The potential reach and impact of integrated, open transport data

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Our platform brings together a city’s movement network on one transport data platform, empowering citizens to access opportunities in their cities.

In South Africa alone, our platform data on public transport networks serves at least 13.9 million urban commuters, approximately 7 million of which are women and girls.

**Explanations on Calculations:**

<table>
<thead>
<tr>
<th>Metro</th>
<th>#/km²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Town</td>
<td>1530</td>
</tr>
<tr>
<td>Johannesburg</td>
<td>2696</td>
</tr>
<tr>
<td>Ethekwini</td>
<td>1502</td>
</tr>
<tr>
<td>Erkhuleni</td>
<td>1609</td>
</tr>
<tr>
<td>Nelson Mandela Bay</td>
<td>588</td>
</tr>
<tr>
<td>Tshwane</td>
<td>464</td>
</tr>
<tr>
<td>Average Population Density</td>
<td>1398.167</td>
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- The Public-Private Infrastructure Advisory Facility (PPIAF) measure the percentage of urban areas within 500m of a bus stop, any distance further than this a commuter will find inconvenient. We can therefore calculate the surface area that a stop serves as 0.785km².

- The total number of stops and intermediates captured is 12,691.

- With the above we arrive at a total of 13,929,147. These are people who have access to a stop and therefore can be impacted by our product.

- Approximately 7 million South African females are within 500m of a public transport service stored within our transport platform. This figure is based on the female to male population ratio and taken as a percentage of the 13.9 million people within our total coverage area in the country.

The continent’s rapidly urbanising cities can use technology to leapfrog many ‘developed’ cities and embrace their transport systems – both the formal and informal.

Accepting and integrating transport data from any source, the WhereIsMyTransport platform is a scalable and replicable solution that brings together a city’s movement network on one transport data platform, empowering cities and operators to move the continent’s next one billion people.
The lack of information on informal transport’s routes is a continent-wide issue. According to the UN, 71 African cities have populations greater than 750,000 people but lack the infrastructure to support their citizens’ everyday mobility needs. By 2025, 12 cities will be home to over 5 million people each. And by 2050, more than 1.1 billion Africans will be living in cities.

Our platform is designed to handle and integrate data on both formal and informal transport systems, making it a particularly useful tool in emerging regions with a high degree of informally-run services and transport uncertainty.

Across the African continent, up to 80% of all public transport users rely on informally-run transport and commute with a high degree of uncertainty. In South Africa, roughly 5.5 million workers use public transport (36% of the working population) and of these 68% rely on informally-run minibus taxis. Dissatisfaction with public transport is very high in emerging regions where information such as routes, arrival times, and fares are largely communicated by word of mouth. WhereIsMyTransport has calculated that transport uncertainty costs South Africa approx. $104bn every year. What the Government is spending on public transport is just 8% of what it is losing through “waiting time” on public transport. The economic impact is further compounded by the fact that congestion on South African roads means that the Government loses R59.4 billion per annum\(^1\).

WhereIsMyTransport’s new platform will help Government and municipalities to understand where the public transport budget is best spent to address the complexities of transport planning in its cities. It will also provide developers with the opportunity to create solutions to make journeys easier for commuters.

**Explanations on Calculations:**

- Transport uncertainty refers to the time spent by South Africa’s commuting workers waiting for their first mode of transport to arrive on a daily journey to work. While the time people typically spend waiting for public transport varies by mode, a review of the data from the National Household Transportation Survey found that the average waiting time for the first mode of transport on a daily commute was 8.5 minutes\(^2\). Train users in particular were found to often have to wait for more than 15 minutes for their train.

- Over the 250 potential working days per year, this 8.5 minute wait, when multiplied by the 5.431m workers who use public transport in South Africa, adds up to 8,014,496.5 days. That’s 8 million days wasted because commuters are not able to confidently determine when they'll be able to get on public transport.

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\(^1\) R94,367,000,0003 given as transfers and subsidies to municipalities for road transport (2014/15) (approx. $6bn), source as above. Minus impact on productivity of time spent in traffic due to congestion, which equals 10 days lost in traffic congestion per worker per year; equivalent to R60.35 billion; The average South African wastes R7,100 sitting in traffic every year (from TomTom fourth annual global traffic index)

\(^2\) From National Household Travel Survey
WhereIsMyTransport calculated this against the average South African salary (R178,932 per annum, R14,911 per month (December 2013) – or R710.04 per day\(^3\)), to find that the potential cost of this waiting time is at least: $104 billion dollars. (R1,420,870,182,685)

This is a huge figure, but particularly when compared to the amount the South African Government spent on transfers and subsidies to municipalities to fund public transport in 2014/2015 = R111,456,000,000\(^4\) (approx. $8bn). This means that what the Government is spending on public transport is just 8% of what it is losing through “waiting time” on public transport.

Our open platform powers apps for commuters, thereby generating spillover effects for transport’s impact on environmental sustainability.

Our integrated transport data platform encourages people to use public transport over more resource intensive alternatives such as cars through convenient access to reliable journey information. The platform also provides cities and operators the information they need to optimise their movement networks and improve transport resource efficiency. The platform empowers cities to make data-supported decisions to effectively manage the whole urban mobility network, and strategically pinpoint and target challenge areas.

Transport activity accounts for almost 25% of global emissions. More alarmingly, resource inefficiencies and growing personal motorisation rates in emerging economies will, by 2030, result in 80% higher levels of total transport-related energy and carbon emissions as compared to 2007 levels.

The average traveler using a private vehicle generates approximately 3.4 tonnes of CO\(_2\) in travel related emissions per year. Africa’s multi-modal urban transport app, Findmyway, which was named one of the WWF’s 2015 African Climate Solvers is powered by the WhereIsMyTransport platform.\(^5\) According to WWF, use of the app can reduce emissions in emerging economies by 28 million tonnes of CO\(_2\) in the period from 2014 to 2025. These reductions are achieved through improving the efficiency of public transport systems and the app is just one example of the power of a single mobility platform.

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\(^3\) Stats SA’s Quarterly Employment Survey

\(^4\) Taken from: http://www.treasury.gov.za/documents/national%20budget/2015/ene/FullENE.pdf

\(^5\) For link to video on 2015 WWF Climate Solver, Findmyway please see: https://www.youtube.com/watch?v=3ua4TMS2i0M