Pune Caught in a Whirlpool:
Can a Modern Public Transport System Rescue it – A Review

Dr Adhiraj Joglekar

Contents

Pune Caught in a Whirlpool – Can a Modern Public Transport System Rescue it – A Review

Genesis of the whirlpool

Pune is a city in the state of Maharashtra, is situated approximately 180 kilometers southeast of Mumbai at the confluence of the Mula & Mutha at an elevation of approximately 560 meters above sea level.

Over the past 30 years, urbanized areas have increased by 240% while agricultural and grassland/scrub areas have decreased by 31% and 39%, respectively.

The Pune City had 2.5 million people in 2001, a 62% increase since 1991. The population is now estimated at around 3 million (30 lacs). The Per Capita Income in 2004 of Pune was Rupees 50400/ per year. With zero percent loans available, it's not surprising that the increase in vehicle population has been even more dramatic. The number of registered vehicles increased 97% between 1997 and 2002, from 475,583 vehicles to 938,125 vehicles. Each month 10,000 – 13,000 new vehicles are registered (a rate of over 400 per day). In 2003-04 approximately 110000 vehicles were registered. Pune roads have gown 6 times since 1960, but the vehicles have increased by 105 times.

The table below shows the data available for 2004.

Category of vehicles	PMC	PCMC
2 wheelers	867944	271319
4 wheelers (not buses)	139740	34148
Rickshaws	57253	5588

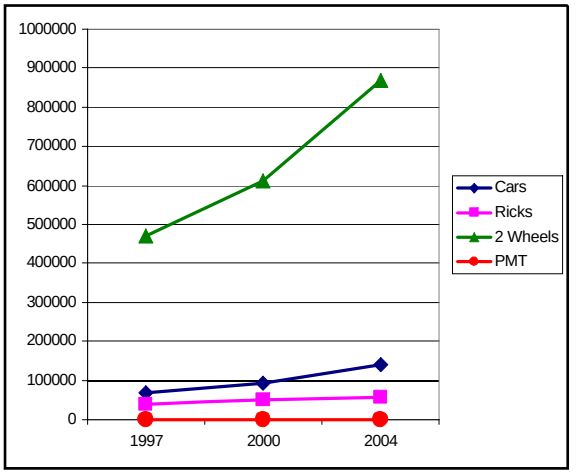
In contrast, the Public Transport in Pune run by the Pune Municipal Transport (PMT) has hardly changed in its capacity. The table below shows the numbers made available to the public through the media.

No.	Total buses	Old buses	New expected	Source & year
1	700	117 to be scraped	50	July 98, Indian Express (IE)
2	No data	No data	158	1999, IE
3	No data	No data	158	July 2000, IE
4	700	143	100	Oct 02, IE
5	829	100	335 = 200 purchased, 135 leased	May 04, IE
6	850	150	350 + 150 leased	Sept 04, TOI
7	849	144 (above 15 years, 248 are 0-15 years old)	Hire 150 buses and buy 100	Sept 04, IE
8	828	193	500 (as per PMT Budget for 05-06)	May 05, TOI
9	No data	No data	Hire 150 (if not 300) and buy 200	Oct 05, IE
10	No data	350 buses over 10 years old	200 (25 Volvo) + 150 leased (not approved by GB of PMT)	May 06, IE

Mumbai, the economic capital of the country has a population of 170 lacs has 11.5 lacs vehicles. Pune has a population of 30 lacs and has more vehicles - about 13 lacs.

The current numbers of buses run by PMT 832 buses. Additionally about 150 leased. 63 are older than 15 years. They would like to get rid of buses that are more than 8 years old. That means getting rid of approximately 400 buses over the next two years.

The plot below shows trends over 1997 – 2004 for different category of vehicles in Pune. It is not surprising that the line representing PMT is flat.



The CIRT has recommended that the number should be 40 buses per 100,000 (1 lacs people). Thus at least 1200 buses are required to run a good service. It is not clear and hence it should be presumed that CIRT is referring to full size buses and not mini buses (which PMT runs on several routes) when making their recommendations. Moreover to operate a good service, maintenance of vehicles is paramount. A significantly small number of buses may have to be off road due this reason. Also around 250 school buses and about 7,500 buses (as on March 31st, 2002) are registered in Pune to cater to the needs of a large number of industries, offices, and the nearby region ply on Pune roads. In short, around 1600 buses* may well be required by the PMT at the outset and more in proportion to population growth. Statistics suggest that the population will grow by 40% since every decade. If the population grows at a similar rate, the minimum number of buses required by 2010 will be approximately 1800 (but the number could be more as 40 buses /lacs is a generic figure and for an industrial city like Pune it would be close to 60. Delhi has 100/lacs, but still feels a shortage).

Pune Traffic and Transportation Forum have suggested that PMT should be buying about 1000 buses over the next 2-3 years. PMT also needs additional depots. Right now buses are parked on the streets and lead to thefts of parts. Also buses cannot be washed or maintained under current inadequate circumstances. PMT have land for 6 depots but need to acquire land for an additional 6 depots. The proposal will cost only 270 crores as described below –

20 lacs/bus (new low floor) = 200 crores for1000 buses.

4 crores/depot = 50 crores for depots.

20 crores = upgrades and a much needed training centre.

Another startling fact that comes out of the CIRT report is that the number of scheduled kilometers in 1999 was 648.52 lacs, increasing only to 674.85 lacs. Thus despite massive increase in the population and the geographic boundaries of the city, the distance covered by PMT buses has hardly increased.

Mumbai's BEST had a fleet of 1800 buses in 1971 when it had to cater to a population of 27 lacs people

85% of Mumbai's commuters use public transport today, compared with only 25% in Pune.

The BEST carries about 50% of Mumbai's total road users, yet occupies only 4% of the city's roads.

BEST increased its fleet by 87% during 1990-2000

* Figures based on population being 30 lacs, some believe the population is already close to 40 lacs in which case higher number of buses will be needed

Compounding factors:

The above situation has been compounded by the lack of basic infrastructure within Pune. Existing roads are well known to be pothole ridden. Some roads seem as if they were a part of a 'war zone'. Rather than resurface the existing roads, money is being spent on ad-hoc measures such as building flyovers (some being built for 2 years and still not near completion) and widening roads at the cost of footpaths. Such is the situation that on most major roads such as S B Marg (one amongst 40% roads of Pune without footpaths); pedestrians are being pushed to share the same space as with motorized and non-motorised vehicles.

Consequences

Pollution

The consequence of the above is that at peak times the city roads are congested and grid-locked. Still worse, due to continuing use of old vehicles, especially 2 stroke rickshaws and huge number of 2 wheelers, the city is extremely polluted. Fewer than 30% of the vehicles in Pune met the emission norms in 2000. The World Bank report in Dec 2003 placed Pune as the fifth most polluted city in Asia.

Some 210 tons per day of total pollution is produced in the city. Around 65% of the pollution is due to vehicles. PM10 (also referred to as respiratory suspended particulate matter, RSPM) are significant in causing medical problems (asthma and lung cancers). As per the National Ambient Air Quality Standards pollution levels should not exceed the stipulated level more than 2 percent of the time in a whole year and not on two consecutive days. It is reported that the PM10 levels at Karve Road in Pune exceed the stipulated level more than 50 percent of the time. Bhosari, an industrial area, has recorded the lowest levels of SPM, which are less than half of the levels recorded at Swargate, a commercial and a transport-intensive area. The SPM (and concomitantly PM10) levels are the highest at Swargate, though they are quite high at Nal-Stop as well. SPM has been steadily rising over the years and is currently more than twice as high as the permissible level of 140ug/m3. Assuming that PM10 is approximately 40 percent of the SPM level, the average annual PM10 level would be approximately 128ug/m3, which is greater than twice the permissible limit of 60ug/m3.

There are mixed reports on pollution due to NO2 & SO2. Though a declining trend in the NO2 & SO2 level has been reported, both these pollutants have in the past often exceeded the permissible limits.

But pollution of air is not the only problem we need to worry about. The average noise level at Karve road is reportedly around 95 decibels. This is much higher than the permitted level of 65 decibels. At peak (rush hours) the levels are known to rise up to 125 decibels. Sustained noise at this level can lead to deafness. But subtle effects of a combination of the noise and air pollution include irritability, fatigue, anger and their consequences.

Accidents & deaths

But there are bigger costs of the above state of affairs. Accidents and deaths are a common place in Indian cities. Unlike cities in the West, pedestrians, bicyclists and Motorized Two Wheelers constitute 75% of the total fatalities in road traffic crashes. A total of 2001 accidents occurred in the year 2004 of which 348 were fatal, 278 were serious and 1383 were minor; eventually claiming about 400 lives.

> ***'The situation is so dire that our near and dear ones could walk out of the house to get a loaf of bread and never return'.***

India's vision of energy self-sufficiency

President Kalam in his Independence Day Speech in 2005 described a vision of becoming energy self-sufficient in 30 years. The above and below mentioned facts should be considered in this respect.

- The transport sector consumes 23% of commercial energy in the country
- The consumption in 94-95 was 65.49 million tones and the demand is expected to go up to 120 million tones by 2005.
- Domestic production would meet only 27% by the year 2010-11.
- It may be of interest to note that of a total 12, 00,000 litres of petrol supplied to Bangalore, the 13, 22,758 two-wheelers in the city alone consume at least half that amount every day! ***Pune has almost similar number of 2 wheelers, probably consuming similar amounts of petrol***

> ***It will be fair to say that energy self-sufficiency and with it possibly the vision of becoming a super-power is likely to remain just an illusion***

Environmental effects

Climate Change

Our planet is surrounded by a blanket of gases which keeps the surface of the earth warm and able to sustain life. Due to pollution, this blanket is getting thicker.

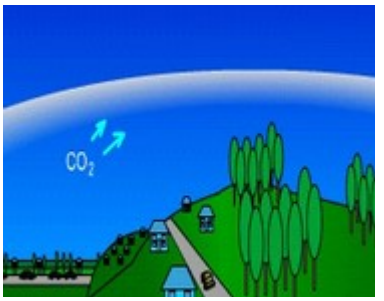
The heat from the sun is trapped inside this blanket leading to global warming. Polluting gases like CO_2 are reduced by plants. But with urbanisation, plant numbers reduce, escalating the global warming.

Scientific research indicates that, because of climate change, we may experience more intense and more **frequent extreme weather events.** A gradual increase in temperature also has major implications for ecosystems, growing seasons, animals and their habitats.

Some facts & examples of extreme weather are detailed below –

1. 30% of todays Greenhouse gases are due to industrial revolution, which began in the 18th century.
2. burning fossil fuels emits about 6.5 billion tonnes of CO_2 into the atmosphere each year.
3. The glaciers, which regulate the water supply to the Ganges, Indus and Brahmaputra, are believed to be retreating at a rate of about 10-15m (33-49ft) each year. India's Gangotri glacier is receding by 23m (75ft) each year. The average retreat of glaciers in Antarctica is 1,970 feet (600 meters) since 1953.
4. Warm water expands. This & melting glaciers means sea levels will rise to point wherein 17 million people living at an elevation of less than 3 ft (1 m) above sea level in Bangladesh, and millions more inhabiting the flat banks of the Ganges and Brahmaputra Rivers may perish. Many islands in South-Pacific and Indian Ocean will be submerged in water forever.
5. Heatwaves are now common. The ten warmest years on record have all been since 1990. In Europe, the August 2003 heatwave was probably the hottest for at least 500 years. During August 2003, the hottest temperature ever recorded in the UK was taken in Brogdale in Kent. It was 38.5°C. Between 4 and 13 August 2003, over 2,000 people in the UK died as a result of the heat. In France between mid-July and August – 15000 people died, 3000 in one day (more than numbers of deaths in one day during world war II).
6. Hurricanes - 26 storms - five more than the previous record of 21 occurred in 2005. Of the 26, 16 reached hurricane force. The impact of Hurricane Katrina is well known to all.
7. Erratic Monsoons – 26th July 2005, Mumbai received a meter of rain in a day. Up to 1000 people died. Droughts could also affect us, as global warming tends to change pattern of rainfall.
8. other effects – rising sea water means salt water tables rise, crops fail and with droughts this could lead to famine. Also warm weather helps breed germs, viruses and diseases will spread rapidly.

CO_2 Emissions



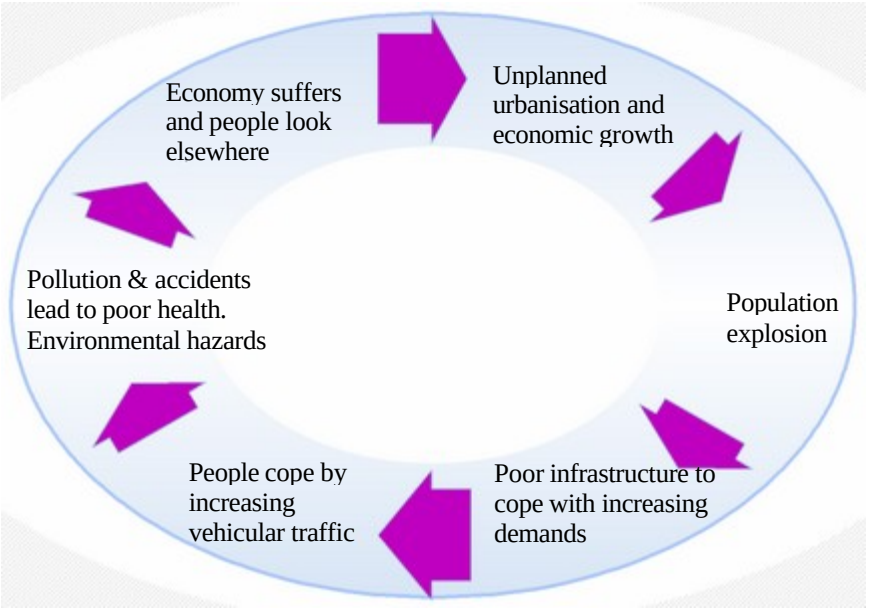
Blanket of polluting gases traps the heat leading to global warming

Extreme weather – heat waves, thunderstorms, hurricanes, melting glaciers, rising sea level, floods or droughts

The economic loss due to weather-related natural disasters in 2005 was 200 billion dollars**.**
It will take 30 years to start seeing effects of us doing something about climate change
WE NEED TO ACT NOW

Pune Caught in a Vicious Whirlpool

The above can be summarized as a vicious cycle that Pune seems to be caught up in.



Other problems with the PMT

The Maharashtra Pollution Control Board in its Pune Action plan suggests that reduction in number of two wheelers depends on the switching over to the use of public vehicles by the people.

But even if we were to imagine that urbanisation occurred in a planned manner, that the roads were in good shape and that the PMT runs at full strength of 1600 buses, still the chances of people using PMT are slim. There are several other difficulties with the running of this loss making company run by the Pune Municipal Corporation.

You don't have to look too far for understanding the reasons for this. Pankaj Sekhsaria, India Together, reported on the round table conference organised in 2004. Speaking at this conference, then General Manager of PMT, Radheshyam Mopalwar said the following –

> *'The fleet is only half the number of buses needed for a city of 30 lakhs residents; it is old and aging rapidly; the buses themselves are in a pathetic state; there are not enough trained people; not enough bus depots or washing facilities; and the bus stops and bus stands are quite simply, bad. The presentation was well illustrated with images: no window panes in some buses; no seats in others; 200 buses that had to be left running even at terminating destinations because they had no starters, and evidence of the use, rather misuse of bus stops themselves. One had cows and goats taking shelter, another was blocked off by a garbage bin that was placed right 'there' and another that was being used by hawkers to park their hand carts and wares. Little of it was surprising, because this is the daily experience of the travelling public of Pune'.*

In another report from CIRT, Sudarsanam Padam states *'even the minimum expectations of manufacturing a passenger bus could not be met. Bus bodies are mounted on truck chassis which are built for heavier loads, their powerful engine and other assemblies are more fuel consuming, clearance from ground level is high, thus inconveniencing passenger entry and exit, and they are not designed for comfort'.*

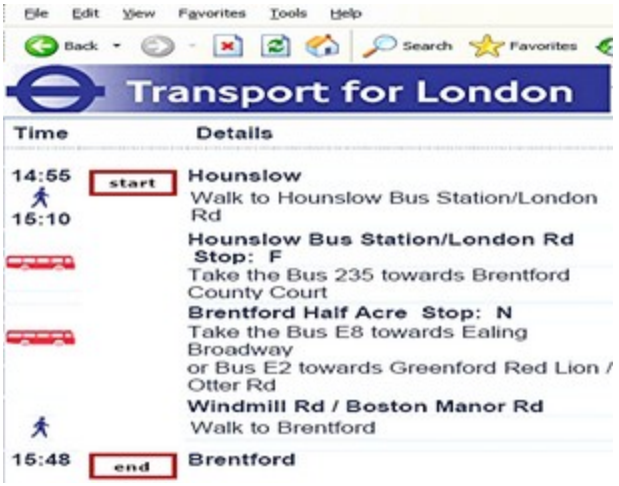
The difference is glaringly obvious when we compare PMT with Public Transport elsewhere. For the purposes of this document comparison is drawn with London United that runs public buses in London and BEST that runs buses in Mumbai. Both these latter organisations have improved dramatically over years and remain very user friendly.

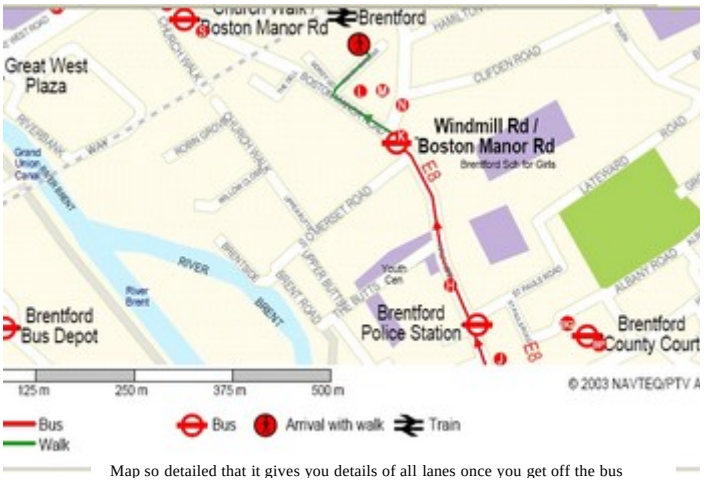
The BEST has decided to improve its fleet keeping the following objectives in mind –

- Low floor
- Better ventilation
- Aluminium body
- Better brakes / Stronger suspensions
- Wheel chair access
- International designs

London United uses only low floor buses with a single step entry. Further they operate automated doors, a tool that could save thousands of lives in our cities.

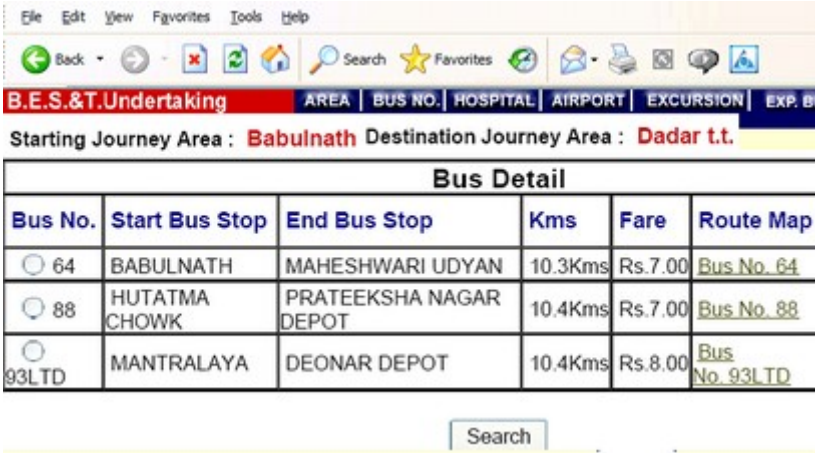
Now take a look at user-friendly interface provided London United. You can access it at any time and plan your journey. An example is given below.





Map so detailed that it gives you details of all lanes once you get off the bus

A similar interface is also offered by BEST on their website.



In 2006 - the public transport company (PMT) serving the Silicon Valley of Maharashtra does not even have a single web page of its own

But that's not all. You have already read above how the bus stops in Pune are not very good. To add to the woes of the people, following project 'accessibility for all' the bus stops were modified. Though these bus stops provide a place for disabled to sit and questionably an easier entry in to the bus, they occupy virtually the entire width of the footpaths. This unfortunate and may be considered an illegal encroachment of the pavement drives pedestrians back on to the roads, endangering their lives and contributing to congestion.

Clearly as the pictures below suggest ***a simple right angle (inverted L shaped) frame would have sufficed***. Tragically, one cannot help but think that the bus stop designers within PMT probably did so sitting at their desks. Further, those who commissioned these bus stops did not think about the feasibility of the designs on some of the footpaths they were erected on.

Pictures from London Bus Stops

Real time information using GPS technology is available on some bus stops.

Information about bus frequency, expected times and local map is always provided.

BEST too is in process of trying GPS technology

Footpath left available for pedestrians

In contrast the Pune bus stops are a picture of misery

As can be seen the bus stops -
Encroach on the entire footpath.
Are in a pathetic state or are used for other purposes

These images are modified and the original images and article can be accessed by visiting www.punewestsideplus.comand www.puneeastside.com

Solutions

The vicious cycle that Pune is caught in may seem complex. It is important to remember that complex problems need not be resolved through complex solutions. Basic principles and learning from what mistakes were made elsewhere can pave the way for simple yet effective solutions.

Swedish International Development Cooperation Agency looked at the feasibility of a Metro **Bus** system in Banglore. They have clearly stated that –

- *Road and street infrastructure cannot grow at the same pace as the population and must therefore be used more efficiently by promoting high-capacity public transport.*
- *The bearing principle is not to start with the provision of new, expensive infrastructure, but to use existing resources as efficiently as possible.*

How not to solve a problem:

The above principles and below mentioned facts demonstrate why grandiose projects like the ***Sky Metro (an elevated rail network) proposed for Pune will fail*** and are examples of how not to solve a problem.

The PMC spent 30 lacs on a feasibility study of the Sky Metro in Pune. One needs to ask why this study was commissioned without keeping the following in mind –

1. The cost of building the Sky Bus Metro is Rs. 50 Crores per kilometer.
2. Pune population travels in all directions. Unlike Mumbai, Pune does not have well established corridors such as the Western or Central railways. This is clear from the following table –

Destinations	Distance	Estimated Cost of Construction
Agriculture College to Chinchwad	15 kms.	Rs. 681 Crores
Sambhaji Bridge to Warje	9.4 kms.	Rs. 423 Crores
Sambhaji Bridge to Hadapsar	11.7 kms.	Rs. 535.6 Crores
Wakdewadi to Lonikand	24 kms.	Rs. 1085.5 Crores
Chaphekar Memorial, Chinchwad to Agriculture College	17.2 kms	Rs. 775.3 Crores
Pataleshwar Temple to Katraj	10.1 kms	Rs. 459.9 Crores

3. Looking at the table one can see that the overall cost of this project will be 3960.3 Crores. **This is astonishing given that Pune Municipal Corporations Budget for 2004-05 was 951 Crores. Also compare this with the projected immediate cost of 270 crores detailed on page two.** For a more detailed critique of the Sky Bus system, please contact Major General Jatar by writing to him scnjat@gmail.com
4. Further, Dinesh Mohan, IIT Delhi make the following points -

   Two major studies done to understand the performance of metro rail systems by the World Bank and the Transport Research Laboratory (U.K.) make the following conclusions:

   Contrary to expectations metros do not appear to reduce traffic congestion. The experience from Chinese cities supports the conclusions that building metro systems does not necessarily reduce congestion and decrease private transport use. The relief to traffic congestion is short lived because private traffic rapidly grows to utilise the released road capacity.

   The advanced track transport system is enormously expensive and requires long construction period, it cannot be taken as immediate solution

   *The experience of designing and running **a high capacity bus system** in the city of Curitiba in Brazil gives us a very good example of what **is possible** in planning public transportation systems **at a fraction of the cost (5%-10%) involved for metro lines.***

5. Also, simply building flyovers or expanding roads will never help. **It only attracts more vehicles on the roads. Mumbai is an example of this.** With over 55 flyovers built, the city remains grid locked. The proposed Metro in Mumbai will bring only short-term relief to the cities congestion. It is for such reasons that the Balbharati -Paud road should be opposed. To read more about **Stop the Balbharati - Paud bypass road visit** http://www.rescuepune.blogspot.com

What is the solution?

Every weekday over 6,800 scheduled buses carry around six million passengers on over 700 different routes in London. But evidence shows that despite a huge number of buses and an excellent Metro (Underground) rail network, the average traffic speed in London is 6miles per hour. London has had to consider other strategies to overcome the problems of congestion.

Simply increasing the bus numbers and modernising the PMT will not solve the problems of Pune

Pune needs a three pronged approach –

- Establishing a modern user friendly public transport system based on a rapid transit bus system
- Municipal authorities taking tough decisions and implementing them
- Puneites to change their lifestyles for the better

Modernising PMT

This should include establishing a modern user friendly public transport system based on a rapid transit bus system.

The way ahead is to tackle the following –

1. Ensure the bus service has adequate number of buses (the Pune Development Plan states a need for 2000 buses)
2. Ensure the buses are of a reasonable standard. Only on doing this will the middle-income group is ready to travel on the buses.
3. Ensure the service is user-friendly. This will need to include comfortable yet practical bus stop designs that allow placing of vital information such as bus time tables, frequencies, helpline numbers and also advertisement (an important source of revenue generation). Further, an inter-active website providing information is a must.

But the above will not suffice. The PMT as admitted in the Pune development plan is a company that has repeatedly runs into financial losses. Mismanagement is the only reason for such a plight. Current Staff to vehicle ratio in transport undertaking is very high (**13:1**). The reasons for such a high staff-vehicle ratio are beyond comprehension.

A fat waistline can never be healthy

Instead of using automation to its full advantage, we are stuck in medieval times. London buses for example use oyster card (smart card) technology for ticketing. Everyone getting in to the bus needs to have a pre-paid ticket. This means that there is no conductor on the buses anymore (even on double-decked buses). People enter the bus via the automated front door, swipe their smart card on the card reader and get off from the automated back door at their destination.

Bajaj produced 2.4 million vehicles in 2005 with 10,500 workers. In 1990s they used to make 1 million vehicles using 24,000 workers

Unfortunately, motor vehicle act of 1988 does not allow the public transport buses to run without conductors. It is time such irrelevant statutes are amended. Without this optimal use of manpower is not possible and companies end up in the red as the cost of salaries itself becomes a burden.

Also, London United uses several articulated buses. These have been used in Curitiba, Brazil and were mentioned as one of the recommendations in Bangalore by the Bangalore Metro Bus Feasibility study.

London articulated bus

If the above two changes were implemented, you can imagine that during peak time, one bus driver on an articulated bus could carry several more passengers along the trunk routes in Pune. Further, since we won't be using conductors any more, the freed staff could be re-trained to maintain buses, drive the 1000 odd new buses that we need, implement customer satisfaction surveys and man high bandwidth help-lines.

Other changes that PMT needs to consider as a part of its modernising agenda are as under -

Bus lanes

Any modern rapid transit system relying on buses uses dedicated bus lanes to solve the problems of congestion. As public transport is likely to get people to their destination faster, they ditch their cars and start using the buses. Further, car drivers that drive on the bus lanes are heavily fined, making available valuable source of incomes. In London drivers are fined £100 (Rs 8000/-) for such an offence. Bus lanes cameras are in operation all the time for this purpose.

A clear way for buses despite lot of traffic in Central London

Ticketing

London buses have simplified their ticketing. Irrespective of the distance, only one ticket is issued. This is useful as people are encouraged to walk small distances (disabled, senior citizens & children go free).

Further, as mentioned above with use of smart card technology, tickets are not issued on the buses. The daily, weekly, monthly or annual pass in London allows people to hop in and out of the bus any number of times. Also one smart card is allowed to be shared by family members / friends.

Smart card – BEST is also introducing them

Adverts

This is a valuable source of income for most public transport systems. PMT has failed to exploit this to its benefit. Naturally the state of bus stops is such that the advertiser will not feel like advertising on the bus stops. The buses are even worse off in this matter.

Effective advertising, placed on rollers, the adverts change every few minutes

Road tax

It is simply amazing that PMT is said to be a subsidised service, but still has to pay lacs of rupees per year as road tax. Measures should be taken for this to stop immediately.

Pricing of tickets

This is a complex subject. Yet following facts need to be borne in mind –

The cost of riding a two-wheeler is 64 paise per kilometre. The cost of running a bus is recovered only if the ticket is charged at 70 paise per kilometre per passenger. Thus if a person travels 20km / day, the cost is Rs 384 per month on a scooter. The bus service will become popular only if this figure can be beaten.

It becomes difficult to implement cheaper tickets, especially if PMT decides to convert (or buy) all its buses that run on CNG or any other cleaner technology. The cost of such buses will be enormous & tickets become costlier. It for this reason that Dinesh Mohan, Delhi IIT suggests practical solutions should be considered. Conversion to either CNG, Euro II diesel or 50%-50% mix of CNG-Euro II diesel give similar advantages in terms of reduction of the pollutants. A compromise is to have a 50%-50% mix of CNG-Euro II diesel buses, at least to begin with. This will help rationalize the price of tickets. A similar compromise may be required by procuring a combination of semi-low floor and low floor buses (the former are cheaper).

But the pricing issue will become simpler to deal with if significant other decisions mentioned below are implemented.

These are measures that the Pune Municipal Corporation will have to implement in order to restrict the use of vehicles on the city roads.

Taking tough decisions

The provision of public transport alternatives is not sufficient to achieve reduced congestion or emissions. As motorists switch to public transit, others will start driving upon seeing the congestion slightly relieved. Thus, it is always essential to attack urban congestion through comprehensive measures i.e. both traffic management and pricing which also restrict automobile use.

Let's look at some methods used around the world -

Congestion charge

The best and most recent example of this policy is London. A time had come when the average speed in London fell to 3 miles per hour. Ken Livingstone, London Mayor introduced a £5 per day congestion charge two years ago for driving in to 8 square miles within central London. Initially opposed but still implemented the move has been so successful that the charge has now been increased to £8 per day. The Mayor has not only increased the congestion charge area, he has also promised to increase the charge to £10 when he is re-elected.

The impact of the congestion charge is detailed below –

- *Traffic delays were 30% lower*
- *Traffic levels reduced by 18% in traffic entering the zone*
- *Bus passengers increased by 29,000*
- *Congestion charging contributes to London's economy, in 2005it contributed £93 million, 73 of which will help buy 350 more buses. The remaining money is to be spent on improving road safety, pedestrian safety and cycle lanes.*
- *There are 65,000 fewer car trips into or through the charging zone each day*

Why restrict other vehicles -

A car consumes nearly 5 times, two-wheelers 2.6 times and a rickshaw 3 times more energy than a 52-seat bus (when adjusted for the number of people carried).

Seven to ten 2-wheelers pollute as much as one bus.

4 two-wheelers occupy the same space as a bus when in motion. But a bus carries 70-100 passengers.

Other examples: Trondheim in Norway ($1.5 / day), Durham in England and Edinburgh in Scotland (£2 per day), Singapore (45 p / mile) & Singapore where ownership permit costs more than price of car.

Parking

One of the biggest ills of Indian cities, including Pune is the fact that motorist park their vehicles wherever they wish and get away with it. One of the pictures on page six shows how a bus stop has been used for this purpose. More often it is the footpaths (or a space where a footpath ought to be) that has been consumed by the vehicles.

What is needed is an immediate stop to this free 'park where you like' policy. Parking should be charged and these fees should become an important source of generating revenues for the PMC.

In London one should expect to pay £2 per hour, around £10 per day for parking the vehicle in a public space.

Petrol subsidy

The Government of India under pressure from the masses (thanks to vote bank politics) has deterred from increasing the petrol prices. People need to realize that India imports huge amount of crude oil each year. This is refined into petrol and then sold by companies such as Reliance, Shell and Hindustan Petroleum. These companies keep costs low because they get subsidy from Indian Government. Such policies mean the companies make their profits but do not pay the Indian Government sufficient taxes, leaving the Government cash-strapped when it comes to generating revenues. Many countries have now stopped such subsidies. ***In the UK cost of 1-liter petrol is around Rupees 80***.

Road tax

The rationale behind this charge is that it helps maintain the roads. Unfortunately in India many do not pay this tax and there is no way of penalizing the drivers for not doing so. In Europe you cannot drive without displaying your tax disc, proof that one has paid the charge (this is apart from congestion charges mentioned above).

Some countries are also considering charging 10% of petrol bill as a form of congestion charge. Thus if you fill petrol worth Rupees 500, you pay Rs 550, with 50 rupees as a surcharge for helping maintain roads and public transport. Many people find this a useful way of congestion charging as it implies that *the more you drive the more you pay*.

Using restrictions

Bus & cycle lanes - Bus lanes have been discussed on page nine. Many countries are encouraging use of cycles by way of cycle lanes. 32% people in Copenhagen go to work in cycles. The city has dedicated cycle lanes and when these lanes meet other motorized traffic, cyclists are given a preference.

Drive a Vehicle - Feel the Pinch

Example of London

The cost of petrol in London is 1 Pound (Rs 80) per litre. If you use 2 litres a day, five days a week = £480 per year

The congestion charge is 8 pounds / day = 160 pounds per month (5 working days) = £1920 / year

Car parking = £10 per day = £40 per month = £480 per year.

Road tax = £125 / year

Insurance = £400 / year

Total = £3405 / year (one tenth of average salary)

Cost of annual unlimited use bus pass is £540 only

What will you choose?

Pedestrians' only paths - A huge number of countries in the West are ensuring that there are safe pedestrian only areas within the center of the cities. This helps shoppers and children remain safe.

A beautiful quiet walkway in London

Pedestrians' only pathway between station and residential area

Hounslow High Street - biggest retailers – But only Pedestrians, cycles and buses allowed

Restricting Rickshaws to the periphery

I am aware that there is likely to be some debate on feasibility of restricting Rickshaws to the periphery of the Pune city. ***I urge the readers to join me in having a long-term vision of Pune.*** There is already a huge problem with the unregulated manner in which the Rickshaw drivers behave. Refusing to take short rides, driving dangerously and adulteration of the fuel are some issues we commonly encounter along with occasional rude behaviour.

Yet there are several other reasons for banning the rickshaws from the city center –

1. Unlike the cars, which are improving in their safety measures through stringent crash tests, there is no study to suggest that the rickshaws in Pune (or India and rest of the world) are safe. This is one big reason why the Western world has banned three wheelers from their roads. Unfortunately this is true even for electric rickshaws, which may be silent and also non-polluting but just as dangerous.
2. There is evidence showing that Rickshaws hamper use of Public Transport. It is well documented that banning 6 seated rickshaws (from Jan 04) led to an increase in bus use and also profits of PMT in the periphery of Pune.
3. If the report, Pune Action Plan by the Maharashtra Pollution Control Board is accurate, the Road Traffic Authority has already stopped registering new 3 wheelers in the city. Indeed with phasing out of old rickshaws, a time will come when there are no rickshaws on Pune streets.
4. With a modern Public Transport Bus Service which is user-friendly, well-priced, and well operated in regards the routes, frequency and comforts – one will hope the rickshaw use decreases. Indeed if you have bus stops within 5-7 minutes of your home or work place, who will need a rickshaw? In London buses have enough places for even big suitcases, prams & wheelchairs. It is common for people to travel with their luggage to train stations and airports. Only emergency situations may require use of a Taxi service and a modern city should have a highly regulated taxi service provided by energy efficient 4 wheelers. The cost of buying a 4 wheeler is huge in comparison to a 3 wheeler and consequently we will have just the right number on streets. Also the consumer will have to pay more and hence use it only when needed.
5. Mumbai is a classic example where banning 3 wheelers from south-central city has helped enormously. Anyone who has been to Mumbai can tell you how horrific it would be if rickshaws were allowed in places like Girgaum or Dadar.

Nothing fails more than success. Two wheelers and rickshaws have successfully served the masses in India. But times change, Mumbai had to say goodbye to Trams, almost all major cities have seen the last of hand pulled rickshaws.

There could be nothing worse than having to endure a liability of an idea that has served its time.

What you can do as an individual

One word probably sums what we can all do individually – **sacrifice**. Several measures listed below could be encorporated in our daily lives. But the biggest change needed is in us understanding & supporting the tough decisions that prospective Governments will be forced to implement. It is unrealistic to think we can have petrol subsidy for ever.

If we do not use the 2 wheeler once a week, together we can prevent 140 tons of pollution each year. A lot more when we do so more often

Some simple measures you can start using are –

1. Walk or use a cycle when possible.
2. Use PMT when possible.
3. Plant trees where possible.
4. Obey traffic rules
5. Use well known methods such pooling cars

But above all, you must join the Pune Transportation & Traffic Forum (PTTF)

Join PTTF by - Email: contact@pttf.net or visit www.pttf.net

Goals without deadlines are DREAMS

Ironically the Pune development plan documented by the PMC is excellent (on paper). As mentioned before, it suggests the PMT should have 2000 buses. It also mentions several suggestions discussed above.

Unfortunately there are no timelines or deadlines within the plan. There is no business model for running of the PMT effectively.

Equally tragic is the vote bank politics and short sighted but pre-election rhetoric of grandiose ideas such as the Sky Bus by the politicians. Clearly there is a lack of political will to make the simple but logical and effective changes.

If this persists then there is a need for the masses to push the PMT into oblivion consequently making it a history.

The Government of India's Dis-Investment Department (http://www.divest.nic.in) clearly documents that only 3 sectors cannot be privatised – Atomic Energy, Minerals specified in schedule to atomic Energy and Railway Transport.

If the PMC and its defunct Public Transport provider PMT cannot change for the better, it is time this sector is privatised.

A well regulated private sector functions well. Telephony is an excellent example, so also the well regulated private bus services in Delhi and a relatively autonomous BEST in Mumbai.

Conclusions

In summary it is clear that Pune is caught up in a vicious cycle of self perpetuating problems. A long term vision and participation of citizens in planning the future of the city is vital. Politicians, bureaucrats and citizens will have to make tough choices. We need to understand and accept that doing the right thing is not always the most enjoyable or comfortable thing. Amongst several changes that we need to implement the most important one is provision of a modern, efficient & effective public transport system. Without the latter, the city can expect to go down hill and become just another bustling metropolis with poor quality of life.

Pune – solving the jigsaw

All of the above can be put down as prioritized steps that need completing in a certain order.

Step 1	Improve existing road infrastructure + Modern Public Transport
Step 2	Taking tough decisions – removal of petrol subsidy, congestion charging, paid parking, restrictions (bus lanes, cycle lanes, pedestrian only areas, rickshaws limited to periphery of the city, etc
Step 3	Time for making individual sacrifices – walk, use public transport, etc
Step 4	Auditing effect of changes, sustaining the changes – an ongoing process

References:

1. A survey of business in India. The Economist, June 2006
2. Accessibility for all - a case study of Pune city in India. Anand Venkatesh, CIRT; David Maunder and Joanne Sentinella, TRL, UK; Phatak Vinay, Disability Network, India
3. Accident Analysis of Shivaji Nagar, Pune by Jayteerth Deshpande & Sushim Bhiwapurkar**,** Symbiosis Institute of GeoInformatics, Pune
4. Antarctic Glaciers Melting Rapidly, By Robert Roy Britt, Live Science, April 2005
5. BBC News: Himalayan glaciers 'melting fast'. Monday, 14 March 2005
6. BEST Undertaking: www.bestundertaking.com
7. Extreme Weather Events over India in the last 100 years. U.S.De, R.K.Dube and G.S.Prakasa Rao. J. Ind. Geophysics. Union (July 2005), Vol.9, No.3, pp.173-187
8. http://www.emcentre.com/econnection/RP_trafficdata.htm
9. Konkan Railway Corporation Ltd. Government of Maharashtra Pune Sky Bus Metro: A Preliminary Engineering cum Feasibility Survey Report for PMC, 2000
10. Pankaj Sekhsaria, India Together, November 2004
11. Partnership for Sustainable Urban Transport in Asia - Pune – India, Srinivas Bonala & N V Iyer, Pune Municipal Corporation, 2004
12. Planning for Public Transport: Integrating Safety, Environment and Economic Issues. Dinesh Mohan, Transportation Research and Injury Prevention Programme, Indian Institute of Technology, New Delhi 110 016, India
13. Planning for Public Transport: Integrating Safety, Environment and Economic Issues. Dinesh Mohan, Transportation Research and Injury Prevention Program,
14. Pune Action plan 04, Maharashtra Pollution Control Board
15. Pune Breathing Easy, Research & Administration in Natural Wealth Administration
16. Pune Municipal Corporation - http://www.egovpmc.com/default.asp
17. Pune Traffic, Its time we Act. Pune Traffic & Transportation Forum (Sept 2004)
18. Regional Emissions Inventory Study - Pune, India by Patrick Gaffney, Michael Benjamin, John Mooney, Ted MacDonald, U.S. Environmental Protection Agency (May 2004).
19. Sustainable transport in Pune (final report) – Central Institute of Road Transport, Bhosari (June 05)
20. The Banglore Metro Bus Feasibility study. Swedish International Development Cooperation Agency (Sida), Sept 99
21. Transport for London: www.tfl.gov.uk
22. Transport needs regulation, Sudarsanam Padam, Central Institute of Road Transport (CIRT), Pune
23. Whither efficient public transport? Deccan Herald, Monday, March 01, 2004
24. www.climatechallenge.gov.uk/understand/what_is_climate_change.html
25. www.commondreams.org - 2005 Costliest Year for Extreme Weather, by Jim Lobe
26. Committee Proceedings to recommend Bus Specifications for Pune Municipal Transport (PMT). Maj. Gen. S. C. N. Jatar, Retd, Shivraj G. Rane & H. M. Naqvi, July 06. Contact Major General Jatar by writing to him for a copy of the article scnjat@gmail.com

Aknowledgements

I have great pleasure in taking this opportunity to thank Ranjit Gadgil & Sujit Patwardhan, members of Pune Traffic & Transportation Forum for having done splendid work in this area for a while. My correspondence with both of them has been insightful and inspiring. Both of them have shared vital information that has helped shape this document.

Disclaimer

All information presented here is as accurate as the sources mentioned. I have simply compiled the information for the benefit of myself & other lay citizens of Pune.

Brief note about the author – Dr Adhiraj Joglekar MBBS, MD, DNB, MRCPsych (UK)

Born and brought up in Mumbai, I completed my Medical Education at Nair Hospital & T N Medial College. On completing my post-graduation in Psychiatry I practiced the profession as an independent consultant before leaving for UK to specialize in Child & Adolescent Psychiatry.

My parents moved to Pune in 99-2000. Since then I have made several visits to the city. The city was a culture shock for me as having lived in Mumbai I was used to much better traffic discipline and using public transport regularly.

An eye-opening moment came when I found it impossible to cross the roads at Deccan with my 4 year old daughter saying ‘dad why are the cars not stopping, I am scared…’

Without a doubt we and our near & dear ones deserve better. I hope you join us in making Pune a model city that sets an example for other cities to emulate.

Contact: adhirajjoglekar@yahoo.com