



# Intelligent Mobility in Africa

Building the Infrastructure for the Future



# Executive Summary

Africa stands at a defining moment in its mobility journey. Rapid urbanization, economic growth, and a youthful population are driving unprecedented demand for efficient, safe, and sustainable transport. However, the continent's infrastructure remains under strain, with fragmented systems, limited real-time data, and inadequate integration across modes. Intelligent Transport Systems (ITS) present a transformative opportunity—allowing African cities to leapfrog legacy models and adopt smart, data-driven mobility frameworks.

This whitepaper explores how intelligent mobility can reshape Africa's urban landscape, examines key enablers and benchmark case studies, and provides strategic recommendations for policymakers and city leaders seeking to build adaptive, people-centric transport ecosystems.



# The Mobility Paradox in Africa

Africa's urban centres are among the fastest-growing in the world, with cities like Lagos, Nairobi, and Johannesburg facing exponential increases in commuter demand. Yet, infrastructure development often lags behind. As traffic congestion intensifies, so does the cost of inefficiency—estimated by the African Development Bank to reach billions in lost productivity annually.

The continent's transport challenge is dual: managing rapid motorization while ensuring sustainable growth. Traditional infrastructure expansion alone cannot meet the pace of demand. What's required is a paradigm shift toward intelligence—where mobility systems are interconnected, data-informed, and human-centred.

## Intelligent Mobility as a Catalyst for Transformation

Intelligent mobility integrates advanced technologies—AI, IoT, cloud, and analytics—into the movement of people and goods. Rather than focusing solely on physical infrastructure, it transforms how cities think, plan, and operate. ITS allows for predictive decision-making, dynamic traffic management, and multimodal integration.

For Africa, this represents a leapfrog opportunity. By adopting digital-first strategies, cities can bypass the limitations of traditional expansion and establish adaptive systems capable of supporting both informal and formal transport sectors.



# The Four Enablers of Africa's ITS Revolution

The successful adoption of intelligent mobility in Africa depends on four foundational enablers that work together to ensure both innovation and sustainability.

- **Smart Infrastructure:** Deploying connected roadways, digital sensors, and adaptive traffic systems that communicate in real time.
- **Data and Decision Systems:** Harnessing analytics and machine learning to improve traffic management, optimize routing, and predict demand patterns.
- **Public-Private Collaboration:** Leveraging private sector innovation and investment through structured partnerships that ensure scalability and shared value.
- **Inclusive Policy and Human-Centred Design:** Designing ITS frameworks that consider accessibility, affordability, and equity for all citizens, especially vulnerable groups.

## Benchmark Case Studies: Innovation in Motion

### Case Study 1: Leeto la Polokwane

A Benchmark for Urban Mobility Modernization Leeto la Polokwane is one of South Africa's most progressive urban mobility initiatives. Conceived to digitize and integrate municipal transport operations, the project demonstrates how African cities can embed intelligence into transport planning and execution.

The system integrates smart scheduling, passenger information systems, and automated fare collection under a single governance structure. Outcomes include improved data visibility, enhanced commuter experience, and reduced

### Case Study 2: Nairobi's Intelligent BRT System

Data-Driven Transit for a Growing City Nairobi's Bus Rapid Transit (BRT) system exemplifies how African cities are embedding data intelligence into public transport networks. The initiative focuses on corridor-based management, real-time tracking, and passenger information delivery.

By deploying IoT-enabled sensors and central command systems, city officials can now analyze traffic flows, coordinate schedules, and improve reliability.

The project showcases how ITS can address congestion and enhance mobility in high-density urban environments, particularly when aligned with broader sustainability objectives.

## The Economic and Social Dividend of Intelligent Mobility



Intelligent mobility extends beyond efficiency—it drives inclusion, safety, and economic opportunity. According to the World Bank, African cities adopting smart transport systems can reduce travel times by up to 25%, leading to productivity gains, lower emissions, and improved quality of life.

From a social perspective, ITS supports equitable access by bridging gaps between urban and peri-urban communities. Technologies such as open data platforms, mobile ticketing, and real-time updates empower citizens with the ability to plan, pay, and travel seamlessly.

### Synnect's Perspective: Building the ITS Continuum

Synnect's approach to ITS is rooted in the belief that technology should serve people first. Our ITS Continuum framework maps the evolution of transport systems across four maturity stages—Visibility, Integration, Automation, and Autonomy. This model enables cities to assess their digital readiness and plan

incremental improvements without disrupting existing operations.

Through this continuum, African cities can evolve from fragmented transport systems to adaptive ecosystems capable of predictive control and autonomous decision-making.

# Policy and Leadership Recommendations

- Establish national ITS frameworks to guide investment and ensure interoperability across regions.
- Encourage public-private partnerships that align innovation with public value creation.
- Invest in capacity-building programs to upskill transport planners and control centre teams.
- Adopt open data policies that foster collaboration and transparency across the mobility value chain.
- Prioritize inclusivity by designing systems that are accessible, affordable, and equitable for all users.



## Conclusion

Africa's transport transformation will not be defined by speed, but by intelligence. By embracing data-driven systems, the continent can build mobility networks that are resilient, inclusive, and future-ready. The journey toward intelligent mobility requires vision, collaboration, and commitment—but its rewards are immense: safer roads, cleaner cities, and a more connected Africa.

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