

Strategies for Future Public Transport Systems in Central America: The Cases of Panama City, San Salvador, and Managua

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ABSTRACT :Public transport in Central America is currently facing a critical juncture: for a variety of reasons, policy leaders in the region are being forced to make choices that will decide whether or not public transport will continue to be the dominant mode of transport in the region's major cities. In order for this to occur, as the cases of Panama City, Managua and San Salvador illustrate, a thorough restructuring of the institutional and regulatory framework will need to be developed. In addition, strategic public investment will also be essential in providing the private sector operators with an adequate infrastructure. These changes should all be done with the needs and perspectives of the urban poor in mind, who make up the primary users of public transport. If accomplished, a key ingredient towards overall quality of life in Central American cities would be achieved.

RESUME :Le secteur du transport public en Amérique Centrale est arrivé à un point décisif: les dirigeants dans la région sont désormais forcés de décider si le transport public continuera à dominer l'image des grands centres urbains comme moyen de transport préféré. Les cas exemplaires de Panama City, Managua et San Salvador démontrent l'importance d'entamer un processus de /restructuration/ des cadres réglementaire et institutionnel. L'investissement publique stratégique sera aussi essentiel afin de construire l'infrastructure nécessaire pour garantir l'opération des routes d'autobus efficiente. Tous ces changements devraient se réaliser en tenant compte des besoins des classes défavorisées urbaines afin d'améliorer leur qualité de vie.

1. Introduction

To even the passing visitor, a survey of Central American capital cities today leaves one with the impression of chaotic, haphazard, and sporadic development. One can point both to a lack of coordinated land use planning and a lack of a systematic approach to economic and urban development. However, one area where attention has been focused recently has been the state of the urban public transit services as a means to improving urban quality of life. The paper presents the current state of public transit in Central America, the underlying reasons for the on-going efforts at

modernization, and a brief case study of the cities of Panama, Managua, and San Salvador.

It is important to understand the urban development growth pattern as it relates to urban transport. The typical Central American street corridor runs radially beginning with the outlying residential areas (with both lower and upper income housing), through new suburban shopping centers isolated by vast parking lots, to light industrial zones, then to medium to high density residential and commercial activity, to the core of the downtown. It is a pattern that is repeated with remarkable consistency throughout the region. Such corridors often stretch

more than 15km as a radial spoke. They are the main stage for the economic and social life of the urban populations. Unfortunately, these spaces are largely ignored by public investment and strategic planning and often are so choked with traffic and unsafe conditions for pedestrians that economic growth is impeded. Common conditions are a lack of sidewalks and crosswalks, grade-separated intersections designed solely for motorized traffic that cut off pedestrian access, poorly designed public transport facilities causing buses to bunch up into a steady line at bus stops, and autos parked erratically on pedestrian areas and in travel lanes. Clearly, while these corridors are heavily used, they do very little to enhance life quality of urban residents and judging from high accident rates, have high economic costs to the regional economies as a whole.

2. Current Conditions of Public Transit in Central America

Institutional and Regulatory Context

Public transit in Central America, as in much of the rest of Latin America, is dominated by small private-owned and operated bus services provided mostly by individuals associated loosely in cooperative-type relationships. The particulars of this type of transit operation, and its results for both users, operators, and the public sector regulators will be discussed below.

Beginning in the early 1980s and continuing through the 1990s, public regulation of urban bus services in Central America was liberalized to a large extent. Whereas up to this point in time, both technical (route planning, operational guidelines, minimum safety standards, etc.) and economic (tariffs, licensing, taxes, fines, etc.) regulation were used, by the late 1980s, nearly all institutional guidelines had been removed by national governments. The single aspect that today remains in effect is tariff control¹, which has been typically accompanied by different types of price subsidies on the costs of diesel fuel for operators. The distorting effects of the subsidy programs are also discussed below.

In most of Central America, nearly all remaining formal regulatory and normative power resides still

¹ The Central American situation is in fact more extreme than in most South American countries, where not only fares are regulated, but the state regulates through exclusive long-term franchises (called concessions) that are periodically tendered, and through supervised competition among multiple operators. (Gomez-Ibanez and Meyer, 1997)

within the national ministries of transport. Nicaragua and Guatemala are the only two countries to have formally passed decentralization legislation allowing urban passenger transport to be managed at the local level. While all the other countries are in the process of some municipalization of this function, today it is mostly true that the central governments will define the new systems that are needed to improve services. From a management and technical standpoint, and considering the very small size of these countries (with populations ranging from 3 to 8 million), there are legitimate reasons to believe that public transport will remain the responsibility of the central ministries in the short to medium term.

Institutionally, another important aspect is the relative lack of attention urban public transport has received by the national transport ministries over the decades. The most obvious explanation for this is the almost singular focus transport ministries have had since the sixties on building-out their national road networks. Multilateral lending has focused heavily on this subsector up until recently. However, one can now discern a growing trend toward funding of urban transport modernization programs throughout the region.

In response to the need for a more direct effort to place some order on the quality of the urban passenger services, many Central American governments have established in the late 1990s various autonomous and semiautonomous regulatory bodies with attendant technical staff designed to establish operational norms and operational standards for service quality.

All of these bodies were created for the purpose of attempting to place order on what had rapidly become an unmanaged, chaotic service run by private sector providers with seemingly no regard to the public good. Throughout the 1990s, governments repeatedly formed ad hoc national commissions to propose reforms to the public transport systems following waves of social unrest caused by ever rising fares coupled with ever decreasing service quality.

It is important to note that while operational norms and route planning has been developed in most countries, it is nowhere in the region to date enforced. This is due to a lack of resources and ministerial coordination between the national and transit police to penalize noncompliance with the

new rules. But mostly it is due to the important political influence bus operators and their cooperatives have over political decision-makers in the legislatures (and elsewhere throughout the public sector). The key role bus cooperatives play during election days is widely known to all politicians, who must rely on the operators to ferry supporters to the polls to win local and even national races. The *quid pro quo* resulting from such services, as well as campaign contributions, from the heads of the cooperative unions is also understood.

However, since the late 1990s, a new urgency has gripped the public transport sector and private industry brought about by the unstoppable phenomenon of mass motorization of the urban populations. The effects of this rapid motorization throughout the developing world has been well documented in the literature in recent years. (Gakenheimer, 1999; Button, Ngoe, Hine, 1993) In Central American capital cities, the average annual rate of motorization is between 8 to 10%. Coupled with the typically narrow urban roadway rights-of-way, this has produced extreme congestion levels. With the exception of the primary corridors, this has caused a steady drop in mode (and therefore market) share for private operators, who have pushed governments for tariff increases repeatedly in an effort to boost revenues. However, due to congestion and falling profits, operators have seen passengers opting to purchase used autos instead of paying ever higher fares while receiving ever poorer services.

Operational Characteristics

Despite the worsening conditions due to traffic congestion, the bus passenger industry is still a lucrative business for those who either have permits to operate on the main radial corridors, and for those who through political or other means are able to control the access to the state-issued permits.

In most cases, buses in Central America are comprised of North American school buses, which have been modified to varying degrees to serve as transit vehicles. Through extraordinary measures that cause overcrowding during peak periods, these buses have a total capacity of nearly 90 people. High demand for trunk line public transit routes allows this to occur; typical populations densities for main Central American cities are around 5,000 persons/square km, or more than twice as dense as typical North American cities. (Wright, Cody, Ortega, 2000) The heavier routes carry nearly 500 passengers per day, with a single fare costing on

average in the region US\$ 0.20. Operating and maintenance costs (including wages) typically consume around 50% of total revenues, which leaves approximately US\$ 50 daily to the owner of the bus. On average, about one half of the bus fleet is run by owner-operators, while the other half is owned by persons who arrange for a driver to operate his bus. Due to the absence of a regulatory framework, and the difficulty of arranging financing for fleet renewal, most operators/owners proceed to consume the value of their rolling stock through a lack of maintenance. There is no advantage to offering a superior service, since the value of comfort and slightly improved travel time of a superior bus is not valued enough to attract new riders to a new bus service. Thus, what occurs is a kind of “race to the bottom,” with each owner seeking to maximize profits without any regulatory counterweight being enforced by the public sector. The other main determinant limiting a modernization of the service is the severe lack of lane capacity on the main radial corridors leading into city centers, a fact that also limits any operational benefits that may otherwise occur in a noncongested system.

As a result of the regulatory vacuum that has resulted from the government’s retreat from the public transit sector, the private sector operators have created a sort of self-regulation through the use of cooperatives. However, this self-regulation lacks almost all elements of the public interest. Instead of pooling resources to reduce operational costs such as maintenance and management, nearly all coops exist primarily as pressure groups that push for increases in diesel subsidies and tariff increases. Strikes for this effect are common and occur in regular cycles throughout the region, often with tragic consequences as social opposition has often been met with force by the government attempting to quell street rioting.

Impetus for Change

Since the late 1990s, a consensus has formed in most Central American governments and civil societies that the current bus transit system must be transformed. This has occurred mainly due to two main factors: 1) the functionality of the current system, which is characterized by an oversupply of buses operating on ever dwindling lane capacity, is reaching a critical point, which in turn is diminishing the profitability of the bus industry to the private operators and is also affecting the competitiveness of the regional economies; and 2) politicians, both

national and local, have been exposed to alternative transit models established in South America, mainly from Curitiba but also Quito's El Trole system and Bogota's Transmilenio system, and have made a positive political assessment of these modern bus systems. This political consideration is supported by empirical data showing the ability of high-capacity bus systems to handle heavy demand. (Gardner, Cornwell, Cracknell, 1991).

Next, three Central American cases are considered with a view toward their specific proposed solutions to the public transit crisis that each confronts.

3) The Case of Panama City

Current situation

The dilemma of the urban transportation system in the Panama City metropolitan area, with a population of 1.4 million, is defined by the urban growth in a narrow linear orientation, with the Panama Canal and Pacific Ocean constraining growth on the western and southern flanks. The urban road network is essentially radial and extremely congested, with motorization rates of nearly 10% over the past several years. Travel times for transit buses, which are almost exclusively recycled school buses from North America and average 20 years old, has dropped to 10 Km/hour. The basic tariff is 20 US cents.

Description of buses industry

The bus industry is composed of approximately 1400 buses. Estimates put the overcapacity in terms of number of transit vehicles at around 30%. (Asistencia Tecnica para el Sistema de Transporte Urbano, RENARDET, 1999; and ESTPUBI, ALG, 2002) The bus mode transports 50% of all urban trips, for a total of 800,000 trips by bus transit daily. These trips are distributed over a chaotic route structure that is the result of nearly 20 years ad hoc route assignments (there are currently nearly 200 routes) that have responded to pressures placed upon the transport agency by the heads of the cooperatives to grant operating permits.

While the route permits are given by the governments for a nominal fee, there is a substantial black-market in the sale, rental, and resale of these permits, called *cupos*.² Over the years, the main cooperatives have gained control of the majority of these *cupos*, and use them to define entry into the

industry. Because there is very little actual regulation of the service by the government, substantial amounts of the private sector resources have gone into this black-market in *cupos*, rather than in upgrading or even maintaining the quality of the service they provide.

Proposed solution

In 1999, the central government created a semiautonomous surface transport agency, the ATTT, to regulate the bus service in the public interest. The ATTT, with support from multilateral agencies, is currently redefining both the route and operational guidelines for the private sector to follow and establishing the detailed regulations and private concession packages that will be bid out to the private sector. This restructuring process is expected to be completed by the end of 2002. The system envisioned is akin to Bogota's Transmilenio, beginning with one main trunk route of 15 km and incorporating feeder route as the system expands. The total cost per kilometer, including rolling stock, is approximately US\$ 7 million.

At the same time, the Ministry of Public Works has launched a design process for an at-grade light-rail system, with heavy support from the French bilateral aid program. The proposed light-rail would also begin with a first line of 14 km, and cost \$US 21 million.

Currently, these two proposed solutions are being intensely debated within the Panamanian political system. A major constraint on the light-rail solution is its heavy costs, both on the construction side, as well with operations and maintenance. The multilateral banks' lending guidelines make the financing of deficitary transit systems extremely difficult, and private sector concessionaires can only be expected to finance the portion of the system that is profitable to them. In this case, there is projected to be a US\$ 30 million subsidy required annually for the first 20 years of the system, which the Panamanian state would need to cover. With regard to the proposed high-capacity bus system, the financing of the new bus fleet is the major constraint. Recently, however, financing packages for the renewal of the bus fleet have materialized, with partial credit guarantees from the multilaterals being used to allow local commercial banks to give credit to the local bus operators who would present their loan request as a consolidated concessionaire with the right to exploit a given number of routes as

² On a main route, each permit has a street value of over US\$ 30,000.

determined and enforced by the ATTT. Under this scenario, no O&M subsidies would be needed.

4) The Case of Managua

Current situation

Managua, at 1.2 million inhabitants, is a city that has developed on a radial pattern along main urban corridors, beginning at the base of Lake Managua, and rising over 1000 feet. While repeated earthquakes and other natural disasters have struck Managua since its founding, the urban population has grown steadily, especially since the end of the armed conflict in the late 1980s. While congestion is less severe than in Panama City due to wider rights-of-way along the main urban road network, the number of private vehicles is growing rapidly, with annual motorization rates of 8-10% over the past several years. The mainly school bus fleet is also approximately 20 years old, and is a major cause of accidents due to failing brakes. The fare is set at around 15 US cents.

Description of buses industry

There are approximately 2000 buses. (EPYPSA-CORASCO, 2000) Buses account for 70% of all urban trips, for a total of 1,200,000 trips daily. As in Panama, these trips are made over a largely unregulated route structure which includes over 140 routes. In addition, there are an unknown number of pirate bus operators who further add to the problem of over supply, estimated at 30%. The cooperatives of Managua have mainly concerned themselves with the maintenance of the substantial diesel subsidy granted by the central government, and with attempts to protect their route permits from invasions by the pirate operators. The diesel subsidy, which is given in the form of an established quota of gallons of fuel per bus for a given time period, has also created a black-market in the sale of excess diesel fuel sold at a price markup to truck companies and others. To a certain degree, the heads of the cooperatives find it is more lucrative to sell diesel than to use the fuel in bus operations, which amounts to a great distortion of the original intent of the subsidy, which was to keep tariffs low for social reasons.

Proposed solution

In 2000, the Nicaraguan central government, with passage of a new Municipal Law decentralizing many responsibilities to local governments, established a semiautonomous surface transport agency, the IRTRAMMA, to regulate the bus

service. The IRTRAMMA, also with support from Inter-American Development Bank, completed in 2001 a pre-engineering design for a proposed high-capacity busway that would run along the primary corridor from the national airport through the central city for a distance of 16km. The study also included a new route and operational control system to be bid out to the private sector. The system is simple in its physical design, encompassing basic elevated platforms to be serviced by mostly standard size modern buses, augmented by a limited number of articulated buses during the peak periods. This busway would transport approximately 150,000 passengers per day. The total cost per kilometer, including rolling stock, is approximately US\$ 3million, reflecting the lower construction costs in the wider right-of-way of the Carretera Panamericana.

An innovative feature of this solution is the proposed usage of a canon paid by the private bus concessionaire to the IRTRAMA in exchange for their use of the publicly-financed busway. The canon would be fixed at US\$ 0.10 per round trip for each bus operating on the busway. This amount would generate an annual amount of revenue to the public sector of US\$ 600,000. This stable and growing revenue source would allow the IRTRAMMA not only to cover maintenance needed to the busway, but also repay the cost of the initial construction of the public works.

Currently, the proposal is being discussed between the City of Managua and the new central government. Unfortunately for the bus users, the opposing politics of these two different parties, the Sandinistas at the Municipal level, and the Liberals in the central government, will delay any implementation. As in the case of Panama, the financing of the new bus fleet poses a hurdle. Nicaragua carries a very high country risk in international financial circles, and the prospects of an international strategic partner would appear to be slim. However, European donors can offer soft lending instruments, as the Spanish provided in the case of Quito, that would allow for the bus renewal to take place.

5) The Case of San Salvador

Current situation

The case of San Salvador, with a population of 2.6 million within its metropolitan area, is another case which points out the critical choices the city faces

with regard to public transit. Due to the historical growth patterns, the large majority of bus trips pass through the center of the city. However, again due to high motorization rates during the past 15 years, travel times for buses have dropped dramatically, to 6 Km/hour through the downtown core. This is due in large part to a lack of available lane capacity throughout the downtown, which has been invaded by masses of street vendors, who have expanded out of the public markets into all of the east-west streets. This has reduced the streets to a single lane in each direction. Essentially, the intense commercial activity has reduced the functionality of street system to transport persons and goods. The basic tariff is 20 US cents.

Description of buses industry

The bus industry is composed of approximately 2500 buses, with another 1000 pirate operators. (TAHAL, 2000) The bus mode transports 60% of all urban trips, for a total of 1,400,000 trips by bus transit daily. The route system has likewise been distorted over time by political and commercial interest. Estimates put the figure of superfluous bus capacity at 25%. As in the case of Managua, the El Salvadoran central government subsidized the private bus industry by lowering the price of diesel for operators. The ensuing black-market of subsidized diesel fuel has severely distorted the debate over modernization up until recently. The cooperatives of San Salvador are somewhat more complex in their organization than in Managua or Panama, and have recently begun to organize themselves into organizations with classic features of a cooperative, such as negotiating better maintenance contracts, etc.

Proposed solution

Beginning in earnest in 2001, the central government, led by the Vice Ministry of Transport, initiated a process to establish a new regulatory framework for the bus service. The VMT, through a series of technical assistance studies supported by the Inter-American Development Bank (Brennen, Ribera, 2001; Cannell, 2002), has taken critical first steps to redefining the rules of the game on both the technical (route and operational aspects for the private operators), and the financial side, with the elimination of the diesel subsidy that had cost the government over US\$ 40 million per year. With the savings due to dropping the subsidy, the government is proposing public funding for the infrastructure needed for a high-capacity bus system operated over

exclusive lane busways. The planning for this system is expected to be completed by the beginning of 2003. As in Panama, the system envisioned is similar to the Bogota Transmilenio, beginning with an east-west line of 12 km., and is projected to transport 215,000 passengers by 2010. The total cost per kilometer, including rolling stock, is approximately US\$ 3.5 million.

The VMT is presently in the midst of the pre-engineering design and the regulatory establishment for the new Metrobus system. The IDB has programmed a public loan for approval in 2003 for the construction of the public works, while the private sector operators have begun discussions with private banks concerning fleet renewal.

6. Conclusions

The challenge facing Central American governments, whether at the local or national level, is to maintain public transit as a dominant urban mode. If they fail to do this, the consequences would be fiscally and urbanistically disastrous: the resources required to construct sufficient urban highways throughout a Central American capitol city are unavailable; and as the developed world has learned, major urban highway construction divides urban activities, lowers overall quality of life, and locks one into building ever more urban highways to keep up with traffic congestion.

As has been shown through the brief description of Panama, Managua and San Salvador, relatively affordable and attainable solutions are provided by examples from South America. Perhaps more than any other factor, the cultural affinity Central American leaders, both technical and political, feel for these “endogenous” solutions from their own region may ultimately supply the needed sustained momentum to achieve similar systems over the next 10 years.

Finally, the importance of moving beyond the status quo, can be assessed from the competitiveness argument. A better defined urban development pattern along these key street spaces can greatly improve the urban image of a city, which has been shown to be a factor for business location decisions by the private sector. (Jencks and Meyer, 1990) In a globalized economy, where capital concentrates in places which provide it with the best possible set of conditions, one area that Central American cities can improve upon is the management and improvement of their public street spaces. When treated as a strategic asset, the public street space can be a

catalyst that spurs private sector investment and allows private citizens to take full advantage of the benefits of urban life.

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