



**A Study conducted for the Karnataka Evaluation Authority  
Government of Karnataka  
Bengaluru**

**Final Report / July 2014**

**Performance Of  
North Western Karnataka Road Transport Corporation –  
Challenges And Opportunities**

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# **Performance Evaluation of North Western Karnataka Road Transport Corporation NWKRTC**

## **1. Introduction :**

In the state of Karnataka, passenger road transport was catered to by a single corporation called the Karnataka State Road Transport Corporation (KSRTC). However it was felt by the Govt. of Karnataka that a single monolith enterprise would be having the inherent disadvantage of centralization and consequent slower decision-making and such a structure would not meet the needs of the corporation which operates in a dynamic environment and deals with meeting the demand of passenger traffic, which has to be met at the time of the day or period when it arises, lest the demand shifts to other means of transport such as rail, or to private buses. Hence, as per the recommendation of the committee on restructuring, KSRTC was split into four distinct entities namely :

1. Karnataka State Road Transport Corporation (KSRTC)
2. Bangalore Metropolitan Transport Corporation (BMTCL)
3. North Western Karnataka Road Transport Corporation (NWKRTC)
4. North Eastern Karnataka Road Transport Corporation (NEKRTC)

### North Western Karnataka Road Transport Corporation (NWKRTC)

The reorganization through the splitting process in 1997 was completed in steps by October 2000. NWKRTC commenced its functioning as an independent entity in the year 1998-99. The Corporation caters to the bus transport needs of the following districts of Karnataka :  
i) Belgaum ii) Bagalkot iii) Dharwad iv) Gadag v) Haveri vi) Uttara Karnataka

### **Growth Attained by NWKRTC Since Its Formation :**

North Western Karnataka Road Transport Corporation (NWKRTC) was founded on 1<sup>st</sup> November, 1997 under the Road Transport Corporations Act 1950. From the year 1998-99 to 2012-13, the corporation has recorded a growth as follows:

Bus fleet held from 3396 to 4718

Depots from 38 to 48

Effective Kilometers operated –from 37.36 Cr to 52.73

Vehicle Utilization – from 331 to 343 kms per bus per day  
Fuel Efficiency (KmPL) – from 4.93 to 5.09  
Staff Employed – from 19,479 to 22,262  
Staff Ratio (Per schedule) – from 6.43 to 5.19  
Accident Rate (Per Lakh Kms) – from 0.18 to 0.12  
Effective Kms per Employee per day – from 5.83 to 64.89  
Traffic Revenue – from Rs. 345.69 Cr to Rs. 1157.23Cr  
Traffic Revenue per Employee Per Day – from Rs. 480 to Rs. 1424

#### Commercial & Misc

Revenue – from Rs. 8.04Cr to Rs. 42.00 Cr  
Subsidy from Government – from Rs. 15.00Cr to 114.77Cr  
Profit(+)/ Loss(-) – from Rs.0.22Cr profit to 63.31Cr Loss  
Accumulated Losses – from Rs. 140.11Cr to Rs. 440.32Cr

It may thus be seen that as an independent corporation, NWKRTC has recorded a positive growth in almost all parameters except profit which drifted from a very marginal profit in the year 1998-99 to substantial loss of Rs. 63.31Cr by 2012-13, owing to recurring losses every year, its total accumulated losses have risen from Rs. 140.11Cr to Rs. 440.32Cr. The adverse financial position of the corporation especially in the last three years has been due mainly to the periodic escalation of prices of diesel fuel which constitutes 38% of the total cost and staff costs which constitute 37% of the total cost.

## **2. Study Assigned by the Karnataka Evaluation Authority –**

### **Terms of Reference : Scope, Purpose and Objectives**

As a progressive step, it was decided by the Karnataka Evaluation Authority (KEA) that a study to get conducted by an external agency primarily to determine the states of NWKRTCs performance and accomplishments vis-à-vis the objectives with which the organization was created an independent corporation. As per the terms of the study assigned by KEA to our institution, IPE, Hyderabad, we the following EQs (Evaluation Questions) need to be assued.

2.1 Achievements vis-à-vis objectives:

2.2 Relative Performance rating of the corporation vis-à-vis industry leaders in respect of key performance indicators.

2.3 ROI: Actual attainment of Return on Investment vis-à-vis potential

2.4 Balanced Score Card (BSC) framework to be proposed for NWKRTC which could focus the corporation's efforts towards attaining sound financial viability

Additionally the terms of reference indicate that the report should address the following kind of questions:

- (a) Are all the major assets of the Corporation put to optimal use. Is there any scope to expand revenue from these assets
- (b) Which costs have grown disproportionately in the last 5 years? What does the portfolio analysis reveal? How can NWKRTC contain its fastest growing expenditure items?
- (c) What is the effective cost of raising the capital for the Corporation? Are there any cheaper options available in the market? How can NWKRTC tap such resources.
- (d) Is there any scope for further optimizing the bus routes of NWKRTC
- (e) How can NWKRTC compete with the local private road transporters effectively?
- (f) Are there any leakages in the ticket and non-ticket revenues in NWKRTC?  
How could the corporation plug the leakages and further improve the revenues?

**Focus of The Study Report: shall be the areas which are critical to the financial performance of the Corporation and on suggesting solutions for making a turnaround.**

It may thus be seen that KEA authorities stress on this critical aspect of NWKRTC's performance to be studied and useful suggestions made aimed at enabling the corporation to accomplish a turnaround. **Hence, due efforts have been put in so as to come out with innovative but useful suggestions aimed at improving the corporation's performance as well as profitability, which determines the future growth of the organization.**

### **3. Approach to The Study**

Keeping in mind the terms of reference and the comprehensive framework set up by the Karnataka Evaluation Authority (KEA) the following are the salient features of the approach to the study adopted for this project. Firstly a critical assessment of the accomplishments of NWKRTC in respect of each of the various performance parameters. Also, suggestions aimed at enabling the corporation to attain optimal performance in respect of the various performance parameters have been made with different perspectives in mind, namely the following:

- (i) Firstly, measures which could yield the desired results would be highlighted
- (ii) Some of the best practices prevailing in a couple of leading State Transport Undertaking (STUs) would be mentioned where felt necessary.
- (iii) State-of - the- art technology adoption in relevant areas will be suggested
- (iv) Appropriate systems to supplement the existing Management Information System (MIS) would be suggested as to assist in effective decision making and in exercising appropriate management control.

- (v) Suggestions aimed at exploiting the full potential for commercial revenue, especially revenue from idle and unexploited land and from untapped advertising space at bus stations and on buses.

#### **4. Methodology for The project Study :** **Evaluation of The Performance of NWKRTC:**

NWKRTC has shown somewhat satisfactory growth from the time the corporation split has been initiated, as is evidenced from the performance statistics. For the purpose of this study, its performance has been analysed w.r.t management of the enterprise for the following points of view

- (i) Resource utilization – Identifying machines (buses), men, materials, many (and other assets)
- (ii) Decision – making - Identifying areas needing yet further improvement and need for an improvised MIS
- (iii) Stakeholders’ Concerns – Concerns of government, society, commuters, employees & management.
- (iv) Strategy Management – Adoption of strategy to match the changing economic and technological environment for competitive advantage especially in view of seasonality of passenger traffic demand.

In addition, the following issues will also be examined and covered in the report:

- a) Whether the major assets of the corporation are put to optimal use
- b) Specific components of cost which are increasing ‘disproportionately’
- c) Ways to contain the fastest growing expenditure items

The management of a complex and dynamic business such as passenger road transport has been viewed in the context of the upheavals on the international economic front, mainly: (i) the near continually rising uptrend in petroleum oil prices from time to time witnessed in the first half of the financial year 2008-09 and (ii) the constantly increasing costs of even other materials / spare parts/ tyres, etc., and (iii) the periodic but significant incremental escalation in manpower costs.

The post recession impact of spurt in costs of almost all inputs have indeed taught all business enterprises a bitter lesson of anticipating such crises and getting prepared with strategies to combat them so that, in future, the organization is better prepared for such a calamitous and hostile business environment.

## **5. SWOT Analysis of NWKRTC:**

### **5.1 Strengths :**

5.1.1 NWKRTC has a fairly good infrastructure comprising depots with good fleet maintenance facilities, bus stations at many cities, towns, in various districts & talukas, a widespread IT infrastructure with networks spanning across all its depots, divisions, workshops & stores etc.

5.1.2 Its bus fleet is quite young with an average age of just about 5 lakh kms.

5.1.3 Top management team which has a positive outlook in respect of adopting innovative practices and state-of-the-art I. T. to improve efficiency and to reduce costs.

5.1.4 Downsized workforce making NWKRTC cost-competitive in providing passenger services.

5.1.5 Land at depots and bus stations which lends substantial potential for developing revenue yielding projects such as commercial complexes, shopping malls etc.

5.1.6 A good no. of bus depots across the region, with at least 2 or 3 depots in the vicinity which can act as stand-by depots in case of one depot remaining inoperative due to natural calamities, strikes etc.

### **5.2 Weaknesses :**

5.2.1 Clandestine operations by private buses which make inroad into their revenues and compete with NWKRTC's services.

5.2.2 Need to go in for borrowing to fund the various programmes such as need-based fleet augmentation with no. of Volvo, AC, deluxe, luxury and ordinary coaches, as well as for capital intensive bus station projects, IT projects etc.

5.2.3 Delay in receipt of subsidies from govt. and also part of subsidies such as for concessional bus passes not forthcoming from govt.

5.2.4 Obligation of operating at least a few trips in a day to connect small, remote villages even at low occupancy ratio causing losses, being a state level organization – more as a social welfare measure.

5.2.5 A somewhat less satisfactory safety track record in the country, with a somewhat higher rate of accidents per lakh Kms operated and which also results in payment of substantial amounts as monetary compensation to accident victims.

### **5.3 Opportunities:**

5.3.1 The corporation could do collaborative business with other organizations such as Railways s& Tourism Development Corporation and with Postal Dept / Courier organizations for transporting mail / parcels, etc.

5.3.2 Scope for designing and implementing special tariff with differential pricing by the hour of the day to improve non – peak hour occupancy ratio in buses which could be patronized by housewives, elderly personnel, etc.

5.3.3 Scope for catering to MNC/Indian companies / enterprises to transport their employees to / from various residential areas to / from the company officers at special hiring charges.

5.3.4 Scope fro designing and implementing more innovative schemes to motivate employees for higher levels of performance, thereby reducing manpower cost per unit.

### **5.4 Threats:**

5.4.1 Change of policies of state government which may offer more concessions to bus users and to yet more segments of the society cannot be ruled out, which may impair its profitability.

5.4.2 Continual escalation of diesel fuel prices to higher levels as witnessed in the last three Years, which is beyond the control of the corporation and which thereby causes reduction in profits and which would warrant increase of bus fares which , in turn, would be detested by its customers, viz., passengers

5.4.3 Possibility of unionism getting stronger leading perhaps to higher burden of wages, lower staff productivity unless control by deterrent management action.

5.4.4 Possibility of government laying down restrictions on land use for development of commercial complexes in vacant land at depots / bus stations.

5.4.5 Bus fare / traffic revision approvals getting turned down or modified by limiting the fare increase as deemed fit by the government, which may cover only part of the increased cost of inputs such as materials, wages, etc., leading to increase losses.

5.4.6 Improved communications networks, as well as adoption of futuristic “ work – from - home” practices gradually reducing need for travel to work place to some extent, especially in urban areas and metro policies.

## **6. Performance Review of NWKRTC:**



The following table presents the trends in performance of NWKRTC in respect of key performance indicators

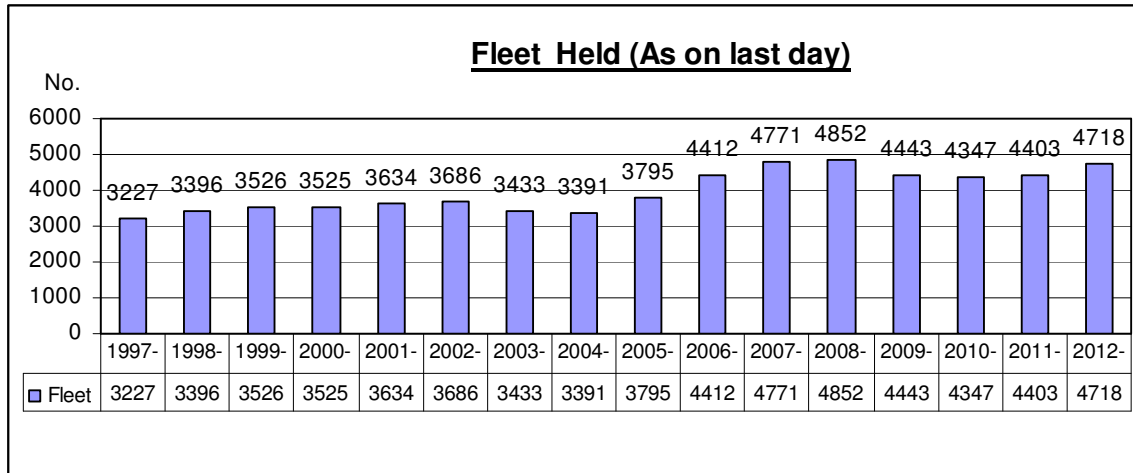
### Key Performance Indicator Trends

S.No.	Performance Indicator	Unit	2008-09	2009-10	2010-11	2011-12	2012-13
1	No. of Depots	No.	53	46	46	48	48
2	Fleet Held	No.	4852	4443	4347	4403	4718
3	No. of Schedules	No.	4484	3996	4008	4031	4293
4	Effective Kms	Crore (Cr)	55.41	52.11	48.01	49.47	52.73
5	Vehicle Utilization	Kms	343	334	336	342	343
6	% Cancellation	%	6.1	6.0	5.4	3.7	3.0
7	Fuel Efficiency	KmPL	5.07	5.01	5.03	5.07	5.09
8	Tyre Life	Lakh Kms	1.10	1.18	1.09	1.17	1.37
9	Load Factor	%	63.4	63.3	65.8	64.2	63.0
10	Breakdown Rate	No.	0.12	0.12	0.09	0.08	0.05
11	Accident Rate	No. Per Lakh Kms	0.14	0.13	0.11	0.10	0.12
12	Total Staff	No.	25309	21498	21458	21009	22262
13	Staff Ratio	No. Per Bus Held	5.22	4.84	4.94	4.77	4.72
14	Employee Productivity	Eff. Kms Per E/e / Day	59.98	66.41	61.30	64.33	64.89
15	Traffic Revenue	Rs. Crore	863.15	847.40	904.76	1018.65	1157.23
16	Subsidy Revenue	Rs. Crore	59.82	47.23	93.35	91.23	114.77
17	Commercial / Misl Revenue	Rs. Crore	71.97	66.83	34.48	49.19	42.00
18	EPKM	Paise	1795	1845	2150	2343	2492
19	CPKM	Paise	1919	1956	2214	2390	2612
20	Margin	Rs. Crore	-68.57	-57.81	-30.44	-23.44	-63.31
21	Fixed Assets (Pax ) Buses	Rs. Crore	531.46	483.60	500.24	580.75	665.15
22	Fixed Assets (Land & Blds)	Rs. Crore	97.13	100.15	121.75	145.80	177.41

### 6.1 Performance Trends of NWKRTC – Graphic Presentation & Brief Notes

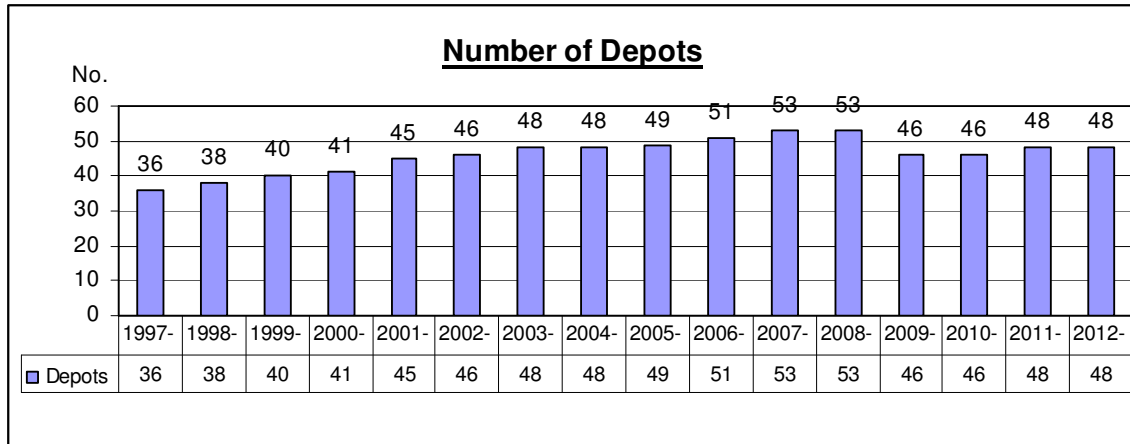
The trends of performance of NWKRTC are presented through graphs/ bar charts in the succeeding paras to follow. The trends are based on data presentation in the latest available Annual Administration Report NWKRTC for the year 2012-13..

Fig-1



The growth in fleet is hardly worth mentioning as the fleet held declined from a high of 4852 in 2008-09 to 4403 in 2011-12, and then recovering somewhat to 4718 . A fairly reasonable growth of 5% at least would enable meeting the growth in traffic from year to year.

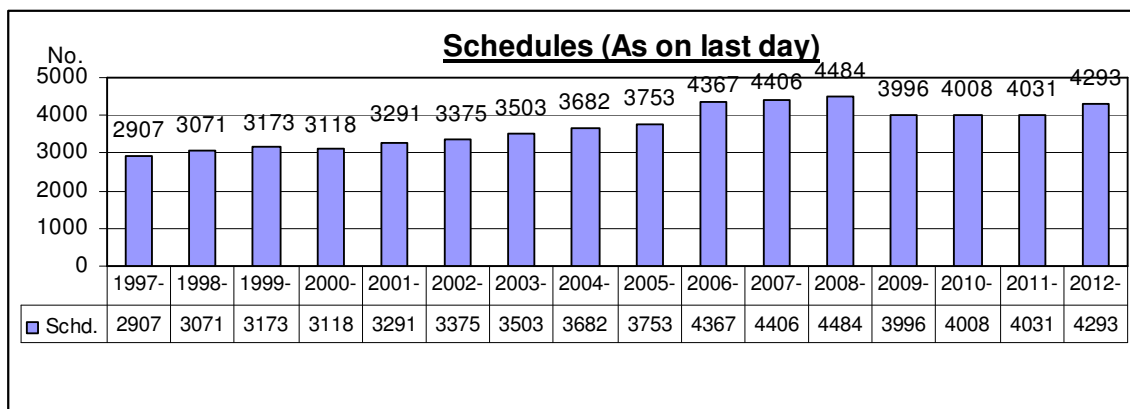
Fig-2



The no. of depots is 48 , a reduction from 53 which was the no. in 2008. This no. of course gets decided based on the operational convenience, O-D or Origin-Destination matrix, etc. Generally, across India, it is seen that the upper limit of no. of buses per depot would be about 120 in metros and larger cities while in mofussil areas it may range between 60 to 80 on an average. These limits on size of the depot are also based on the fact that depots with around these vehicle limits lend themselves for more effective and better depot management and in effective management control.

For NWKRTC, which had a fleet of 4718 buses, the average no. of buses works out to about a little less than 100 . It is felt that the corporation could open a few more depots after due study, if not already done, to decongest a few of the overgrown depots.

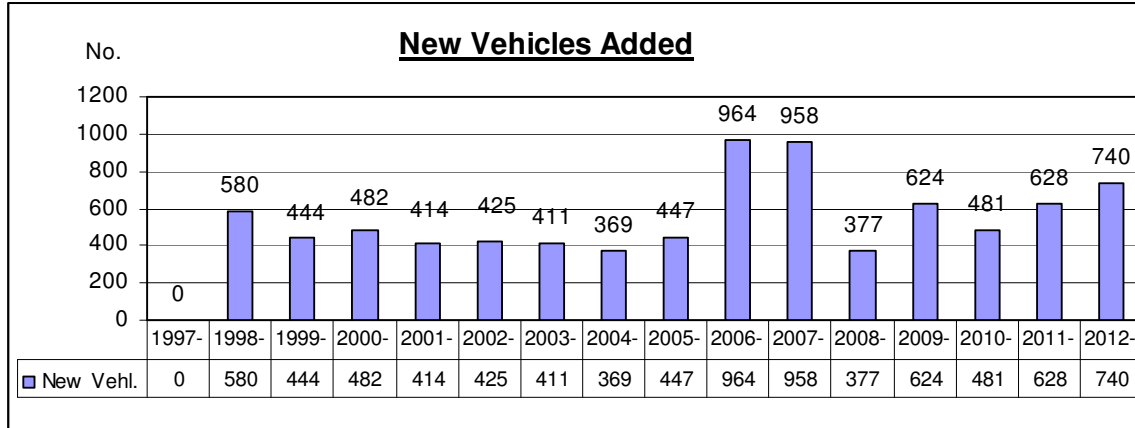
Fig 3



From the aforesaid trend, it is seen that the no. of schedules also declined from 4484 in 2008-09 to 4031 in 2011-12 and then increasing to 4293 in 2012-13. The apparently uneven trend in the schedules needs to be checked as it may lead to passenger dissatisfaction if schedules get reduced since passengers get used to a transport bus

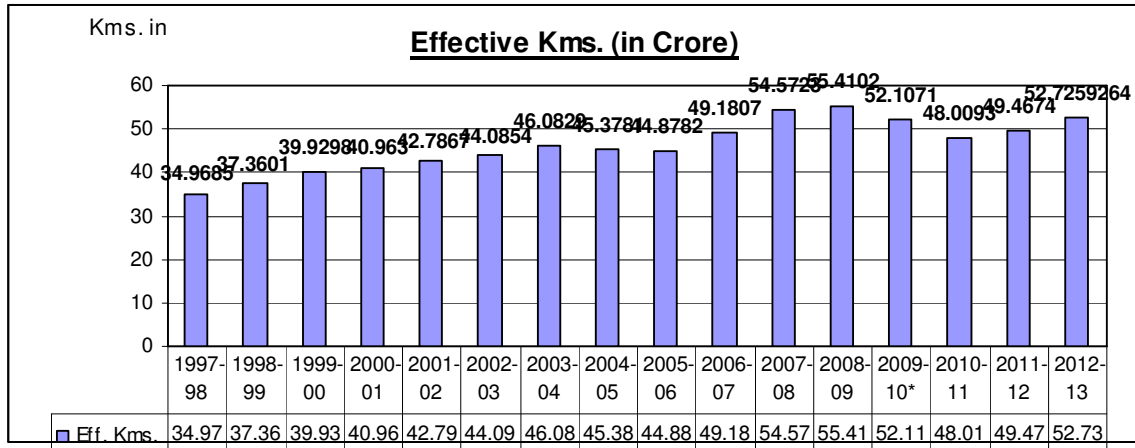
schedule which, once introduced cannot be withdrawn as it invites public criticism. This may be getting considered by the corporation but may some times get overlooked ..

Fig 4



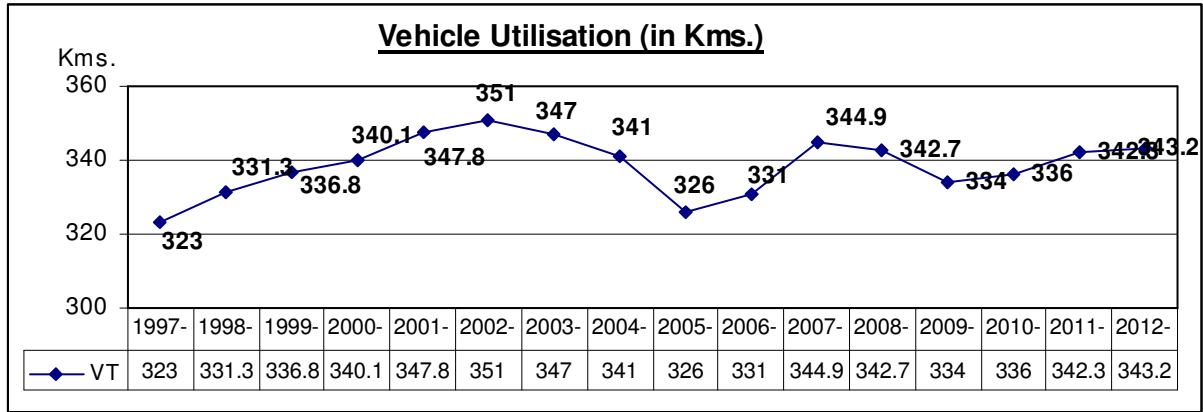
This no. again ought to be need based but constraints of funds limits procurement of buses. If capital from state govt. is not forthcoming in due quantum, the corporation will Be forced to go in for higher and adverse borrowings, which will impact its financial performance. Timely assistance from the govt. could avert such situations.

Fig 5



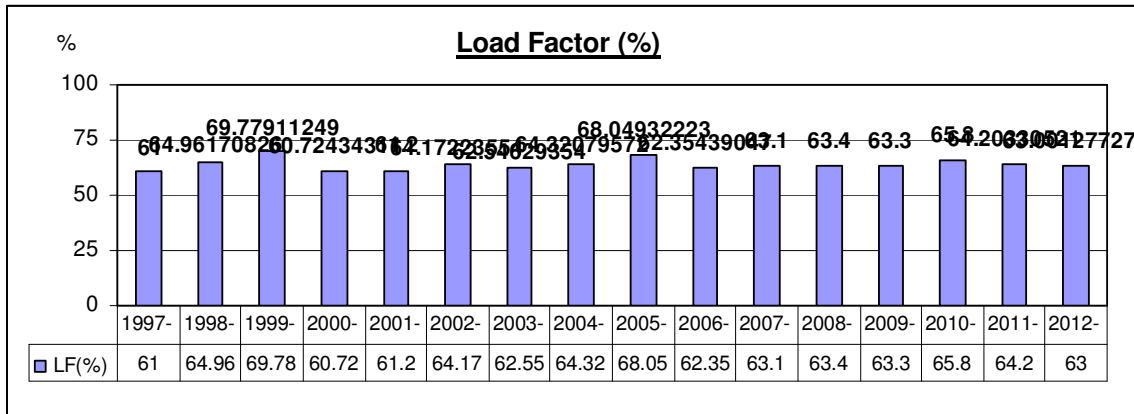
This parameter has shown an increasing trend upto 2008-09, then a decreasing trend upto 2010-11, after which it increased for the next two years upto 2012-13. While this later trend is positive, it has to be vied in conjunction with the trend of average Vehicle Utilization (VU) achieved. . As seen from the data and graph of VU shown in the table below, even VU has shown a rising trend for not just the last two years , but also each year from 2009-10 till the latest year 2012-13. This is a healthy trend in utilization of the dominant and major asset like its fleet of buses.

Fig 6



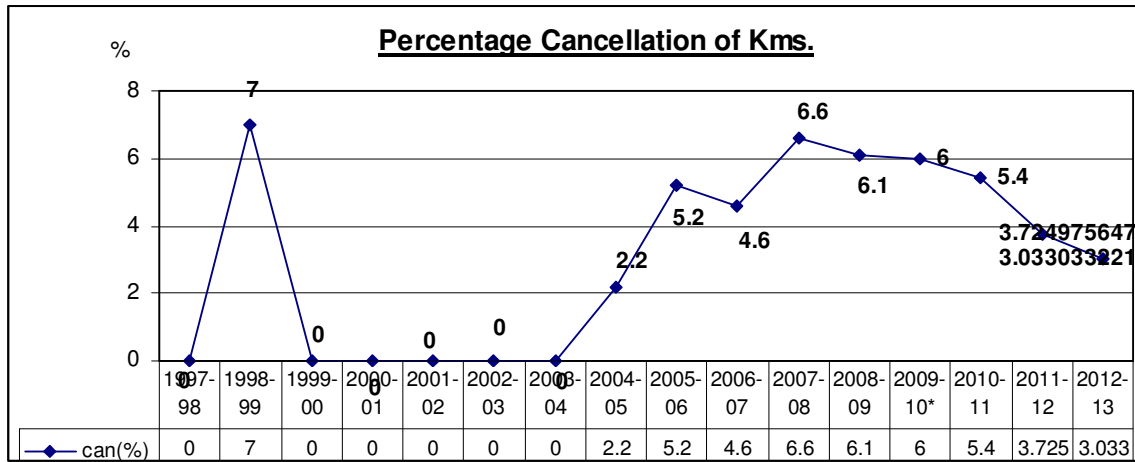
Vehicle Utilization has a two way impact on the financial performance of any Road Transport Corporation (RTC). Increase in average VU leads to additional kilometers operated on bus routes and hence additional revenue. Secondly, increase in VU implies more kilometers produced/ operated per bus, which goes to reduce the Overhead Cost per kilometer. Viewed in this perspective, the Corporation performed well as evidenced by a rapid increase in VU from 326 in 2005-06 to 344.9 in 2007-08 , and again , after a fall to 334 in 2009, it was increased to 343.2 in 2012-13. However, viewed against achievements of industry leaders like APSRTC, KSRTC, there is a scope to increase it to a still higher figure like 360 by the end of at least 2015-16. Operation of more buses on long haul routes which also have a fairly good level of Load Factor.

Fig 7



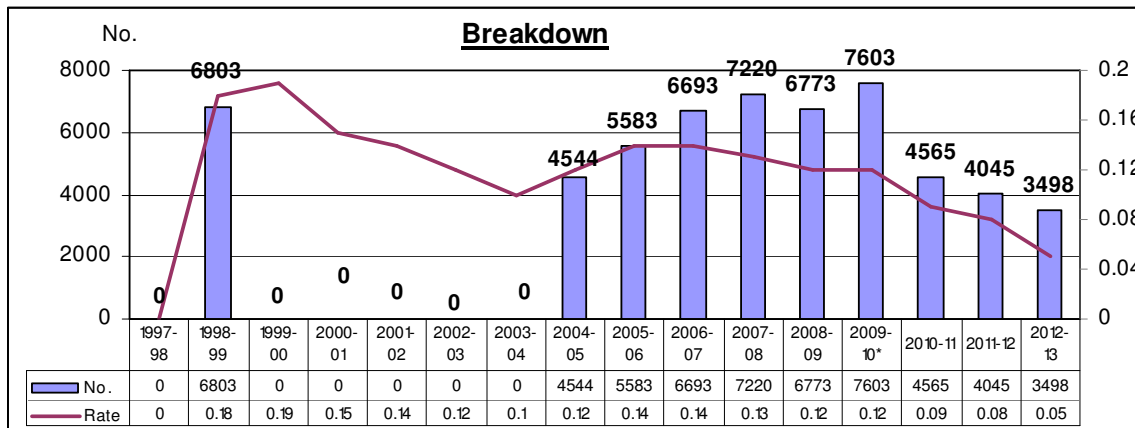
The Load Factor has been hovering around 63% to 65% in the last five years. While this is satisfactory, a Corporation in the same state like KSRTC scored a Load Factor of as high as 81%. Load Factors in the range of 75% to 80% occupancy yield high rates of Profit Per Km. Through better Operational and Marketing Strategies, higher Load Factor could be attained by the Corporation.

Fig 8



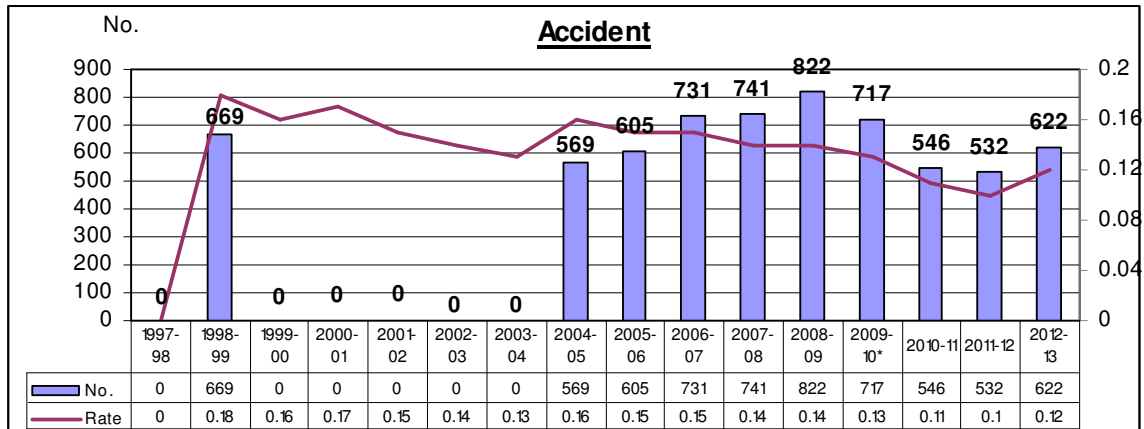
The Corporation has accomplished a good control in ensuring significant reduction in percentage of cancellations, from as high as 6.6 % in 2007-08 to 3.033 in 2012-13. This has also helped in the increase in Vehicle Utilization for the Corporation.

Fig 9



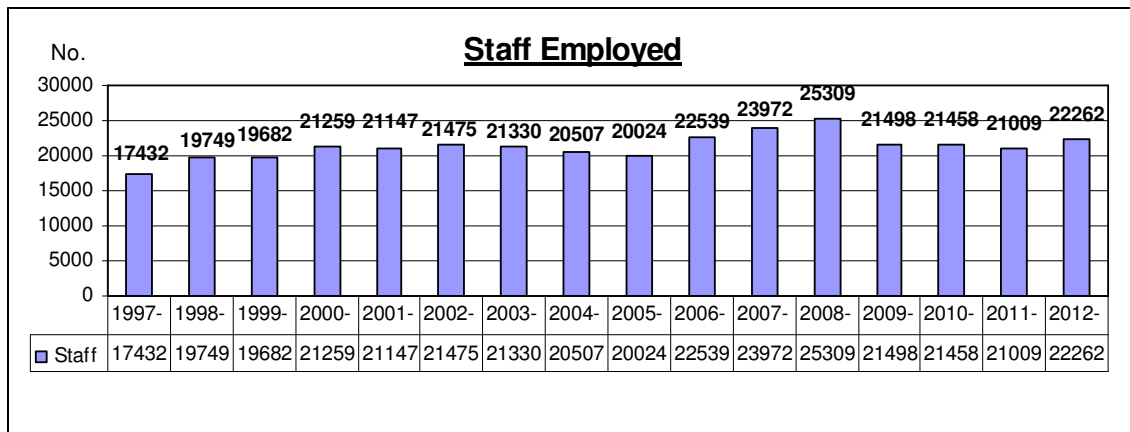
The B/d rate, i.e. Rate of Breakdowns has also reduced appreciably from 0.12 in 2009-10 to quite a low figure of 0.05 in 2012-13. This trend should be continued as lesser breakdowns imply better quality of transport service and will help wean away passengers from crowded, less reliable and not so comfortable private buses.

Fig 10



The Accident rate , i.e., No. of Accidents per Lakh Kms operated , which was as high as 0.16 in 2004-05, declined to 0.10 in 2011-12, but rose slightly to 0.12 in 2012-13. However, it is felt that it could be brought down to about half of this figure , i.e., to about 0.06 through testing the drivers periodicall not only for their driving skills but also for their “attitudes” and “ risk proneness ”. Their ‘psyche’ could be conditioned effectively to safer driving by adoption of state-of-the-art technology such as Simulators. Reduced fatal and major accidents also yield savings by way of lesser cases of payment of monetary compensation. in legal cases as well as in cases of out-of-court settlement.

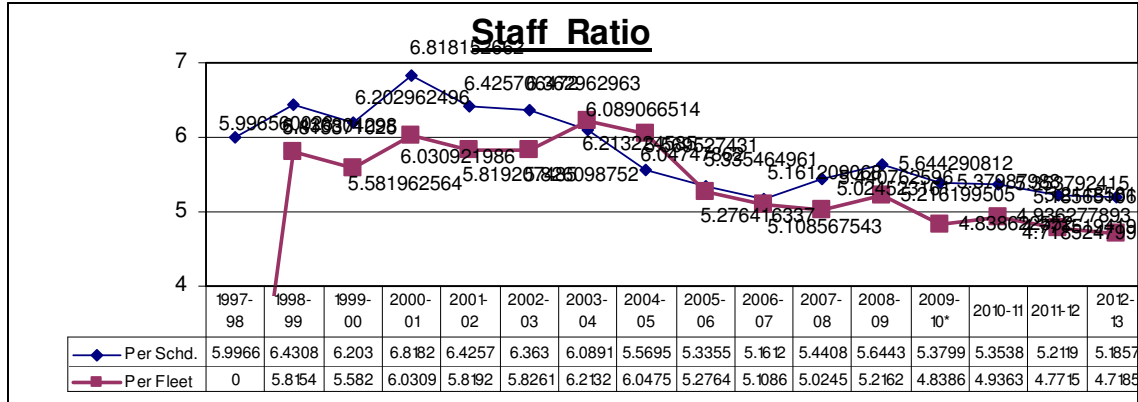
Fig 11



The Total Staff employed touched a high of 25309 in 2008-09, after which it reduced to 22262 men in 2012-13, i.e., by a little over 3000 meneven though the Total Effective

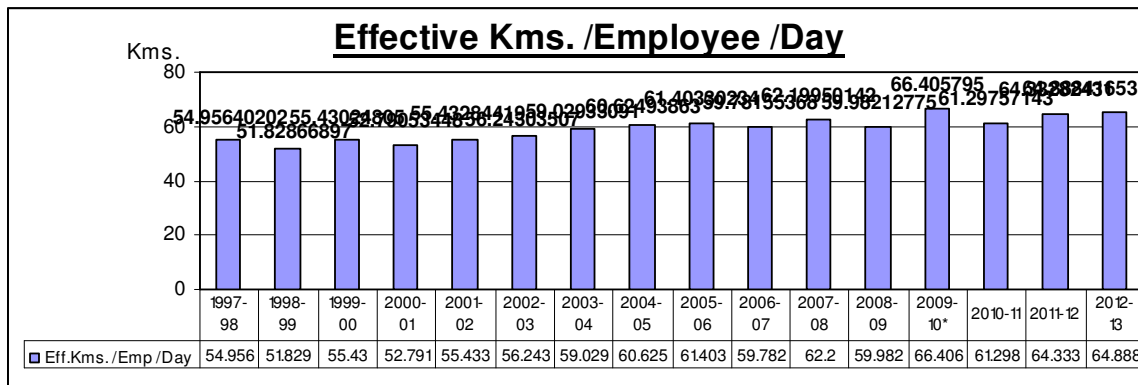
Kms operated went up from 59.98 lakh kms to 64.88 lakh kms. A more realistic assessment of the trend in staff in numbers and their proportion to buses is the Staff Ratio which is discussed in the succeeding para.

Fig 12



The Staff Ratio per schedule which used to be 6.82 in 2001-02, decreased to 5.18 by 2012-13, i.e., by 1.64 men per bus. This implies a saving of 7040 men for the no. of schedules as of the end of 2012-13 which was 4293. This was possible due to a few IT initiatives as well as due to better crew utilization accomplished over the period. Yet higher savings are possible through other technological and managerial interventions which are suggested later in this report.

Fig 13

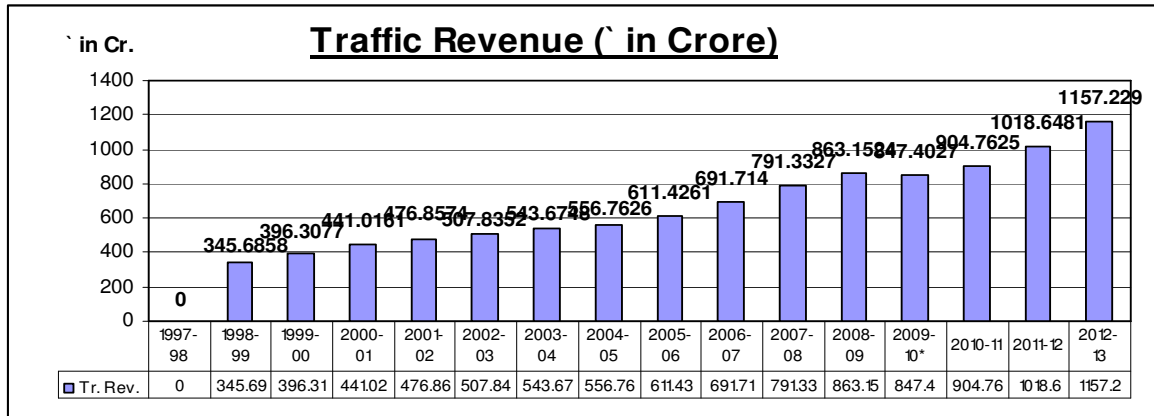


This parameter is indicative of the productivity per employee. The growth in this measure has been only marginal since 2004-05 hovering around 60 kms upto the year 2009-10 in which year it rose to 66 kms. Thereafter, it dropped to 64.88 in 2012-13. It is felt that crew scheduling apart, even what could be looked into is introduction of more 'One Man Services' on limited stops, medium and long distance services, with only the



Driver who also issues tickets to passengers from a Ticket Issuing Machine (TIM) mounted on the dashboard of the bus.getting into the bus at the bus stops along the journey of the bus.

Fig 14

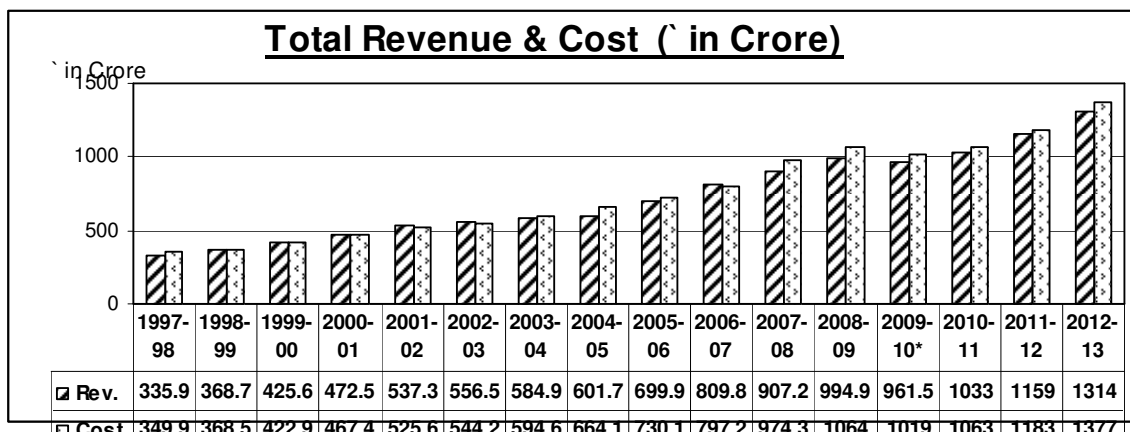


This parameter has shown a rising trend . While the revenue has been improving, it has to be seen whether the revenue has been adequate to cover the total expenditure from year to year . This will be covered later in this report. This apart, the following are the determinants of traffic revenue which a bus earns in a day :

- i) Load Factor or occupancy of seats in the bus
- ii) Vehicle Utilization or the no. of kms the bus operates in a day.

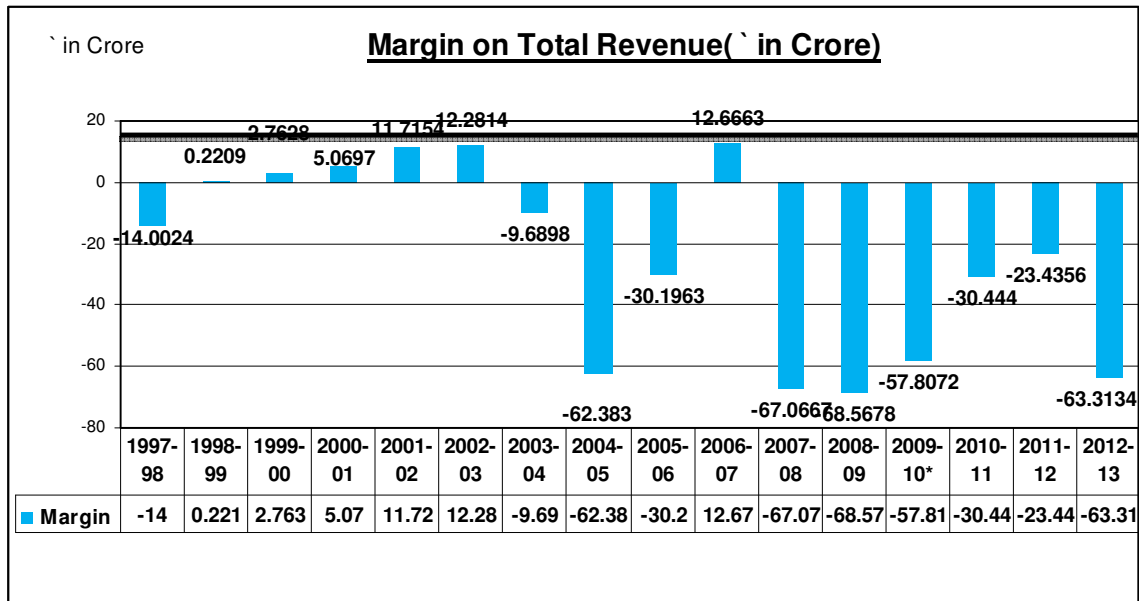
Hence, to attain an increase in traffic revenue, either of the two parameters or both must show an increasing trend. The increase in performance in respect of both the parameters should be adequate enough to yield significantly higher revenue which yields positive net profit. This will be presented under the parameter ‘Net Margin’ covered in the later paras in this report.

Fig 15



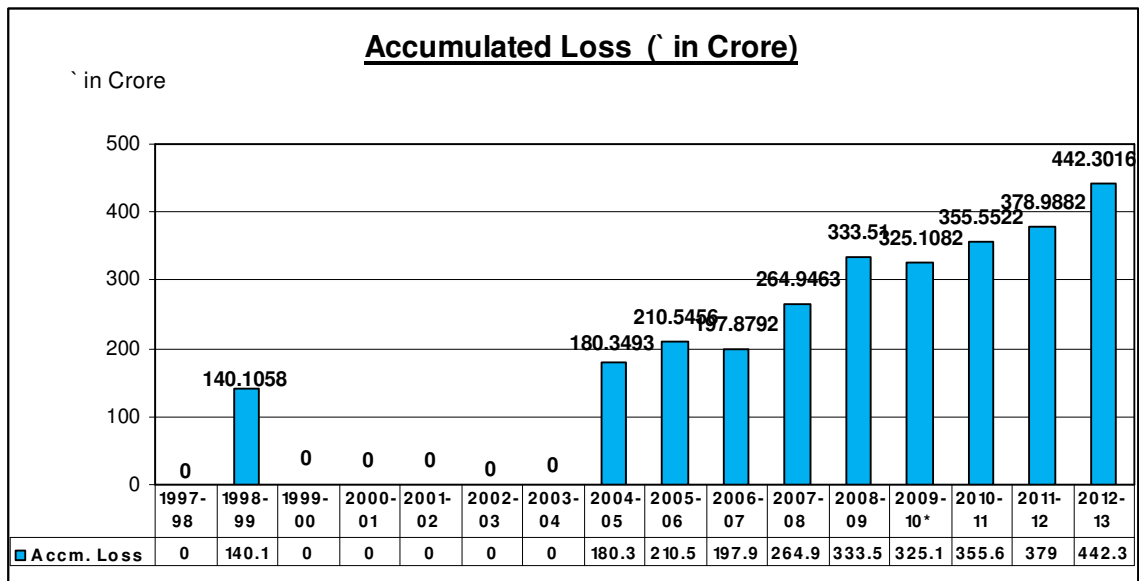
The gap between the Total Revenue and Total cost is reflected in the graph in Fig 15 above. As could be seen, the corporation has been incurring losses, which is more clear in the graph at Fig 16 shown below.

Fig 16



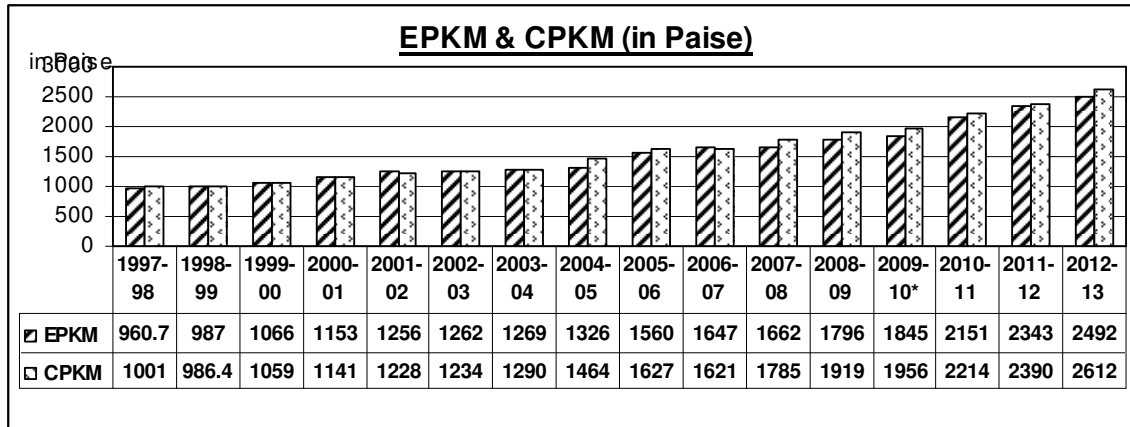
The corporation made a profit of Rs.12.67 cr in 2006-07, after which it has incurred losses each year, of Rs. 67.07cr, Rs. 68.57 cr, Rs.57.81 cr, Rs.30.44 cr, Rs.23.44 cr year after ear later, with the loss again mounting to as high as Rs.63.31 cr in 2012-13. Measures to improve profitability are suggested later in the report

Fig 17



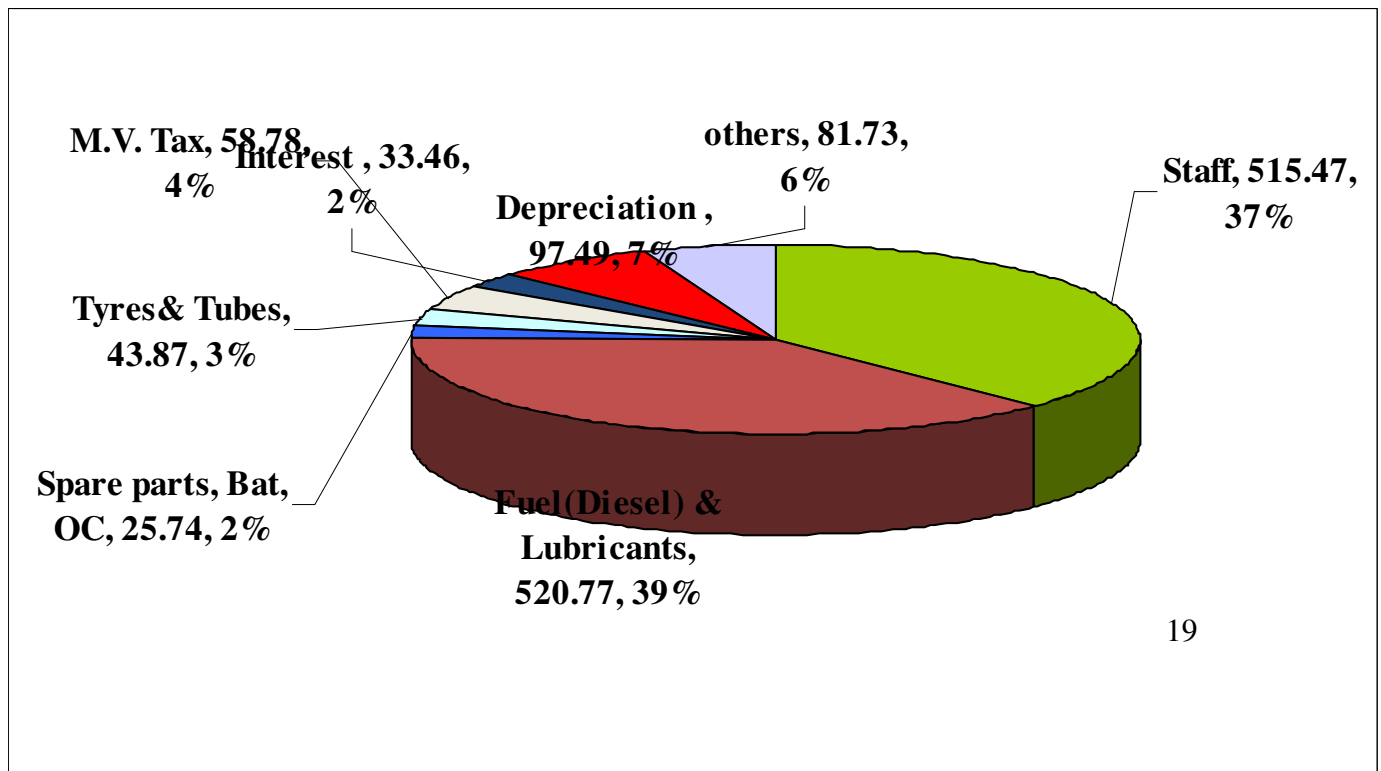
These have risen almost ever year from 2004-05 and touched a figure of Rs. 442.30 cr in 2012-03

Fig 18



The trends of EPKM and CPKM are depicted in the graph above. Measures to improve EPKM and to reduce CPKM cost elements have been suggested under relevant paras in this report. Also, measures for improving commercial revenue have been suggested at the relevant paras in the report.

Fig 17 : Itemised Percentage Cost Components



From the above pie chart, it may be seen that the dominant costs are mainly:

- i) **Fuel Cost : 39% of Total Cost and**
- ii) **Staff Cost : 37% of Total Cost**

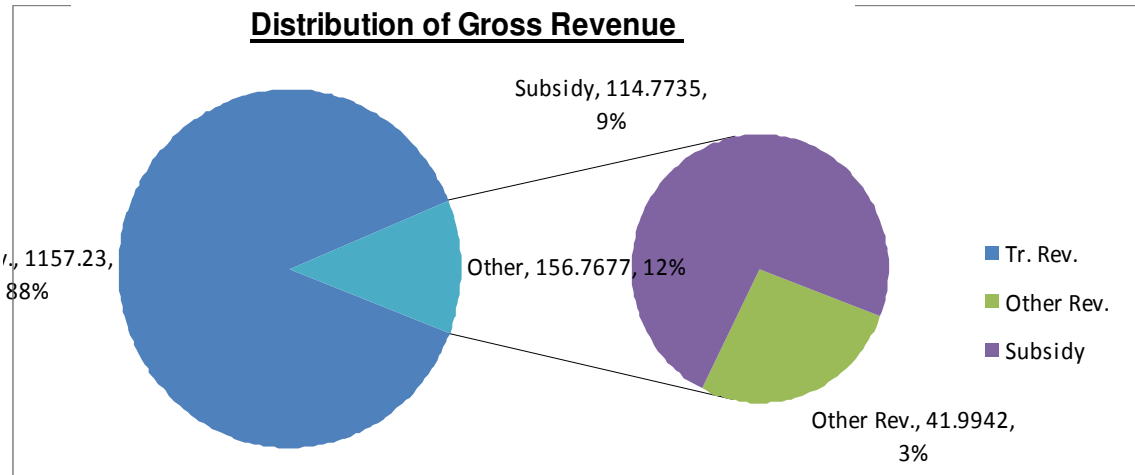
Hence all possible measures which result in reduction of these costs should be taken by the corporation.

**Staff Cost :** While the Staff Ratio compares favourably with leading STUs such as KSRTC and APSRTC, yet, it could be further reduced through measures discussed in parts of this report such as by making drivers to issue tickets through dashboard mounted TIMs , introduction of Biometric Attendance systems integrated to Payroll system, computerizing more activities in different departments having clerical activity, etc.

**Fuel Cost :** This cost always poses an environmental threat since petroleum products of diesel and petrol, lubricants, etc., have been spiraling up year after year. Apart from some factors such as proper maintenance of engines, transmission system, etc, two major initiatives will yield significant savings in this area:

- a) Having superior fuel efficient engines in buses by corcing Tatas and Asok Leyland to either design and develop such engines, or to import such engines
- b) Getting Drivers trained for driving at optimal speeds and in a manner that saves fuel. In this behalf, it may be mentioned tha a retcd. Service Engineer , Mr. Phillip Joy, had trained man a driver for APSRTC and this led to such Drivers improving their KmPL by about 0.5 to 1.0, or by about 10% to 20%

Fig 19



The figure above depicts the main elements of Gross Revenue pictorially. Measures for increasing the commercial revenue / rents have been suggested at relevant portions in this report.

## 7. Stakeholders' Concerns :

This portion of the draft report presents the aspect relation to concerns of the various external stakeholders, such as govt., society and commuters as mentioned briefly below.

### 7.1 Government.

#### a) Efficiency

The government's primary concerns are the provisions of efficient and satisfactory transport services to commuters. At the same time the government would want NWKRTC to provide the services without incurring any losses and begin a burden in the state. Hence, NWKRTC would require to continue to have, has under the existing system, regular performance monitoring of provision of adequate number of buses on different routes with reasonably acceptable frequency to take care of passengers needs in cities, towns and villages alike.

#### b) Road Safety

It would also need NWKRTC to ensure safety of lives to passengers as well as road users.

In this context it is seen that the rate of accidents i.e. number of accidents per one lakh kms operated by NEKRTC has been hovering in the range of 0.14 to 0.16 in the last 4 years and has not been reduced to a desirable level which could be not greater than 0.10. Amongst the accidents, fatal ones involving loss of precious lives need to be reduced. Drivers training on Driving Simulators is to be adopted in order to ensure that the drivers attitudes are oriented more towards safety of lives. The corporation could take note that KSRTC has been training drivers on computer based simulators for the past few years. This effort, which has yielded positive results in reduction of accidents appreciably of late, will surely pay off in the long run and will in few

years lives apart from saving by way of reduction of compensation for deaths by far, KSRTC and BMTC are the only one presently using such advance technology.

### **c) Employment Generation**

Yet another concern of the government could be the creations of jobs. KSRTC keeps recruiting man power mostly for productive categories such as driver and conductors and though it has reduced its man power over all to very competitive levels. Its staff ratio on schedules is one of the lowest among large STUs in India, having been brought down progressively from 6.43 in 1998-99 to as low as 5.19 in 2012-13. This was necessary to make the corporation earn profits and to offset the rising cost of inputs such as fuel, tyres, staff wages etc.

Hence, if NWKRTC has to satisfy the twin objectives of the government namely adequate and efficient transport as well as generation of employment, it could do so without impairing its financial position and profits i.e. through growth of its fleet of buses year after year, which it can add in greater nos. if it earns better profits..

## **7.2 Society**

The societies concerns with reference to NWKRTC would be improvement in number of buses put into operation and their growth, provision of adequate amenities in bus station, provision of employee opportunities, reduction of pollution and reduction in number of breakdowns and accidents.

As mentioned earlier, NWKRTC has grown in its fleet of buses operated , though only marginally, but has as well generated employment.

However, reduction in rate of accidents is yet to be accomplished to acceptable levels, since the rate is comparably higher compared to another STU such as APSRTC.

With regard to breakdown rates, the figure had been brought down progressively to a fairly low figure of only 0.05.by 2012-13.

## **7.3 Commuters**

The commuters' concerns normally are growth in fleet operated on the various routes yielding higher frequency and reduced waiting time, facilities in availing services such as reservation of bus seats for travel, bus passes, making representations, accessing information on services, etc. through website, as well as appropriate electronic display systems at bus stations, etc.

Growth in fleet has been somewhat satisfactory as discussed earlier. On the latter aspect of access of services, information etc., a special mention must be made about the following initiatives taken by NWKRTC.

### **7.3.1 IT Initiatives by NWKRTC to facilitate commuters.**

1) Internet based passenger reservation system – AWATAR PROJECT :- This project facilitates commuters for Any Where Any Time Advance Reservation with user friendly features including display of layout of vacant seats in the bus, facility for per / postponement, partial cancellation, on line reservation through payment gateway, e-ticket printing of home PD / any where, booking of tickets through credit cards etc.

As per the operation department records about Rs. 1.3 crore passengers have so far booked tickets under the AWATAR system.

2) Electronic Ticketing Machines (ETMs) in Buses which make the process more transparent, providing additional passengers required information on the ticket, minimizing scope for fraud etc.

3) Automatic driving test for drivers:

An additional project worth considering could be the GPS technology based Real Time Passenger information system and automatic vehicle tracking system – as has been done by BMTC for city buses and as was implemented at APSRTC as a proto type in 2004 for a few long distance buses. But for such and other technology – intensive project both central and state government must extend adequate financial grants to STUs, which are also capital intensive which STUs can ill – afford but which are going to even improve their financial performances. It is understood tenders for expression of interest were called for.

NWKRTC is planning for the aforesaid technolog induction in a big way but faces the limitation of funds.

## **5.4 Employees**

Their stake concerns wages commensurate with the rise in cost of living, protection of jobs, compensation for higher productivity, etc. It is seen that the corporation has been carrying out periodic wage revision and compensating them for rise in cost of living through DA revision. Even jobs are much better protected than under the private sector, with employees losing their jobs only when they got involved in serious misconduct, irregularity cases, corruption etc.

## **8. Balanced Score Card**

In the paras to follow, the concept of Balanced Score Card is furnished as conceived by pioneers of the concept, namely Robert Kaplan and David Norton.

The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal

and external communications, and monitor organization performance against strategic goals. It was originated by Drs. Robert Kaplan (Harvard Business School) and David Norton as a performance measurement framework that added strategic non-financial performance measures to traditional financial metrics to give managers and executives a more 'balanced' view of organizational performance. While the phrase balanced scorecard was coined in the early 1990s, the roots of the this type of approach are deep, and include the pioneering work of General Electric on performance measurement reporting in the 1950's and the work of French process engineers (who created the *Tableau de Bord* – literally, a "dashboard" of performance measures) in the early part of the 20th century.

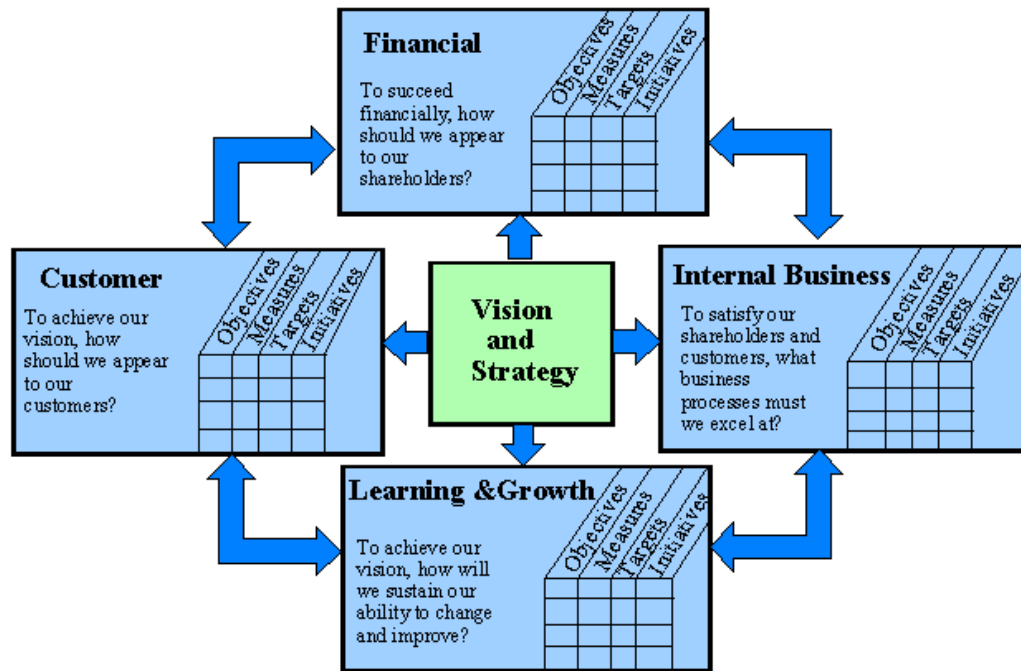
The balanced scorecard has evolved from its early use as a simple performance measurement framework to a full strategic planning and management system. The “new” balanced scorecard transforms an organization’s strategic plan from an attractive but passive document into the "marching orders" for the organization on a daily basis. It provides a framework that not only provides performance measurements, but helps planners identify what should be done and measured. It enables executives to truly execute their strategies.

This new approach to strategic management was first detailed in a series of articles and books by Drs. Kaplan and Norton. Recognizing some of the weaknesses and vagueness of previous management approaches, the balanced scorecard approach provides a clear prescription as to what companies should measure in order to 'balance' the financial perspective. The balanced scorecard is a management system (not only a measurement system) that enables organizations to clarify their vision and strategy and translate them into action. It provides feedback around both the internal business processes and external outcomes in order to continuously improve strategic performance and results. When fully deployed, the balanced scorecard transforms strategic planning from an academic exercise into the nerve center of an enterprise.



The essence of the Balanced Score Card as a strategic management tool is depicted in the schematic diagrams shown

### Balanced Scorecard Framework\*

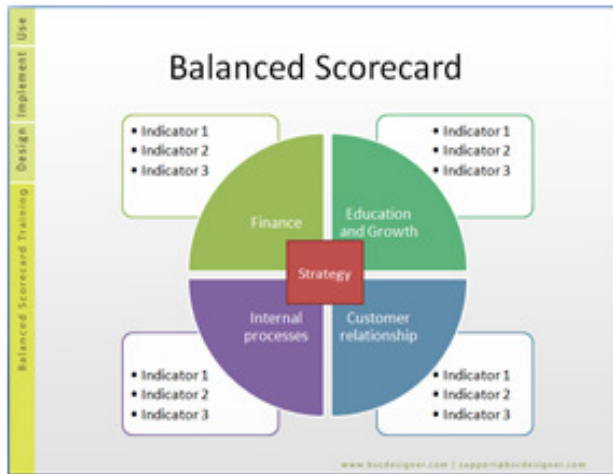


below. \* Adapted from Kaplan & Norton 1996. *The Balanced Scorecard*. Harvard Business School Press: 9. Original from HBR Jan/Feb 1996, p. 76.

Kaplan and Norton describe the innovation of the balanced scorecard as follows:

"The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation."

A simpler way of depicting the salient features of the Balanced Score Card would be through the schematic depicted in the figure below:



## **NWKRTC – A Balanced Score Card**

State Transport Undertakings( STUs ) in India transact their business under a typical set of constraints, the more significant of which are as follows:

- i) Lack of freedom to increase bus fare / tariff even when costs of inputs such as diesel fuel ,
- ii) Non-refund or delayed re-imburement of subsidies to compensate for bus travel concessions offered by way of ‘social service’ to different segments of society such as students, govt. NGO employees, physically challenged persons, etc.
- iii) Petty private operators operating their contract/ stage carriage services illicitly on the STU’s authorized routes, often carrying away passengers waiting at the STU’s own bus station/ bus stand
- iv) ‘Sizeable Overhead Costs’ since STUs have to employ staff in separate departments such as Audit, Personnel & Training, Security, Bus Station Maintenance, Ticket Checking / Enforcement, etc.
- v) State Governments’ compulsive directives to operate bus services to connect various remote villages along routes passing through villages with low population and hence implying low occupancy in buses and hence financial losses

In view of all these aforesaid constraints, even the efficient ones amongst the STUs in India are unable to avoid incurring burgeoning losses year after year

A Balanced Score Card ( BSC ) for STUs in India will therefore have to limit the weightage for the Financial Parameters, while providing a higher weightage for Physical Parameters. The following three scenarios deserve due consideration in the choice of weightage for the Financial and Physical Parameters:

- a) Equal weightage of 50% for Financial and 50% for Physical Parameters :

Such an option is most desirable under conditions of 'level playing field' which imply quick govt. approval to raise bus fares in proportion to increase in costs of inputs, strict regulation of enforcement by RTA to curb illicit operations by private operators, etc.

- b) 60% weightage for Physical Parameters and 50% weightage for Financial Parameters.

Such an option is desirable when at least 'near' level playing conditions are Ensured or facilitated by the state govt.

- c) 75% weightage for Physical Parameters and 25% weightage for Financial Parameters

This option could be adopted for STUs operating in typical low population concentrations such as lesser developed states, hilly regions, etc.

In the case of NWKRTC, it may be appropriate a weightage ratio of 60-40 For Physical and Financial Parameters respectively. This is because, the govt. does give subsidy re-imburements and also accords bus fare revision , though with a delay, to enable the STU to meet most of the financial cost impact of fuel price increase.

### **Performance Parameters For Balanced Score Card for NWKRTC:**

<u>1.Financial Parameters</u>	<u>Weightage</u>		
<b>1.1. Traffic Revenue (Rs. Cr.)</b>	<b><u>0.20</u></b>		
<b>1.2 Commercial Revenue(Rs.Cr.)</b>	<b><u>0.10</u></b>		
<b>1.3 .Net Profit (Rs.Cr)</b>	<b><u>0.10</u></b>		
<u>2. Physical Parameters</u>			
<b>2.1 No. Of Buses per Lakh Population</b>	<b><u>0.02</u></b>		
<b>2.2 Vehicle Utilisation (Kms per Bus per Day)</b>	<b><u>0.10</u></b>		
<b>2.3 Load Factor ( % Occupancy )</b>	<b><u>0.08</u></b>		
<b>2.4 Fuel Efficiency ( Kms PerLitre )</b>	<b><u>0.10</u></b>		
<b>2.5 Staff Ratio (Staff per Bus Held )</b>	<b><u>0.15</u></b>		
<b>2.6 Accident Rate (No. of Accidents per Lakh Kms</b>	<b><u>0.02</u></b>		
<b>2.7 IT&amp;C Investment in the Year</b>	<b><u>0.03</u></b>		
<b>2.8 Market Studies Done in the Year (No. of Studies )</b>	<b><u>0.02</u></b>		
<b>2.9 No. of BOT Schemes Launched in the Year</b>	<b><u>0.02</u></b>		
<b>2.10 Adoption of Best Practices / New Schemes for Profitability Improvement</b>	<b><u>0.01</u></b>		
<b>2.11 Investment on Training for the year</b>	<b><u>0.05</u></b>		
<b>TOTAL SCORE</b>	<b><u>1.00</u></b>		

## **9. Decision – Information Matrix (DIM)— A New Tool for Better Decision-making:**

It was found during discussions had with the Managing Director, the Directors / Heads of department that NWKRTC is on the move and wants to be commercially aggressive. Under such present management culture, the hands of the top management team would indeed get further

strengthened by developing an improvised MIS through a ‘ Decision – Information Matrix (DIM)’, A specimen of information content required for a typical decision under the DIM format is presented below

**Decision Information Matrix ( DIM )**

Decision Domain	Decision to be made	Decision type (Routine / Non Routine)	Data / Information Content Required
Operations	New Route to be started	Non – Routine	Statistical data of origin, destination places and places/towns/villages along the route, new factories or developments planned in the area, statistical data from government departments, data on private buses, trains playing, quality of roads along the route, nature of traffic demand (whether personal or seasonal etc.

**DIM ( Contd.)**

Decision Domain	Decision to be made	Decision type (Routine / Non Routine)	Data / Information Content Required
Operations	Augmentation of Buses on a Route	Routine	Total number of buses, route length, average vehicle utilization, average EPKM and occupancy Ration (OR), average profit per km, number of private vehicles / FPT vehicles (Jeeps,

			<p>autorickshaws, private vans, contract carriages etc. operation along the full length of parts of the route.</p> <p>Additional Data / Information Required:</p> <ul style="list-style-type: none"> <li>a) List of competing routes also needing augmentation through additional buses with the information / data as listed above.</li> <li>b) Newly originated commercial activities along the route</li> <li>c) List of public representatives or public representation pending for the route.</li> <li>d) Social facts warranting augmentation</li> </ul>
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It is felt that development of such a Decision – Information Matrix (DIM) would streamline the MIS towards the decision – making needs of the top management.

Even external environment related information would need to be gathered and provided in DIM wherever necessary, such as for example in case of governments plans to construct new colonies or new towns ( such as the Navi Mumbai townships in Mumbai ) forecasted demand for two – wheelers and four wheelers of the manufactures etc.

**Comprative Performance of NWKRTC Versus Benchmark STUs – Year 2012-13**

	<b>NWKRTC</b>	<b>APSRTC</b>	<b>KSRTC</b>
1. a) Total Fleet of Buses	4718	22574	7829
b) New Buses Inducted			
i) No. of Buses	740	i) 1501	
ii) % Increase			
2. Fleet Utilization (%)	95.4	99.61	91.3
3 Vehicle Utilization (Kms Per Bus per day)	333	363	329
4. Load Factor (%) (Occupancy Ratio)	63.0	69	81.0
5. Staff Ratio	5.9	5.94	5.17
	64.89		
6. Employee Productivity	0.15	60	69.62
	5.09		
7. Fuel KmPL		5.15	4.81
8. Accident Rate(perLakh km)	0.12	0.09	0.13

## 10. Best Practices of a few STUs Proposed for adoption by NWKRTC

The following practices which have yielded significant savings in cost and also substantial additional revenue for Benchmark STUs , namely APSRTC and KSRTC are suggested to be adopted by NWKRTC.

i) **Incentive Schemes** : Like in APSRTC, which has by far got the best of incentive schemes in the entire country, NWKRTC could introduce schemes covering various performance parameters such as Earnings ( Revenue ), Fuel KmPL, Cancellations, Breakdowns, Tyre Life, Production ( in Workshops/ Tyre Retreading Shops/ Body Building Unit ) etc.,. If need be a team from the corporation could visit APSRTC and have a first hand opinion about the efficacy of these schemes for adoption in NWKRTC. Bigger corporations like APSRTC has by now realized savings of a few thousand crore rupees as the corporation had implemented these multifarious incentive schemes to improve performance across the afore-mentioned performance parameters.

ii) Introducing **Ticket Issuing Machines ( TIMs )** on long and medium distance routes duly displacing conductors from these services as was done in APSRTC quite a few years ago.

iii) Adoption of **GPS Technology based Real Time Passenger Information System**

iv) Introducing **Biometric Attendance Monitoring Systems** with integration of its inputs with the Pa Roll System at Depots, Workshops, Administrative Offices, etc.

v) Introducing a scheme to appoint “**Brand Ambassadors of NWKRTC** ” in order to develop them as our publicity agents and suitably rewarding them. Brand Ambassadors for Urban areas/ municipalities, district headquarters as well as at Taluka level could be selected and appointed. The brand ambassadors could range from renowned celebrities in fields such as cinema, or sports, etc. to locally well known personalities within the district, etc..

## 11. Recommendations: Vis-à-vis Challenges And Opportunities

The organization structure and associated delegation of authority in NWKRTC seems to be delivering the results to some extent after the splitting of the monolith Corporation namely, KSRTC.. However, there is a need to design a decision oriented MIS in order to make decisions yet more effective and profit oriented.

Such an MIS and also a *Decision-Information Matrix (DIM)* could easily be designed without much difficulty as has been the experience of this author in a large STU.

The following recommendations are made which will go to boost NWKRTC's performance to much higher levels and will safeguard the interests of the stakeholders namely, commuters for improved , safe and punctual services, society for less polluting buses to conserve the environment, as well as sufficiency of buses for more frequent buses,



Government for employment generation and revenue thru taxes, employees for better salaries and continued employment thru healthy growth in profits from year to year and hence in the size of the undertaking and finally, NWKRTC would look to sustenance and growth amid growing competition from private and IPT modes of transport , mainly the autorickshaws, minivans/ jeeps, etc...

i) **Designing** and developing a Decision-Information Matrix which will be integrated into a decision oriented , IT enabled MIS.

ii) **Developing** new information outputs such as vehicle-wise, service-wise and route-wise profitability statements, exception reports on low performing units, routes, services ,crew and mechanics with more enriched and decision relevant information/ data content  
( This author could give some ideas in this behalf if required )

iii) **Streamlining** the set of indices of performance being presently deployed for performance review in NWKRTC

iv) **Adoption of** GPS technology for automatic vehicle location and real time passenger information display as it benefits passengers with real time information on arrival of buses. Also, the LED display boards at bus stops in cities/ towns and even suburban/ mofussil bus stops could fetch lot of revenue thru intermittent display of ads on a commercial basis. The real time display of accurate information of bus arrivals at bus stop will give confidence to people waiting at bus stops who will then refrain from getting into an auto waiting to grab customers.

v) **Reducing** accidents thru Driving Simulator deployment at a larger scale as these help in inculcating the correct psyche in Drivers for accident avoidance and road safety and thus in developing an attitude for safe driving.

vi) Training all managers at Depots, Region at at H.O to use the concept of “**Opportunity Costs**” wherever possible so that they take decisions keeping in mind the opportunity costs involved, such as in deciding on cancellation , or for augmentation , between two competing routes, or

vii) **Initiating** BOT projects even by demolishing depots and accommodating them in ground floor of the new multi storey structure, deploying the higher floor level spaces for commercial purposes after such demand is seen arising in prime towns.

viii) **Applying** the concept of ‘Strategic Business Units’ and thus aiming at improving their performance thru a ‘quantum jump’ approach rather than an ‘ incremental growth’ approach.

ix) **Training** all managers on the method of forecasting the depot’s month end profit from day to day , or at least from week to week within the current month itself so that there is still some time of a few days left in the month to cause corrective action to improve the depot’s performance before the month ends.

Such a system will transform the mindsets of the Depot/ Divisional Managers into proactive and to plan in advance and take action to improve profitability rather than adopting the reactive approach, as is the case invariably..

**Training** maintenance mechanics on concepts of quality in maintenance and upkeep of buses, especially the ones which cater to higher income segments which demand classy and good quality services.

x) **Venturing into segmented tourism** to cater to the needs of Foreign Tourists as well as Indian Tourists, providing them not only comfortable luxury coaches equipped with wi fi and internet facility, GPS system, databases of doctors/ hospitals en-route with a prior tie-up with them.

xi) **Adoption of differential pricing** , especially on urban routes, to encourage travel by general public, housewives, etc., **in non-peak hours**.

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