Technical Report 2.2 | Transport and Mobility Services

Digital Van Service for Addis Ababa

Understanding the transport landscape and the potential for digital bus aggregation in Ethiopia

A Technical Report commissioned by the Addis Ababa Urban Age Task Force

URBAN AGE

Report Authors
Institute for Transportation and Development Policy (ITDP)
Chris Kost, Africa Director, ITDP, Nairobi, Kenya
Gashaw Aberra, Country Manager – Ethiopia, ITDP, Addis Ababa, Ethiopia

Supervision
Philipp Rode, Executive Director, LSE Cities and Urban Age, LSE, London, UK

AAUATF Working Group
Transport and Mobility Services
Elleni Ashebir, Cities and Urban Mobility Manager, Ross Centre for Sustainable Cities, WRI Africa, Addis Ababa, Ethiopia
Semere Jelalu Shafi, Deputy General Director, Addis Ababa City Traffic Management Agency, Addis Ababa City Government, Addis Ababa, Ethiopia
Clarisse Linke, Country Director, Brazil, Institute for Transportation and Development Policy (ITDP), Rio de Janeiro, Brazil
Philipp Rode, Executive Director, LSE Cities and Urban Age, LSE, London, UK

Production and Design
Elaine Beebe, Copy Editor
Emily Cruz, Project Manager, LSE Cities
Lizzy Garlan, Publication Coordinator, LSE Cities
Yasmin Lennon-Chong, Graphic Design
Atelier Works, Template Design

Image credit (front cover): Charlie Rossier

Contents

1. Introduction

Following the 2018 Urban Age conference in Addis Ababa, the London School of Economics and Political Science (LSE) initiated the Addis Ababa Urban Age Task Force with a goal of investigating critical issues facing the city. As one work area, the Task Force is exploring opportunities to introduce high-quality public transport services that can attract private vehicle users, including digital vans. In this document, "digital van service" refers to a range of on-demand shared ride services using software to pool rides and optimise vehicle routing. By encouraging mode shift from private cars, such shared services could form part of the solution to Addis Ababa's emerging access and mobility challenges.

Per stated transport policies, Addis Ababa is pursuing a paradigm shift in the provision of transport facilities and services. The city aims to implement bus rapid transit (BRT) on more than 15 corridors, enhance the quality of the existing light rail transit (LRT) system and achieve a substantial improvement in the walking and cycling environment. Digital van services can contribute to the city's sustainable mobility goals provided that an adequate regulatory framework is in place. The introduction of digital services also will necessitate creative solutions to existing technical hurdles, such as a lack of consistent mobile internet access in the city. This briefing document offers an overview of the existing public transport system in the city, presents case studies illustrating potential technology and regulatory options, and discusses the way forward for digital van services in Addis Ababa.

2. Addis Ababa's public transport system

2.1 Existing services

Walking and public transport are the dominant forms of mobility in Addis Ababa, making up an estimated 85 percent of trips.[1] The 31 percent of the population using public transport depend on minibus taxis, midi-bus taxis, Sheger buses, Anbessa buses, and LRT. Addis Ababa has a diverse range of public transport options but there are significant limitations in the provision of transport services. Key issues include the following:

– **Insufficient supply of public transport service.** Passengers face long queues during peak hours. Even the LRT system is characterised by very long intervals of 10-15 minutes between trains.

– **Lack of terminals and shelters.** Recently the city administration began installing shelters at bus stops. However, many stops still lack adequate weather protection and lighting.

– **Limited attention to last-mile access to public transport,** especially pedestrian facilities.

– **Lack of affordability.** More than 20 percent of the city population cannot afford buses and 40 percent cannot afford minibus taxis.[2]

– **Inappropriate location of mass transport terminals,** which hinders traffic circulation.

– **Limited network coverage,** particularly in outlying areas.

– **A lack of integration between land use policies and the presence of frequent public transport service.**

– **Poor vehicle quality** and comfort.

Due to the various drawbacks of existing public transport offerings, private cars are the only attractive choice for many residents who can afford personal vehicles. The following sections describe the specific services in more detail.
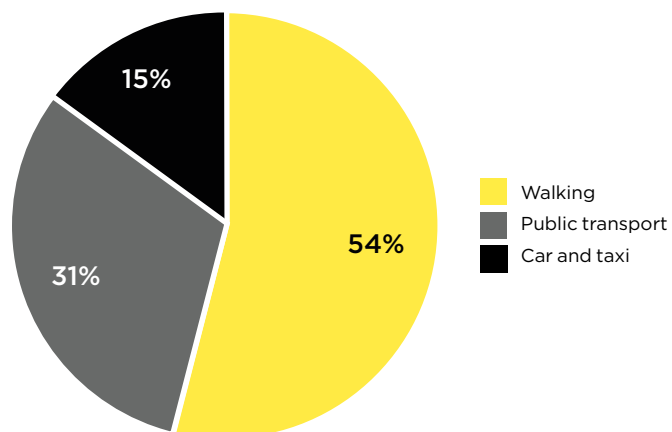
Figure 1: Addis Ababa mode split

Legend: Walking (54%), Public transport (31%), Car and taxi (15%)
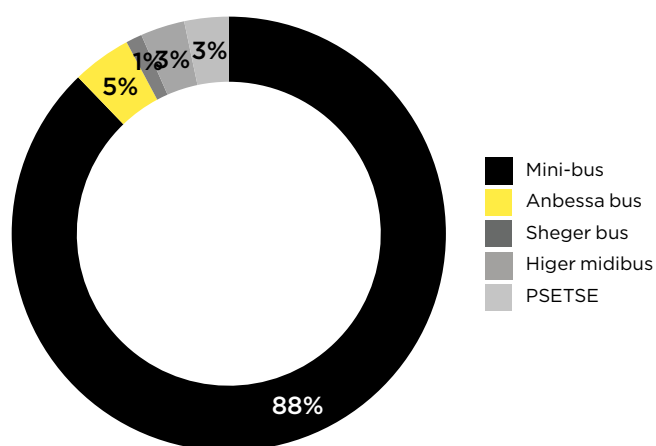
Figure 2: Composition of public transport trips[3]

Legend: Mini-bus (88%), Anbessa bus (5%), Sheger bus, Higer midibus, PSETSE

[1] World Bank. (2015). Addis Ababa, Ethiopia: Enhancing Urban Resilience. Retrieved from http://documents.worldbank.org/cu-rated/en/559781468196153638/pdf/100980-REVISED-WP-PUBLIC-Box394816B-Addis-Ababa-CityStrength-ESpread-S.pdf

[2] Woldetensae, Berhanu et al. (2011). Evaluation of the 2003-2010 development plan of Addis Ababa city transport sector

[3] Addis Ababa Transport Bureau. (2019). Addis Ababa Transport Strategy. The "car" mode share is assumed to include private taxis.

Table 1: Public transport fleets by mode, January 2020[4]

Public transport service	2015	2016	2017	2018	2019	Jan 2020
Anbessa buses (operational)	723	696	475	419	610	687
Sheger buses (operational)	N/A	146	146	146	220	217
Public Service Employees Transport Service Enterprise (PSETSE)	410	410	410	410	410	493
Higer midibuses	466	420	393	393	393	492
Minibus taxis	N/A	N/A	N/A	11,576	11,775	8,911

Figure 3: Long waits for public transport

Figure 4: Queuing at public transport stops

Figure 5: Overcrowded vehicle

Figure 6: Lack of adequate waiting facilities

2.1.1 Minibus taxis

Privately owned "minibus taxis" with a seating capacity of around 15 people are the dominant form of public transport in Addis Ababa, carrying nearly 80 percent of total public transport demand.[5]

According to the January 2020 report by the Addis Ababa Transport Authority (AATA), there are approximately 8,911 minibus taxis operating in the city. Minibus taxis in Addis Ababa are licenced in two ways: there are approximately 5,911 vehicles with code 3 commercial licences and 3,000 blue and white vehicles with code 1 licence plates.[6] There are 13 associations covering five zones in and around Addis Ababa. The routes of minibus taxis are permitted by the Addis Ababa City Transport Authority. Route changes are permitted every three months if operators want to shift to new routes.

Table 2: Spatial distribution of the minibus taxis across the sub cities in Addis Ababa

Sub city	No. of routes
Addis Ketama	233
Akaki	44
Arada	97
Bole	92
Gulele	70
Kirkos	157
Kolfea Keraniyo	59
Lideta	161
Nifas Silk Lafto	352

Table 3: Typical fares for minibus taxi service

Distance (km)	Fare (ETB)
0 - 2.5	1.5
2.6 - 5.0	3.0
5.1 - 7.5	4.5
7.6 - 10.0	6.0

Figure 7: Minibus taxis in Addis Ababa

Figure 8: Minibus taxis in Addis Ababa

— Minibus Taxi route

Housing units

Figure 9: Minibus taxi network

(including Anbessa and Sheger) have green number 3 plates, government vehicles black plate number 4 plates, and Red Cross vehicles have orange number 5 plates. United Nations (UN) vehicles have light blue plates marked "UN" and African Union (AU) vehicles have light green plates marked "AU" in Amharic and English.

2.1.2 Higer midibus

There are approximately 461 Higer midibuses in Addis Ababa, of which the operational fleet is approximately 411. The privately owned buses have a seated capacity of 25. Most of these vehicles operate for a short period of time because their quality is very low. Higer midibuses operate on 37 routes across three zones and carry more than 700,000 passengers per day[7]. In addition to the Higer buses, there are old Isuzu midibuses, locally called Kitkit buses. In order to operate in the city, a midibus operator should be a member of one of the three Higer bus associations: Degen association, Engudaye association, or Negat association. AATA issues the licences for the operation of the Higer buses. The buses operate mainly on the major arterial streets and run long-distance trips. The buses use taxi stations and Anbessa bus terminals to load passengers. They are affordable like Anbessa buses but have a reputation for pickpocketing and other forms of theft.

Table 4: Higer bus fleet

Association	Routes	Fleet	Operational
Degen	12	153	132
Engudaye	14	133	118
Negat	11	175	161
Total	**37**	**461**	**411**

Figure 10: Higer bus

Figure 11: Kitkit bus

[7] Addis Ababa Transport Authority (2019) Daily average public transport report

2.1.3 Anbessa buses

The Anbessa City Bus Service Enterprise operates vehicles in Addis Ababa and the surrounding Oromia region. Anbessa is fully owned by the Addis Ababa City Admiration (AACA) and has 687 buses operating on 124 routes in the city. Based on data from 2018-2019, the service carries an average of 309,888 passenger trips per day. Fare collection is handled by an individual conductor or cashier on the bus. Given the extensive route network operated by Anbessa, headways are sometimes as long as 90 minutes. Services are unreliable due to breakdowns. The number of buses assigned to each route is low due to the insufficient fleet and a large number of route variations.

Table 5: Anbessa fare schedule

Trip distance (km)	Cost (ETB)
< 10	1.60
10.1 - 12	2.00
12.1 - 14	2.25
14.1 - 16	2.75
16.1 - 18	3.00
18.1 - 20	3.75
20.1 - 40	5.50
40.1 - 50	9.00
> 50	12.00

Figure 12: Anbessa network
Source: WRI and Addis Ababa Structure Plan

Figure 13: Interior cabin of an Anbessa bus

Figure 14: Anbessa bus

2.1.4 Sheger Express buses

Sheger Express is another form of bus-based transport in Addis Ababa. The Sheger system emphasises air conditioning and ease of access for the elderly, physically challenged, pregnant women and children. There are approximately 217 Sheger buses operating on 48 corridors, transporting 198,000 people per day.[8] Sheger buses ply along many of the same corridors served by Anbessa buses. The route network is concentrated in the inner city, the Yeka Abado condominium site to the east and the Koye Fitche condominium site to the south.

Figure 16: Sheger bus

Figure 15: Sheger network

Source: WRI & Addis Ababa Structure Plan

Figure 17: Interior passenger cabin of Sheger bus

---

[8] Sheger Mass Transport Service (2020, Jan) Enterprise Report

2.1.5 Civil servant buses

The Public Service Transport Enterprise is operated by AACA as public transport during the morning and evening peak hours for local and federal civil servants. It was launched with 199 buses and recently added 20 additional buses from the Bishoftu automotive and locomotive industry. A total of 219 buses are in operation and the fleet is expected to expand to 410 buses in the near future. It also provides paid service for the public during the rest of the day. Public servants can ride for free after showing a government ID card.

2.1.6 Light rail transit system

In September 2015, the government of Ethiopia launched a 34 km light rail network in Addis Ababa. The system is comprised of two lines. Line 1 (east-west) operates from Ayat to Torhailoch with 17 km and 17 stations and Line 2 (north-south) operates from Kality to Menilk II Square with 16.9 km and 22 stations. There are five common stations between these two lines. The LRT has coaches with capacity of 250 seating and 66 standing operating in one to two coach trains. The LRT currently transports more than 120,000 passengers per day on the two corridors. The north-south route currently has the greatest ridership per reports from the Addis Ababa Light Railway and Railways Corporation. Passengers buy paper tickets at booths near LRT stations. Fares are set by the Addis Ababa Light Railway Corporation and have three different stages: ETB 2 birr for trips up to 4 km; ETB 4 for trips of 4 to 6 km, and ETB 6 for trips of more than 6 km.
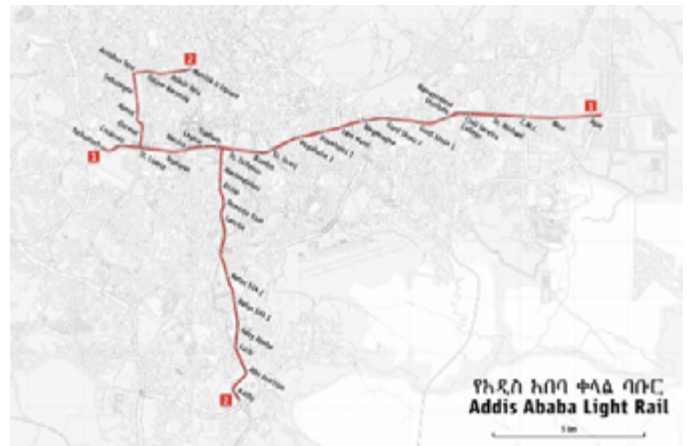
Figure 18: LRT route in Addis Ababa

Figure 19: LRT station

Figure 20: LRT system

2.1.7 Planned bus rapid transit system

BRT is a high-quality, bus-based transit system that delivers fast, comfortable and cost-effective urban mobility through the provision of segregated right-of-way infrastructure, rapid and frequent operations and excellence in marketing and customer service. Compared to rail-based MRT technologies, BRT holds several advantages, including greater flexibility; shorter door-to-door travel times; faster implementation time; lower construction and operating costs; and improved accessibility.[9]

The tenth Addis Ababa city master plan (2017-2032) identified a network of 15 BRT lines in the city, of which construction has commenced on the B2 and B6 corridors. The planned B2 corridor crosses Addis Ababa from Wingate roundabout in the north to Jemo Terminal in the south and will span 19.2 km. The line is expected to serve an initial volume of 5,400 passengers per hour per direction. Direct services will extend beyond the dedicated corridor to provide convenient services to nearby areas. The social and economic impacts are expected to be considerable, as the corridor passes through a low-income, densely populated area that is experiencing development.

A second BRT line, B6 corridor, is currently under planning. The corridor has a planned length of 11.5 km, spanning Bole International Airport to Sarbet via Bole, Wollo Sefer, Gottera and Kera. This corridor shares a station with the B2 line at Kera and runs parallel to the LRT east-west corridor. The corridor development will be financed by the Export Import Bank of Korea, with an expected total cost of USD 63 million. The plan suggests the use of articulated buses. Along the B6 corridor are several areas with high-density mixed-use development and high transport demand, especially from Wollo Sefer to Gottera and Kera. Per the pre-feasibility study, the corridor is expected to transport approximately 73,000 passengers per day in 2024.
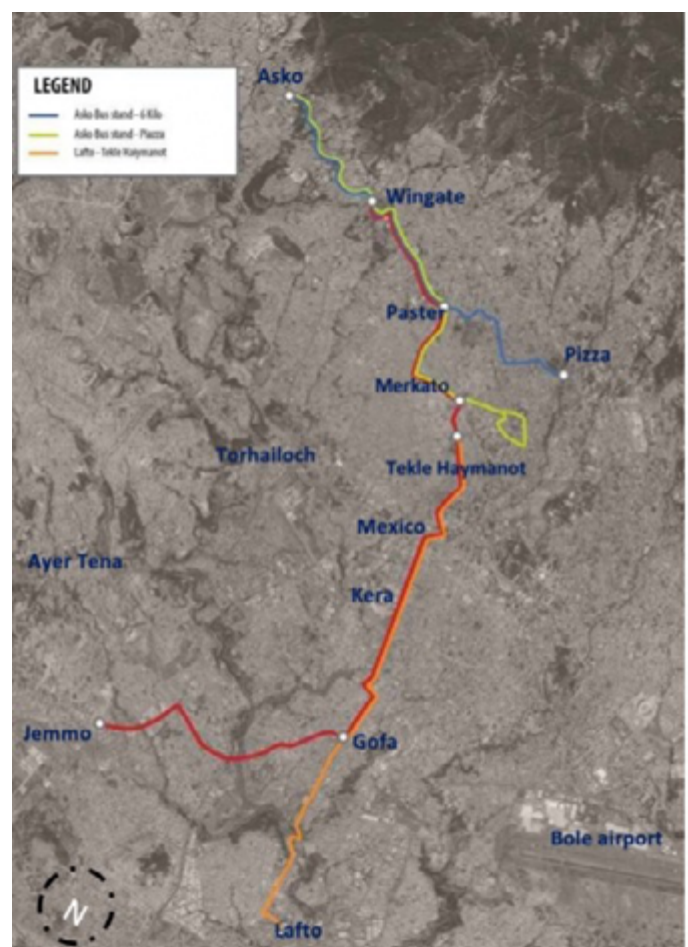

Figure 21: B2 BRT corridor (red) with planned direct services

---

[9] Addis Ababa Transport Bureau. (2017). Addis Ababa BRT Design Framework.

Figure 22: BRT B6 route

2.2 Institutional structure for public transport management

Under AACA, several institutions are involved in the planning and provision of the transport services in the city. The City Administration, under the leadership of the Mayor, oversees the Addis Ababa Transport Bureau (AATB), which in turn manages the Traffic Management Agency (TMA), AATA, Sheger Express Bus and Anbessa Enterprise.

2.2.1 Addis Ababa Transport Bureau

AATB is tasked with identifying challenges in the mobility sector; developing a strategy to guide sustainable development of the transport system; introducing services that will improve public and freight transport systems; and improving transport capacity. The Bureau has a vision to introduce a transport system that is reliable, safe and cost effective. The official tasks of the Bureau are:

– Coordination among AATA, TMA and Vehicle and Driver Licensing Agency;
– Preparation of a transport master plan and implementation monitoring of the plan;
– Development, maintenance and administration of transport infrastructure;
– Preparation of transport regulations, standards and norms;
– Planning of public transport services, terminals, depots, traffic management systems, driver's license regulations and the street network.

– Preparation of standards and studies that support the introduction of transport options that reduce carbon emissions.
– Ensure that transport infrastructure development is aligned with the other city infrastructure elements.

2.2.2 Addis Ababa Transport Authority

The Addis Ababa Transport Authority (TA) is in charge of organising several agencies and associations responsible for public transport and freight transport service provision. As part of this activity, the agency conducts random checks on services operating in the city, provides feedback to transport service providers and issues penalties to operators and drivers. AATA is responsible for conducting studies on the public transport system and optimising the route network. The office also provides customer information on services in the city.

3. Digital van case studies

The following section covers four case studies of digital van services: the Kutsuplus system set up by the public transport authority in Helsinki, Finland; the private bus aggregators in Mumbai, India; the private aggregator Swvl in Nairobi, Kenya; and a hybrid model involving Moia, a digital van service operated in partnership with the public transport operator in Hamburg, Germany. The case studies illustrate a range of possible regulatory models for digital van services.

3.1 Public model: Kutsuplus, Helsinki

Helsinki's Kutsuplus was one of the world's first demand-responsive public transport systems. The system was developed by Helsinki Regional Transport Authority (HSL) and Split Finland Ltd. (earlier Ajelo Ltd.), and the government covered the implementation cost. Under the system, users with smart phones could book a ride in real time. The system was designed to pick up the passengers going in roughly the same direction in the same vehicle. Virtual stops were defined in safe and easily accessible places. The system also gave various pricing levels linked to journey time and other level-of-service parameters. The goal of the project was to serve 20-35 percent of public transport trips by 2027.[10] Initial studies indicated that with 5,000 to 8,000 vehicles the scheme could have carried 500,000 to 800,000 trips.[11]

The project began with only 15 vehicles and had a target to reach 45 vehicles by 2014. It reached 32,193 registrations by 2015, limited by fleet size.[12] The system saw strong growth in demand as well as customer requests to extend the service time and geographical coverage. The system resulted in a reduction in private motor vehicle trips. According to a study from October 2013, 56 percent of registered users had one or more private cars in their household.[13] The users appreciated the benefits of the system, including the ability to avoid searching for parking spaces and cost savings compared to using their own vehicles.

Since the system was developed by the government, regulatory restrictions were not a challenge, but it required a constant flow of subsidies. However, the municipalities benefiting from the system did not grant the funding for the proposed capacity increase amidst a challenging economic situation. This decision severely impacted service quality. Studies suggested that the system's low fleet size was spread across a far-flung coverage area, resulting in long passenger wait times.[14]

Average occupancy was very low at 14.1 percent.[15] Research also shows that travel times by car were upwards of 20 minutes faster than journeys by Kutsuplus. In light of the high subsidy levels, the HSL Executive Board decided to end operations in late 2015 and to use the lessons from the experiment to implement a market-driven Kutsuplus service in the future.

3.2 Private model: Bus aggregators in Mumbai

Around 2015, many bus aggregator start-ups entered the mobility market in Mumbai. Overcrowding in public transport buses and suburban trains and a lack of air-conditioned buses gave a boost to start-ups such as Zipgo, Shuttl and CityFlo. The services operate on fixed routes with a provision to book a seat through an app.[16] The companies generally do not own any vehicles and operate as intermediary IT service providers. CityFlo claims the model has been designed for peak-hour daily commutes.[17] Most of these services use vehicles with a capacity of 12 to 20.[18] These aggregators soon became very popular and some of them raised funds for system expansion or electrification from large companies including Lightbox, Essel Group, Amazon and Dentsu Ventures.[19,20] While ZipGo does not exist today, bus aggregator CityFlo claims to have 30,000 passengers per month and Shuttl claims to have 100,000 trips per day across six Indian cities.[21] Shuttl claims that 57 percent of passengers switched from private cars and that 38 percent of passengers are women.[22] The company also claims to have reduced CO_2 emissions by more than 50,000 tons since inception.[23] By 2017, CityFlo saw 300 daily bookings on its 10 routes and 18 vehicles. Today, CityFlo operates 12 routes in Mumbai.

The Motor Vehicle Act (MV Act) of India defines bus aggregator as "a digital intermediary or market place for a passenger to connect with a driver for the purpose of transportation." The MV Act specifies two types of services: stage carriage and contract carriage services. The stage carriage provision allows a vehicle to run services that pick up passengers at multiple stops, whereas the

[10] HSL HRT (2016,8). "Kutsuplus: Final report." Retrieved from https://www.hsl.fi/sites/default/files/uploads/8_2016_kutsuplus_finalreport_english.pdf

[11] Ibid.

[12] Ibid.

[13] Ibid.

[14] Sulopuisto, Olli. (2016, Mar 7). "Why Helsinki's On-Demand Bus Service Failed." CityLab. Retrieved from https://www.citylab.com/transportation/2016/03/helsinki-on-demand-bus-service-kutsuplus/472545/

[15] https://www.sciencedirect.com/science/article/pii/S2210539519300999

[16] Service providers' websites: https://www.cityflo.com/ , https://zipgo.in/, https://ride.shuttl.com/

[17] Dekhane Eeshita. (2016, Jun 3). "CityFlo – Bus service startup." Indianceo. Retrieved from https://indianceo.in/startup/cityflo-bus-service-startup/

[18] Shakti Sustainable Energy Foundation, "Role of Bus Aggregators in Improving City Bus Services in India by WRI Ross Center for Sustainable Cities." Retrieved from https://shaktifoundation.in/wp-content/uploads/2018/05/Role-of-Bus-Aggregators-in-improving-city-bus-services-in-India.pdf

[19] Pitchiah, Vijayakumar. (2018, Jun 28). "Amazon, others to invest in bus aggregation platform Shuttl." VCCircle. Retrieved from https://www.vccircle.com/exclusive-amazon-others-to-invest-in-bus-aggregation-platform-shuttl/

[20] Sriram, M. (2020, 12 Jan). "CityFlo in talks to raise funds from Lightbox." Livemint. Retrieved from https://www.livemint.com/companies/start-ups/cityflo-in-talks-to-raise-funds-from-lightbox-

[21] Service providers' websites and apps

[22] Salman, SH. (2019, Oct 15). "Shuttl crosses 100 crore revenue in FY19 with 100k daily riders." Livemint. Retrieved from https://www.livemint.com/companies/start-ups/shuttl-crosses-rs-100-crore-revenue-in-fy19-with-100k-daily-riders-1157113500262620.html

[23] Economic Times. (2019, Oct 16). "Shuttl records 100,000 daily rides on its platform." Retrieved from https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/shuttl-records-100000-daily-rides-on-its-platform/articleshow/71614346.cms

contract carriage provision refers to a service that carries a passenger or passengers for hire between a defined origin and destination without stopping along the way.[24] Bus aggregator services in most of the states in India operate under contract carriage licences and hence encounter regulatory uncertainty because of the limitations of the contract carriage provisions of the MV Act. In several cities, bus aggregator services have been perceived as direct competitors to city bus operations, in violation of monopolies held by government-owned transport operators. In Maharashtra, the public transport authority urged the state's transport department to suspend bus aggregator services.[25]

Apart from regulatory challenges, research claims that there are several financial as well as social challenges for the bus aggregators. Some of the social challenges are user perception: "buses are cheap" and "they fail to provide last-mile connectivity."[26] Some of these challenges resulted in suspension of ZipGo services when the major investor withdrew his invested funds.[27]

3.3 Private model: Swvl, Nairobi

Swvl is a digital bus aggregator headquartered in Cairo, Egypt, that operates in several cities, including Nairobi, Kenya. The following case study covers Swvl's operations in Nairobi.[28] The company operates services with fixed routes and schedules. Vehicles undergo an annual roadworthiness test and range from 13-seat vans to larger vehicles. The company reports having 500,000 boardings per month and claims that some customers own cars. Customers can book trips using a smart phone app. Fares range from USD 2-3. Fare levels have been set higher than fares on the regular informal public transport vehicles in Nairobi, known as matatus, but lower than fares for app-based taxi services. The fares are collected in cash or using a mobile-based payment service known as M-Pesa.[29] Routes are not updated in real time but the company has the ability to make updates after 1-2 days. To enhance reliability for customers, stopping points remain the same from one day to the next. The business model follows a post-payment system. As a result, if passengers are not available, drivers sometimes spend a lot of time searching for new customers and are not able to adhere to the assigned schedule.

Drivers are expected to follow the entire assigned route but may skip stops where no passengers are present. Swvl developed an in-house planning dashboard and uses GIS heat maps to analyse the locations of potential demand for new services.

The company partners with vehicle owners to bring vehicles onto the platform. Owners receive a daily payment based on the number of trips completed by the vehicle. Owners are responsible for employing their own drivers. Swvl sets out requirements for vehicles entering the system, including an import date cut-off (a proxy for the age of the vehicle) and the presence of required licenses.

The platform has faced regulatory uncertainty and opposition from some sectors of the matatu industry.[30] In November 2019, services provided by Swvl and a similar bus aggregator known as Little Shuttle were temporarily suspended by Kenya's National Transport and Safety Authority (NTSA), citing noncompliance with public transport regulations.[31] Swvl relaunched services following negotiations with the agency. Under Kenya's transport sector regulations, public transport operators are required to join savings and credit cooperative organisations (known as "saccos"). A sacco must have 30 vehicles in order to be registered by NTSA. To comply with these regulations, Swvl now enters partnerships with owners who are already part of registered saccos. Swvl then operates on routes already registered with the respective sacco. Under this new model, Swvl vehicles are able to access regular public transport stops and terminals.

3.4 Hybrid model: Moia, Hamburg

Moia is a digital hail service launched in Hamburg in February 2019 by Volkswagen Group. The system was launched with 100 vehicles and was slated to expand to 500 vehicles. The system uses VW passenger vans with capacity of up to six passengers. All vans under the service are battery-operated electric vehicles with a range of 300 km. Users can book a ride by entering the origin and destination in a smart phone app. Users can get service from virtual stops near the origin and destination. Prices are dynamic and depend on distance, time of day, and other factors.[32] Per the operator, the fare for a single ride ranges from €5 to 10.

Hamburger Hochbahn, the public transport company in Hamburg, supported the introduction of Moia.[33] Hamburger Hochbahn adopted a policy of addressing customer needs and increasing ridership by fostering multiple options such as shared bicycles, e-scooters, and electric ride hail options. The mobility options are

[24] Government of India. (2019). Motor Vehicle Act

[25] Binu Paul. (2018, Sep 27). "For bus aggregators, the road to maturity has plenty of speed bumps." Techcircle. Retrieved from https://www.techcircle.in/2018/09/27/for-bus-aggregators-the-road-to-maturity-has-plenty-of-speed-bumps [26] Ibid.

[27] Binu Paul. (2019, Feb 21). "Essel Group-backed bus-pooling startup ZipGo to halt operations in Bengaluru, Mumbai." Techcircle. Retrieved from https://www.techcircle.in/2019/02/21/essel-group-backed-bus-pooling-startup-zipgo-to-halt-operations-in-bengaluru-mumbai

[28] Siyadat, Ahmed Ali. (2020, 10 Feb). Personal interview

[29] Christine Kariuki, Corporate sales lead at Swvl, (2021 June 14), Focus group discussion with the international operators.

[30] Mbugua, Dickson. (2020, 12 Feb). "Let us find a way to cushion Kenyans from disruptive tech." Business Daily. Retrieved from https://www.businessdailyafrica.com/corporate/shipping/cushion-Kenyans-from-disruptive-tech/4003122-5451966-fab1v6z/index.html

[31] Wainainah, Doreen. (2019, Nov 13). "SWVL grounds buses as NTSA pressure mounts." Business Daily. Retrieved from https://www.businessdailyafrica.com/corporate/companies/SWVL-grounds-buses-as-NTSA-pressure-mounts/4003102-5347016-r2m9aj/index.html

[32] MOIA. (n.d.). Wie viel kostet der Service? Retrieved from https://help.moia.io/hc/de/articles/360001347785-Wie-viel-kostet-der-Service-

[33] Rödl & Partner. (2019, Apr). "Hamburger Hochbahn plant MOIA in switch zu integrieren." Retrieved from https://www.roedl.de/themen/kompass-mobilitaet/04-2019/hamburger-hochbahn-plant-moia-switchh-integration

collectively branded under the "Switch" program. Unlike other ride hail taxi companies in Germany, Moia company obtained formal approval from Hamburger Hochbahn to operate the ride hail vehicles under Switch. While the service has seen some growth in ridership, 40 percent of trips made by the vans do not have any passengers.[34] In January 2020, a Volkswagen board member urged the company to scale back the level of investment in the service.[35]

3.5 Observations from case studies

Following are some observations from the experience with digital van services in various cities:

– Existing legal frameworks often have been insufficient to guide the regulation of digital van aggregators.

– There is a trade-off between flexibility and cost-effectiveness. Some services operate up to the doorstep, providing a high degree of convenience for users. However, the flexibility comes at a substantially higher operating cost: these services tend to have lower occupancy and a large number of "dead" kilometres where vehicles circulate empty before reaching the next passenger. Other services operate fixed routes and utilise the digital technology for bookings, payments and dissemination of real-time trip information, but do not customise route itineraries. They have lower operating costs than fully flexible services.

– There is some evidence that premium services operated by bus aggregators have been able to attract trips from private vehicles.

– Hybrid models with oversight by a public transport authority can help ensure that digital vans complement existing public transport systems. Collaboration can also facilitate data sharing and enable government to optimise the overall transport system in the city.

Figure 23 compares the degree of demand responsiveness and public sector involvement for the digital bus aggregators.

The case studies suggest that operators in Addis Ababa will need to address several technical and behavioural hurdles that may impact the reach of such a service:

– **Smart phone penetration and use:** Taxi aggregators in Addis Ababa receive many of their requests through call centres. Greater adoption of smart phone apps for trip bookings will reduce operating costs.

– **Internet connectivity:** Limitations in internet connectivity may restrict the extent to which digital van services can respond to changes in demand patterns in real time. In addition, they hamper the ease of online bookings.

– **Electronic payment penetration:** Most payments on digital taxi services in Addis Ababa are made using cash. On higher-capacity minibus services, cash payments will affect staffing requirements on the vehicles. Operators could explore the use of an electronic wallet system where customers could load money to pay for multiple rides.
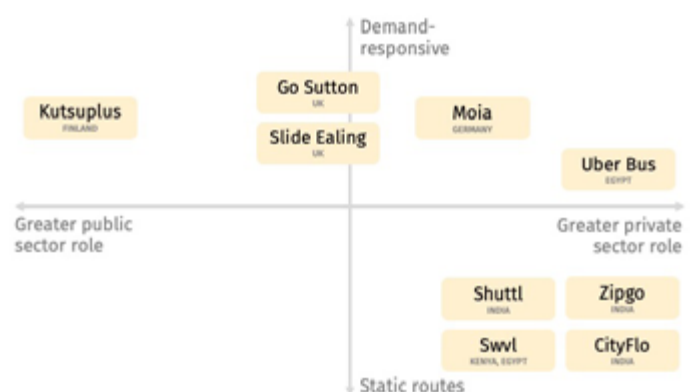
Figure 23: Digital van typologies

[34] NDR. (2019, Oct 16). "Fahrdienst Moia legt in Hamburg weiter zu." Retrieved from https://www.ndr.de/nachrichten/hamburg/Fahrdienst-Moia-legt-in-Hamburg-weiter-zu,moia162.html

[35] Hamburger Morgenpost. (2020, Jan 26). "Scheitert MOIA in Hamburg? VW-Chef macht drastischer Ansage zum Hamburger Fahrdienst." Retrieved from https://www.mopo.de/hamburg/scheitert-moia--vw-chef-mit-drastischer-ansage-zum-hamburger-fahrdienst-33802570

4. Emerging digital taxi services in Addis Ababa

4.1 Existing digital taxi operators

The following section introduces some of the prominent digital taxi operators in Addis Ababa. There are currently 60 registered taxi-hailing companies in the city, classified into Electronic Taxi Dispatch service providers (E-Taxi) and Taxi Operation Associations. The first category consists of companies that provide electronic taxi-hailing services but do not own their own vehicles. The second group is comprised of companies that operate using their own fleets. The latter group is also free to utilise electronic systems to connect drivers and passengers.

4.1.1 Ride

Ride functions as an aggregator for more than 10,000 vehicles and drivers. The vehicles are owned by drivers or other fleet owners, and Ride serves as the intermediary to link operators with customers. The cost per kilometre is ETB 10 after an initial booking fee of ETB 50. Twelve percent of the trip cost goes to Ride. Bookings can be made using an app or by dialling 8294 to reach a call centre. The ride operators mainly work in the city centre where there is high travel demand. The system includes some safety features for drivers. The safety features include the tracking of the vehicle in case it is stolen. If the driver faces a dangerous situation, the agency will track the passenger.

4.1.2 ZeyRide

ZeyRide was established in 2016. Car owners bring their vehicles to the system, and ZeyRide provides booking services through a smart phone app and call centre. Drivers who do not own their vehicles are required to present a hiring letter showing they have been retained by the vehicle owner. The company has approximately 5,000 vehicles, the third-largest number after Ride and Feres. An average vehicle operates 15 trips in a day. The drivers can work as long as they wish, as the company has not set any limitations on working hours. The app tracks the location of vehicles while in service.[36] The customer app has a safety feature that allows passengers to share trip information with their friends or relatives. The company is working with an international partner to introduce electronic payment.

ZeyRide plans to expand its service to the Liberian capital, Monrovia, in collaboration with the Liberian web solutions firm Hak Technologies. According to founder Habtamu Tadesse, ZeyRide had planned to launch the service with 200 cars in August 2020. The team is in talks with Abyssinia Bank to help finance vehicle imports. The company also plans to introduce higher capacity minibuses in the near future.

4.1.3 Pick-Pick

The erstwhile Pick-Pick service operated six-seat minivan taxis. The company owned the vehicles and has obtained a formal registration and license numbers from the City Administration to operate as taxi service with code 1 plates. The system had approximately 300 vehicles operating

Figure 24: Pick-pick vehicle

Figure 25: Ze Lucy vehicle

throughout the city. The service accepted bookings using an app and or by dialling 6111 to reach a call centre. The company filed for bankruptcy in October 2021 and all the vehicles are now operating under Ride, Feres, and other digital taxi operators in the city.[37]

4.1.4 Ze-Lucy digital taxi service

Ze-Lucy was one of the first digital taxi operators in Addis Ababa. Full operations started in September 2017 and the system now has approximately 725 vehicles painted in a distinctive green and yellow colour scheme. The vehicles are licensed with codes 1 and 3. The vehicles are owned by an association comprised mainly of former Lada and minibus taxi drivers. The head office is staffed by approximately 10 employees. The vehicles are from Toyota Lifan. The system has a smart phone app and call service that can be reached at 7404.

4.1.5 Taxiyea

Taxiyea operates under the name EI-Taxi. The company is owned jointly by association members who own vehicles and the company that runs the technological system. Recently the company entered negotiations with Lada taxi drivers to change their vehicles. The Taxiyea agency imports new Hyundai vehicles, and current Lada drivers who are willing to join the system are given the option to pay 10 percent of the car price upon signing of the

36 Habtamu Tadesse, CEO of ZayRide digital taxi. (2021 August 14). Focus group discussion with local operators

37 Pick-Pick official bankruptcy letter to the drivers and vehicle owners: https://www.facebook.com/pickpicktaxi/photos/pcb.1267532550249235/1267514806917676/?type=3&theater

agreement, 20 percent when receiving the vehicle, and the remaining 70 percent during operations. The company is now partnering with six taxi associations, and there are 500 vehicles registered to operate using the system. The system offers a smart phone app and a call service at 6055. The vehicles have a purple and yellow colour scheme and are registered by the transport office with code 1 (taxi service) license plates.

4.1.6 Ethiopia Taxi - ETTA

Ethiopia Taxi operates under the name ETTA. The company is a private limited company offering taxis that can be hailed through a smartphone application and a call service at 8707. The company started operating individual trips like the other taxi hailing companies, with smaller vans that can allow more people to travel together.

4.1.7 Seregela

Seregela is a digital taxi company founded in Addis Ababa in September 2020. All of the drivers are women. The company operates with a range of small, sedan and van-size vehicles. The service uses a call centre (number 7878) and app-based systems to connect the passenger with the closest Seregela driver. There are 200 vehicles operating with 250 female drivers. There are two depots for the vehicles to park at night. Drivers are expected to take the vehicles from depots and return them by 8 pm, with drivers allowed to work a maximum of eight hours a day.[38]

The company hopes to expand in the region and continent and also introduce e-vehicles. There are two operating models: one where the company owns new cars and hires the drivers and another where the company works with drivers who have their own vehicles.

4.1.8 Feres

Ride hail company Feres has become a major player since it joined the market in 2020. When the service was launched, Feres waived charges for new drivers. After a six-month period, the company started to charge a 12 percent fee. Riders can book vehicles by calling 6090 or through an app. A popular feature of the app is that customers receive mileage that can be credited towards mobile cards and transport fees. The drivers can work as long as they prefer each day. The company is working with an international company called Ibro Mobile to start the electronic payments.

According to Nebila Abednur, marketing team lead at Feres, "the company had established an app system called road safety button, which allow drivers to request help when they feel threatened. The request on the button will notify five nearby drivers with the information about the vehicle location and name of the driver. After that they could report [the incident] to the nearest police stations."

[38] Bethelhim Birhanu. (2020, Oct). Interview on EBS TV programme about the Seregela taxi. https://www.youtube.com/watch?v=dUxGFiTvtAA&t=1s

[39] Dadhi, Hawi. (2021, Jul 24). "Ministry Redefines 'New' for Vehicle Taxation." Addis Fortune. Retrieved from https://addisfortune.news/ministry-redefines-new-for-vehicle-taxation/ [40] Ibid.

Figure 26: Seregela vehicles
Source: What's Out! Addis
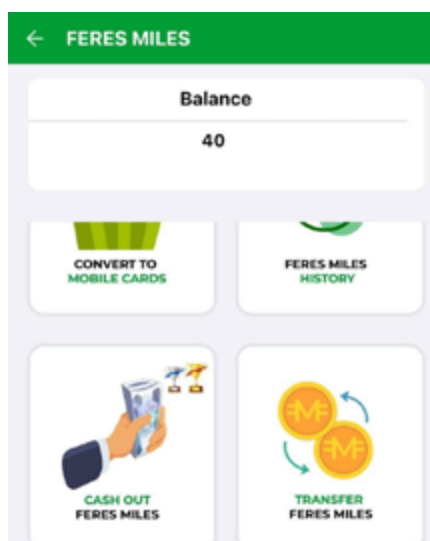
Figure 27: Feres mileage app

4.2 Regulation of digital taxis

After digital taxis were introduced in December 2016, AATA directed operators to register as transport providers and to ensure that all of their vehicles were registered with public service license plates. Proclamation 608/2010 states that vehicles need to have a license plate code 1 in order to operate as public transport or taxis. Code 1 vehicles can be owned both by private sector entities and public agencies but operations are to be regulated by the government. The Transport Authority directed those vehicles with code 2 (for private cars) and code 3 (for commercial use) would not be permitted to operate in the city.

The digital taxi service providers and AATA have filed suit, and several cases are still pending in federal court. The digital taxi providers argue that they provide an IT service and they do not fall under the regulatory ambit of the Transport Authority. They argue that they are paying taxes as a technology service provider. AATA, on the other hand, is arguing that the Transport Authority has full right and responsibility to regulate all transport-related services.

In an effort to replace Addis Ababa's aging fleet of blue and white taxis, the Ministry of Finance has waived excise taxes for imports of vehicles for commercial use, including digital taxi services.[39] The policy reduced the cost of a new taxi vehicle by 13 percent.[40]

5. Principles for regulating digital vans

If managed well, digital vans hold the promise of expanding the reach of public transport. Premium services involving digital booking tools could attract new riders who otherwise would not use public transport. Drawing from the experience with digital van regulation in peer cities, several principles for the management of digital services emerge.

5.1 Integrate digital services with a robust public transport system

Digital van services can serve as one component of a holistic approach to sustainable transport provision in Addis Ababa. Presently, population growth and increasing travel demand, paired with a lack of high-quality sustainable transport options, are driving an increase in the use of personal motor vehicles. To reverse these trends, a city the size of Addis Ababa will need a fleet of more than 3,300 city buses (compared to an existing fleet of 904 buses), at least 70 km of rapid transit, and comprehensive, high-quality, non-motorised transport (NMT) facilities over the next ten years. Such an expansion of the city's sustainable transport offerings would enable the city to accommodate increasing travel demand on sustainable modes rather than private vehicles. Digital services should be planned in the context of a broad effort to address the city's mobility needs and should complement to the city's core public transport system. Digital vans can set a higher quality standard for service in the public transport sector, leading a transformation that can help encourage affluent residents to shift to sustainable modes.

5.2 Use pricing to favour larger vehicles

The proliferation of digital taxi services in Addis Ababa has introduced a convenient mobility option, but with increased demand, the services are likely to contribute to congestion, along with associated challenges such as traffic crashes, local air pollution and greenhouse gas emissions. Many cities around the world have experienced an increase in traffic because trips have shifted from sustainable modes to ride-hailing services.[41,42] Similarly, the success of digital van services at addressing the city's mobility and environmental challenges will depend on the trips that they replace. If they attract trips from cars or digital taxis, they will have significant benefits. However, if they draw trips from larger public transport vehicles, or if digital van occupancies are low, they may actually increase pollution, congestion, and associated challenges.

Digital van services will need to be appealing to affluent residents in order to attract trips from cars. In addition, to encourage the use of larger, more sustainable vehicles, the city should introduce clear incentives for high-

occupancy, shared modes. In the short term, Addis Ababa should pursue parking fees as a means of managing the use of motor vehicles. The Addis Ababa Non-Motorised Transport (NMT) Strategy calls for the implementation of an IT-based parking system covering 30,000 spaces over 10 years.[43] In the longer term, the city can consider congestion pricing as a broad strategy to incentivise shared, shorter trips. Congestion pricing covers all vehicles, disincentivising low-occupancy trips and encouraging shared rides. Congestion pricing is based on the total kilometres driven, whether for an active passenger trip or deadheading between trips, thereby encouraging operators to route vehicles so as to minimise the number of kilometres that vehicles run empty.

5.3 Mandate data sharing

Transport planning requires accurate data on current travel patterns. Therefore, digital van regulations should mandate the sharing of data with concerned government authorities on a real-time basis. For example, Vancouver, Canada, made data-sharing a condition of Uber and Lyft's entry to the local market.[44] The following types of data should be shared by all operators:

– **Passenger data:** Trip data, including the origin, destination, timing, fare and route number. The data should be anonymised to address privacy concerns;
– **Vehicle data:** The GPS track, route number, average passenger load and other relevant data for each trip;
– **Safety-related data:** Information on all incidents related to the operator's services, including traffic crashes, traffic citations, fatalities, injuries, cases of sexual harassment and theft.

5.4 Optimise route design

It is important for the government to play a role in route design for digital vans in order to ensure an appropriate supply of service across the metropolitan region and to avoid an oversupply on key corridors. Government involvement also can help ensure that new services are compatible with existing operations and handle disputes that might arise.

To avoid duplication of service, bus aggregators should be encouraged to establish services to and from areas of the city that are poorly served by existing public transport routes and areas with a high level of car dependency. For example, several condominium areas near Ayat have wide spacing of bus routes, leaving many households without public transport service within walking distance. Routes also can target upper-income areas to increase the number of users who shift from personal motor vehicles (see Figure 28).

[41] See for example: Bliss, Laura. (2019, Aug 5). How much traffic do Uber and Lyft cause? CityLab. Retrieved from https://www.citylab.com/transportation/2019/08/uber-lyft-traffic-congestion-ride-hailing-cities-drivers- vmt/595393/

[42] Brinklow, Adam. (2018, Jul 27). Lyft, Uber increase traffic 180% in major cities. Curbed SF. Retrieved from https://sf.curbed.com/2018/7/27/17622178/uber-lyft-cause-traffic-streets-congestion-bruce-schaller-tnc-report

[43] Addis Ababa City Administration. (2018, Nov). Addis Ababa Non-Motorised Transport Strategy 2019-2028.

[44] Marshall, Aarian. (2020, Feb 1). "Vancouver wants to avoid other cities' mistakes with Uber and Lyft." Wired. Retrieved from https://www.wired.com/story/vancouver-wants-avoid-other-cities-mistakes-uber-lyft/

5.5 Adopt a transparent tendering process

Government will have an opportunity to influence the introduction of digital vans if it takes a proactive approach to licensing these services—rather than catching up with regulations after the industry launches such services on its own. The tendering process can identify bidders willing to operate the defined service at the most affordable price. It also can incorporate minimum criteria for company turnover and experience.

5.6 Set appropriate tariffs

Digital vans are expected to charge more than existing public transport systems, given the premium service they will offer. As a result, these services may cater primarily to middle- and high-income groups. However, steps can still be taken to enable access to these services by vulnerable groups. For instance, on-demand bus services in London have accepted the Freedom Pass, which allows elderly and disabled users to ride for free.[45]

5.7 Integrate customer information systems

Operator data on active vehicle locations throughout the city should be made publicly available for integration into government and third-party trip-planning apps (eg, Transit App, Citymapper, etc.) Such information can facilitate multimodal trips that combine digital vans and the rest of the city's public transport system.

5.8 Ensure user safety

Operators must adopt clear provisions to ensure customer safety. Incident reporting procedures must be developed and drivers should receive adequate training. Drivers must be sensitised to methods for responding to sexual harassment and other incidents that might occur on vehicles. Clear information on the procedures should be shared with passengers through smart phone apps, on-vehicle signage, social media and other means.

5.9 Set emission standards

To improve air quality in Addis Ababa, all digital van vehicles should meet the Euro 3 standard or higher. As the quality of imported fuel improves to 50 ppm sulphur or less, Euro 4 vehicles can be introduced. Electrification of the digital van fleet presents an opportunity to further reduce greenhouse gas emissions and local pollution. Further study should be conducted to assess operational viability and business models for e-vans.

Housing units in Addis Ababa

High income and real state housing sites

Street network

Figure 28: High-income residential areas in Addis Ababa

5.10 Repurpose parking zones to establish public transport terminals

The Addis Ababa Structure Plan (2017-2027) envisions the establishment of 60 multi-storey car parking structures across the city centre. Per the experience with the lots that have been developed so far, the parking structures are not serving the desired objectives. Space earlier earmarked for parking can be repurposed for public transport terminals, serving digital vans along with other public transport services.

5.11 Offer public transport services in lieu of off-street parking

As digital vans and other enhanced public transport services become established, off-street parking requirements should be reviewed. The Addis Ababa Structure Plan currently requires one car parking space per five residential units and one parking space per 150 sq m of office space. Eliminating such requirements can improve the affordability of residential and commercial space significantly.[46] In lieu of parking spaces, developers and property managers can offer complimentary public transport passes. The city of San Diego, USA, while eliminating off-street parking requirements within 800 metres of a public transport stop, also mandated multifamily housing projects to provide public transport passes free of charge.[47] In San Mateo, USA, a study found that residents who moved to a transit-oriented development who received free public transport passes were more likely to delay the purchase of a car or forego the purchase entirely.[48]

45 Transport for London. (2019, Feb 20). On-demand bus services to be trialled in Sutton. Retrieved from https://tfl.gov.uk/info-for/media/press-releases/2019/february/on-demand-bus-services-set-to-be-trialled-in- sutton

46 Jia, Wenyu and Martin Wachs. (1998, Fall). Parking and affordable housing. Access Magazine. Retrieved from https://www.accessmagazine.org/fall-1998/parking-affordable-housing/

47 Pacheco, Antonio. (2019, Mar 6). "San Diego eliminates parking requirements for transit-adjacent projects." CityLab. Retrieved from https://archpaper.com/2019/03/san-diego-eliminates-parking-requirements-for-transit- adjacent-projects/

48 TransForm. (2015, Mar 30). GreenTRIP: Traffic reduction strategies; tips for successful transit pass implementation. Retrieved from https://www.transformca.org/sites/default/files/Info%20Sheet_Transit%20Pass%20Program%20Best%20Practi ces_March%202015_Updated.pdf

6. Conclusion

Congestion, air pollution and traffic crashes are daily occurrences in Addis Ababa, driven by a rapid increase in the use of private cars. Responding to these issues, the city government has taken steps to improve the quality of public transport services. The Addis Ababa City Structure Plan (2017-27) calls for an expansion of mass rapid transit service, including a comprehensive BRT network. To improve last-mile connectivity to public transport, the city has invested in facilities for pedestrians and cyclists. In addition, plans are underway to introduce a public bikeshare system.

A system of demand-responsive digital vans could further extend the reach of the public transport system. Digital taxi service providers have been growing dramatically, and there are currently more than 60 registered ride-hail and taxi companies in the city. However, the increase in digital hail operations has brought many new vehicles to Addis Ababa's streets, and many trips carry only individual passengers. Introduction of a digital van system can improve the efficiency of digital hail services while still offering a high-quality service that is attractive to private car users. A well-managed digital van system offers the promise of reducing the number of cars on the street while reducing harmful emissions.

There are several basic principles the government should consider when managing digital van service in Addis Ababa. Because street space in the city is limited, government policy should encourage the use of high-occupancy vehicles. Digital van regulation should facilitate integration between the vans and other public transport services; ensure safety for passengers and drivers; and incentivise operation in city areas that are underserved by existing bus and LRT routes. Payment integration between digital vans and other public transport services could improve convenience for passengers. An open line of communication between transport agencies and operators throughout the implementation process is critical to foster innovation and encourage complementarity between digital vans and the public transport system as a whole.

Addis Ababa Urban Age Task Force Reports

Theme 1 | Urban Housing and Retrofitting

Policy Brief 1 | *The Addis Ababa City Block: a high-density, mixed-use and inclusive housing solution for the urban core*

Technical Report 1.1 | *The Addis Ababa City Block: inclusion and livelihood though the horizontal-above-vertical concept*, by Elias Yitbarek Alemayehu

Technical Report 1.2 | *Finding Housing Affordability: cost estimates and affordability paths for the Addis Ababa City Block,* by Jacus Pienaar

Technical Report 1.3 | *Sustainable Building Materials: exploring green construction options for new housing in Addis Ababa*, by Hannah Langmaack, Peter Scheibstock and Thomas Kraubitz (Buro Happold)

Theme 2 | Transport and Mobility Services

Policy Brief 2 | *Beyond Car Growth: digital van service as alternative to private car use in Addis Ababa*

Technical Report 2.1 | *Digital Van Service Demand: gauging interest in mobility alternatives among current and aspiring car owners in Addis Ababa*, by Philipp Rode, Bethany Mickleburgh, Jennifer Chan and Rebecca Flynn

Technical Report 2.2 | *Digital Van Service for Addis Ababa: understanding the transport landscape and the potential for digital bus aggregation in Ethiopia's capital* by Chris Kost and Gashaw Aberra (Institute for Transportation and Development Policy (ITDP))

Theme 3 | Green and Blue Infrastructure

Policy Brief 3 | *Working with Nature: next generation green and blue infrastructure for Addis Ababa*

Technical Report 3.1 | *Green and Blue Infrastructure in Addis Ababa: a review of challenges and response strategies*, by Hailu Worku

Technical Report 3.2 | *The Social Functions of Green and Blue Infrastructure: international case studies and insights for Addis Ababa*, by Santiago del Hierro, David Jácome and Tigist Kassahun Temesgen

Theme 4 | Urban Governance and Planning

Policy Brief 4 | *Urban Governance and Strategic Planning: how Addis Ababa could benefit from human-centred, inclusive design, participatory pilot projects and improved data management*

Technical Report 4.1 | *Participatory City Making: polycentric governance and human-centred, inclusive urban design,* by Meinolf Spiekermann and Marc Steinlin

Technical Report 4.2 | *Urban Knowledge Management: solutions for the Addis Ababa City Administration*, by Bersisa Berri

Technical Report 4.3 | *International Building Exhibitions (IBA): an approach to innovative city making in Addis Ababa* by Efrem A. Tesfaunegn, Anka Derichs and Michael von der Mühlen

Technical Report 4.4 | *Addis Ababa Spatial Compendium: mapping and urban analytics for Ethiopia's capital*, by Alexandra Gomes and Philipp Rode (LSE Cities)

Addis Ababa Urban Age Task Force

Founding Partners

The Task Force is a partnership between the Addis Ababa City Administration Plan & Development Commission (AAPDCo), LSE Cities at the London School of Economics and Political Science, the Alfred Herrhausen Gesellschaft, and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Members

Dereje Fekadu (Co-Chair), Commissioner, Plan and Development Commission (2018-2020), Special Chief of Staff, Mayor's Office, Addis Ababa City Administration, Addis Ababa, Ethiopia

Philipp Rode (Co-Chair), Executive Director, LSE Cities and Urban Age, LSE, London, UK

Elias Yitbarek Alemayehu, Architect and Associate Professor, EiABC, Addis Ababa University, Addis Ababa, Ethiopia

Elleni Ashebir, Cities and Urban Mobility Manager, Ross Centre for Sustainable Cities, WRI Africa, Addis Ababa, Ethiopia

Ricky Burdett, Director, LSE Cities and Urban Age, LSE, London, UK

Anka Derichs, Senior Strategic Urban Development Advisor, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Eschborn, Germany

Timnit Eshetu, CEO, Construction Enterprise, Addis Ababa City Administration (2019-2021), Addis Ababa, Ethiopia

Brett Herron, Former Member of the Mayoral Committee: Transport and Urban Development, Cape Town, South Africa

Olusola Ikuforiji, Environmental Specialist, African Development Bank, Abidjan, Côte d'Ivoire

Clarisse Linke, Country Director, Brazil, Institute for Transportation and Development Policy (ITDP), Rio de Janeiro, Brazil

Elisabeth Mansfeld, Cities Project Area, Alfred Herrhausen Gesellschaft, Berlin, Germany

Michael von der Muehlen, Former State Secretary and Participant of International Building Exhibition (IBA) "Emscher Park", Dortmund, Germany

Jennifer Semakula Musisi, First City Leader in Residence, Bloomberg Harvard City Leadership Initiative, Harvard Kennedy School, Cambridge, USA, Executive Director, Kampala Capital City Authority (2011-2018), Kampala, Uganda

Henk Ovink, Special Envoy for International Water Affairs, Kingdom of the Netherlands, and Sherpa to the High Level Panel on Water, United Nations, The Hague, Netherlands

Kecia Rust, Executive Director and Founder, Centre for Affordable Housing Finance in Africa, Johannesburg, South Africa

Semere Jelalu Shafi, Deputy General Director, Addis Ababa City Traffic Management Agency, Addis Ababa City Government, Addis Ababa, Ethiopia

Jagan Shah, Senior Infrastructure Adviser, Department for International Development (DFID), British High Commission, New Delhi, India

Marc Steinlin, Managing Director, Complex(c)ity Ltd., Helsinki, Finland and Basel, Switzerland

Zeleke Teferi, Department Head, Catchment Management and Water Quality Control, Addis Ababa Water & Sewerage Authority, Addis Ababa, Ethiopia

Cecilia Vaca Jones, Executive Director, Bernard van Leer Foundation, The Hague, Netherlands and Quito, Ecuador

Hailu Worku, Chair of Environmental Planning and Landscape Design and Deputy Scientific Director of EiABC, Addis Ababa University, Addis Ababa, Ethiopia

Governing Board

Dereje Fekadu (Co-Chair), Commissioner, Plan and Development Commission (2018-2020), Special Chief of Staff, Mayor's Office, Addis Ababa City Administration, Addis Ababa, Ethiopia

Anna Herrhausen (Co-Chair), Executive Director, Alfred Herrhausen Gesellschaft, Berlin, Germany

Ricky Burdett, Director, LSE Cities and Urban Age, LSE, London, UK

Anka Derichs, Senior Strategic Urban Development Advisor, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Eschborn, Germany

Timnit Eshetu, CEO, Construction Enterprise, Addis Ababa City Administration, Addis Ababa, Ethiopia

Philipp Rode, Executive Director, LSE Cities and Urban Age, LSE, London, UK

Partner Co-ordinators

Emily Cruz, Outreach Manager, LSE Cities, London, UK

Anka Derichs, Senior Strategic Urban Development Advisor, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Eschborn, Germany

Elisabeth Mansfeld, Cities Project Area, Alfred Herrhausen Gesellschaft, Berlin, Germany

Moges Tadesse, Chief Resilience Officer, Addis Ababa City Resilience Project Office, Addis Ababa, Ethiopia

An initiative by

URBAN AGE

Urban Age

The Urban Age Programme, jointly organised with and supported by the Alfred Herrhausen Gesellschaft, is an international investigation of the spatial and social dynamics of cities. The programme consists of conferences, research initiatives, task forces and publications. Since 2005, 17 conferences have been held in rapidly urbanising regions in Africa and Asia, as well as in mature urban regions in the Americas and Europe.

urbanage.LSECities.net
@UrbanAge

Addis Ababa Plan Commission

Addis Ababa City Plan and Development Commission is committed and fully dedicated to preparing research-based city-wide short, medium and long term strategic development plans (both socio-economic and spatial) in order to transform the city to one among the middle-income cities in the world; create a liveable city for the citizen; and make Addis Ababa the best destination for investment in Africa. The commission is accountable to promote urban economy and jobs; deliver urban renewal and housing for citizens; improve urban environment and quality of life; and support policy decisions that will register accelerated, sustainable and equitable economic growth and a climate resilient green economy.

The Alfred Herrhausen Gesellschaft

The Alfred Herrhausen Gesellschaft promotes a free and open society and its cohesion. Democracy, the social market economy and sustainability are the foundations of such a society. Our work is based on the values of Alfred Herrhausen: on freedom and responsibility, on competition and compassion. Alfred Herrhausen thought and acted with the aim of crossing and overcoming boundaries. In his memory, the Alfred Herrhausen Gesellschaft creates platforms for discussions to enrich relevant discourses during selected events, and in publications and other media.

alfred-herrhausen-gesellschaft.de
@AHG_Berlin

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

As a service provider in the field of international cooperation for sustainable development and international education work, GIZ is dedicated to shaping a future worth living around the world. GIZ has more than 50 years of experience in a wide variety of areas, including economic development and employment promotion, energy and the environment, and peace and security. We work with businesses, civil society actors and research institutions, fostering successful interaction between development policy and other policy fields and areas of activity. Our main commissioning party is the German Federal Ministry for Economic Cooperation and Development (BMZ).

GIZ.de
@giz_gmbh

LSE Cities

LSE Cities is an international centre at the London School of Economics and Political Science that carries out research, conferences, graduate and executive education and outreach activities in London and abroad. It studies how people and cities interact in a rapidly urbanising world, focusing on how the physical form and design of cities impacts on society, culture and the environment. Extending LSE's century-old commitment to the understanding of urban society, LSE Cities investigates how complex urban systems are responding to the pressures of growth, change and globalisation with new infrastructures of design and governance that both complement and threaten social and environmental equity.

LSE.ac.uk/cities
@LSECities