



A Review: Nigeria's Transportation System and the Place of Entrepreneurs

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Abstract

Transportation is a requirement for every nation, regardless of its industrial capacity, population size or technological development. The Nigerian transport systems, right from inception, were poorly designed and are unable to scale up to meet greater demand, a design flaw which causes traffic congestion on roads, overstressed railways, faltering airfields, and mass-transport blind spots. Overall there appear to be market impediments which operate to limit the extent to which Nigerian entrepreneurs undertake businesses in the transportation sector and their prospects for success. This paper discusses the origins of modern Nigerian transportation, problems in its transportation infrastructure and system, and emphasizes the role of entrepreneurship as the strategic instrument for creating an effective transportation system conducive to business and then makes policy suggestions, after considering the potentials. We also recommend a well structured and properly implemented PPP model as one effective way of funding transport infrastructural deficit in Nigeria.

Keywords: Transportation, transport systems, roads, railways, airfields, entrepreneurship, Nigerian entrepreneurs.

INTRODUCTION

Moving goods and people from one place to another is critical to maintain strong economic and political ties between regions in the same state. With a land area of 910,768 sq. km, population estimate of 150 million people and GDP-growth rate of 6% per annum (2006 est), the centrality of effective public transportation in Nigeria is readily seen. Nigeria's transportation infrastructure is in a dismal state and falls short of the countries it would like to be compared with. It is insufficient to meet the transformation agenda of the current administration, as a tool for achieving rapid economic growth and development [Walker, Gilbert James].

Globally Nigeria ranks low in the quality of its infrastructure which impacts the ease of doing business. Low investments in transportation have resulted in the current infrastructural deficit. Key challenges include inadequate investment and poor management of transport infrastructure – which have created a huge infrastructural deficit. An estimated \$15b is required annually to adequately fund Nigeria's

infrastructural deficits. The government has adopted the use of Private Public initiative in alignment with global trends in transportation infrastructure development. Development of road infrastructure via the PPP model remains in the infant stages while that of rail is still in the conception/design phase. Only one successful example of concessioning exists in the Nigerian Aviation industry. Concession of seaports has been the most successful when compared to other modes of transportation in Nigeria. An enabling framework is critical to the success of the

PPP models in transportation infrastructure financing and development.

South Africa's transport sector is a key contributor to its competitiveness in global market and is increasingly being seen as a crucial enabler of economic and social development. South Africa's transport infrastructure is considerably more developed than that of Nigeria, evolving over the years into what we can see as a transport sector that surpasses others in the Africa's sub region. Although the public sector is still the primary source of funds, South Africa is increasingly dependent on PPPs to finance the transportation infrastructure development. The PPP approach to infrastructure procurement and delivery entails a shift from the traditional government procurement model with emphasis placed on private sector-based service delivery and utilization of PPPs in procurement of infrastructure, even when government funding is required. Despite the picture painted, South Africa is not without its transportation challenges.

Comparing Nigeria's financing and procurement model to South Africa, there exists key differences and identifiable gaps in the Nigeria's model and thus appropriate recommendations to improve performance. What goals should Nigeria set for its transportation infrastructure? The future state of transport system is expected to be efficient, affordable, adequate, safe, well integrated and environmentally sound. In line with the realisation of these expectations and visions, specific goals should be set for transport mode. Potential investment opportunities for roads, rail, aviation, seaports and waterways must be effectively harnessed if our vision of achieving meaningful rapid economic growth and development is to be realised.

ROAD TRANSPORTATION IN NIGERIA

With respect to road travel, it is important to evaluate the extent and quality of the road network. In terms of the extent of the road network, the federal government has done much in the last fifteen years to improve the coverage of Nigeria's road system. One outstanding example is the work of the Directorate of Food, Roads, and Rural Infrastructure (DIFFRI), which in the late 1980's embarked on a campaign to construct approximately 60,000 kilometers of new rural roads. As can be seen from a tour of rural areas, many roads that have been constructed are in a terrible state of disrepair [Walker, Gilbert James]. As with so many things in post-oil-boom Nigeria, many rural (and urban) roads have not received adequate maintenance. Poorly-maintained roads are particularly problematic in the rainy season (approximately March to October). In fact, some rural areas are only accessible by car in the dry season [Gumel, H.A.].

July field trips on Nigeria's Jos Plateau proved these points well enough. Many rural roads in the Plateau region cannot be safely travelled at speeds exceeding 25 to 30 miles per hour [Drummond-Thompson, Phillip,]. The slow rate of travel is necessary given the large and frequent potholes that mark the many rural roads. Certain stretches of rural roads are so bad that motorized vehicles have bypassed the original roadway to form new dirt tracks. Other portions of rural roads have been reduced to one lane. The road network of the Jos Plateau is indicative of the poor state of maintenance of many rural roads. Even though a good network of colonial-era roads existed (partly due to the intensity of mining activity on the plateau), many of these roads have not been maintained in the post-independence period. Proper maintenance is critical because rainstorms can be tremendously intense. Thus, small areas of road decay can very rapidly expand under the forces of erosion and weathering in the rainy season. Much of the problems associated with the erosion of roadways are compounded by the lack of adequate drainage infrastructure (which also makes driving hazardous during heavy rains). While Nigerians are not forced to address maintenance problems derived from recurrent freezing and thawing (like temperate areas of the United States), they do have to deal with intense seasonal rain.

Although urban roads are in better condition than most rural roads, maintenance of roads is also a problem in the cities. Since the collapse of oil prices in the early 1980's and implementation of a Structural Adjustment Program in 1986, state budgets have been extremely tight. Fiscal austerity has also been exacerbated by corrupt military regimes that have funnelled state revenues into non-productive projects (often contracted to firms owned by military leaders) or foreign bank accounts. Although almost all urban roads are paved (Nigerians often say "tarred"), many have large pot holes or large sections where pavement has been eroded. An interesting scene in the city of Ibadan is the activity of informal road repair crews. Young men can often be seen filling city pot holes with dirt and rocks. In return for their unsolicited service, road users often tip these unofficial public workers. The work of these brave maintenance crews notwithstanding, Nigerian urban roads can still be very rough. The important point to note is that aside from uncomfortable travel, poor urban roads can cause bottlenecks in traffic and contribute to traffic congestion [Walker, Gilbert James].

URBAN TRANSPORTATION AND CITY PLANNING

Another issue that directly relates to urban transportation is city planning. While the extent and effectiveness of planning in Nigerian cities varies to some extent, most urban areas are forced to deal with city regions where no formal planning was conducted. Hence, transportation routes are often confined to pre-existing routes that may not always follow optimum courses. A dramatic example of planning done after development occurred in the city of Ibadan in the 1980's. Under military direction, city workers bulldozed swaths of houses and businesses, making way for new streets.

While this action probably improved traffic flow in certain parts of the city, it clearly violated the human rights of the people affected by the removal process.

One final area will be discussed on the issue of urban transportation. It is that of cost of transportation. Relative to the early 1980's when cars were relatively inexpensive, many people in Nigeria have trouble purchasing cars. As a result, there is presently a thriving market in Nigeria for used cars, many of them imported from other parts of the world (like Europe). Given the cost of new cars (and imported used cars), many people fix cars that would be discarded in more affluent societies [Gumel, H.A., Stephen D.O]. One other aspect of Nigerian urban transportation is the notable lack of public transportation. While there have been several different programs and agencies established in the post-1988 period, government efforts to provide public transportation have been mostly failures [Drummond-Thompson, Phillip,]. Thus, those without cars requiring long-distance urban transportation are forced to turn to the private sector. Taxis, "danfos" (small vans that hold about 10-15 people), and scooters provide urban transportation for many urban residents. One final issue to consider with respect to cost of transportation is the cost of fuel. It is ironic indeed that an oil-rich country such as Nigeria often has a scarcity of fuel. Two factors contributing to a discontinuous supply of oil are the reduced production capacity of Nigerian refineries and price controls imposed by the federal government. Low refining capacity means that Nigeria often has to import much of its petrol. Artificial price controls have led to the expansion of a black market in gas, making it difficult to find gas in certain places (especially the North) and at certain times [Robinson H., et al]

RAIL TRANSPORTATION IN NIGERIA

Rail transportation offers much potential because of its relative safety, reliability, lower cost to the users and being singularly capable of transforming the national economy through mass movement of people, goods and services. Within this context, the demand for an effective railway system, and the enormous potentials for profitable investment in rail infrastructure in Nigeria, is indisputable. As at today, the rail network in the country stands at 3,557 kilometers with 3,505 kilometers still on the narrow gauge. Statistical figures on the corporation passenger and freight traffic showed that while in 1964 the corporation carried an average of 11,288,000 passengers and 2,960,000 tonnes of freight, by 1974 these figures had dropped to only 4,342,00 passengers and a dismal 1,098,000 tonnes of freight. Passenger traffic grew from 7 million in 1978 to 15.5 million in 1984, but then declined again to 3.0 million in 2003. The same dismal performance is reflected in the freight traffic fluctuation from 3 million tones in the 1960s to a terribly dismal level of less than 10,000 tonnes in recent times. Attempts at improving on the foregoing conditions by successive governments over the last 20 years, even though on ad-hoc basis, have not really altered the deterioration at all" [Oshin Siji; StockWatch.].

While the rails stagnated, the roads are lengthened. As at 2005, about 193, 200 kilometres of roads were available in the country. Of these 34, 123 kilometers are federal roads, 30, 5000 kilometers are states', and 129, 577 kilometers are local council roads. These roads carry more than 90 per cent of domestic freight and passengers. The result was that too much pressure was brought to bear on the available road infrastructure, thereby causing incessant collapse and necessary huge financial outlay for maintenance and repairs [Oshin Siji].

MAJOR OPERATIONS PROBLEMS FACING RAILWAY DEVELOPMENT

The problems are a multitude, but the most important ones are listed below:

- Technical problems such as tight curves, steep gradient, rail buckling with
- associated track/speed limits
- Poor communications
- Government interference with management structure
- Lack of freedom to set tariffs
- Underfunding
- Falling rolling stock level
- Plummeting traffic levels (freight and passenger)
- Inflexible bureaucracy
- Volatile staff training

REJUVENATING THE RAILWAYS

The implementation of the 25-year rail vision plan commenced in year 2006 with the award of the first phase of standard gauge rail the spanning over 1,315 kilometers from Lagos to Kano, and awarded to Messrs CCECC at a cost of \$8.3 billion, and planned second phase extending from Port Harcourt to Maiduguri at a cost of more than \$9 billion, were facing serious problems. Unfortunately, as laudable and desirable as planned modernization programme is, its funding is posing challenges to the current administration for the following three reasons:

First, the anticipated source of its funding from excess crude oil account which has constitutional limitations and is, therefore, considered inappropriate. Second, the anticipated 1.28 billion US dollars concessionary loan from China for the project has not yet been put into place for a number of reasons. Third, the rehabilitations phase within the 25 years plan which would have offered gradual and appropriate transition from the old to the new lines was circumvented in the 25 years vision [Oshin Siji; StockWatch].

In the face of all these, it goes without saying that Nigeria needs a decent rail transport network to move a major part of its estimated 50-60 million tones of freight per annum, especially before the new lines are ready. If this is not put in place, we shall most unfortunately continue with the excessive use of roads and the attendant negative consequences which, of course, include rapid deterioration of our roads, terrible accidents and high accidents rates, inefficient intermodal freight split, amongst other inefficiencies.

NIGERIA'S AIR AND SEATRANSPORT INFRASTRUCTURE

Efforts have been underway by agencies of Government to design a Concession Model for the Airports, however, this is still inconclusive. The recent governments have provided direct funding for Terminal Upgrades and Runway Extensions in recent time in a bid to ramp up the quality of infrastructure. Only one successful example of concessioning—Terminal II of Murtala Muhammed Airport to Bicourtney Ltd [Bankers' Committee Report].

One important feature of the policy issues in the water transport is National Inland Waterways Act. Also, most policies governing road transportation are in use for water transportation infrastructure. Most of the seaports have been leased out to private sector operative under 2 models (the landlord model and the service port model). The landlord model seems to be the most preferred option. The concession of seaports is most successful when compared to other modes of transportation [Bankers' Committee Report].

COMPARING NIGERIA AND SOUTH AFRICA'S TRANSPORT INFRASTRUCTURE

South Africa's transport infrastructure is considerably more developed than that of Nigeria, evolving over the years into what we can see as a transport sector that surpasses others in the Africa's sub region.

Comparing Nigeria's financing and procurement model to South Africa, there exists key differences and identifiable gaps in the Nigeria's model. Although the public sector is still the primary source of funds, South Africa is increasingly dependent on PPPs to finance the transportation infrastructure development. The PPP approach to infrastructure procurement and delivery entails a shift from the traditional government procurement model with emphasis placed on private sector-based service delivery and utilization of PPPs in procurement of infrastructure, even when government funding is required.

	SOUTH AFRICA	NIGERIA
Land Area (sq. km)	1,214,470	910,770
GDP (2009)	\$ 285.9bn	\$ 168.9bn
GDP perCapita PPP (2009)	\$ 10,291.3	\$ 2,150.1
Road Network (km)	362,099	193,200
Road Density (km of road per 100 sq. km of land area)	29.8	21.2
Rail Network (km)	20,872	3,505
Rail Density (km of rail per 100 sq. km of land area)	1.7	0.4
Number of Airports	85	22
Number of Seaports	8	13
Cargo Throughput (Million tonnes) - (2008)	185	65

Source: World Bank Development Indicators; CIA World Factbook; Transnet, Nigerian Ports Authority
Airports by International Civil Aviation Organization (ICAO) code -
http://en.wikipedia.org/wiki/List_of_airports_by_ICAO_code:_F#FA_-_South_Africa
http://en.wikipedia.org/wiki/List_of_airports_by_ICAO_code:_D#DN_-_Nigeria

South Africa's Public sector infrastructure expenditure and estimates, 2006/7 –2012/13

2006/07	2007/08	2009/09	2009/10	2010/11	2011/12	2012/13	
R million		Outcome		Revised estimate		Medium-term estimates	
National departments	4 631	5 712	6 318	6 382	6 847	7 758	10 703
Provincial departments	27 112	29 395	36 094	41 185	45 623	49 971	50 786
Municipalities	21 084	30 736	39 577	37 480	41 305	50 449	56 028
Extra-budgetary institutions	3 699	3 726	6 194	10 859	11 175	15 083	18 821
Public-private partnerships	1 343	3 857	4 942	13 751	9 939	11 389	6 109
Non-financial public enterprises	25 736	56 765	103 322	125 504	147 025	148 665	157 970

Note: PPPs constitute a small percentage of capital for infrastructure build

Globally, Nigeria ranks low in the quality of its infrastructure which impacts the ease of doing business. As part of the Global Competitiveness Report, a survey was conducted to determine the most problematic factors for doing business in each country, inadequate supply of infrastructure and access to financing were identified as the two most problematic factors for doing business in Nigeria. Key challenges include inadequate investment and poor management of transport infrastructure - which have created a huge infrastructure deficit [Måns Söderbom; Francis Teal].

General Infrastructure Challenges

- Federal government is the primary financier of infrastructure projects
- Annual budgetary allocation is insufficient to meet the country's infrastructure demands
- Process of allocating budget to rehabilitate existing infrastructure is slow, opaque and inefficient
- Capacity gaps exist for project development, management, operations and maintenance.

Specific Infrastructure Challenges

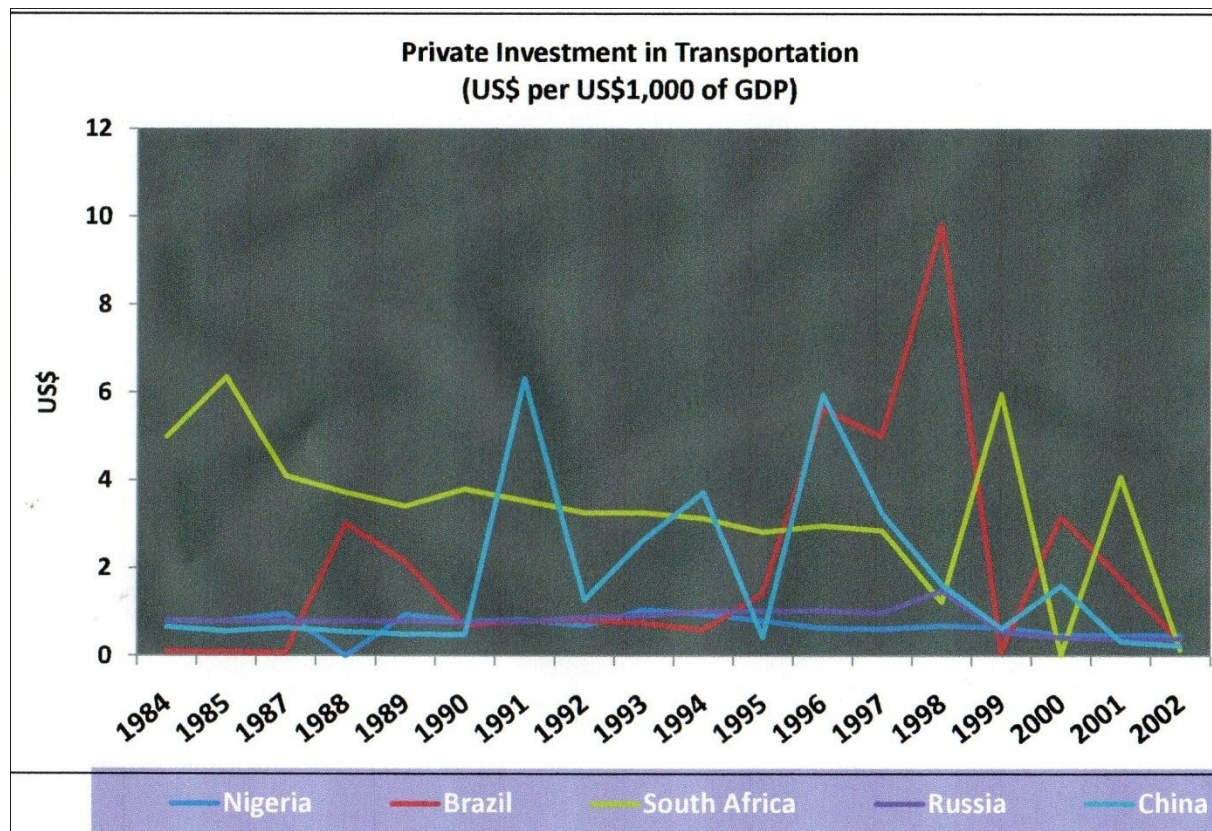
- Poor roads and road network
- Weak regulatory environment
- Inadequate strategic planning, oversight and regulatory functions
- Poor contracting procedures and quality control
- High dependence on public sector subsidies
- Highly dilapidated infrastructure and lack of serviceable locomotives and rolling stock
- Poor management of the Monopoly player, National Railway Corporation
- Inadequate visual and navigational aids
- High cost of air travel
- Lack of a well-articulated national air transport policy and weak enforcement of existing policies

Criteria	2010 -11 Ranking/	2009 -10 Ranking /	Change (from 2009-10)
	139	133	
Quality of roads	128	112	-16
Quality of railroad infrastructure	104	104	0
Quality of port infrastructure	121	122	+1
Quality of air transport infrastructure	101	78	-23
Overall Infrastructure Ranking	135	126	-9
Country Ranking on Global Competitiveness Index	127	99	-28

[Source: World economic forum: Global Competitiveness Report 2010-2011; 2009- 2010](#)

NIGERIA INFRASTRUCTURE SPENDING – Comparative Survey

Poor investments in transportation sector of the Nigerian economy have resulted in the prevailing infrastructural deficit. As a result, Nigeria's infrastructure spending is low and predominantly sourced from government. The graphical flow below compares Nigeria with the scenarios in few selected countries.



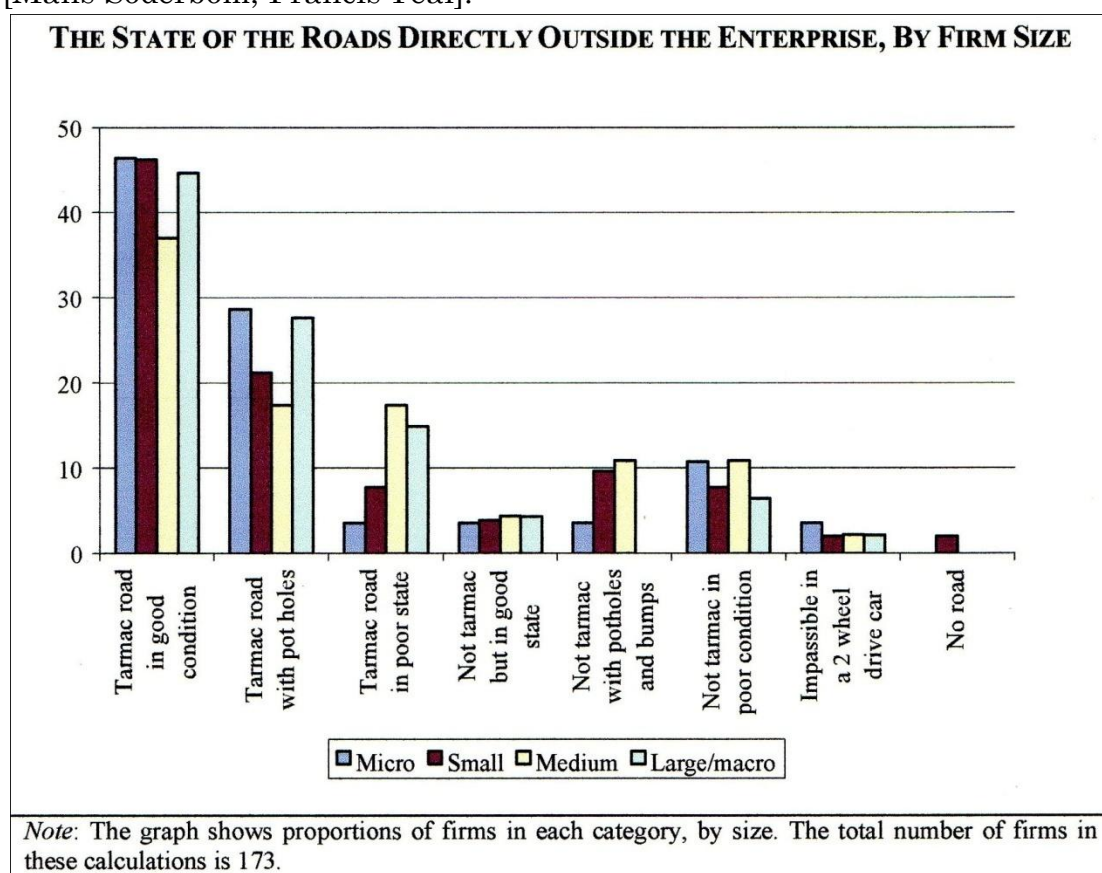
[Source: Team Analysis, 2009 Banker's Committee Documents](#)

ROAD INFRASTRUCTURE AND ENTREPRENEURIAL FIRM SIZE

The NMES conducted a cross-sectional survey of 173 firms and derive an objective data on the impact of road infrastructure on small business creation and

development. Figure below shows this data. A little less than half the firms have a tarmac road 'in good condition' in the immediate vicinity.

Between 25 and 30 per cent of firms in the large and the micro category are situated on tarmac roads with some potholes. Large firms require good roads for the transport of raw materials and finished products. Micro firms often need to be situated in areas where they have a large exposure to potential customers. It is for this reason that they locate along good roads. A number of medium and large firms operate in areas where roads are 'in a poor state' or impassable in a two-wheel drive car. Twenty-three per cent of large firms and thirty per cent of medium firms are situated in these types of area. This is particularly costly from an efficiency point of view given that large and medium firms tend to be more infrastructure-intensive than smaller firms [Måns Söderbom; Francis Teal].



Source: Nigerian Manufacturing Enterprises Survey (NMES) 2009

THE PRE-COLONIAL AND POST-COLONIAL NIGERIA: THE RISE OF TRANSPORT ENTREPRENEURS

The British claimed Nigeria in the late 19th century, and the pattern of British infrastructure development clearly revealed their intentions. The British immediately sought out to build a transportation network that would make ruling over the area as well as resource extraction easier. Road construction, and later railroad construction became primary goals of the colonial government. The unification of the Protectorate of Sokoto and the southern regions into one political entity in 1912 intensified these goals. A vast majority of the roads and railroads in

Nigeria lead south-north, from the coast to the inland and back again. Eastwest transportation routes weren't necessary because the flow of goods—such as ground nuts, cocoa, and cotton—was from the inland to the coast where it could be shipped to Britain for processing. The designers of the British road networks attempted to use existing footpaths to connect cities in Nigeria, but found that the nature of these footpaths made them difficult, if not impossible, to expand into wide roads suitable for automobiles. These new roads were still subject to the damaging effects of their rainy season, though, so they were often damaged or destroyed every season when the rains came. Frustrated by repeatedly rebuilding bridges, some local governments stopped importing wood, steel, or concrete and used entirely local material to produce cheap, expendable bridges, instead [Oshin Siji].

Nigerians took advantage of the introduction of automobiles by developing taxi and goods transportation services. Nigerian methods of transportation were often more efficient than their British counterparts. They were more flexible, made use of more appropriate technology, and could charge lower rates. A British transport company called Weakes Transport announced that it was offering scheduled services in 1923. Because of the inflexibility of scheduled routes, Weakes Transport vehicles often ended up carrying less than full loads at higher prices than their indigenous counterparts. The average rate for a Weakes Transport shipment was 2s 7d per ton mile compared with 6d per ton mile for indigenous transporters [Oshin Siji].

Nigerians tended to favor American vehicles for transportation during the colonial period. They were cheaper than British vehicles, costing about half as much as the equivalent British imported machine. They were also common and easily-serviced because of a plethora of spare parts, while British vehicles had lacking after-market support in colonial Nigeria. American cars, especially the Ford, was also very light and had pneumatic tires, which allowed it to travel over roads that wouldn't be suitable for the heavier British vehicles. A colonial administrator in Lagos commented that, “there are nearly 2,000 miles of road over which motor cars can travel. But only 180 miles are metalled to take heavy motor cars.” He went on to comment that the American Ford completely outstrips the English equivalent in versatility [Drummond-Thompson, P.].

Post-colonial transportation systems can be simply described as the minimal maintenance of the infrastructure the British had set up. The political and military strife within Nigeria had a significant effect on the transportation infrastructure in Nigeria. Funding to maintain and expand road and rail was redirected to corrupt politicians and nationalized transportation corporations [Walker, Gilbert J.].

The biggest introduction into the transportation market in independent Nigeria is aircraft. Aircraft transport is ideally suited to Nigeria because of its high speed and independence from roads, rails, and rivers that are subject to forces of nature. Unfortunately, air networks suffered from the poorly-connected roads and airports that are poorly-designed for moving bulk goods around the nation or internationally.

ENTREPRENEURSHIP AND THE NIGERIA CONTEXT

Entrepreneurial forces are relatively strong in Nigeria as the lack of jobs and rise in poverty leave few other options for the Nigerian people. Although difficult due to lack of resources, there are non-profit organization such as the Fate Foundation in Nigeria that are dedicated to promote entrepreneurship.

Facts About Entrepreneurship Activity In Nigeria

- Entrepreneurship activity in Nigeria is primarily based on necessity.
- Nigeria's economic decline since the 1980s, has created hostile environment that is unfavourable to entrepreneurial success.
- The Nigeria's infrastructure limits entrepreneurial effectiveness and is a barrier to success.
- The high cost of doing business in Nigeria, such as the lack of adequate electricity and the basic needs by a large amount of the population stifle entrepreneurial activity.
- Getting venture capital to finance entrepreneurial endeavour in Nigerian is very difficult because of the political and economic instability.
- The policies of the Nigerian government are a barrier to large-scale entrepreneurial success for many Nigerians. The government is plagued by corruption and greed. The government systematically ignores laws that are already in place in place to promote free enterprise.
- The lack of enforcement of Nigerian patent laws discourages entrepreneurs from commercial venture. The list is long! [Igwe, C.N.].

RECOMMENDATIONS

First, Nigeria's transportation model focused on paying for physical infrastructure – roads, bridges, rail lines; rather than procuring service availability. We hereby recommend Institute service procurement approach to annual transport capital expenditure budget, issuing service purchase guarantees not construction contracts.

Second, risk allocation tends to be too heavily skewed towards government in Nigerian transport infrastructure procurement (contract-to-build versus pay-for-service). In this regard, we must begin to implement changes to payment model for transport capex projects, require private operators to raise funding backed by government off take contracts

Third, PPP application appears to be tied too closely to concessions and user-pay projects, as opposed to a broader tool of government procurement from a self-funding private sector. There is the greater need to broaden application of PPP use beyond concession issuance for existing road, rail and port assets, to service delivery on new capex, and operations/maintenance projects.

Fourth, the operating philosophy in Nigeria has been to look first to government for funding, with private finance and PPP options seen only as a side opportunity. Relevant government agencies must begin to incorporate additional planning

element to annual transport budgeting process that seeks to exhaust private financing potential before public spending

Finally, PPP model requires an industry of service providers, not just traditional contractors reinvented as concessionaires. The government should, as a matter of urgent national importance begin process of developing private infrastructure service delivery industry through use of annual budget spending power.

CONCLUSIONS

While the effort and money being put into maintaining and expanding systems stagnated or decreased the demand for transportation services increased with the growing population. Between 1962 and 1974, the volume of road traffic increased by 13.5% per year, while funding increased less than 2.8% per year. Between 1967 and 1981, the number of passengers on Nigerian railways increased by 25%, but the number of locomotives in service has only increased by half that much, some of those locomotives are steam-powered and date back to British rule. Further, both the quality and gauge of the rails are questionable. The rails are insufficient for carrying heavier loads and require custom-fitted rolling stock because the gauge smaller than standard. The problems in modern Nigerian transportation systems are a product of the past. Both colonial and post-colonial mismanagement of road, rail, water, and air infrastructure has contributed to the economic and social problems within Nigeria. At the same time, Nigerians were able to take advantage of opportunities in transportation networks for economic prosperity, as seen in the Nigerian taxi drivers and Overland Airways. There is a lack of sources covering 1985 to 2005 that made researching the modern era of Nigerian transportation exceedingly difficult. Future research projects might focus on this period to find more information, especially national budgets for infrastructure maintenance and development [Måns Söderbom; Francis Teal].

Because investments in transport infrastructure are very capital intensive, the Nigerian government should encourage competition by relaxing fiscal measures to empower Nigerian transport entrepreneurs and encourage private sector participation in ownership, funding and operations. That will help intensify the effort to modernize transport infrastructure and services as we continue in our march to attain vision 20/2020.

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