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Background and context

Lagos is Nigeria's economic powerhouse, accounting for some 65% of Nigeria's industry and contributing more than 70% of its national economic output¹. It currently hosts the most active stock exchange in west Africa; its four ports collectively handle about 75% of the country's imports and 90% of non-oil exports by weight; and the city's international airport takes about 80% of both airborne international trade and passenger movements in and out of the country².

Lagos is seen as a microcosm of the internal dynamics of emerging megacities around the globe today. It is the world's fastest-growing megacity with compound growth rates surpassing that of any other megacity on the globe. It displays, and often accentuates, all the main features – both good and ugly – of megacity agglomeration of both human populations and economic activities. Historically, Lagos is a product of colonial times with inadequate strategic planning. When the British colonial government started recording population in 1866, Lagos had 25,083 inhabitants. At the time of Nigerian independence in 1960, the population estimate of the city was approximately 600,000. With a meagre 0.012% of Africa's land mass, Lagos currently hosts 1.8% of the continent's population. It is now a large and complex urban area with a current population density of 4,193 persons per square kilometre over the entire metropolis and 20,000 persons per square kilometre in built-up areas. Its population is now increasing by 70 people each hour and has a mean age of 19 years old. It has been estimated that the current population of 23 million is set to double within one generation (DASUDA, 2015). Geographically, the metropolitan area has continued to spread since colonial times and now the majority of the population commutes into the central business districts (CBDs) on the "island" from peripheral boroughs on the mainland. The further the distance from the CBDs, the longer the commute times and, in addition, the more inefficient public transport becomes. There is also severe gridlock on the island during peak hours due to the unsustainable traffic volumes.

1. LAMATA, December 2009: p. 19.
2. Ibid.

Challenges

The boom in Lagos's population since the 1960s was occasioned by the unprecedented rural-urban migration induced by declining agricultural productivity as the country switched to crude oil production and export. This rapid migration and concomitant urbanisation further increased as Lagos emerged as the country's political capital. In the 1990s, the federal capital moved to Abuja, but Lagos still remained the country's primary city and commercial centre. The explosion in population and economic activities following from this status exerted enormous pressure on the city's civil infrastructure. Currently, transport services and infrastructure are greatly inadequate to serve the needs of the population with some sources determining that in Lagos "... transport, infrastructure and services remain at levels that support no more than six million people" (The Quramo Report, 2015). Over the years, Lagos has grappled with enormous challenges in all aspects of urban transportation including modes, infrastructure, networks, flows and administration.

Of the four major modes of transport – road, rail, water and air – movement by road remains predominant, accounting for more than 90% of internal passenger and freight movement. The result is a highly motorised transport landscape with a 220 to 224 car density when the national average car density is 20 (The Quramo Report, 2015). It is predicted that vehicular growth will climb by 350% over the next 25 years (IBM, 2013). The implication of population size, density, poor planning, absent regulation, and general governance failure for transportation can best be described as intractable. *The Economist* recently described Lagos traffic to be among the worst in the world (2015).

The predominance of a unimodal transport structure in Lagos has had dire implications for the roads. In the absence of other alternatives, the available roads suffer from overuse. Given the rapid expansion of the city, housing developments are always ahead of infrastructure provision – not just roads and bridges, but also schools, hospitals and police posts as well. Routes and terminals have remained largely underdeveloped except in few older districts like Ikeja, Ikoyi and Victoria Island and some newer areas of the city like Lekki and Banana Island. Poor network planning has implications for the flow of traffic in the city. Inability to expand the network, poor and inappropriate maintenance, and the absence of alternative transportation modes like rail and water, in addition to the unmitigated explosion of the city's population, have created a traffic congestion nightmare that gives Lagos the unenviable reputation as one of the most congested cities in the world. This has been equally manifest in the dilapidation of existing infrastructure and rapid deterioration of any new investment. Lagos has lagged behind other emerging cities in the exploitation of modern transport infrastructure solutions that have curbed congestion problems, such as urban metro lines and high capacity buses.

Administratively, there has been an overlapping jurisdiction over transport in Lagos as in the rest of Nigeria between agencies of the federal, state and local governments, creating interagency rivalry. At the national level, agencies and parastatals under the federal government involved in transport management in Lagos include: National Inland Waterways Authority (NIWA), Federal Road Safety Commission (FRSC), the Federal

Urban Mass Transit Authority (FUMTA), Nigeria Ports Authority (NPA) and the Traffic Unit of the Nigeria Police. At the state level, the agencies and parastatals commissioned by the Lagos state government for the control and management of transportation include: Lagos State Traffic Management Authority (LASTMA), Lagos Metropolitan Area Transport Authority (LAMATA), Lagos State Ferry Services (LSFS), Lagos State Ministry of Public Transport (LSMPT) and the Vehicle Inspection Unit (under the State Ministry of Public Transport). One of the major achievements of the transport reform in Lagos is sorting out the web of overlapping mandates, streamlining responsibilities and harmonising authority over the transport system; although some grey areas and occasional skirmishes remain.

Until recently, public transport was dominated by the informal private sector, with minimal large-scale fleet operators, and characterised by excessive fragmentation, operational indiscipline, and thuggery. There was a near total absence of organised, public transportation system for the teeming population of Lagos. The absence of public transportation led to the explosion of private vehicle ownership, resulting in traffic anarchy, massive air pollution, and reduced quality of living. This is what the transport reforms targeted.

Trends

For years, Lagos lagged behind other emerging cities in the exploitation of modern transport infrastructure solutions that have curbed congestion problems – such as urban metro lines and high capacity buses. According to Dayo Mobereola, the erstwhile boss of Lagos Metropolitan Area Transport Authority (LAMATA), in 2006 Lagos' transport infrastructure and services were almost the same as they were in 1976³. Serious effort to combat the traffic situation in Lagos started in the 1980s in partnership with the World Bank, which wanted to fund the creation of a metropolitan transport authority according to international best practices to plan, manage and improve public transportation in Lagos. However, this attempt was truncated by the military coup d'état of December 31st 1983⁴. Before the failed World Bank attempt, several efforts had been made by the metropolitan government to tackle the transport challenge in Lagos, beginning in the late 1970s when the population started to grow beyond the capacity of installed infrastructure. In 1977, the government of Lagos enacted a Traffic Restraint Policy Edict which aimed to control traffic flow to Lagos Island (the better planned and more developed half of Lagos City) by allowing only specific vehicles (odd and even vehicle registration numbers permitted only at designated times and days of the week). Initially this worked quite well as there was a noticeable increase in car pooling and use of public transport, but again, the government failed to create the necessary structures to sustain the policy – like providing secure car parks and convenient mass transit buses to move people to and from the island which, in turn, created the incentive for people to design crafty ways to circumvent the policy⁵.

From 1979 to 1983, the Lagos urban rail scheme was initiated by the government of Lagos. The contract, awarded in 1982, was terminated when the military took power in Nigeria on December 31st 1982. Work was suspended on the urban rail system and the programme was alto-

3. Mobereola, 2006: p. 12.

4. Gomez-Ibanez, 2011: p. 2.

5. Ogunsonya, 2002: p. 35.

gether jettisoned by the military regime. During the 1990s military government, there were more than 100 agencies of federal, state and local governments with various roles in transport provision and or management in the city, with most agencies developing and implementing their policies in isolation, giving rise to a regulatory crisis and paralysis⁶.

Upon Nigeria's return to democratic governance in 1999, the World Bank renewed its interest in the plan to create and fund a metropolitan transport authority. Desirous of improving the seemingly intractable problem of the public transport system in Lagos, the city council bought into the programme and employed international experts to help draft the Lagos Metropolitan Area Transport Authority (LAMATA) law. The law legislated LAMATA into existence to be a semi-autonomous transport authority with overall responsibility for planning and coordination of transportation in the city of Lagos. The law was passed by the Lagos State House of Assembly in 2002 and LAMATA was set up the following year, with Mr Dayo Mobereola, a renowned transport economist, as its first Managing Director. Subsequently, the Lagos state government and the World Bank launched the Lagos Urban Transport Project (LUTP), which provided about \$100 million in World Bank loans for capacity building at LAMATA and for repairs and provision of transport infrastructure in Lagos⁷. LAMATA's jurisdiction included the management, maintenance and improvement of the 635-kilometre network of roads used by the public transportation system in Lagos. It was also charged with the coordination and implementation of the transport policies, programmes and actions of all transport-related agencies at different tiers of government in Lagos. LAMATA effectively harmonised the plethora of intersecting transport agencies – local, state and federal – that previously dotted the transport landscape of Lagos⁸. It effectively became the implementation agency of the Lagos Urban Transport Project, jointly funded by Lagos State and the World Bank. Its overall objective was to ensure that all the people in the Lagos metropolis had access to affordable, rapid, efficient and effective public transportation.

Solutions

LAMATA set out to develop a longer term strategic plan to deliver an efficient and sustainable transport service to Lagos City across all the aspects of the transport system including mode, infrastructure, network and flow. It embarked on a shift to an intermodal transportation system which would include, amongst others, the development of urban mass rail and water transportation; optimisation of the existing road network; creation of a new road network to improve access; and the massive development of a complex network of roads in Lagos to ease and anticipate future traffic growth. In the interim, however, it embarked on two quick-win projects. First, it needed to renovate and rehabilitate its 635 km road and commission monitoring studies on the transport needs of the Lagos megacity. Although it achieved rapid success with the rehabilitation of Trunk B and C roads – which are statutorily under state and local governments – it had difficulty with Trunk A roads, which are under the federal government. However, it is pertinent to note that LAMATA managed to renovate and rehabilitate the roads at one-fifth to one-third of the costs of comparable

6. Dayo Mobereola, *Op. Cit.*, pp. 2-3.

7. Gomez-Ibanez, *Op. Cit.*, p. 3

8. *Ibid.*

projects by the State Ministry of Works. This was highly acclaimed by the World Bank and awarded much needed social and political legitimacy to the agency.

Second, it also needed a quick, if temporary, palliative to deal with the grinding traffic gridlock occasioned by congestion, lawless driving, rickety and ramshackle minibuses that mars Lagos. It therefore came up with the idea of Bus Rapid Transit (BRT) – a network of high capacity buses that will run on dedicated lanes across the heavily congested corridors in Lagos which will encourage residents to leave their private cars and thereby decongest traffic. This initiative was suggested by the World Bank and had been tried and is in use in several cities in South America and elsewhere. The BRT scheme, in essence, was to consist of efficient service, a strong institutional regulatory framework, high socio-economic benefits – especially for the low income population, maximum private sector participation, minimal public expenditure and liability, and mitigation of the environmental and social impacts of the BRT system⁹.

LAMATA decided on two models in two corridors for the initial phase. The first was a “pilot exclusive franchise” scheme whereby the thousands of minibuses operating on the corridor would be replaced by a “single bus company operating full-sized buses”¹⁰. The second corridor also had the same feature as the first with the distinctive feature that it would run on special dedicated lanes for 65% of the corridor.

The plans met with stiff opposition especially from the city’s elite who had long given up on the use of public transport. The argument against the scheme was that by creating a dedicated lane out of the already inadequate and congested road network, the problem of traffic gridlock would be compounded instead of being solved. However, with the political backing of the governor of Lagos at the time, LAMATA went ahead with the demarcation and construction of bus terminals along its “declared roads”. The lanes were typically 3.3 m wide and separated from other traffic by concrete kerbs that were 400 mm high.

The next issue to be resolved was that of ownership and who to run the buses. Since it was meant to be private-sector driven, the state naturally contacted the National Union of Road Transport Workers (NURTW) and the Road Transport Employers’ Association of Nigeria (RTEAN)¹¹. The NURTW quickly saw the benefit of operating the BRT and quickly signed up¹². The World Bank had taken LAMATA and the unions on an educational tour of countries in South America where the BRT was in use on two different occasions in 2004 and 2006. In 2005, the NURTW agreed with an Indian truck manufacturer – Ashok Leyland – to finance about 100 buses over 18 months provided a local bank underwrote the risks. Finally, Ecobank agreed to finance the purchase of the buses for 24 months¹³. A company, the First BRT Cooperative of Nigeria (FBC), was formed to lease the buses and operate them in the BRT corridor¹⁴.

“Bus rapid transit” lite

On March 17th 2008, the BRT Lite scheme was launched by Bola Tinubu’s successor after eight years as governor: his former chief of staff, Babatunde Fashola, whom Tinubu picked for the job himself. The BRT

9. LAMATA, January 2009: p.4.

10. Ibid, p.4.

11. These were the two unions that organised and controlled road passenger transport operations in Nigeria. NURTW represented mainly drivers and workers while RTEAN represented owners’ interests. With time, RTEAN came to dominate inter-urban and large bus sectors while NURTW dominated the urban and small-bus sector. Also, membership was always fluid as many drivers were also owners.

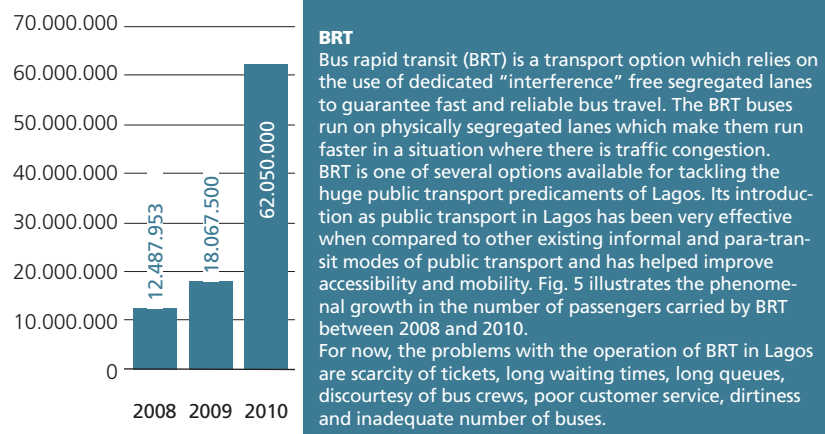
12. The NURTW’s support for the scheme was predicated on the realisation that their members would operate the buses, it would not lead to job losses for their members and it had better job and health security for their members in that they would enjoy less punishing work schedules. RTEAN’s support was on the basis that the banks would finance the new vehicles – something they were unwilling to do.

13. This was on the condition that the bank print and sell the tickets from which it would deduct its leasing fee first and pass on the profit to the bus-operating company.

14. Jose Gomez-Ibanez, Op. Cit., p.5.

became so successful and exceeded all expectations and projections. Ridership was 150,000 passengers per day when the forecast was only 60,000. Demand quickly outstripped supply and the FBC was forced to lease an extra 120 buses while it paid off the 100 buses earlier leased in record time¹⁵. Demand forecast showed about 300 buses were needed¹⁶. So successful was the scheme that every corridor in the city began to clamour for the service. It was also suggested that the FBC was grossing about the equivalent of \$20 million a year¹⁷. In no time, the Lagos BRT experiment became a model for other cities in Nigeria and across Africa.

Figure 1. Number of passengers carried by bus rapid transit



Source: Lagos State Government Digest of Statistics (2011)

With the BRT scheme up and running, LAMATA proceeded with the onerous task of developing a strategic transport master plan for the Lagos metropolitan area. This was all the more necessary as it was estimated that the population of Lagos was going to reach 36 million in 2020 and a consequent 350% growth in the number of vehicles in the state was expected. Such a megacity could not afford to depend only on roads for transportation. After extensive consultations with all stakeholders, the use of world-class forecasting models and thorough analysis of policies and alternatives, the strategic plan was released in December 2009. The plan clearly spelled out the transport vision, goals, policies and action plans for the Lagos metropolis.

While the plan was being prepared, Governor Fashola – who had made the promise to improve ferry services across Lagos waterways during the 2007 elections – consulted with LAMATA, the Lagos State Waterways Authority (LASWA), to prepare the necessary infrastructure and contract private operators to prepare service. Although LAMATA was not going to supervise the agency, the creation of LASWA by the state government did not violate the LAMATA establishment law.

The rail project

The master plan identified a Lagos Urban Rail Network to cover seven corridors as part of an integrated MRT system to link the major

15. Ibid.

16. LAMATA, January 2009: p.13.

17. Jose Gomez-Ibanez, Op. Cit., p.5.

population and activity centres in Lagos State. All the railway lines were expected to be delivered by 2020 at an estimated cost of about \$8 billion. The government was determined to bring to fruition the railway line projects. Work commenced on the Blue Line and it was planned to be ready and commissioned before 2015. LAMATA was charged with the execution of the project. However, because of the huge capital outlay – estimated at \$1.8 billion – the state government decided to divide the project into phases. The project was planned under a public-private partnership (PPP) model, whereby the state builds the infrastructure and the private sector provide the rolling stock and management¹⁸. The contract was awarded to the Chinese Civil Engineering Construction Company (CCECC). The first section of the network (phase one of the Blue Line) was scheduled to enter revenue service by the first quarter of 2014, but had not yet opened at the time of filing this report. However, construction is ongoing and nearing completion.

LAGBUS

The pressure on LAMATA to deliver bus services to virtually all corridors in Lagos became heavier after the success it recorded with the pilot bus services. It was argued that Lagos needed thousands of modern big buses to permanently replace the dilapidated buses and minibuses called *molues* and *danfos*, respectively, from Lagos roads. Before the success of LAMATA's experiment, it was assumed that the greatest obstacle to the roll-out of modern buses for public transportation was the unwillingness of the banks and other lenders to finance the projects on reasonable terms. Therefore, the government, as far back as 2004, created a parallel bus company, LAGBUS Asset Management, which was to report to the Ministry of Transport rather than LAMATA. As LAMATA had made the idea of big buses for public transportation quite popular, promises of buses soon found their ways into political campaigns and before long, LAGBUS was dabbling in public transportation.

LAGBUS's sole initial aim was to use the state's borrowing power to procure and lease buses to private operators on reasonable terms and also to establish a bus assembly plant to supply high capacity buses to Lagos and the entire Nigerian market. The company consequently negotiated with a Brazilian bus builder and by 2006 it started taking delivery of the first 200 buses. However, it could not find willing leasers of its buses because the prices were high (\$25 million compared to \$9 million for BRT's Ashok-Leyland ones). No one could give a satisfactory idea as to the huge differentials in prices and the buses were not utilised for more than a year. However, with the 2007 elections only months away, a political decision was taken to roll out some of the buses. This marked the entry of LAGBUS into the bus operator market, making a future clash with LAMATA almost inevitable. However, after much dispute, LAMATA was compelled to grant LAGBUS a "universal service license" that allowed it and its sub-contractors to operate any service – other than the BRT – it thought possible¹⁹. As in 2015, LAGBUS operated about 500 buses on 40 different routes in Lagos and neighbouring Ogun State. It also granted franchising rights to 10 companies operating a total of 238 buses on 17 routes under its Route Franchise Scheme in Lagos State.

18. <http://www.vanguardngr.com/2014/08/lagos-building-new-nigeria-rail-projects-lamata-boss/>

19. Ibid, p.8.

Lessons learned and recommendations

In the words of Diane de Gramont, “in fifteen years, Lagos has gone from being a symbol of urban disorder to a widely cited example of effective African governance. The Lagos State government has succeeded in multiplying its tax revenues and using these resources to restore basic infrastructure and expand public services and law enforcement” (2015). These reforms were driven mainly by electoral pressures as well as elite ambitions to construct an orderly and prosperous megacity. LAMATA, which remains the most manifest aspect of the reform, has been lauded as a model in sub-Saharan Africa for formulating and implementing innovative policies aimed at managing public transportation in megacities.

LAMATA is notable for its bid to harmonise discordant and competing territorial claims on the transport system among the plethora of government agencies – federal, state and local government – responsible for the management of transportation in the metropolis. However, over ten years after its establishment, LAMATA, unlike other model transport authorities in London, New York, Vancouver or Ontario, does not yet have sole authority and control of roads and buses in the Lagos metropolitan area. This is partly due to constitutional restrictions at the national level which mandates some federal routes to federal agencies and partly due to the overwhelmingly informal size of the transport system with arguably greater areas lying outside LAMATA’s purview. Until the government is able to expand the infrastructure network, especially to newer edge cities, LAMATA will continue to be overwhelmed by the sheer enormity of the transport challenge in Lagos.

In spite of this, the BRT scheme is considered innovative in many respects. It incorporated environmental and sustainability concerns in its plans by promoting a shift to more environmentally sustainable urban transport modes. In November 2015, LAMATA initiated plans to start deploying Compressed Natural Gas (CNG) buses on some of its routes. Although this will be a giant step in the direction of sustainability, the challenge is the scarcity of complementary infrastructure (like CNG refill stations) to support such ambition in Lagos.

An electronic ticketing system was implemented on the BRT and Bus Franchise Scheme in 2012. This provided more visibility in the ticketing process, increased revenue protection and data collection. The ticketing system was implemented on a PPP basis, with the system provider supplying and installing all equipment at no initial cost. The suppliers are scheduled to receive a percentage of each transaction for a period of 15 years. The ticketing system worked very well initially but has been undermined by lack of stakeholder buy-in and issues of trust. Commuters often complained of being short-changed by ticket handlers who would not give them their cash balances, making excuses of not having lower denomination currency. These are however, administrative problems that can be easily handled by better supervisory capacity.

Other forms of intelligent transportation systems (ITS, smart technologies) are in the process of being implemented including: real-time passenger information systems, automatic vehicle location systems, fleet management scheduling system as well as establishing a control centre for real-time monitoring.

The reform of the transport system in Lagos is a key strategy for achieving the SDG goal of making cities inclusive, safe, resilient and sustainable. Transportation developments, from the provision of adequate infrastructure (highly lacking in Lagos) to the improvement of public transport systems, and the implementation of various integrated intermodal transit options (e.g. the planned marina bus stop which will have various modes of transit including the Blue Line LRMT, the BRT and the minibuses (*danfos*) and ferry) are critical components of achieving this goal.

Although the Lagos urban transportation reform has been quite innovative, revolutionary and very successful since its launch in 2008, it has come under strain due to poor management. The buses, originally meant to transport people faster along congested corridors and also decongest the roads by providing a decent and quality alternative to car drivers, had largely been run unprofessionally, such that most of the buses were now broken down, dirty, filthy, congested and no longer attractive to car drivers. Consequently, traffic congestion along the routes had returned and the original idea of the BRT appeared to have been defeated. These are clearly difficult challenges, especially given the astronomical growth in the population of the city that seems to continually overwhelm every little effort to put things in check. The political nature of the challenges creates another set of challenges, requiring serious political will. The challenge for the city of Lagos in its ambition to become a competitive megacity is to find a way to fix the transportation problem, to provide, at least in the short term, an efficient and convenient public transportation system that will encourage the burgeoning Lagos middle-class population to drop their cars and use public transportation to and from work. For the sake of the city's sustainable development.

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