Wi-Fi solution that would empower employees, streamline operations, and support the organization's growth and innovation initiatives. To achieve this goal, EIL Mumbai got in touch with IObyHFCL to design and deploy a comprehensive Wi-Fi solution.

The Engineering Services Market size is estimated at USD 1.67 trillion in 2024, and is expected to reach USD 2.04 trillion by 2029, growing at a CAGR of 4.20% during the forecast period (2024-2029).³

It was estimated that in the year of 2025, the market size of engineering, research and development (ER&D) in India would reach 63 billion U.S. dollars, more than doubled from 31 billion dollars in 2019.⁴

Challenge

EIL's Mumbai office faced significant hurdles in offering centralized Wi-Fi connectivity for all employees, seamless roaming across the premises, and optimized performance for diverse applications on devices. The existing LAN setup offered only intranet access, forcing staff to rely on mobile hotspots for their internet needs. The network suffered from low bandwidth and capacity, hindering productivity and efficiency.

Solution

To address the connectivity challenges faced by EIL's Mumbai office, we designed and implemented a comprehensive Wi-Fi solution. The primary objective was to provide seamless, high-speed internet access to all employees throughout the office premises while ensuring optimal performance for various applications and devices. The solution consisted of Wi-Fi 6 indoor Access Points, 8 Port PoE Managed Switches and hardware controller.

The team identified 40 key hotspot areas and then 2X2 indoor Access Points were strategically deployed across the office space. These Access Points support high-density environments, enabling seamless connectivity for a large number of devices simultaneously. With advanced features such as OFDMA (Orthogonal Frequency Division Multiple Access) and MU-MIMO (Multi-User Multiple-Input Multiple-Output), these Access Points ensure efficient spectrum utilization and enhanced user experiences. Advanced security features, including WPA3 encryption, rogue AP detection, and wireless intrusion prevention, were implemented to safeguard sensitive data and maintain regulatory compliance. To power the diverse range of devices at EIL Mumbai office, ten 8-port PoE (Power over Ethernet) managed switches were deployed.

The key role of these Power over Ethernet (PoE) switches was to interconnect various segments, Providing Power to Wireless Access Points, enabling seamless communication and data transfer across the entire facility. These switches simplify the installation process by providing both power and data connectivity through a single Ethernet cable.

The managed switches offer advanced features such as VLAN support, Quality of Service (QoS), and network segmentation, enabling granular control and optimization of network traffic. It enables the IT team at EIL to create separate virtual LANs for different departments, projects and user groups. These PoE Managed Switches not only met the current requirement but at the same time enabled easy expansion and integration of additional network components. To enable centralized management and control of the network infrastructure one hardware controller was deployed, allowing efficient administration, monitoring, and troubleshooting for the network administrators. The deployment process was strategically planned and executed to minimize disruption to EIL's day-to-day operations. The project team carefully assessed the office layout, identified optimal locations for Access Point placement, and configured the network components to ensure maximum coverage and performance.

Access Points



Wi-Fi 6 Access Points

L2 Managed Switches



8-Port PoE Switches

Result

- 01** Seamless roaming capabilities allow employees to move freely within the office space without experiencing connectivity disruptions, ensuring uninterrupted access to critical resources and applications.
- 02** It has streamlined operations, reduced downtime, and improved overall productivity within the premises.
- 03** The deployment of managed PoE switches has simplified network infrastructure, providing both power and data connectivity to Access Points through a single Ethernet cable, reducing installation complexity.
- 04** The integrated hardware controller provides a unified management platform, enabling EIL's IT team to configure, monitor, and troubleshoot the entire network infrastructure from a central location.
- 05** The scalable solution allows EIL to accommodate growing network demands and integrate emerging technologies, ensuring long-term investment protection and adaptability.
- 06** The implementation has eliminated the need for mobile hotspots, ensuring a consistent and reliable internet experience across the office.

Conclusion

In conclusion, Engineers India Limited (EIL) successfully addressed the connectivity challenges faced by its Mumbai office by implementing IObyHFCL's comprehensive Wi-Fi solution. By deploying Wi-Fi 6 indoor Access Points, managed PoE switches, and a hardware controller, we enabled seamless connectivity, enhanced performance, and robust security at their premises. The successful implementation of this Wi-Fi solution at EIL's Mumbai office serves as a testament to the company's dedication to technological advancement and sets a benchmark for other EIL offices to follow, driving innovation, efficiency, and productivity across the organization.



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