SOUTH AFRICAN BRT EXPERIENCES

WHAT CAN WE LEARN?

Edward Beukes
Urban Transport Specialist

SSATP AGM, Abuja Nigeria
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How do people travel in South Africa?

66% of people either walk or use public transport in the mornings.

- **Car**: 34.2%
- **Walk**: 27.0%
- **Taxi**: 25.4%
- **Bus**: 6.2%
- **Train**: 6.3%

2013 NHTS: Work and Educational Morning Trips
How do people travel in South Africa?

67% of public transport trips have taxi as main mode.

- **Taxi**: 67.1%
- **Bus**: 16.4%
- **Train**: 16.5%

2013 NHTS: Work and Educational Morning Trips
How is Public Transport funded in South Africa?

Taxi’s receive just over 1% of funding support ($28m)

Total: $2.305bn in FY17/18
INTEGRATED RAPID PUBLIC TRANSPORT NETWORK PROGRAMS

- BRT inspired by Latin American Cities’ BRT model for dense cities
- Most CAPEX with National Funds.
- Expectations of no/reduced OPEX subsides


Source: MyCiti
13 cities have IRPTN programs underway, 4 are already operational, 9 are either in construction or in planning.
Costs to Date

Total costs for the whole program since 2009 has been $3.4bn.
What have we bought with this money?

Average cost of $15m per kilometer in operational cities

<table>
<thead>
<tr>
<th>City</th>
<th>Ded. right of way (km)</th>
<th>Mixed traffic (km)</th>
<th>Closed station</th>
<th>Bus stops</th>
<th>Depots</th>
<th>18m</th>
<th>12m</th>
<th>9m</th>
<th>6m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tshwane</td>
<td>16</td>
<td>23</td>
<td>12</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>119</td>
<td>0</td>
<td>0</td>
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<tr>
<td>George</td>
<td>0</td>
<td>110</td>
<td>1</td>
<td>454</td>
<td>1</td>
<td>0</td>
<td>69</td>
<td>0</td>
<td>15</td>
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<tr>
<td>Joburg</td>
<td>43</td>
<td>4</td>
<td>48</td>
<td>231</td>
<td>2</td>
<td>82</td>
<td>195</td>
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<td>0</td>
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<tr>
<td>Cape Town</td>
<td>32</td>
<td>108</td>
<td>42</td>
<td>765</td>
<td>3</td>
<td>52</td>
<td>105</td>
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<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>245</td>
<td>103</td>
<td>1450</td>
<td>7</td>
<td>134</td>
<td>488</td>
<td>220</td>
<td>15</td>
</tr>
</tbody>
</table>
Performance: operational cities

~165000 weekday pax across the system

- Tshwane: Pax per weekday
- George: Pax per weekday
- Johannesburg: Pax per weekday
- Cape Town: Pax per weekday

Capex per weekday pax:

- Tshwane: $160.00
- George: $140.00
- Johannesburg: $120.00
- Cape Town: $100.00
BRT Implementation approach

Predict and provide, replace and reform…

Source: D Bosch, City of Cape Town
Creation of Vehicle Operating Companies

• Main points:
  • Existing MBT operators must form nucleus of VOC’s
  • Negotiated 12yr contracts with incumbent MBT operators
  • No loss of employment amongst drivers (or payouts as required)
  • Gross contracting model

• Cities tied into impossible bargaining positions with MBT sector
  • Opex costs 25-40% higher than original estimates
BRT Implementation approach

How successful has this been?

Source: D Bosch, City of Cape Town
BRT Implementation approach

How successful has this been?

Source: D Bosch, City of Cape Town
SOUTH AFRICA’S UNIQUE URBAN FORM

Apartheid-legacy urban form. Post-1994: spatial segregation has remained stark.

- City core with employment and opportunities
- High-density low-income “townships”
- Low density suburbs with single family detached housing

Source: R Munoz-Raskin, SATC 2017
SOUTH AFRICAN CITIES, INCLUDING JOBURG, ARE NOT LIKE LATIN AMERICAN CITIES

Latin American Cities are typically dense, South African cities are not.

Source: R Munoz-Raskin, SATC 2017
SA TRIPS ARE NOT LIKE THOSE FOR LATIN AMERICAN CITIES

- South Africa metros: long, unidirectional, highly concentrated peak travel.

- South Africa paratransit: Mature vs. LAC. And very capable of providing long distance, one-seat rides quickly adapting to market and urban form.

Source: R Munoz-Raskin, SATC 2017
Other indicators definitely are comparative outliers (iii)

* Using bus operating cost as defined in South Africa: Payment to operators for all costs of contract, including overheads, labor, fuel, tires, and vehicle maintenance.

AND...
SA BRT IS NOT LIKE LAC SIBLINGS
AND...
SA BRT IS NOT LIKE LAC SIBLINGS

- Other indicators definitely are comparative outliers (iv)
OPERATIONAL FUNDING IS A CHALLENGE

- Opex funding for BRT systems is generated locally:
  - Farebox revenue
  - Municipal funding (4-8% of property taxes)

- Operator contract model used gross-contract:
  - Ridership risk lies entirely with municipality

- Deficits have resulted in:
  - Good – cities forced to optimize schedules and cut costs as much as possible (lots of innovation)
  - Bad – off-peak frequencies often severely restricted, and differential peak/off-peak fares introduced to discourage peak hour travel
CAPEX FUNDING SECURITY IS A CHALLENGE

DORA allocation to CT for public transport investment (PTIS&G, PTIG & PTNOG, PTNG)

2012/13 DORB allocation in current Rands (adj with inflation)

MYFIN assumed PTNG allocations

Source: D Bosch, City of Cape Town
INSTITUTIONAL CAPACITY AND GOVERNANCE

• Delivery has been impacted by:
  • Lack of capacity at local and national level
    • Technical skills
    • Financial skills
    • Management skills
  • Poor corporate governance
    • Poor administrative capacity
    • Poor procurement practices and oversight
  • Significant delays in roll-out programs
  • Inappropriately specified system plans
HOW ARE CITIES RESPONDING TO THIS CHALLENGE?

1: Institutional strengthening

2: MBT Integration

3: Incremental roll-out

4: MBT sector formalization
INSTITUTIONAL STRENGTHENING

- **Driven from National Government:**
  - Funding for BRT tied to:
    - Clearly articulated and approved planning:
      » Sensible specifications
      » Financial viability
  - Demonstrated commitment at local level to:
    » Resourcing line departments
    » Training and capacitation
  - Increased oversight on procurement and contracting
    » Benchmarked costing
    » Performance monitoring and reporting
MBT INTEGRATION

• Understand the competitive advantages of each mode of transport
  • Taxis as feeder:
    • Flexibility, convenience, frequency, coverage
  • BRT as trunk:
    • Speed, capacity, reliability

• Plan for integrated systems
  • Electronic ticketing and Integrated Fare collection
  • Facilities designed for easy transfers

• Formalize MBT sector
  • Required for service-level agreements
  • Needed to support fleet diversification
INCREMENTAL ROLL-OUT

Identify high impact investments city-wide
Implement priority infrastructure to accommodate existing modes + future BRT
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- Implement priority infrastructure to accommodate existing modes + future BRT
MBT SECTOR FORMALIZATION

- Incentivize transformation of MBT associations into cooperatives or companies.
- Use driver rewards programs + GPS monitoring to incentivize improved driver behavior.
- Introduce electronic fare collection + GPS-equipped vehicles linked to APTMS systems through vehicle recapitalization program.
- Explore options for demand-side subsidies to lower out-of-pocket costs for low-income commuters.
SOUTH AFRICAN BRT EXPERIENCES

WHAT CAN WE LEARN?

THANK YOU