



THE INTERNET OF THINGS

OPENING DOORS TO HYPER-CONNECTIVITY IN AFRICA



IOT AND THE DIGITAL REVOLUTION — AN AFRICAN PERSPECTIVE

Africa is all set to unleash the 4th Industrial Revolution (4IR) embracing Information and Communications Technology (ICT) to usher in the digital economy. The continent, which has arrived on the world stage with a young population and a hotbed of economic activity, faces its biggest challenge yet in terms of inclusivity and connectivity. The global Internet of Things (IoT) revolution can deliver unprecedented intelligence into this picture to drive performance, growth and profitability across the African continent.

“Connected devices are predicted to grow from 212 billion in 2020 to 500 billion by 2030”.

Source: Verizon insight labs 2017

POWER UP YOUR DIGITAL LANDSCAPE

TCTS brings together real-world experiences from across industries along with the complete IoT ecosystem to rapidly monetise opportunities in the market.

- Facilitate growth with actionable and reliable data
- Increase productivity through streamlined operations and automated monitoring
- Enhance customer experience, partner engagement and amplify loyalty
- Manage risk and minimise errors through intelligent monitoring

Digital transformation and connectivity are rapidly changing the business landscape. Leading the way is the **Internet of Things (IoT)** that lets you control anything in the physical world through sensor-enabled devices. This unlocks massive, previously unseen opportunities to expand revenue, optimise operations and enhance customer and end-user experience.



BUILDING A CONNECTED AFRICA

IoT solutions that are powered by our state-of-the-art devices, network, platform and applications, and are a perfect fit your specific use case.

ASSET TRACKING SOLUTION

Connecting intelligence to your assets

Benefits

- Reduce asset loss, damage, and downtime
- Increased asset utilisation
- Preventive asset maintenance
- Achieve mandatory compliances
- Prevent asset misuse

Use cases

- Critical high-value asset monitoring
- Airport and harbour management
- Containers and pallet monitoring
- Warehouse and storage management
- Factories and production lines monitoring



EMPLOYEE HEALTH AND SAFETY

Safety as a solution to proactively prevent worker safety related incidents

Benefits

- Increased worker safety
- Improved worker productivity
- Quicker emergency response
- Less injuries and liabilities

Use cases

- Mining industry
- Chemical and hazardous industries
- Airports, harbours and other large facilities
- Construction sites



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

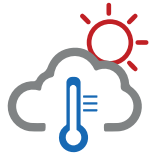
Business assets and facilities monitored for efficiency and control

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
- Expensive machinery and assets



SMART LIGHTING

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

Benefits

- Enable two-way communication between street lights and 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
- Two-level security with end-to-end encryption
- Achieve regulatory compliances
- Easy deployment with plug-and-play solutions



WOMEN SAFETY

Redefining women 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



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



WASTE MANAGEMENT

Smart solutions for waste collection, logistics and disposal

Benefits

- Smart bins and platform for waste collection, vehicle tracking, dynamic scheduling and 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



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



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 re-lease 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



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 THE 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, across network and application level
- **Highly scalable** plug-and-play solutions that can be deployed in least possible time
- **Cost-effective** solutions with faster return on investment

TRANSFORMING A STEEL CITY INTO A SMART CITY

Improving utility services in Jamshedpur Utilities and Services Company (JUSCO)

TCTS has transformed JUSCO – an India-based comprehensive urban infrastructure service provider – in line with the company's mandate to convert an obligatory service into a customer-focused and sustainable corporate entity. The key use cases demonstrated include:

- Sewage network management
- Workforce tracking
- Water quality control
- Transformer monitoring
- Smart street lights
- Water/gas AMR
- Surveillance/door sensors
- Waste management
- Intrusion detection

WHAT MAKES TCTS UNIQUE?



SENSORS

Identify the right hardware specific to the use-case, and factor in price sensitivities



NETWORKS AND TECHNOLOGY

Solutions tried and tested within our networks



ANALYTICS

Convert big data into actionable insights



INTEGRATION SERVICES

Deeper and wider telco experience for IoT deployment



INNOVATIVE ENGAGEMENT MODELS

A range of flexible commercial models to choose from



REAL-WORLD SOLUTIONS

Expert recommendations based on real-world trials



OPERATIONAL CAPABILITY

Highly skilled resources with multi-vendor/technology capabilities

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.

