Enabling Smart Cities in Africa

With next-generation smart technologies

Connected devices are dominating the urban landscape. The fourth Industrial Revolution is combining the power of data with the power of the people. Technologies to leverage these devices, such as artificial intelligence, the Internet of Things (IoT), 5G, security, quantum computing and Blockchain, are unleashing numerous opportunities. But they are also posing new challenges, as citizens are increasingly concerned by privacy issues.

Tata Communications Transformation Services (TCTS) enables the African governments and corporates to develop industry regulations to drive technology adoption, and select strong technology partners for seamless service functioning and connectivity to the sensor ecosystems. Through the Smart Cities project within the digital transformation gamut, Africa can drive growth and job creation across its emerging economies.

FROM 'STEEL CITY' TO SMART CITY

TCTS transformed the India-based Jamshedpur Utilities and Services Company (JUSCO) from an obligatory service into a customer-focused and sustainable corporate entity.
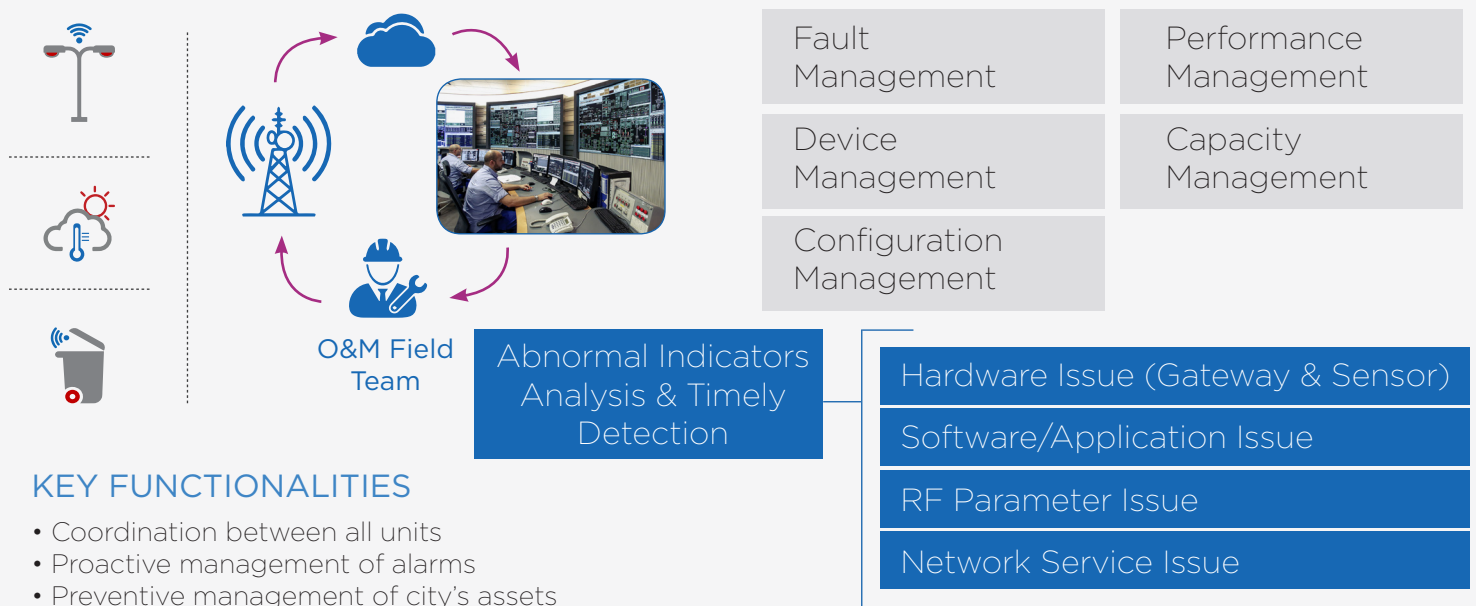
The key use cases demonstrated include: smart sewage network management (manhole monitoring), workforce tracking, water quality control, smart street lights, water/gas AMR, surveillance/door sensors, and waste management.

SMART SOLUTIONS FOR SMART AFRICA
INTEGRATED COMMAND AND CONTROL CENTER
The Command and Control Center acts as the nerve centre for the whole smart city operations.

Fault Management	Performance Management
Device Management	Capacity Management
Configuration Management	

O&M Field Team

Abnormal Indicators Analysis & Timely Detection

Hardware Issue (Gateway & Sensor)

Software/Application Issue

RF Parameter Issue

Network Service Issue

KEY FUNCTIONALITIES

• Coordination between all units
• Proactive management of alarms
• Preventive management of city's assets

AUTOMATED METERING
Innovative and scalable metering solutions for the utility industry

Benefits

• Comprehensive usage monitoring
• Better demand and supply management
• Faster and accurate reading
• Enhanced customer experience and savings
• Improved operational efficiency

Use cases
• Smart cities
• Connected industries
• Home automation

ENVIRONMENT MONITORING
Business assets and facilities monitored for efficiency and control

Benefits

• Reduce routine maintenance costs
• Eliminate costly breakdowns and downtime
• Greater insights for predictive asset health
• Ensure consistent performance at facilities

Use cases
• Data centres
• Business critical facilities
• Hazardous work environments/industries

SMART LIGHTING
IoT-based smart lighting solutions that optimise street lighting and conserve energy

Benefits

- Enable two-way communication between street lights and the command centre
- Automatic lighting control for energy savings
- Regulate individual lamp dimming
- Track and recover stolen LEDs
- Identify and stop energy theft
- Measure individual lamp energy consumption
- Product replenishment
- Dead lamp alerts for replacement
- Track lamp burn hours for proactive replacement
- Robust SLAs and network management
- 2-level security with end-to-end encryption
- Achieve regulatory compliances
- Easy deployment with plug-and-play solutions

WASTE MANAGEMENT
Smart solutions for waste collection, logistics and disposal

Benefits

- Smart bins and platform for waste collection, vehicle tracking, dynamic
- scheduling & routing
- Weight automation
- Mapping with city GIS
- Workforce management, staff attendance
- Centralised municipal database
- Citizen feedback mechanism

Use cases
- Municipal services
- Private waste collection service

WOMEN SAFETY
Redefining women's safety with technology

Benefits

- Comprehensive solution for SOS alert and POI tracking
- Modern multiple devices types
- Easy-to-use devices
- Extensive reach beyond GSM networks
- Low-power IoT device for longer battery life

Use cases
- Women commuting late at night
- Women using public transport
- Lone women travellers

SMART BUTTON SOLUTION
Harness the power of feedback and address citizen service

Benefits

- Request conveniently with a simple click
- Enhance customer experience at city facilities
- Provide proactive remedial measures

Use cases
- Service initiation – At-home services
- Facility management services
- Public facilities feedback

INTELLIGENT TRAFFIC MANAGEMENT SYSTEM
A comprehensive e-ticketing solution

Benefits

- Throughput acceleration
- Traffic reduction
- Traffic optimisation
- Service monetisation
- Centrally controlled traffic signals
- Electronic toll collection

Use cases
- Optimising public transport mechanism
- Lower carbon emission

SMART PARKING
Complete ecosystem connecting commuters to city parking space

Benefits

- Obtain real-time awareness of slot occupancy
- Use of smart apps via phone for pre-booking or release of parking slot
- Connectivity to POS for easy and safe payment option

Use cases
- Large event-based parking systems
- Public parking facilities
- Private parking management companies

TATA COMMUNICATIONS

TRANSFORMATION SERVICES

CITY SURVEILLANCE

Monitor and manage crowd behaviour effectively

Benefits
- Monitor footfall, Face Recognition (FR), ANRP by using CCTV and video analytics
- Optimise resource allocation for emergency response
- Enforce traffic regulation and penalisation of offenders

Use cases
- City surveillance team
- Police/security departments

KEY FEATURES OF OUR SOLUTIONS

Low-power wide area network allows for longer range and low power consumption of deployed devices

Deep penetration base stations to track everywhere, even underground or in remote locations

End-to-end solutions across devices, platforms, networks and applications all through a single provider

Enhanced security of data across the solution, offering network and application level security

Highly scalable plug-and-play solutions, which can be deployed in the least possible time

Cost-effective solutions with a faster return on investment

Cloud-based application and a feature-rich system that is easy to configure and manage

Easy configuration that allows to define and modify sites, beacons, maps, zones, and rules to fit unique requirements

About Tata Communications Transformation Services (TCTS)

Tata Communications Transformation Services (TCTS), a 100% subsidiary of Tata Communications Ltd, provides leading business transformation, managed network operations, network outsourcing and consultancy services to telecommunication companies around the world. TCTS delivers operational efficiency, cost transformation and revenue acceleration solutions for all the stages of the carrier process lifecycle including but not limited to network engineering and design, implementation and operations functions.

TCTS is a part of the USD $100+ billion Tata group. Tata group comprises of over 100 operating companies in seven business sectors. TCTS leverages the market expertise of Tata group's global telecom operation capabilities and globally established IT, process and consulting skills. It carries the rich traditions and business ethics of the Tata companies.

For more details on TCTS and how we can help your company build, operate and transform, please contact us at tcts.marketing@tatacommunications.com or visit www.tatacommunications-ts.com. To hear more from TCTS experts, join us on LinkedIn https://www.linkedin.com/company/tata-communications-transformation-services and follow us on Twitter https://twitter.com/Tata_TCTSL.