NTT DATA

SMART OPERATIONS:

Transforming O&M of Network infraestructure

The Smart way to optimize O&M

FUTURE AT HEART

As the complexity of network infrastructure grows, the challenges that already weigh on infrastructure management threaten to become unsustainable unless there is a way to significantly reduce O&M costs. Smart Operations harnesses the power of new technologies to transform labor-intensive O&M activities and so achieve a step-change reduction in costs.

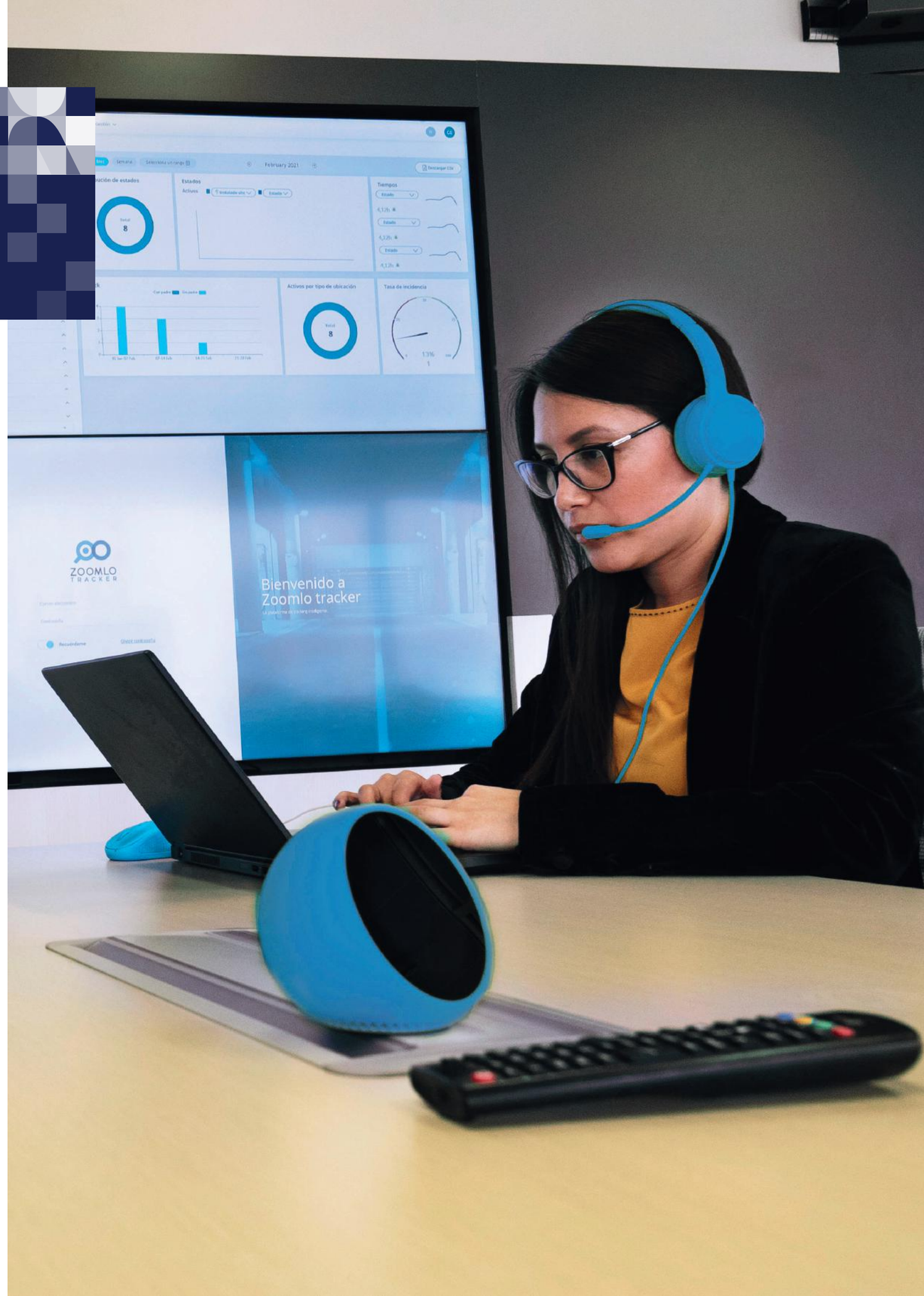
TODAY'S CHALLENGES

Transforming network O&M activities and achieving a significant reduction in their costs are essential prerequisites if network operators are to reduce Opex and reap the full benefits of new network technologies.

Operators need to move from the current O&M model, which is reactive and labor-intensive, to one that is predictive and,ultimately, proactive. They desperate need to reduce the number of site visits and resolve incidents more quickly if they are to reduce O&M costs and increase service availability.

Another area where network operators face urgent pressure is energy consumption, which already makes up 20% of O&M costs. This energy bill is set to rise steeply, as, for example, 5G base stations consume more energy than their predecessors, and Operators may need to install additional base stations and equipment in the field to support edge computing and other new applications.

Theft and vandalism of equipment create additional O&M challenges. As well as being costly to rectify, they can have serious consequences for customers if service is affected.



THE SMART OPERATIONS SOLUTION

Smart Operations boosts the effectiveness and significantly lowers the cost of O&M activities through the extensive use of automation, monitoring and predictive maintenance. It addresses specific O&M challenges using disruptive technologies such as IoT, XR, AI and Big Data, and can be integrated with a wide range of field equipment and existing monitoring solution.

Smart Operations was developed to solve these all multiple O&M challenges.

It improves O&M in three ways:

It makes site equipment “smarter”.

Leveraging IoT technologies to enable many other O&M tasks to be done remotely or automated, and reducing the need for site visits.

It empowers field technicians to work more efficiently on site.

Showing them how to locate equipment, perform tasks and find faults using workflows displayed on XR headsets or their smartphone.

It enhances cost control

Smart Operations optimizes consumption and monitors site alarms, so reducing energy bills and the costs due to vandalism and theft.

MAIN FEATURES

XR for Technical Assistance

- **Visually guides** technician to the specific location of equipment that has reported a fault or needs routine checking.
- **Incorporates AI** for equipment and image recognition.
- **Standard XR** workflows for solving incidents or maintenance are easily created using workflow wizards.
- **Technical manuals** and general information on the infrastructure can be displayed on the headset.
- **Remote Support** performs bi-directional calls with a remote expert to guide the on-site technician in real-time in the task execution.
- **Photographs and activity reports** generated automatically during a site visit and notifications can be displayed on the headset.
- **Take advantage** of the information generated in the field activities, for its analysis and much more automatic and successful decision making.
- **Data generated** by IoT equipment can be visualized on the headset.

IoT Capabilities

- **Management and real-time monitoring** of temperature, humidity, and AC/DC energy consumption of site equipment (electrical network analyzer, A/C, inverters and tower beacons), and site alarm transmission.
- **Configuration and remote control** of air conditioning to minimize consumption using programmed routines.
- **Thermal cameras detect temperature anomalies in site equipment** that could indicate a possible failure, as well as detect the presence of intruders and animals.
- **Magnetic sensors** detect open doors or battery removal, and location tracking in case of robbery.
- **Backup data transmission** in case of power supply disruption or connectivity disruption/loss.
- **Historical data correlation & detailed analysis of information** for the detection of anomalies and to allow automatic and proactive decision making.

Smart Self-Audit and Asset Control

QR codes attached to site equipment simplify audits and inventory control, and allow management and real-time monitoring of network assets using tools based on blockchain improving also Inventory data quality.

Smart Operations Platform

- Centralizes data collection and performs functions such as **data monitoring, parameterization, asset control and communications with the field technician.**
- **AI and ML technologies help make sense of the data generated by field equipment,** allowing patterns or anomalies to be detected more quickly and automating some decision-making.
- The platform can be integrated with ticketing and network inventory management systems **to enable information to be updated in real time and improving response times for incidents.**

Analytics and Big data for Predictive Maintenance

- **Data generated by site equipment** can be analyzed using Big Data technologies to do root-cause analysis and generate recommendations for failure mitigation.

VR for Technical Training

Technicians can use the VR headset to access educational and training material covering all types of IM and OM actions, reducing the costs and time associated with training on operational equipment.

BENEFITS

Reduce the number of site visits.

Smart Operations allows site equipment to be monitored and controlled remotely, while the use of analytics and Big Data technologies takes the guess work out of decision-making and enable more incidents to be resolved remotely, so reducing the number of site visits.

Increase the effectiveness and reduce the cost of callouts.

Smart Operations makes more information available on site, stores historical data on previous interventions, and guides technicians through troubleshooting and maintenance tasks, reducing the time they spend on site and allowing technicians with lower level skills to perform more tasks autonomously.

Ensure Integrity of site assets and their correct operation.

As well as supporting real-time monitoring, alarm triggering and error detection, Smart Operations can predict possible faults and performance degradations in site assets, including batteries, UPS, A/C, RF and baseband equipment.

Keep control of site assets through their lifecycle.

An asset management system, facilitates the inventory during maintenance processes, and ensures E2E traceability over the complete lifecycle of the site equipment, with the movements of assets recorded using blockchain technology to ensure inalterability of the data.

Optimize energy consumption.

Smart Operations helps reduce the energy bill associated with site equipment by monitoring power consumption remotely, as well as ensuring the air conditioning is running optimally and automatically controlling lighting.

WHY NTT DATA?

NTT DATA is **one of the leading IT service providers in the world.** The company shares the Telecom DNA as part of NTT Group, accelerates open ecosystems, and contributes to the success of telecom operators across the globe. As a trusted global innovator, our value comes from “consistent belief’ to shape the future society with clients and “courage to change” the world with innovative digital technologies.

For more information

To find out more about how NTT DATA can help your business.

https://www.nttdata.com/global/en/smart-operations