



MINIMUM INVESTMENT WITH MAXIMUM RETURN: A CASE OF INDORE CITY TRANSPORT SERVICE

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ABSTRACT:

Indore, a city in the central India, had a population of 1.5 million as of 2001 census. It generated 2.27 million trips per day as of January 2004. These trips were served by intermediate public transport (IPT) modes which used to ply for 15 to 18 hours/day. There was no organized public transport system. Infrequent service, poor crew behavior, over crowding, bad roads, and poor vehicle conditions of IPT modes added to the misery of commuters. The city administration, in November 2005, decided to provide public transport on public private partnership (PPP). A unique model with a motto of '*Minimum Investment with Maximum Return*' was adopted while conceptualizing the scope of the project. Routes were identified by Indore City Transport Service Limited (ICTSL), a special purpose vehicle created for operating and managing transport services. Private players invested in buses and operated them on defined routes. ICTSL specified the technical and functional parameters for bus and service. Operators received financing up to 90% from banks which was facilitated by agreements between ICTSL, banks, and the operators whereby escrow accounts were created to pay back the loans. Ticketing was kept as a separate activity and was bided to another agency. This helped in achieving certain level of integration between different service providers.

The paper discusses the uniqueness of this model and investigates its sustainability in the long run using the case study method. The distortion and memory errors due to ex-post analysis have been reduced by triangulating information from written sources as well as multiple interviews with different sets of stakeholders.

RÉSUMÉ :

Indore, ville du centre de l'Inde, avait lors du recensement de 2001, une population d'un million et demi d'habitants. En Janvier 2004, la population générait 2.27 millions de trajets par jour. Ces trajets étaient principalement effectués par le biais des transports intermédiaires, soit principalement des minibus et auto-rickshaws. Ce mode de transport fonctionnait en général entre 15 et 18 heures par jour. Il n'y avait pas de service de transport en commun organisé. Un service irrégulier, le comportement des chauffeurs, les embouteillages, le mauvais état des routes et des véhicules amplifiaient la difficulté des usagers. En novembre 2005, la ville a décidé de se lancer dans un partenariat public-privé pour les transport publics. Un modèle unique avec pour devise "Un investissement minimal pour un ROI maximal" fut lancé. Les lignes ont été identifiées par le Indore City Transport Service Limited (ICTSL), un organisme spécialement créé pour gérer les transports publics. L'ICTSL spécifiait les caractéristiques techniques et fonctionnelles des bus et les investisseurs privés pouvaient ensuite investir sur ces lignes et faire

fonctionner leurs bus. Les opérateurs privés avaient la possibilité de recevoir des financements allant jusqu'à 90% de l'investissement au moyen de prêts facilités par des accords entre les banques, les opérateurs et l'ICTSL. Des comptes bloqués ont été créés pour assurer le remboursement des emprunts. La vente de billets était une activité séparée, gérée au travers d'une autre agence spécifique. Cela aidait à un certain niveau d'intégration entre les différents prestataires de services.

Cet article aborde le côté unique de ce modèle et s'intéresse à la viabilité du système sur le long terme. Les erreurs dues aux oublis des personnes interrogées ont été minimisés par triangulation de l'information des différentes sources ainsi que par des interviews des différents acteurs.

1. Introduction

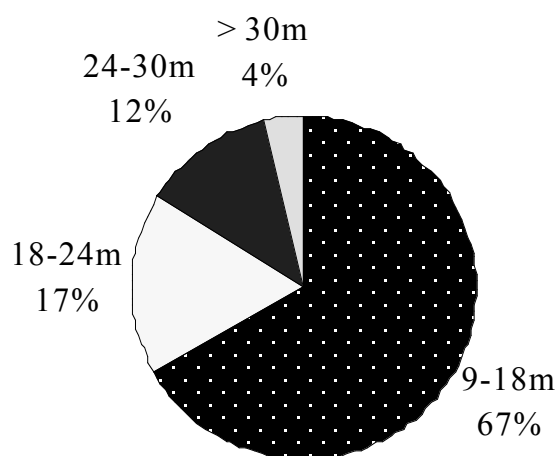
Indore, a rapidly growing city in the central India, had a population of 1.50 million (with a decadal growth of 38%) as of 2001 (IDA, 2007). The population density was around 1,028 persons/hectare. The city had 0.52 million work force. It generated 2.27 million trips per day as of January 2004. These trips were served by IPT modes as there was no organized public transport. These IPT modes (500 minibuses, 550 tempos, and 10,000 autos as of 2004) used to ply for 15 to 18 hours/day. The net incomes estimated for minibuses, tempos, and autos by CES (2004) were Rs 419, Rs 149, and Rs 100 respectively in January 2004.

In November 2005, a decision to introduce public transport system with private sector participation was taken to tackle the dilapidated condition of transport. The motto was to achieve '*Minimum Investment with Maximum Return*'. The paper discusses the uniqueness of this model and investigates its sustainability in the long run using the case study method. The distortion and memory errors due to ex-post analysis have been reduced by triangulating information from written sources as well as multiple interviews with different sets of stakeholders.

2. Transport Condition (November 2005)

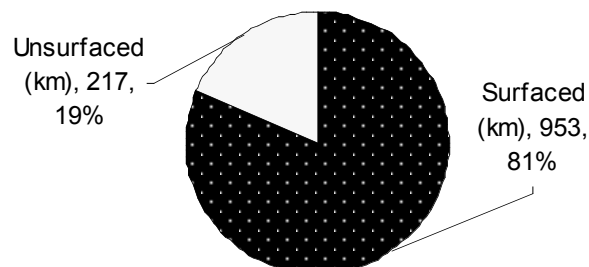
Indore Municipal Corporation (IMC) has an area of 130.2 sq km. The total road length was 1,170 km within IMC as of January 2004. The existing width and surface conditions of these roads have been presented in figure 1 & 2 respectively.

Figure 1: Road Width in IMC



Source: CES, 2004

Figure 2: Surface Condition of Roads in IMC

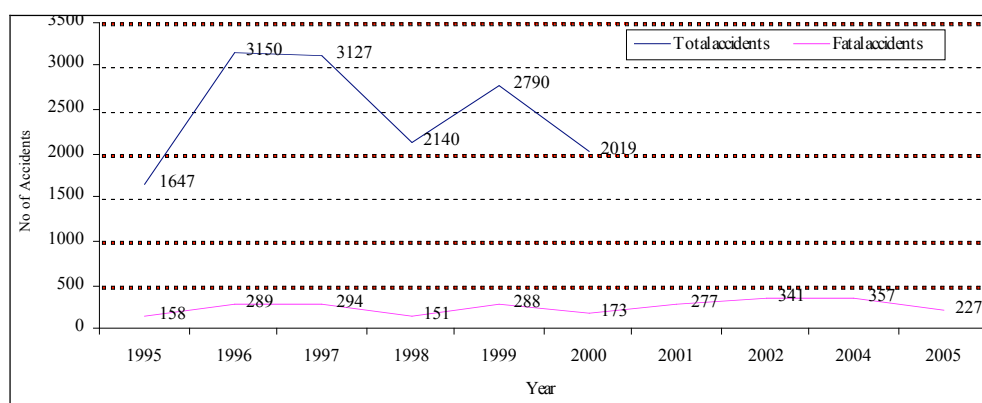


Source: CES, 2004

Wider roads ensured that the journey speed was more than 20 km/h for 71% of the road length within IMC. Till early 90s, urban transport service was provided by Madhya Pradesh State Road Transport Corporation (MPSRTC). Poor financial condition of MPSRTC led to suspension of these services in due course. The company completely closed its urban operation in 2005. Hence, Indore did not have any organized public transport facility since late 90s. Lack of public transport created many problems for the commuters as IPT crew members used to ill-behave, provide irregular service, and frequently drive in a rash manner

(as reported in various newspapers and as conveyed by different stakeholders during interviews). Women commuters used to face far more difficulties due to over crowding and ill-behavior of both co-passengers and crew members. The poor state of transport is also reflected in the number of accidents (figure 3) and ambient air quality (table 1) apart from the high annual growth rate of vehicular ownership (two wheelers were growing at an average annual rate (between 2001-02 and 2007-08) of 12.9% whereas cars/taxis were growing at a rate of 27.6%. The year wise growth is presented in figure 4

Figure 3: Number of Accidents in Indore District



Source: CES, 2004 and RTO Office Records

Table 1: Ambient Air Quality in Indore

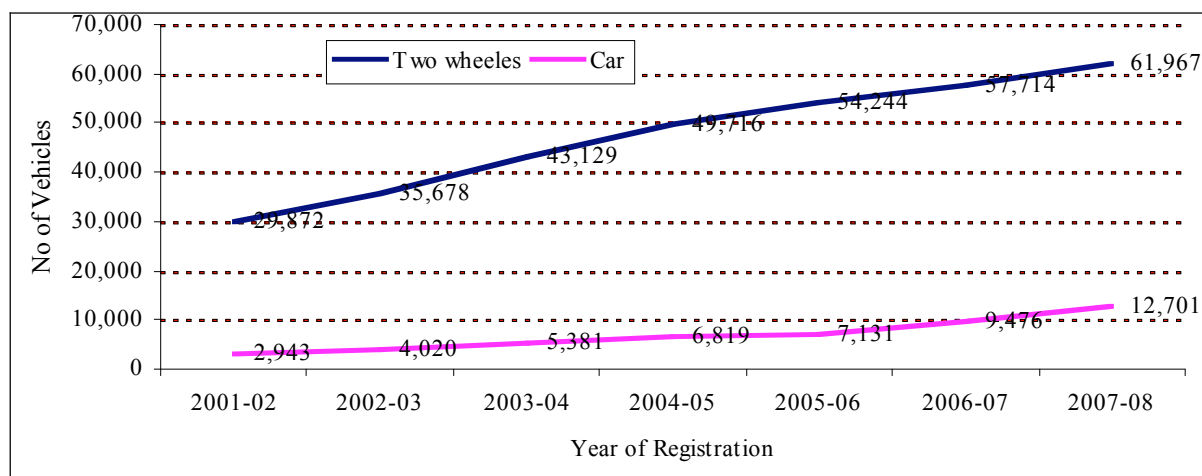
S. No	Yr.	Polo ground				Kothari Market				Telephone Nagar			
		SO _x	NO _x	SPM	PM10	SO _x	NO _x	SPM	PM10	SO _x	NO _x	SPM	PM10
1	1991	23.2	30.0	441.15	-	19.7	29.1	453.88	-	10.5	16.37	280.20	-
2	1992	10.9	17.7	422.15	-	10.3	17.2	489.70	-	4.36	12.14	313.78	-
3	1993	11.6	18.6	399.65	-	09.7	16.0	377.99	-	2.54	10.89	267.42	-
4	1994	08.3	11.4	426.00	-	07.5	10.9	394.95	-	3.76	8.20	241.95	-
5	1995	09.0	10.9	465.01	-	06.7	11.6	409.00	-	5.97	9.20	285.54	-
6	1999	27.0	22.4	486.73	416.6	25.3	20.6	400.96	335.4	19.4	16.47	265.91	224.9
7	2000	28.3	21.8	517.64	417.2	25.7	20.5	431.69	347.8	19.1	13.06	314.96	224.9

The ambient air quality standards for commercial and residential areas, under the environment protection act, 1986 SPM- 200ug /m³, SO_x- 80 ug/m³, NO_x- 80 ug/m³, PM10- 100ug/m³ and for Industrial areas, SPM- 500ug /m³, SO_x- 120 ug/m³, NO_x- 120 ug/m³, PM10- 150ug/m³.

Source: IMC, 2006



Figure 4: Registered Two Wheelers/Four Wheelers between 2001-02 and 2007-08 (District)



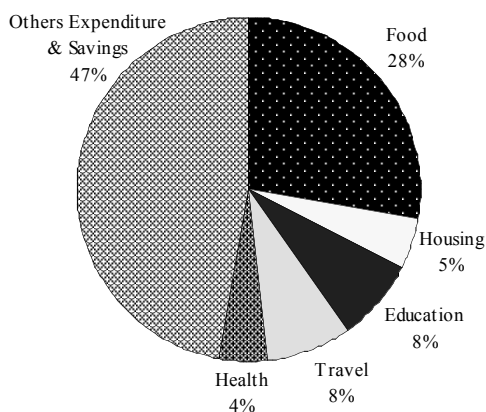
Source: CES, 2004

3. Socioeconomic Status

The average expenditure of a household in Indore is Rs 7,524 per month of which nearly 8% is spent on travel (figure 5). The distribution of household expenditure on travel (figure 6) reveals that nearly 65% of the households spend less than Rs 500 per month while 80% of the households spend less than Rs 800 per month. Also, the average trip

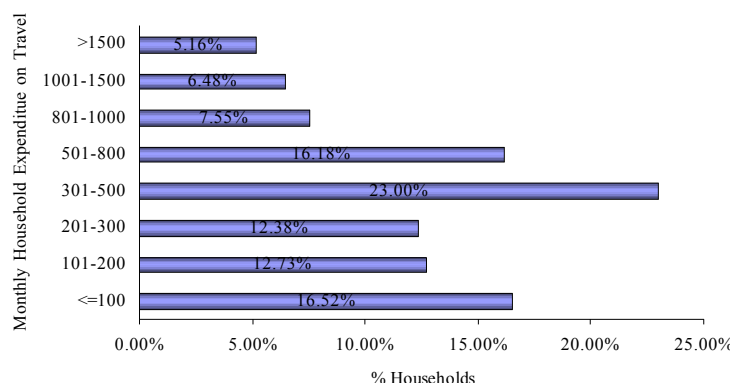
lengths for car/jeep/taxi, two wheeler, cycle, auto rickshaw, tempo, and bus were 6.9 km, 6.1 km, 3.6 km, 5.1 km, 4.3 km, and 6.9 km respectively (CES, 2004). More than 85% of the trips have a trip length of less than 7 km (figure 7). These statistics indicate that the city can not afford a very costly transport system as the average expenditure on travel is less than Rs 600 per month and trips are short.

Figure 5: Household Expenditure Pattern



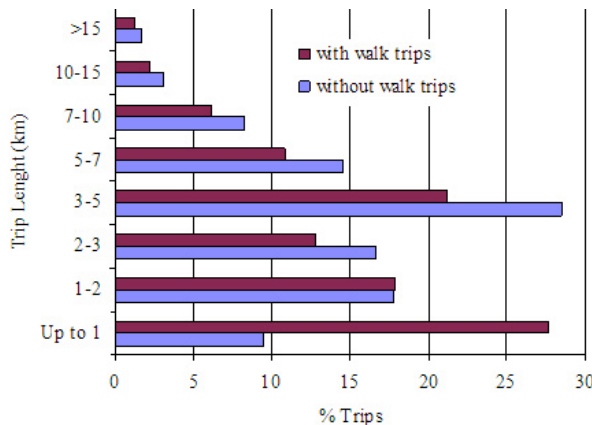
Source: CES, 2004

Figure 6: Distribution of Household Based on Travel Expenditure



Source: CES, 2004

Figure 7: Trip Length Distribution in IMC



Source: CES, 2004

4. Structuring

In November 2005, a series of meetings of the senior officials & all stakeholders (IMC, Indore Development Authority, Traffic Police, mini bus operators, tempo operators, and citizen groups) culminated into a decision to provide (i) safe, (ii) reliable, and (iii) affordable transport system with private sector participation. The meetings were initiated and chaired by Mr. Vivek Aggarwal, District Magistrate and Collector of Indore District. It was decided that Public Private Partnership (PPP) is the best mode as all the stakeholders must share risks related to the project to make it efficient. It was also decided that the transport system has to be sustainable and not depend on the government budgetary supports. It was decided that government will like to maximize returns and at the same time spend minimal amount possible in the project i.e. first identify the minimum government investment that can get the project rolling and then try to maximize the returns for the government. After discussing various alternative modes, decisions were operationalized by incorporating Indore City Transport Service Limited (ICTSL) on 1st December 2006 under the Companies Act to provide road based bus transport system. The paid up share capital of the company was Rs

2.5 million and it was equally shared by IMC and Indore Development Authority (IDA). The top management of the company is given in table 2. It was also decided that apart from the board of directors, Regional Transport Officer, Superintendent of Police, Indore, and bus operators would also be invited to all the meetings so that their valuable inputs could be kept in mind, while taking decisions.

The infrastructure and services were unbundled for private sector participation as: (i) infrastructure facilities like road network, common parking places for buses, and common maintenance workshop for buses to be provided by ICTSL, (ii) bus stops to be developed by IMC, (iii) investment in buses and operation of buses to be done by private operators, (iv) all advertisement rights to be sold to one private operator by ICTSL, (v) ticketing and marketing of services to be managed by another private party, and (vi) GPS system (to monitor real time performance and provide real time information to commuters) to be provided by another vendor. The idea of unbundling was to share risks, promote competition, and to take advantage of any economies of scale. The government also decided to be more like a regulator and facilitator of the project by carrying out planning, management, control, and monitoring of the public transport system i.e. network and route design, fixation of fares/tariff, finalization of specifications of buses, franchising/route allocation, contract monitoring, service quality monitoring, and dispute resolution activities.

The financial structuring, as conceived, is shown in figure 8. Daily fare box revenue constituted the direct source of revenue for the bus operators and they keep 100% of the share. Monthly pass revenue was to be shared in the ratio of 20:80 between ICTSL and operators. Pass vendors were to receive a share for

making, distributing, and marketing of passes. Advertisement revenue was to be shared in 40:60 between ICTSL and operators. The incomes from fare box, pass, and advertisement were expected to be in the proportion of 60%, 15%, and 25% respectively. Investment on buses was to be made by the private player which was

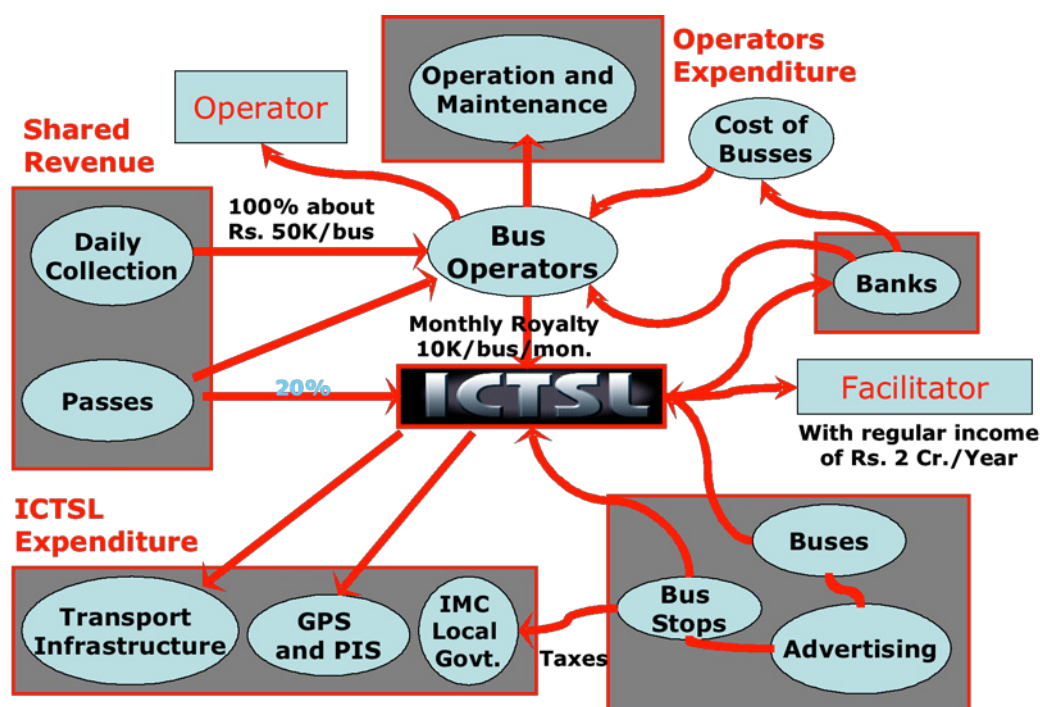
facilitated by ICTSL through counter guarantees to the bank. Investments on road infrastructure were to be made by ICTSL. Thus, the model insured that every player involved in the project shared a part of the risk and at the same time government did not have to invest substantially.

Table 2: Top Management (Board Members) of ICTSL

S.N	Board	Ex-officio
1	Chairperson	Mayor, Indore Municipal Corporation (IMC)
2	Vice Chairperson	Chairperson, Indore Development Authority (IDA)
3	Executive Director	District Magistrate and Collector, Indore District
4	Chief Executive Officer	Joint Collector, Indore District
5	Member	Commissioner, IMC
6	Member	Chief Executive Officer, IDA

Source: <http://www.citybusindore.com/management.asp>

Figure 8: Financial Model of ICTSL



Source: Aggarwal, 2006 (Presentation)

5. Identification of Routes and Players

Routes having potentially high passenger traffic (eighteen in number) were identified by

carrying out extensive surveys of all the routes by ICTSL officials. These were planned to have minimum overlap segment between any two routes. One route was to be served by only

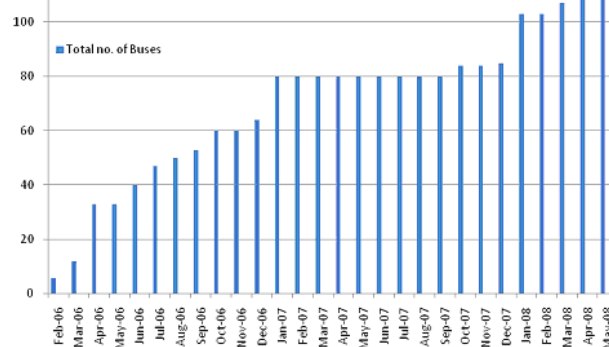
one operator and thereby ensuring that two operators did not compete for the same commuters. The bus operators were selected based on the maximum monthly premium that they were ready to share with ICTSL. Tenders were invited for eighteen routes. The tender documents specified the operating hours, revenue sharing structure, and the type of bus for the operators. Initial response was low and two routes were awarded on 21st February 2006 for a premium of Rs 5,000 per month each. Rest of the routes were re-bid and awarded in due course within a premium band of Rs zero to Rs 25,111. Advertising agency was also identified based on the premium per bus per month that it was ready to share. M/s Giriraj Adverting & Marketing Services was the highest bidder at Rs 25,000 per bus per month in the initial round for 18 routes. The pass agency was selected based on the minimum amount requested per pass for new and renewal passes. M/s R Square Systems and Solutions got the contract for issuance of passes who had asked for Rs 19.50 on a new pass and Rs 7.50 on a renewed pass for the pass denomination of Rs 250. The GPS operation was awarded for a value of Rs 2,400 per bus per month to M/s Arya Omni Talk. The existing IPT operators were given the choice of converting their vehicles to CNG and ply on designated routes. This helped in reducing the opposition from the existing unions.

6. Performance

The operation started with six buses in February 2006. It reached to 112 buses in May 2008 (figure 9). As expected, number of buses increased at a rapid rate, in the first one year of operation, to 83 by February 2007. This rapid increase was needed so provide a minimum level of connectivity in the network. All 112 buses could not have been started from the first date due to financial constrains and high perceived risks. Phased introduction was commensurate with the level of awareness of

the commuters regarding the availability of this new facility. Also, phased introduction allowed the new facility to get constant positive media attention. Number of passengers also increased at a rapid rate from 0.5 million passengers in April 2006 to more than 2.6 million passengers in May 2008 (Aggarwal, 2008). On an average Rs 437,827 were collected as fare box per day in May 2008, based on the fare structure decided by the Government of Madhya Pradesh (table 3). The number of pass issued in a month increased from 446 in April 2006 to 6,391 passes in April 2008. Within two years of its operation, the service has also been able to develop a sense of ownership among the citizens of Indore. Around 12-15 seats have been reserved for woman in the buses, making it safer for them.

Figure 9: Fleet Size over the Two Years



Source: ICTSL Records

Table 3: Fare Structure

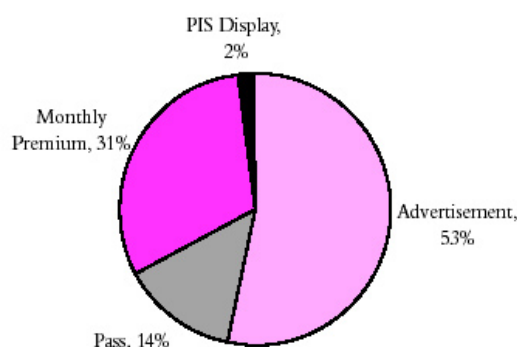
Distance	Fare
0 - 3 km	Rs 3
3 - 7 km	Rs 5
7 - 10 km	Rs 7
10-13 km	Rs 10
13 - 16 km	Rs 12

The breakup of realized revenue and the cost elements for ICTSL has been shown in figure 10 & 11 respectively. The realized shares of revenue from different sources are nearly in the same proportion as planned (e.g. the ratio of pass to advertisement was planned as 0.3 and it



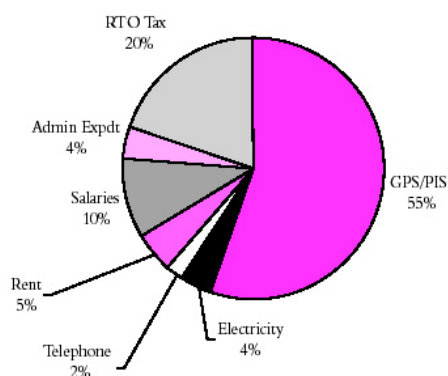
turned out to be 0.27). On the cost side, tax and GPS formed the major part of expenditure.

Figure 10: Breakup of Revenue Sources for ICTSL (2006-07)



Source: Aggarwal, 2008

Figure 11: Breakup of Costs for ICTSL (2006-07)



Source: Aggarwal, 2008

The key financial statistics of ICTSL for the 3 years performance have been shown in table 4.

Table 4: Key Statistics of ICTSL

Particulars	2005-06	2006-07	2007-08
Investments	0.00	0.00	0.00
Number of Buses	12	80	107
Total Income (Rs)	141,844	9,681,515	NA
Profits Before Tax (Rs)	-787,961	4,953,508	NA
Profits After Taxes (Rs)	-788,409	3,430,806	NA

Source: Auditors Report 2006-07, ICTSL Records; NA: Not available

The company has grown rapidly without any investment and has been able to make a healthy profit from its second year of operation itself. Number of accidents has also reduced according to of ICTSL (only one fatal accident has been attributed to buses over the two years of operation as against 18 for minibuses in 2005). On environmental front, ICTSL has engaged consultants to assess its attempts in reduction of vehicular emission, air pollution, and fuel consumption to earn credits under Asia-Pacific Partnership on Clean Development and Climate (APPCDC). These credits will also lead to monetary reward from the UN.

7. Sustainability

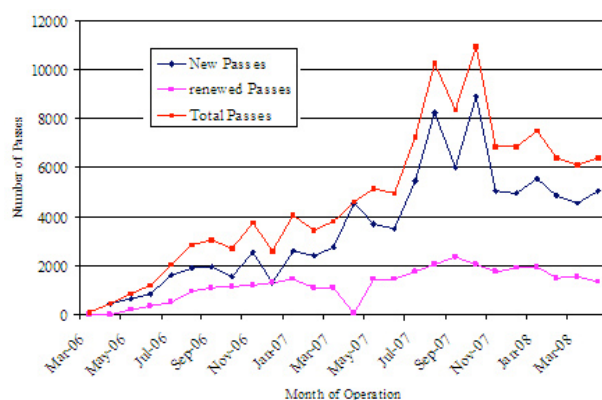
ICTSL has made profit in 2006-07 and a much higher profit is expected in 2007-08. However, there are few things that need to be kept in mind. The proportion of passes is expected to increase over the years while direct fare box proportion is expected to go down. Figure 12 provides the details of number of passes issued in each of the months over last two years of operation. Also, costs are expected to increase over the years. Table 5 provides the details of changes in some of the cost elements over the two years of operation. Advertisement revenue per bus is also expected to go down as number of buses has increased over the years. Increase in the capital cost of buses as well as the bank interest rate means higher monthly installments (EMI). Increase in diesel costs, insurance cover, and maintenance costs are expected to add to the burden of private players.

Figure 12: Trend in Passes



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Source: ICTSL Records

For ICTSL to sustain its profitability, it is important that private players are also able to make reasonable business from it. If the private players start bleeding, the venture will collapse. Given that the costs are increasing and share of revenue has been decreasing over the last two years, ICTSL may have to take steps to provide cushion to the private players. One of the ways is to allow an increase in the ticket price. As table 6 shows, commuters are very sensitive to any increase in their travel cost and hence any change in ticket price may reduce ridership. However, ICTSL may plan an equivalent increase in ticket prices when the new fuel price hike is announced by the central

government (while also keeping in mind the reduction in sales tax of petroleum at state level) so that the relative advantage of ICTSL can be maintained. Another option is to renegotiate the contracts and allow a higher proportion of pass revenue to the operators. However, given that ICTSL is still a government company, it may be difficult to carry out such an exercise. From organizational structure point of view, the top management has been constituted very carefully. It has a judicious mix of both politicians and bureaucrats. A large number of initiatives have failed in the past after the project champion moves out of the project. However, in this case since the top management has a set of local politicians and the venture has been perceived as successful, they would not like the initiative to die ever. The constitution of the top management includes top authorities from IMC, Indore Development Authority, and District Administration. It helps in better coordination and in removal of any obstructions. This also ensures that nothing stops in want of resources.

Table 5: Change in Capital and Operations Expenditure for Operators

Nature of Expenditure	Item	January 2006 (Rs)	May 2008 (Rs)
Capital Expenditure	Bus Cost	1.8 million	2.3 million
Operations Expenditure	Fuel Cost	Increase of ~ Rs 1.5/km	
	Maintenance Cost	4000/month for new, 9000 per month for one year and longer	9000/month for new, 13000 per month for one year and longer
	Crew Cost	14, 600	14, 600
	Any Other		

Source: Discussion with Operators during Field Visit

Table 6: Rate of Shift of Commuters

Condition	Date	No. of Passengers	Fuel Price Increase	Shift Rate
Before increase in fuel prices	June 3, 2006	30,200	Petrol Rs 4/litre Diesel Rs 2/litre	~4,375 commuters shift for every rupee increase in travel cost
	June 4, 2006	30,600		
After increase of fuel prices	June 6, 2006	33,400		
	June 7, 2006	33,500		

Source: Dainik Bhaskar, Indore, 8 June 2006, Authors' calculation



8. Uniqueness of the Model

The current model is unique in many respects. PPP in urban public transport has been sparse in India. The model used in Delhi allowed single bus owners to provide service. As a result, in Delhi, many operators compete against one another on the same route leading to rash driving and frequent accidents. Many incidents of poor crew behavior and infrequent services have been reported in Delhi. Many times, the service is also referred to as killer service. On the other hand, ICTSL has been involved in only one fatal accident in two years of operation. ICTSL also ensured that crew members should undergo training to ensure safe driving and better behavior. Delhi model will also not be able to reap the benefits of economies of scale on items like maintenance cost, parking space etc. Under the current blue line bus system, government takes a part of the revenue risk. In Mumbai, BEST provides the bus services and bears all the risks rather than sharing among many players as in the case of Indore. The private players in Ahmedabad also do not take any revenue risk and are guaranteed a minimum level of return by the local government. The minibus operation in Hyderabad is infrequent and unorganized. Apart from Indore, most of the cities have invested in the creation of infrastructure for provisioning of services. Indore is the only city where some integration across operators has been achieved by keeping ticketing a separate activity. Advertising as major source of revenue has not been explored by any other city apart from Indore. Ahmedabad has used it as a source of revenue for construction of bus stops in 2006-07. However, advertising on buses is yet to be conceived as a source of revenue in most of the cities. The organizational structure of ICLTS is also very different from other cities. It ensures proper coordination among different stakeholders as the top decision makers form the board. A judicious mix of local political leaders and top

government officials also ensures that the project will be owned by at least one of the board members. Thus, chances of failure after the champion leaves the project have been minimized

9. Concluding Remark

Indore has come up with an innovative structuring of urban transport. The unbundling of the project was done in such a way that risks were shared by all the parties involved in the process and at the same time it allowed competition in each of the components. The organizational structure ensured smooth commencement of the services. It also ensures that the company will work with the same intensity even when the project champion leaves. The company has performed financially on similar lines to what was expected. The number of fatal accidents and pollution level have also reduced. However, increase in various cost components and reduction in share of revenue for the private players indicate certain concerns that need to be addressed immediately for sustaining the services in the long run.

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