Restructuring urban public transport in India

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ABSTRACT: Transportation in the urban context assumes great economic significance as the productive efficiency of urban areas will be maintained only if mobility requirements in the cities are fully met. However, this productive efficiency is now threatened due to the increasing number of vehicles causing congestion, and thus slower speeds on roads. An effective way of addressing this problem would be to encourage the greater use of public transport instead of personal vehicles. This requires both an increase in the carrying capacity of the public transport system and a quantum improvement in the quality of public transport. In addition, despite the high volumes of traffic, most urban centers in India do not have any rail transit system to cater to intra - city movements. Hence, there would be substantial dependence on bus services to meet public transport needs for the next several years. This is likely to call for a major restructuring of the current manner of public transport provisioning in the urban centers. This paper highlights the various options for restructuring the provision of road based public transport and synthesizes them into a strategy for reform given the commercial viability of the various activities carried out by public transport operators in India.

RÉSUMÉ : Le transport dans le contexte urbain suppose une grande signification économique dans la mesure où l'efficacité productive des zones urbaines sera maintenue seulement si les exigences en matière de mobilité dans les villes sont entièrement satisfaites. Cependant, cette efficacité productive est maintenant menacée en raison du nombre croissant de véhicules causant des encombrements et ainsi des vitesses plus lentes sur les routes. Une manière efficace d'aborder ce problème serait d'encourager l'utilisation plus grande des transports publics au lieu des véhicules personnels. Cela exige à la fois l'augmentation de la capacité de transport du système de transports publics et une amélioration quantique de la qualité des transports publics. De plus, malgré les grands volumes de trafic, la plupart des centres urbains en Inde n'ont pas de système de transport ferroviaire pour faire face aux déplacements à l'intérieur de la ville. De ce fait, il y aurait une dépendance substantielle aux réseaux d'autobus pour satisfaire les besoins de transports publics au cours des prochaines années. Cela va probablement nécessiter une restructuration importante de la mise à disposition actuelle de transports publics dans les centres urbains. Cette communication met en évidence les options diverses pour restructurer la mise à disposition de transports publics basés sur la route et les synthétise dans une stratégie en vue d'une réforme compte tenu de la viabilité commerciale des activités diverses effectuées par des opérateurs de transports publics en Inde

India has witnessed a rapid growth in the number of total vehicles registered in the last two decades, which are about 41 million registered vehicles as on 31 March 1998 (Table 1).

Table 1. Growth of vehicles in India

Year	No of vehicles (thousands)	Two wheelers	Car, jeep, taxi	Buses	Good vehicles	Others
1951	306	8.82%	51.96%	11.11%	26.80%	1.31%
1961	665	13.23%	46.62%	8.57%	25.26%	6.32%
1971	1865	30.88%	36.57%	5.04%	18.39%	9.12%
1981	5391	48.56%	21.52%	3.01%	10.28%	16.64%
1986	10577	59.04%	16.83%	2.15%	8.16%	13.82%
1991	21374	66.44%	13.82%	1.55%	6.34%	11.85%
1996	33783	68.83%	12.44%	1.33%	6.01%	11.39%
1997	37231	69.01%	12.52%	1.31%	6.07%	11.09%
1998	40,939	69.23%	12.35%	1.31%	6.18%	10.94%

Source. MoST 2000

Along with the rise in vehicle population, the increased mobility demand is reflected in rising utilization rates of personal vehicles. The problem has been accentuated by the gradual reduction in the share of public transport in India reflected in the declining share of buses in the total vehicle fleet in the country, where the proportion of buses registered has declined from over 11% in 1951 to just over 1% in 1998.

The rapid increase in the number of motor vehicles in India calls for urgent measures to deal with the resultant congestion and pollution. In particular, encouraging a greater use of public transport instead of personal vehicles and thereby checking the trend of increasing shift towards the use of personal vehicles is key here. However, unless the quality of public transport services improves substantially, the trend of increasing preference for personal vehicles would continue. This calls for a complete change in the mindset of the operators. Hence, it is extremely important that the provision of public transport services be restructured to ensure service delivery that matches consumers' expectations. One way of doing so could be promoting the induction of the private sector in an organized and meaningful manner. Improving quality of services from public transport would also require restructuring of the State Road Transport Corporations (SRTUs) so that the policy, planning, and regulatory functions are carried out by an entity different from the one involved in direct operations. There would also be a need for a regulatory framework that would oversee all modes of public transport, particularly urban and suburban railways.

Given the commercial viability of the various activities carried out by SRTUs, this paper synthesizes options for restructuring into a strategy for reform based on a project carried out with support from the Department for Transport, Government of UK

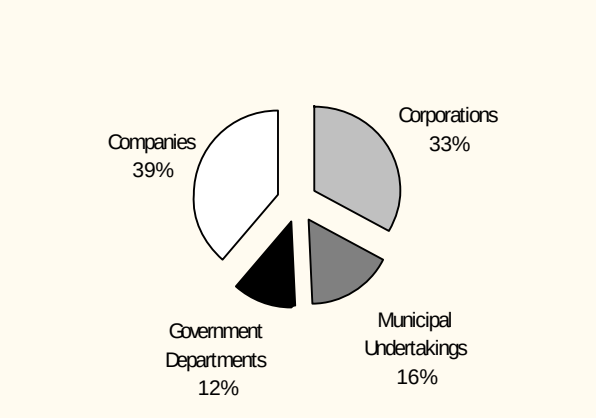
1 PERFORMANCE OF PUBLIC TRANSPORT IN INDIA

Public transport in India can be classified into two – rail and road. Out of total passenger movement of the country, 80% is met by road transport while the remaining 20% is carried by railways at present.

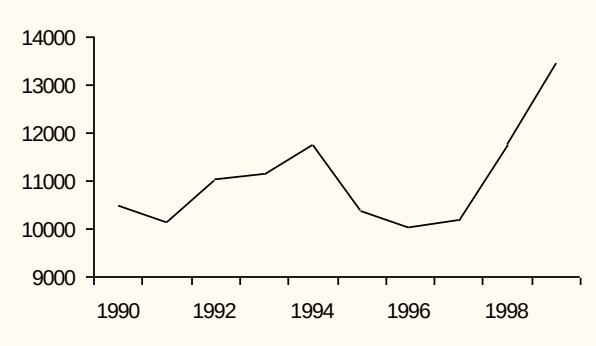
1.1 *Road transport*

Road transport in India is operated partly by public sector and largely by private sector comprising about 28.7 % and 71.3 % respectively of the total buses. The participation of the state in road transport commenced in 1950 and since then State Road Transport Undertakings have been formed in every state.

At present, there are about 67 State Road Transport Undertakings (SRTUs) in the country.



They operate a fleet of over 115 000 buses and employ more than a quarter of a million people (March



1999 data). Out of 59 corporations, 14 corporations operate exclusively in the urban areas, 8 operate exclusively in the mofussil (rural) areas, and 37 operate in both urban and rural areas (Table 2).. Out of the total number of buses held by the corporations, 17 455 render services in urban area and the remaining 95 310 function in mofussil areas, including 2659 in hilly regions (Source. ASRTU 2000).

Table 2. State Road Transport Undertakings in India

Number	Rural	Urban	Rural and urban
SRTUs	8	14	37
Buses	115424	17455	

Source. ASRTU 2000

The organizational form for public sector bus companies varies from state to state, the most common form being that of a Corporation constituted under the provisions of the Road Transport Corporation Act, 1950. There are 22 such corporations. 26 undertakings have been formed under Indian Companies Act, 1956. Public transport is also operated by 11 Municipal Councils under various municipal legislations. The remaining eight undertakings function as part of government departments (Figure 1).

Currently public bus transport in India is provided through a multiplicity of mechanisms. These include the following:

- Own services which are operated by the SRTU using its own fleet

- Kilometer Scheme under which, private buses are hired to run services as required by the SRTU.
- Direct permits under which permits have been given directly by the State Transport Authority (STA) to private operators for providing transport services on specified routes. The buses are owned and operated by the private permit holder who also collects the fares. The fares, routes and other aspects of service are as allowed by the STA under the Motor Vehicles Act, 1988. These operators are independent and have no relationship with the SRTU.

Figure 1. Management of State Road Transport Undertakings in India
Source. ASRTU 2000

1.1.1 *Operational performance*

The total strength of the urban SRTUs grew from just about ten thousand vehicles in 1991 to about 13 500 in 1999, an increase of 28%. However, while the total vehicle fleet strength grew at almost 10% per annum in the 1990s (Table 1), the urban SRTU fleet grew by less than 3% per annum (Figure 2). Given that the increase in the national bus fleet over this period has also not been spectacular (Table 1), the size and spread of urban public transport has seen a decline in the last five years

Figure 2. Growth in fleet strength of SRTUs in urban India
Source ASRTU 2000

The operational characteristics on the other hand do not show any distinctive trend (Figure 3). While the kilometers operated daily by each bus have shown a steady increase, the proportion of the total fleet on road has been declining.

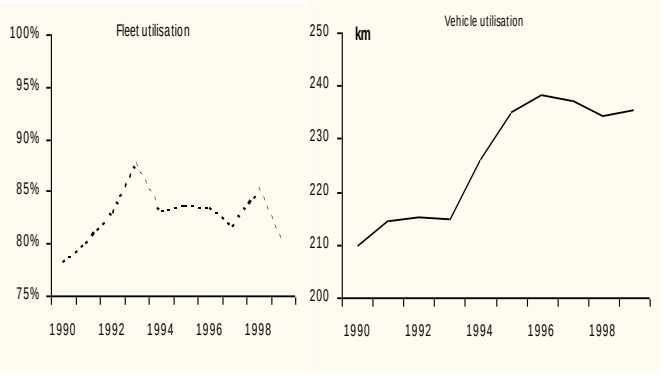


Figure 3. Operational performance of SRTUs in urban India
Source ASRTU 2000

1.1.2 *Financial performance*

The overall financial performance of urban SRTUs in India appears to be gloomy and they are heading towards a severe financial crisis in the very near future. These corporations have incurred an accumulated loss of about 13 billion rupees by March 1999, which is nearly as large as of 14.60 billion rupees, the aggregate amount of equity of both the Union Government and the State Governments, and reserves. Further, this accumulated total debt is larger than the total assets of the SRTUs.

As earnings per kilometer have grown slower than costs per kilometer, losses per kilometer have grown by nearly 7% per annum (Figure 4). Such a situation has arisen because of continuing inefficiency in operations, uneconomical operations to meet the universal service obligation, and universal subsidization of services. In addition, the motor vehicle taxation regime is such that it taxes buses more than personal vehicles, resulting in higher cost of operation for public transport.

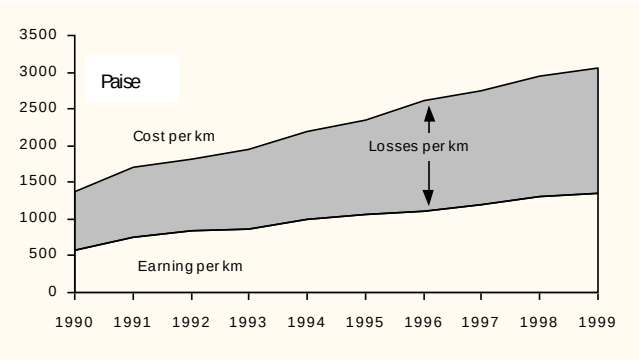


Figure 4. SRTU's financial performance (Rupees per kilometer)
Source ASRTU 2000

A result of the continuing losses has been the inability to generate adequate funds for capital expenditure and replacement of rolling stock. There exists a vicious circle of continuous losses leading into inadequate funds for capital expenditure and poor management of the fleet, which in turn leads to poor operational performance, causing even higher losses. The mounting losses imply a substantial commitment from the Government for the provision of public transportation services in the urban India. There is thus a need to review their current operations to identify areas for reform.

2 RATIONALE FOR RESTRUCTURING

It has been universally recognized that improved transport systems are essential for accelerated economic growth. Transportation in the urban context assumes even greater significance. Large agglomerations are seen as the vertices of continued economic growth. The productive efficiency of urban agglomerations will be maintained only if mobility requirements in the cities are fully met. However, this productive efficiency in urban India is now threatened due to the increasing number of vehicles causing congestion, and thus slower speeds on roads. Obvi-

ously, transportation infrastructure could be the primary bottleneck for the unimpeded growth of the state. Thus, it is important that the existing transportation infrastructure be utilized optimally. Meeting mobility needs would imply a greater modal share of public transport.

Another major consideration for restructuring public transport is the continued drain on the exchequer. With greater emphasis on fiscal discipline, it is increasing becoming difficult for governments to continue funding such loss making ventures. In addition, the role of the state in provisioning these services that can be more efficiently provided by private operators is increasingly being questioned in a variety of fora.

2.1 *Augmenting public transport*

While it is recognized that the share of public transport in India is considerably higher than that in most developed countries (about 50% in most large cities), the cause for concern is the declining share. Among the major reasons has been the inability of public transport operators to keep pace with the increasing demand and the deteriorating quality of service arising out of continued losses and thus inadequate capital generation for capacity augmentation. This issue is dealt with is detail in the next section.

Another problem has been the relatively little concern for consumer satisfaction. In most cities, government–owned agencies operate and manage public transport services. Given the virtual monopoly that public sector service providers enjoy, service planning has been largely dominated by the dictates of operating convenience rather than by consumer convenience. With fares and tariffs not linked with costs of operation, there is little incentive for the service providers to improve efficiency. In addition, being public sector concerns, the emphasis on commercial orientation is limited. As a result, ridership changes and costs of operation are not concerns of the management. Thus, a change in the incentive regime is necessary to ensure attention to consumer satisfaction. This requires regulatory reforms and institutional restructuring in the urban public transport sector. Monolithic public entities need to be split up with greater induction of the private sector into services they are better placed to provide.

2.2 *Mounting losses of State Road Transport Corporations*

The considerations for restructuring State Road Transport Corporations also stem from mounting losses and poor operational performance, as highlighted earlier, resulting in a continuous drain on scarce budgetary resources. A number of activities of State Road Transport Corporations are of a nature that can be efficiently provided by the private sector. In addition, private sector funds could be tapped for the purposes of generating revenues for the purposes of fleet augmentation and fleet replacement.

In the post liberalization era, it would be difficult for Governments to continue to provide financial support to such loss making ventures, especially with the growing emphasis on fiscal discipline. Indications of such concerns can also be gauged from the Ninth Plan document where the Union government's policy regarding the funding of SRTUs is outlined. The thrust of the policy is to fund the acquisition of buses for replacement only, and not for fleet expansion. Any public bus fleet expansion is to be funded from the private sector. In fact, the Ninth Plan document also states that given the financial constraints facing the SRTUs, 75% of the public transport services should be made available from the private sector (Planning Commission 1999). Thus, it would be difficult for the State Government to perpetually finance public transport losses, let alone make a capital contribution for fleet augmentation.

This would require that activities which can be performed by several operators, that is, those on which scarce public funds need not be spent, should be separated from those that are best performed by a monopolistic service provider, so that public funds need be used only for those activities where private funds are either not available or where public funding and management is desired. Such a separation of activities would also have the advantage of throwing up other opportunities for revenue generation such as commercial exploitation of the land resources.

2.3 *Comparative advantage of SRTUs*

Some of the activities of SRTUs such as the workshop activities are not natural monopolies based on economies of scale and are currently being provided by a number of private sector operators competitively. Thus, it may be difficult to justify continued public expenditure on such activities, especially if these services can be provided more efficiently by the private sector. Lave (1975) uses this idea as the foundation for his argument that policymaking should be separated from operating. He sees the role of the government authority is to arrange or sponsor public transportation rather than supply the transportation itself.

A review of the current market structure in the urban public transport sector also reveals that SRTUs do not have a comparative advantage in a number of activities they are undertaking. This is particularly true for bus operations where the private operators are able to provide these services in a more cost–effective manner (though given the universal service obligations in the sector, private operations would have to be appropriately regulated). Similarly, the SRTUs do not have any comparative advantage

in operating workshop facilities, which are been competitively provided by the private sector for all types of vehicles.

3 INTERNATIONAL EXPERIENCE IN REFORMS IN PUBLIC TRANSPORT

The situation of existing public transport institutions being grossly inadequate to provide the required levels of service to effectively deal with the rapidly increasing congestion and pollution is not peculiar to India alone. It has been faced in most major cities around the world. Several of them have undertaken reforms and restructuring of the manner of public transport provisioning with a view to meet the required demand and the expected quality of service.

An examination of the reforms carried out around the world reveals two main trends in the restructuring of public transport around the world. The first is to unbundle the monolithic and integrated services into more manageable and compact constituent units. This has generally preceded a greater involvement of the private sector in providing services in a competitive environment. The second trend has been to segregate policy and planning functions from operational functions. The advantages that seem to emerge from such a restructuring are that it enables a separation of activities that are natural monopolies from activities that are not natural monopolies. Such separation makes it possible to bring in competition in activities that are not natural monopolies. Competition, in turn enables improvements in efficiency, enhancement of capacity by tapping private financial resources, and induction of more professional management. Secondly, it becomes possible to channel scarce public funds into those activities that the public sector is best suited to perform and not use them up in activities that the private sector is better equipped to perform.

3.1 *Models for involvement of the private sector*

The private sector participation can take different forms in infrastructure sectors. The public transport sector in particular can either be unbundled and opened in a segmented fashion to private sector participation, or the complete sector can be opened to such processes. These options are discussed below.

3.1.1 *Service contracts*

This is a type of small duration contracts where a private operator performs specific tasks such as provision of buses. By using this option, it is possible to take advantage of private sector expertise for performing technical tasks or even to open such tasks to competition. The public utility manager, under this option, has the responsibility for co–coordinating the tasks being performed by private operators and the responsibility for ensuring investment in the sector would lie with the public utility manager. It is not possible to bring management expertise or improve operating efficiency in this option. However, unlike other infrastructure sectors, it is possible to bring additional investment under this option in the public transport sector as is discussed below.

The most common form of the service contract in the public transport sector is the gross cost model for private sector participation in bus operations. This requires the government authority to set the routes operated and the fares to be charged. The fare revenue accrues to the government authority, which then pays the private operator an agreed amount, irrespective of the occupancy and ridership. The operator is thus simply a supplier of a service, bearing the operating risks but is insulated from the revenue and ridership risks. This way each route can be operated by multiple private operators and the private operators do not have any incentive to race recklessly against other private operators to each bus stop in order to gain more passengers. Furthermore, the private operators are not hurt by fares that do not correspond to costs. Hence, this approach is suitable in cases where the fare revenues are likely to be uncertain, such as in new routes or in low–density corridors and in cases where the government wants to subsidies commuters.

The quality actually achieved needs to be monitored by a public entity with a system of penalties to deter under–performance. The government authority awards the routes via competitive tender to the lowest bidder. Preference is given to private operators that have achieved high standards of quality. This prevents private operators from concentrating only on dense routes, and provides the private operator with the incentive to improve quality.

The terms of the gross cost approach are somewhat similar to that of the Kilometer Scheme described earlier except that in the Kilometer Scheme the payments are fixed regardless of the type of route or the time of day. As against this, in the gross cost scheme the operator bids for the compensation. Such a bidding process permits an operator to factor in the type of route and the service quality expected into the amount being bid for as compensation.

3.1.2 *Management contract*

This short-term option transfers the responsibility for the operation and maintenance of the existing system to a private operator for a fixed fee, which could be related to various performance parameters. The public utility is still responsible for rehabilitation and new investment though this option could bring technical and management expertise to the sector and to some extent improve operating efficiency. Management contracts in the transport sector are particularly relevant in the management of depots and workshops of large bus operators.

3.1.3 *Lease Contract*

Under this option, a private firm leases assets of the public utility typically for 10 to 20 years for a fee and takes on the responsibility for operating and maintaining them without any responsibility of financing new investment, which will lie with the public utility. This contract could bring in technical expertise, managerial expertise, and operating efficiency to the sector. While investment risk lies with the public utility, the commercial risk is shared between the private operator and the public utility. A variant of this form of private participation exists in France, but rarely elsewhere. Nevertheless, it is possible to develop lease contracts in the transport sector for some activities such as depots and terminals as is later suggested in the paper.

3.1.4 *Concession contract*

A concession agreement or franchise is a means of awarding fixed long-term monopoly rights to provide a service to a private firm within a geographical area. Under this option, a private operator not only has the responsibility for the operation and maintenance of the existing assets but also for new investments, although the ownership lies with the government or with the public utility. This option could bring in technical expertise, managerial expertise, operating efficiency, and additional investment to the sector. The investment risks and commercial risks lie with the private operator.

The application of the concession type of private participation in the public transport sector is the net cost scheme in the public transport sector where the operator receives the revenue from ticket sales, as opposed to a fixed payment in the gross cost approach, thus taking the risk of changes in financial performance over the contract period. A public entity continues to set routes, prescribe fares and service quality, and may either provide a fixed subsidy, or receives a fixed contract fee (if the route makes profits). The government authority awards each route via competitive bid to the private operator requiring the least amount of subsidy or willing to pay the greatest fee.

Due to the revenue risk, this option would be suitable for high–density corridors with only a few operators, where the ridership would be more certain, so that private operators have no motivation to adopt dangerous passenger capture techniques such as rash driving and speeding. However, this would imply that a private operator would have a near monopoly over an area and hence would require appropriate regulation to ensure that such monopoly power is not misused.

3.1.5 *Divestiture*

This option, through the sale of assets or shares or through management buyout, can be partial or complete. It gives the private operator full responsibility for operation, management and investment. Unlike the concession, it transfers ownership of assets to the private sector. This model has been adopted in the rail transport industry in UK.

3.1.6 *Restructuring public transport*

The two relevant options for bus operations highlighted above are the gross cost and the net cost options. In deciding between the two options, a key concern is whether large private operators would come into the sector in India. If not, then the net cost option will not be able to solve the safety problem. The gross cost option is also favorable because it is easier to integrate fares between different operators and different modes with the gross cost model (Walters 1998). Finally, if the government perceives the need to subsidies commuters, the gross cost option would shield the private operators from such revenue risks. However, the gross cost option will requires more monitoring because the private operator will have no incentive to attract passengers or accurately collect fares. If the government authority cannot provide the required monitoring, then the use of the gross cost option will end in decreased quality, falling ridership, and increased costs to the government authority.

Given the immediate constraint in urban India in terms of the lack of proven capacity of the private sector to operate large public transport fleets, is may be a more feasible option in the short run to initiate private participation in the public transport sector the gross cost option. In addition, it would allow the government to gradually phase out subsidies to minimize political and community resistance to restructuring. Over time, operations under the Kilometer Scheme would allow the private sector also to develop its capability to operate and manage large public bus fleets.

4 UNBUNDLING THE STATE BUS OPERATORS

As mentioned earlier, urban SRTUs in India provide public transport services, using both their own fleet and by leasing buses from private operators under the Kilometer scheme. Apart from operating these bus services, SRTUs also maintain infrastructure to repair and maintain buses. The repairs and maintenance wing provides technical support to the SRTU buses only and not to private bus operators despite having excess staff in this category, as is the case with DTC (DTC 2001). Thus, there exists this resource of technically competent manpower, which can be used to service additional vehicles. Finally, they also own land for the purposes of parking buses (at depots) and passenger terminals for providing traffic interchanges. Interestingly, while the privately operated public buses (Blueline buses) in the Del-

hi are permitted to use the terminal facilities for picking up passengers, for which they pay a charge of Rs 2500 per month for using the bus stands and Rs 5000 per month for using terminals, there is no provision to let them use the depot facilities for parking. DTC collected nearly 20 million rupees in 2000/01 in such charges.

These activities are representative of most urban SRTUs in the country. Thus, it is possible to classify the activities of urban SRTUs under the following independent heads.

- Operation of buses
- Carrying out repairs and maintenance
- Provision of parking facilities for buses, terminal facilities for passenger interchanges, and bus stations.

The three activities mentioned above, though independent of each other in the sense of requiring an independent operational structure and separate manpower do not function as separate profit centers. No separate accounts are maintained to allow an evaluation of which of these is a profitable activity. Ideally, these three activities should be operated as discrete profit centers.

4.1 *City bus operations*

Operating city services is clearly not a natural monopoly because several private operators are already operating services on city roads. The international review also reveals that with appropriate regulation, private operations of public bus services would be successful. Thus, keeping in view the precarious financial position of the Government and the continuing losses suffered by the SRTUs as also the feasibility of bus services being provided in a competitive market, greater involvement of the private sector in operating services in the city is recommended. The government should largely concern itself with policymaking, planning, co–ordination and regulation, rather than with the actual operation of services.

However, it must be noted that India's experience with private operation of the public transport sector has not always been a success. Assessments of the privately operated buses in Delhi reveal the poor quality of service delivered and the low level of commuter satisfaction with these services (Goel 2000). However, through private sector participation such as the Kilometer Scheme in both Delhi and Bangalore, the SRTUs should be able to increase their market share without any additional capital expenditure (DTC 2001). In using hired buses, the STRU can save on capital investments thus reducing the strain on the exchequer. However, there are problems associated with the current form of the Kilometer scheme, namely the unwillingness of operators to operate on crowded routes and during peak hours or their motivation to make compromises on ridership. On the other hand, if the public transport system would be based only on private operators, working under concession contracts, the risk is high that services would be uncoordinated, driving practices would be dangerous, and some routes/hours would be underserved.

Hence, it is recommended that SRTUs should not augment their urban bus fleet. The additional demand should be met by obtaining such services from private operators on gross cost contracts. Over time, the SRTUs should phase out their own bus services by not replenishing fleet and substituting its services by contracted services. To avoid the pitfalls associated with the Kilometer scheme, the compensation payable should vary recognizing that the cost of operation differs from route to route and over the time of day. Besides, an effective monitoring system needs to be in place to ensure that the contractual terms are adhered to.

Over time, it is expected that the private sector operations would mature and it would be possible for the government to withdraw from operation of public buses completely and only regulate the sector. Such a gradual process would also allow the SRTUs to recover their investments in the public transport sector completely. In addition, public bus operations for an initial period in competition with the private sector would enable a regulatory agency to set a benchmark for quality and to enable some experience to be gained with net cost contracts before public operation is completely stopped. A gradual process would also help build support for such reforms. Finally, a gradual rationalization of the tariff regime would ensure the financial viability of the sector and it would be feasible to transfer the revenue risk to the private sector.

Apart from restructuring the SRTU operations, another area of concern in the public transport sector is the operation of private single bus operators. Clearly, such operations would not fit into the new scheme of things. However, it would be legally difficult to terminate these services as they are operating under valid permits. Nevertheless, recourse could be taken to the provisions of section 103 (2) of the Motor Vehicles Act, 1988, which permits the State Government to cancel an existing permit or modify the terms of an existing permit. However, there may be a disruption in public transport services if these operators were not to join the Kilometer Scheme immediately. Another alternative for these services would be for the operators to form large co–operatives and such co–operatives could then be given operating contracts. Finally, these permits could be allowed to lapse and not be renewed. This would allow for a gradual withdrawal of the private individual bus services. Hence, it is recommended that the existing permits may be cancelled but should be brought under the ambit of gross cost contracts.

4.2 *Depot and terminals*

The ownership and management of the depots, terminals and bus stations is a natural monopoly and it would be inefficient for a multiplicity of operators to own and manage these infrastructure facilities. It is best for these to be provided as a common facility for all operators. Nevertheless, this can be still operated as a separate profit centre in the form of a separate corporation. Due to the monopoly nature of the activities proposed, it is recommended that the State Government retain a controlling stake in this corporation, thus effecting partial divestiture. Another alternative here would be to allow professional management of these properties by the private sector using lease contracts. In either case, unbundling this activity from bus operations by setting up of a separate terminal/depot corporation would facilitate the lease contracts.

This corporation should enter into contracts with the inter city bus corporations and the SRTU or any private operator to allow parking within its premises at an appropriate fee. In addition, this company could also earn substantial revenues through property development and advertising. It could lease out space for suitable retail outlets for additional revenues. This would have the twin benefits of revenue generation as well as improving access to public transport. As the SRTUs lack the professional expertise to develop or manage commercial property, the terminal/depot corporation should consider a joint venture with strategic partners, such as reputed property development companies, able to bring in requisite property development and management skills.

However, it is important to recognize that commercial development of the properties allocated to this company could be more remunerative than provision of parking facilities for buses, or interchanges for passengers. Thus if the terminal/depot company is to operate on commercial considerations only, there might be a conflict in the provisioning of such services and operating only on profit considerations. Hence, it is recommended that though the company should operate only on commercial considerations, for commercial development of its properties it should need the approval of appropriate regulatory agencies in this sector.

4.3 *Repairs and maintenance workshops*

Management of the workshops and repair facilities is again not a natural monopoly; there are several private workshops at which repairs could be carried out and there is no need for public funds to be spent on these facilities. However, given the fact that substantial infrastructure for repairs already exists with SRTUs, this may be used for the repairs and maintenance of all buses and other motor vehicles. The second advantage is that SRTUs also have technically competent manpower that can be used to service the city vehicle fleet. However, the repairs should be done on a purely commercial basis, by charging market–based fees. If this activity cannot be sustained in the public sector, then it should be privatized. It is to facilitate this that a separate company has been suggested.

5 OTHER ISSUES TO BE RESOLVED

The restructuring of STUs would help improve their financial performance and conserve public funds. The induction of the private sector into the operation of buses would enable improved performance and additional capacity available. Yet, the restructuring of STUs alone would not be sufficient for bringing about a marked improvement in the quality of public transport. To bring about the required improvements and attract private investments in public transport, it is necessary that several planning, licensing and monitoring functions in public transport provisioning should be performed effectively. These are the following.

- Fixation of fares and fees
- Route and network design
- Route allocation and issue of permits
- Specification, monitoring and enforcement of quality of service standards
- Co–ordination
- Data collection and management
- Dispute resolution
- Make recommendations to government on policy matters

Finally, it is likely that the some kind of fare integration would have to be effected between bus services and the urban rail services as are being developed in Delhi, to increase the attractiveness of the public transport system. This would call for a coordination mechanism to be put in place.

6 ABOUT THE AUTHORS

Trained as an applied economist, Kaushik Deb has undertaken several assignments in a variety of energy and resource sectors, focusing on the policy interventions in the transport sector. In particular, he has developed policy interventions in the transport sector to correct market failures in the overall context of liberalization of the Indian economy. He has worked closely with several government departments and policy makers in India advising them on the design and impact of deregulation of public transport and strategies to reduce transport sector emissions. His efforts have concentrated on the need for, and the design of, privatization strategies for the

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