Sub-Saharan Africa
Managing Traffic w/ ITS

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Population: 1.4 billion
2.5% / yr growth
(2.5 billion by 2050)
Fertility rate: 4.4 (2020)
Median age: 18.8 yrs*
Urban pop: 44%

* Youngest continent

Source: Statista.com

Road Traffic Deaths
27/100,000-Highest in the World
I. Root Causes
Transportation Issues in Sub-Saharan Africa

- Rapid Population Growth (2.7% / year)*
- Rapid Urbanization (4.5% / year)
- Growth in # of Vehicles (w/ Middle Class)
- Poor Infrastructure (Roads & Public Transport)
- Many African countries are landlocked
- Regions are not well connected
- Policy Issues (Lack of effective Nat’l Transport Programs)
- Lack of Strong Institutions
- Low Capacity (Skilled Manpower in Transport Mgmt. & Technical Knowhow)

* Source UN
II. Major Transportation Issues in Urban Africa

- Traffic Congestion
- Lack of effective Traffic Control & Management
- Adverse Environmental Impacts from congestion
- Safety - Frequent Accidents
- Ineffective Safety Measures (Standards)
- Inefficient Public Transportation Systems
- Poor Coordination among stakeholders
- Barriers between states at borders
- Very high logistics & transport cost
III. Emerging ITS Programs in Sub-Saharan Africa:

- ITS Nat’l Policy & Program Development
- Mobility—Managing Traffic & Congestion
- Traveler Information
- Safety & Incident Mgmt.
- Public Transport—Access, Efficiency & Reliability
- Toll Systems
- Freight—Need for Efficiency & Cost Effective Logistics
- Environment—Green Growth & Air Quality (Smart City)
- Network Integration—Multi-Modal Transport Systems
- Regional Coordination
III-A ITS in South Africa:

- South Africa has the most advanced ITS Program in Africa
- Has well developed National ITS Program/Policy
- Three institutions play key role in the Nat’l ITS Program
  - S. Africa’s Ministry of Transport
  - SANRAL (S. African Nat’l Road Agency Limited)
  - ITS South Africa
- South Africa is a pioneer in ITS & ETC applications (including ORT)
- The Public Transportation Systems (BRT, Rail & Taxis) use ITS
- ITS South Africa is well connected w/ the Int’l ITS Community
Open Road Tolling (ORT) – South Africa
BRT Bus ("Rea Vaya") - Johannesburg - South Africa
ITS - fully deployed on the BRT System
III-B ITS in Nigeria:

- **Nigeria** has the largest population in Africa (est. 220 million); w/ 2.4% growth
- Lagos is Megacity, with population of 16 million, and growing fast
- Informal Transport Systems (Minibuses, Taxis etc) dominate the Network
- Lagos is investing on Integrated Public Transport Systems to meet the big demand (including Rail, LRT, BRT, Ferries and Trams)
- The first BRT in Africa was introduced in Lagos (2008)
- Nigeria is also building major highways, with Toll Systems, across its states
- ITS was introduced a few years ago, primarily in the Public Transport Sector
- ITS on the BRT Line includes Traveler Info; Traffic Signal priority; Smart Ticketing, Scheduling, AVL, Safety & Security Systems
- A comprehensive National ITS Program & Policy is still needed
- ITS Nigeria (established in 2010), lobbies for ITS expansion in Nigeria
Traffic Jam in Lagos, Nigeria
Lagos - BRT – Nigeria
ITS systems are deployed in Buses and Routes
III-C ITS in Ethiopia:

- Addis Ababa (Capital City) has over 5 mill Pop; w/ 4% / yr growth
- Addis-Adama Expwy (the first in the country) opened in 2014
- The Expwy has ITS & Toll Systems deployed
- ITS Systems include TMC, VMS, CCTV, Weigh-in-Motion, Speed Detection and Incident Mgmt.
- A new Highway (Modjo-Hawassa) is under construction
- The Highway is planned to include various ITS systems & TMC, (with ATMS, ATIS, Incident Mgmt and Toll Systems)
- A Nat’l ITS Strategic Plan is developed, but not fully implemented
- An ITS Program is underway for Addis Ababa
- ITS Ethiopia https://itsethiopia.org was established in 2014
Addis-Adama Expwy - Ethiopia
ITS & Toll Systems partially deployed
Addis Adama Expwy Toll Plaza
Ethiopia
Addis-Adama Expwy - TMC
Basic Tolling & ITS Systems (CCTV, VMS) integrated
Addis Ababa City – LRT & Traffic Jam
Need for TMC & System Integration is high
III-D ITS in Tanzania:

- Tanzania borders with 8 countries; border crossing delay is big issue.
- Dar es Salaam, a port city, w/ over 6 mill. Pop. projected to reach 10 mill. by 2030 (WB). It is one of the fastest growing cities in Africa.
- The City is very busy seaport, serving its land locked neighbors, as well.
- It faces serious congestion and mobility challenges.
- Undeveloped road network, growth in vehicles, lack of efficient Public Transport Systems are some of the challenges.
- Dar es Salaam is heavily investing to improve the Transport Infrastructure.
- 1st Phase of Dar es Salaam BRT opened in 2016; plan is underway for expanding the network.
- ITS & AFCS (Auto. Fare Collection System) is deployed for the BRT.
- An ITS Project for Planning, Design and Construction (Syst. Integration) w/ TMC for Dar es Salaam and Metro Region is underway.
- The ITS Project includes a Nat’l ITS Program (ITS Strategic Planning).
Dar es Salaam - BRT - Tanzania
Planning underway to deploy ITS
Minibuses in Dar Salaam, Tanzania ("Dala Dalas")
IV. ITS Projects in Africa - Key Opportunity Areas

- Developing the Public Transport Systems - BRT
- Traveler Info; Traffic Control & Management
- Freight and Border Crossings (CVO applications)
- Safety Systems
- Toll Systems
- Developing Nat’l ITS Program & Strategic Plan (Road Map)
- Regional Integration (AfCFTA)*

* African Continental Free Trade Area
V. ITS Expansion in Africa—Favorable Trends

- AfCFTA (Africa Continental Free Trade Area)
- Rapid Urban & Economic Growth in several countries
- Transport Issues seeking ITS solutions are prevalent
- ITS-Value Awareness is growing among Policy Makers
- Need for ITS solutions in Public Transport (eg BRT) is growing
- Partnership with Int’l development Agencies (like WB) is helping advance ITS (e.g. in Ethiopia & Tanzania)
- Large, growing, dynamic and technology savvy youth population
- Rapid growth of Smart Phones - ground for ITS Applications
- Growth in highway and Urban Transport Infrastructure
VI. ITS Africa - Vision
(www.its-Africa.org)

❖ Establish an ITS Society for Africa, which will lobby, promote and advance deployment of effective ITS Programs in Africa;

❖ Expand ITS in Africa to support and contribute for building a safe, reliable, efficient and affordable multi-modal transportation system in the continent.
VII. ITS Africa Working Group - Background

- Founding Members: Three ITS Africa Societies
  - ITS South Africa (www.itssa.org)
  - ITS Nigeria (www.itsnigeria.org)
  - ITS Ethiopia (www.itsethiopia.org)

- ITS Africa Working Group formed
- Draft Bylaw & Organ. Framework developed
- Awareness created through Int’l Networking
- Facing challenges, even though w/ good prospect for growth
- Needs Revitalization
- Interest to join ITS Africa from others is high
“Be sure you put your feet in the Right Place, then Stand Firm.”

Abraham Lincoln

Thank you for the Opportunity!

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