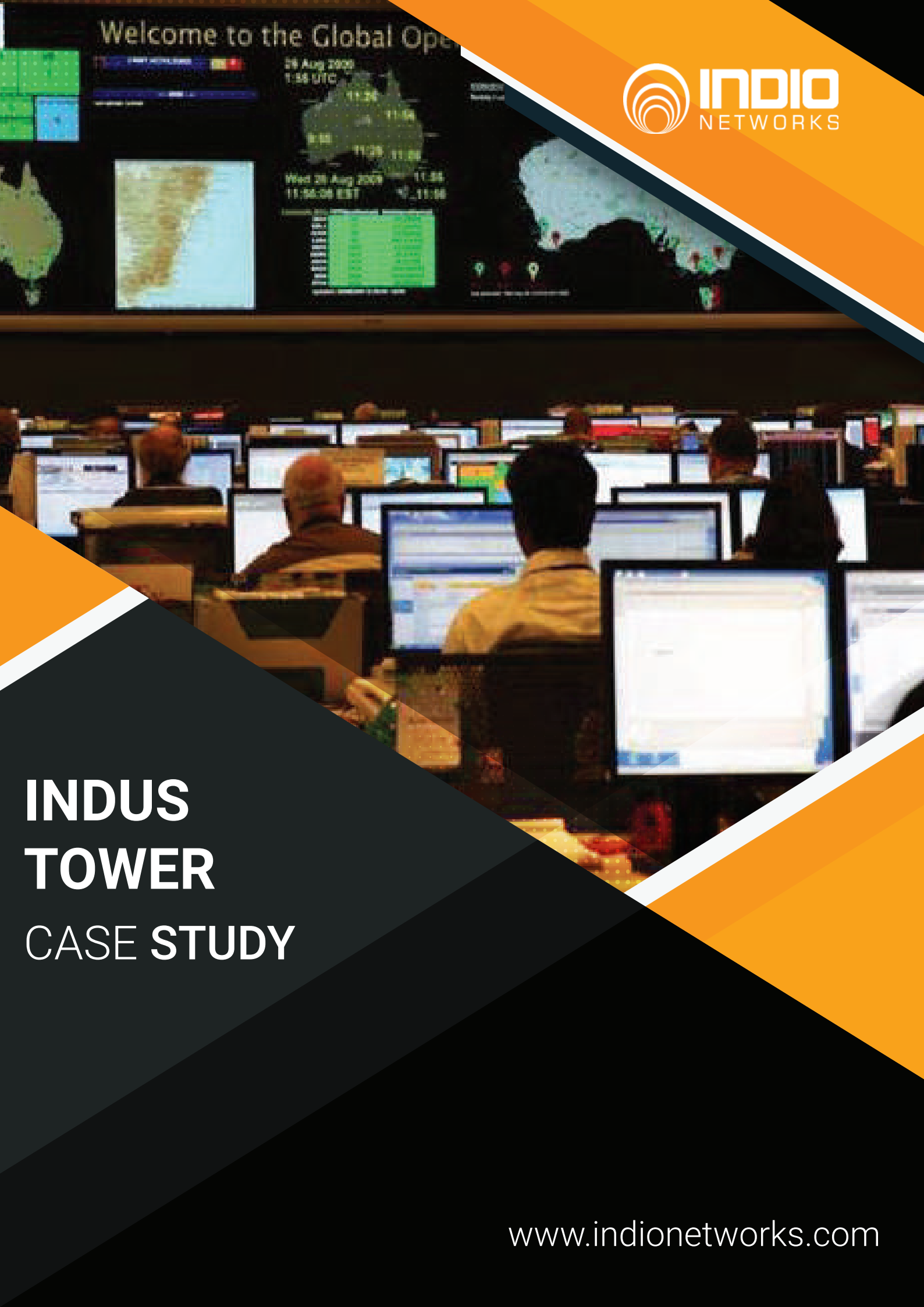# INDUS TOWER

CASE **STUDY**

www.indionetworks.com

OVERVIEW

Indus Towers is world's second largest mobile tower company that operates over 150,000 cellular towers across India. It has precense in over 15 circles in India and serves all large cellular operators in India including Airtel, Idea, Vodafone, BSNL and others. Indus Towers is operational for last 12 years and has revenues of over $ 2 billion.

REQUIREMENT

Indus Towers wanted to monitor and control their remote equipments from the central facility. They were experiencing lot of problems with the field equipments like tampering, pliferage of fuel, non-maintenance of equipments, breakdowns and no-show for the field engineers. This was directly affecting their SLA and commitments to their customers. They were also experiencing loss of revenue and trust with their customers.

Indus wanted a universal modem that would interface with devices from multiple makes and models, read the data periodically from these equipments, upload the data to the cloud server and finally provide a two-way communication between the cloud and the site equipments.

HOW WE HELPED

Wifisoft built an universal IOT modem that was responsible for monitoring and managing the remote site equipments. It also developed a generic software on the modem that would interface with equipments of different makes and models.

- Universal Modem
- Multiple I/O ports (RS-232, RS-485, Ethernet, WiFi)
- 4G Dongle for cloud connectivity
- Variable Voltage Power Circuit
- Generic firmware for I/O connectivity
- Weather / Tamper proof Design
  Open Standards
- Two-way communication - Cloud - IOT Modem
- Over-the-air updates
- Central Management & Monitoring
- Multi-vendor support

INDUS TOWER
CASE STUDY

Indio Networks is deploying specially designed IOT modem for managing and monitoring remote equipments installed at cellular towers across the country.

Indus Towers is world's second largest and India's largest mobile tower company. Established in 2007, Indus Towers is grown aggressively over the years to establish itself as the leading infrastructure company for telecom industry. It operates over 125,000 tower sites in 15 circles in India and serves large telecom operators like Airtel,

Idea, Vodafone and others. The company generates bulk of their revenue by leasing the space on the towers to mobile operators. In 2017-2018, the company generated over $2 Billion in revenue from operations. Recently it also merged with Bharti-Infratel which owns over 80,000 towers in India.

System Requirements
1. Build Universal Modem
2. Multi-vendor support
3. Prevent Equipment misuse
4. Stop tampering of device settings
5. Reduce Pilferage
6. Remote Management & Monitoring
7. Track non-maintenance of equipment
8. Analyze and Track equipment usage
9. Predict maintenance and faults
10. Single console management

Problem Statement
Indus Towers was facing lot of problems with their field equipments like equipment tampering, changing equipment settings, downtime due to equipment faults, non-maintenance, misreporting from site engineers, errors due to manual configurations and more. These issues resulted in non compliance, failed SLA and unscheduled downtime that was directly affecting the bottomline of the company.

The central NOC team had no visibility into their remote equipments and had to rely on the manual reading from the field engineers which were incorrect or inconsistent. The NOC team also didnt have any mechanism to remotely update the settings on their equipments to handle the change in the site conditions. Indus had to schedule a site visit by their vendor or field engineer to correct or change any settings.

Indus floated a RFP in 2018 for soliciting bids for building an universal modem that had the capability of interfacing with all their field equipments and uploading the data to the cloud using the 4G backhaul. The modem also needed to support two-way communication between the cloud and the remote equipment so the NOC would be able to update the settings remotely.

The RFP also discussed about developing a mobile application that would

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seamlessly interface with the modem to download the data from various site equipments. The mobile app needed to upload the data to the cloud so the field engineer would be able to collect and upload the data without having to touch the equipments.

Lastly, the RFP stated that the enclosure should be weather and tamperproof so anyone will not be able to easily open or tamper with the equipment. The equipment also needed to be installed at each tower site and connected with the equipment.

The modem needed to be interfaced with the following types of equipment - SPS (Smart Power Supply), DECM (Direct Electrical Control Management) and SMPS. Indus installed equipments from different vendors like Selvon, Intelux, Delta, Emerson, Vertiv and others were to be interfaced with the modem.

SOLUTION

Indio Networks designed a special IOT modem based on Indus specifications and were able to successfully interface it with various energy equipments at the tower site. The modem also used 4G connectivity to upload the data to Google cloud that was setup for accepting and analysing the data. The modem was designed to periodically communicate with each equipment and download the system parameters. These parameters were compiled and uploaded on the server.

Indus selected 10 sites in two separate cities - Pune and Gurgaon/Delhi for implementing the pilot study. The data was analyzed for two months to verify the accuracy and reliability of the data. Indus cross referenced the data with the actual data collected by the field technicians. The pilot sites had equipments from different vendors to test the inter-operability of the modem.

After 2 months of successful trials, Indus was convinced that the modem worked as per the specifications and was able to withstand the vagaries of weather and outdoor conditions. They also verified the ease of doing installations and maintenance of the modem.

The project was scaled to install the Universal Modem across three more circles in India. The plan was to install over 25,000 modems in cities of Delhi, Mumbai and whole of Gujarat. The project would then expand to other circles in India to cover all their remaining tower sites.

RESULTS

As the modem was installed, Indus started collecting valuable field data from their equipments. The data was analyzed in Google cloud to identify anomolies and potential failure points. This led to tremendous improvement in their SLA and site reliability. In addition, Indus was able to check and monitor the pliferage and tampering of their equipment in the field. If any settings on their equipment was found tampered or incorrect, the Indus engineers could easily reset the setting back to original value.

The data gained from the remote sites was consolidated and MIS reports were generated. The management was able to track the field data in real-time and identify issues before they manifested in the field. The equipment reliability was improved greatly since the equipments were maintained regularly. Indus was also able to track the field visits by their technicians and monitor the overall health of the site.

The project was very important step for Indus to automate and digitize their field management. There was a marked improvement in the performance of its field staff since they were accountable for the errors in the field. Indus was able to bring down outages and system failures of their equipments drastically.

Overall, the project ended up saving millions of dollars for the company while improving the customer satisfaction and goodwill with its customers.