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In this Issue

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Editorial

Telecommuting and Sustainable Mobility

This issue of SQ focuses on sustainable transport. It covers challenges that need to be addressed in India's over-congested cities and strategies that we need to consider.

Could telecommuting help address some of India's most overwhelming transport and environmental problems? Indeed it would. If much of city's workforce stayed at home or staggered their work days at offices (i.e. "flexible jobs"), then telecommuting could significantly help in conserving energy, avoiding greenhouse gas (GHG) emissions and reducing traffic congestion. What more - telecommuting is perceived to increase the productivity and provide a work-life balance.

Over the years and more recently so, telecommuting has proven to deliver significant societal, environmental and economic benefits. In fact, telecommuting is potentially the most promising opportunity for businesses to capture significant emission reduction benefits with a relatively minimal investment in technology and infrastructure. The business can thus claim that it is significantly contributing towards city's sustainable mobility.

Aside from the environmental advantage, telecommuting has other important benefits. It offers attraction and retention of qualified staff, reduces sick leave and absenteeism, provides greater flexibility for disabled or physically challenged workers, decreases cost of work space, reduces family stress and accommodates family needs.

What's behind this coming telecommuting revolution? Quite simply, work no longer now needs to be defined as a place you need to go and spend your day. Work can be done through internet with connected devices and cloud-based services that make working from anywhere possible. So why travel to the workspace?

AT&T in the United States, has an impressive story. AT&T defines telecommuting as a formal work arrangement in which people work from home at least one day each week. AT&T enabled nearly half of its total workforce with mobile and remote access technologies that allowed them to telework from a variety of locations. It was found that by reducing their commute, AT&T's telecommuters avoided 175 million total commute miles, saved approximately 8.7 million gallons of gasoline, and avoided total GHG emissions of 76,000 metric tons, equivalent to removing 14,788 passenger vehicles from the road for a year and saved on average, 54 minutes of commute time per employee. CISCO and British Telecom are other examples who have similar stories to tell.[1]

Members of BCCI, especially with large workforce, may like to examine telecommuting as a strategy and help address some of the challenges to sustainable mobility in India. In particular, IT companies in congested cities like Mumbai, Pune and Bangalore should take a lead where teleworking should be possible. While there is now a considerable metrics available to quantify the benefits of telecommuting, we need more research and data analyses in the Indian context - and of course with good case studies. I do hope that this issue provides some inspiration to our members in this direction.
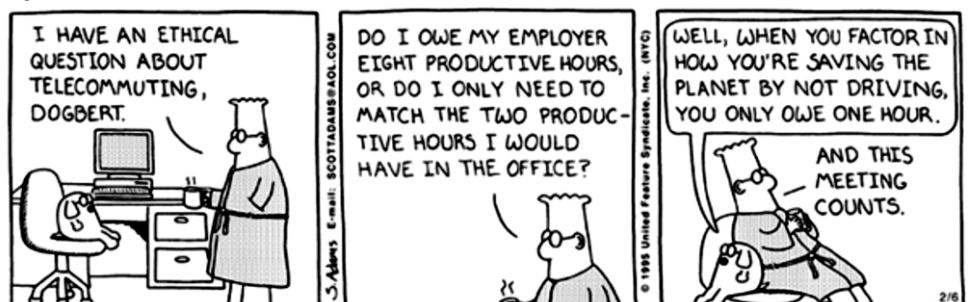
- Prasad Modak

[1] *http://www.greenbiz.com/blog/2011/02/17/how-telecommuting-lets-workers-mobilize-sustainability*

Source: http://theexpatexperience.wordpress.com/tag/telecommuting/

Sustainable Transport - an integral aspect of Sustainable Development

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Any means of transport with a low impact on the environment and on the society can be termed as **Sustainable transport**. The term Sustainable Transport and related terms such as Sustainable Transportation, Sustainable Mobility and Green Transport came into use as a logical follow-on from Sustainable Development.

Sustainable transport makes a positive contribution to the environmental, social and economic sustainability of the communities they serve by providing social and economic connections through increased mobility (See Box 1). The advantages of this increased mobility however, need to be weighed against the environmental, social and economic costs posed by the transport systems.

> **Box 1: Checklist for a good Sustainable Transport System**
> - ❑ Accessibility
> - ❑ Health and safety
> - ❑ Cost effectiveness
> - ❑ Impacts on competitiveness and generation of wealth
> - ❑ Lower Consumption of natural capital
> - ❑ Lower Production of pollutants (local and global)

The Need for Sustainable Transport

The need for Sustainable Transport is evident. In the past the economic and social benefits of the transport sector outweighed their monetary costs and the negative environmental impacts. That is no longer the case today. Environmental impacts of transportation include air, water, and noise pollution; the unsustainable use of land and other natural resources; disruptions in community living and interactions and destruction of natural habitats. Spills and leaks of fuels, oils, and solid and hazardous waste by-products can contaminate land, surface water, and groundwater. Transport systems have accounted for 20-25% of the global energy consumption and carbon dioxide emissions (World Energy Council, 2007). The greenhouse gas emissions from fossil fuel combustion in the transport sector have been increasing at a rate faster than any other energy using sector (Intergovernmental Panel on Climate Change, 2007). The transportation sector is also a major contributor to smog in urban areas. This smog can damage vegetation and have adverse effects on human health, such as impaired lung function, respiratory infection, and asthma. It has also been associated with certain conditions of heart disease.
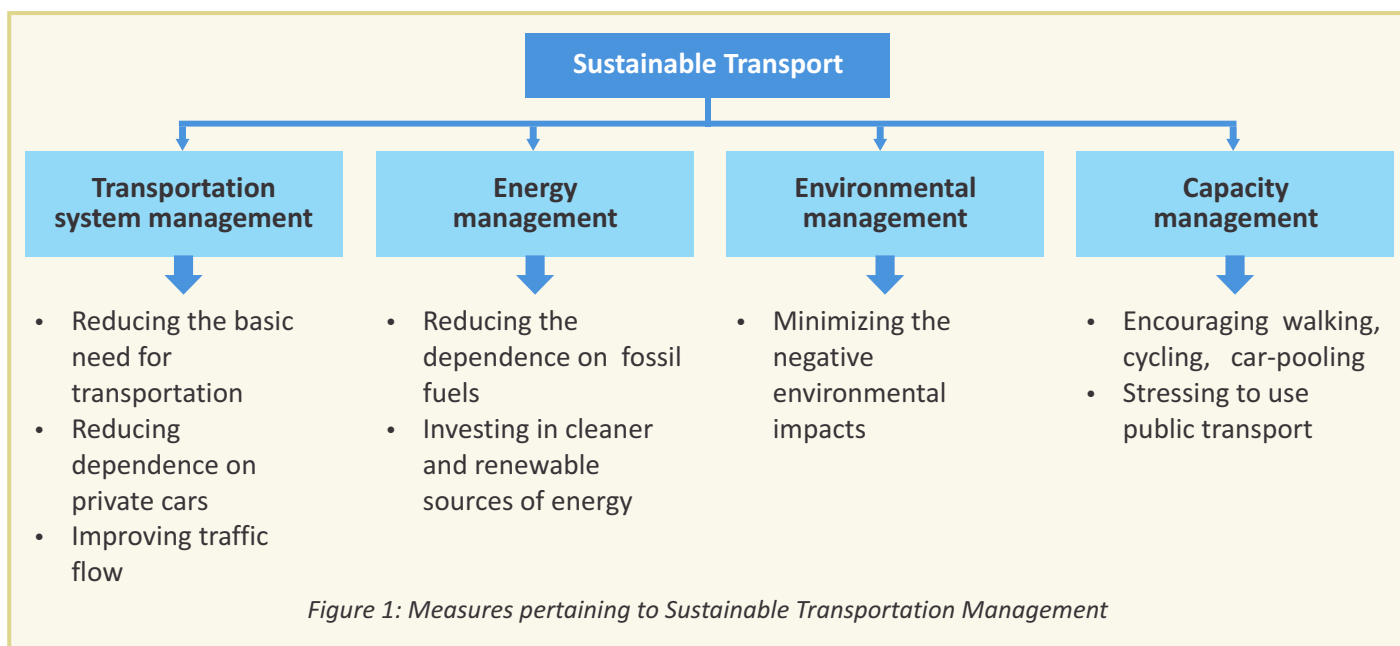
Social and economic impacts include higher health care expenses, the costs of cleaning up pollution, and the costs associated with accidents and congestion. Traffic congestion imposes economic costs by wasting people's time and by slowing the delivery of goods and services. Congestion also contributes to greater fuel consumption and additional emissions of smog-causing air pollutants and greenhouse gases, which have further impacts on the quality of life and health of individuals. Other social costs of transport include road crashes, air pollution, physical inactivity, time taken away from the family while commuting and vulnerability to fuel price increases.

Just as the impact of transport is multidimensional, the focus of planning and establishment of Sustainable Transport systems must also be so. The environmental considerations should include understanding, minimizing and addressing the above mentioned impacts on the area serviced by the planned transport system. Economic efficiency must also be ensured -- transport must be cost-effective and capable of adapting to changing demands. Under the social dimension, the focus of any transport or transport related activity must be aimed at upgrading standards of living and quality of life.

Sustainable transport can be achieved through measures pertaining to transportation system management, energy management, capacity management and environmental management. See figure 1.

There is an urgent need for the incorporation of sustainable thinking in the planning and implementation of all transport or transport related

Sustainable Transport

Transportation system management	Energy management	Environmental management	Capacity management
• Reducing the basic need for transportation • Reducing dependence on private cars • Improving traffic flow	• Reducing the dependence on fossil fuels • Investing in cleaner and renewable sources of energy	• Minimizing the negative environmental impacts	• Encouraging walking, cycling, car-pooling • Stressing to use public transport

Figure 1: Measures pertaining to Sustainable Transportation Management

activity so that they may fulfil their purpose while simultaneously reducing the environmental, economic and social costs and impacts. This calls for a broadening of focus to include not only mobility (i.e. the physical movement) but to also include accessibility (the people's ability to obtain desired goods and services). Sustainable Transport planning also requires stakeholder involvement so that diverse perspectives and preferences can be incorporated into what would become a more comprehensive and integrated strategies and consequently better transportation systems and networks.

Sustainable Transport in India

Indian cities are urbanizing at an unprecedented scale and pace. Over the next few decades, India's urban population is expected to increase significantly, from 377 million in 2011 to 590 million by 2030! The country's existing urban transport infrastructure is already over-capacity. This fact coupled with the alarmingly high rate of traffic fatalities, increasing air pollution and greenhouse gas emissions, congestion, and urban sprawl--has created a sense of urgency to improve the quality of life in our cities now for the benefit of future generations.

There have been more than 130,000 deaths as a result of road and traffic accidents in India.
-- National Crime Records Bureau, 2011

The new trends in urban development planning separates the land uses (i.e. residential and commercial) which tends to shunt growth to a city's periphery thereby reducing the density and leading to urban sprawl and consequently increasing daily commutes. Such policies make it difficult and expensive to develop public transport networks with quality service and wide coverage and the result is a cityscape where private vehicles are the only convenient option. Existing investments in urban transport systems in India have focussed mostly on improving vehicular movement by increasing road space.

Building more roads is not the answer. Indian cities need to invest in public transport systems, with a priority on city bus services integrated with other transit modes, as well as pedestrian and cycling networks to encourage non-motorized transport. Cities also need to actively manage their growth and development patterns in order to both facilitate and reinforce the advantages of sustainable transport modes. The Government of India (GoI) has taken significant steps towards the promotion of sustainable transport. The most notable is the finalisation and issuance of the National Urban Transport Policy (NUTP) in 2006. There have also been steps taken towards strengthening the transport related institutional set up, in addition to the initiation of capacity building programmes and demonstration projects (in partnership with the Global Environmental Facility). GoI has also

lent its support towards improving both road and rail based mass rapid transit (MRT) facilities as well as making emission norms increasingly stringent and improving quality of fuels.

The National Urban Transport Policy (NUTP, 2006) - Moving people rather than vehicles

In order to promote sustainable transport in Indian Cities, the National Urban Transport Policy (NUTP) was issued by the Ministry of Urban Development, Government of India (GoI) in 2006. The main aim of NUTP is to promote sustainable transport in Indian cities bringing about a more equitable allocation of road space with people, rather than vehicles, as the main focus. See box 2 for Vision and Objectives of NUTP, 2006.

The NUTP was created to motivate the planning and implementation of people centric urban transport solutions instead of focusing on improving the conditions for private motor vehicles. It has identified a wide range of public transport technologies such as high capacity and high cost technologies like the underground metro systems to high capacity and low cost bus rapid transit systems. The policy is a significant departure from traditional urban transport practices in Indian cities, as it places at the forefront, the needs of the majority of the population using public transport and non-motorized modes.

Although, GoI has introduced some vital policies and initiatives towards the promotion of Sustainable Transport, however, awareness of the un-sustainability of present trends in transport growth is not yet very known in India and most cities, it appears, are not aware about the role and importance of sustainable urban transport.

EMBARQ India, a member of the World Resource Institute's Center for Sustainable Transport Network Initiative, has been working alongside local transport authorities to reduce pollution, improve public health, and create safe, accessible and attractive urban public spaces. Since its establishment in 2006 in Mumbai, EMBARQ India has expanded its activities to Bangalore and Delhi and has been working with Indian authorities to catalyze and help implement solutions to the problems of urban mobility.

EMBARQ India proposed 5 solutions[2] for sustainable transport in India –

- Bus transit System[3] to be introduced in major cities
- Transit-Oriented Development[4]
- City Bus Systems should be the backbone of Urban transport system
- Pedestrians and cyclists must be at the core of Urban and Transport planning
- Engagement with the private sector is critical

BOX 2: The National Urban Transport Policy (NUTP, 2006)

The NUTP's Vision is threefold:

- To recognize that people occupy center-stage in our cities and all plans would be for their common benefit and well-being.
- To make our cities the most livable in the world and enable them to become the "engines of economic growth" that power India's development in the 21st Century.
- To allow our cities to evolve into an urban form that is best suited for the unique geography of their locations and is best placed to support the main social and economic activities that take place in the city.

The Objectives of the NUTP are:

- Incorporating urban transport as an important parameter at the planning stage rather than being a consequential requirement
- Reduced travel demand – better integration of land-use and transport planning
- Equitable allocation of road space
- Improved public transport
- Introducing intelligent transportation system (ITS)
- Facilities for use of non-motorized vehicles
- Capacity building – individual and institutional
- Use of cleaner technology
- Innovative financing mechanism
- Greater involvement of private sector
- Better awareness

Conclusions

With the rapidly increasing global urban population, particularly in developing countries, there is a constant demand to expand transport infrastructure as well as infrastructure supporting global commercial interactions. The challenge therefore is to expand and improve the transportation supply in such a way that the transport system is not only effective but sustainable.
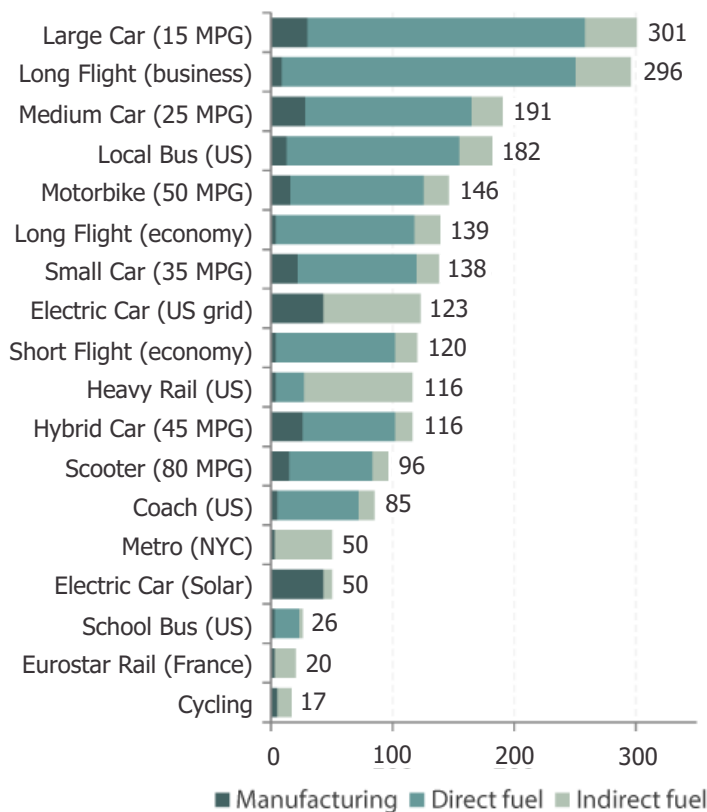
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[2] *The details on the above solutions can be read : http://www.wri.org/blog/5-keys-sustainable-development-indian-cities*

[3] *Bus rapid transit (BRT, BRTS) is a bus-based mass transit system. A true BRT system generally has specialized design, services and infrastructure where buses ply for a significant part of their journey within a fully dedicated right of way (busway), in order to avoid traffic congestion.*

[4] *A transit-oriented development (TOD) is a mixed-use residential and commercial area designed to maximize access to public transport, and often incorporates features to encourage transit ridership. A TOD neighborhood typically has a center with a transit station or stop (train station, metro station, tram stop, or bus stop), surrounded by relatively high-density development with progressively lower-density development spreading outward from the center. TODs generally are located within a radius of one-quarter to one-half mile (400 to 800 m) from a transit stop, as this is considered to be an appropriate scale for pedestrians, thus solving the last mile problem.*

The Carbon Intensity of Travel: g CO2e/pkm

Mode	g CO2e/pkm
Large Car (15 MPG)	301
Long Flight (business)	296
Medium Car (25 MPG)	191
Local Bus (US)	182
Motorbike (50 MPG)	146
Long Flight (economy)	139
Small Car (35 MPG)	138
Electric Car (US grid)	123
Short Flight (economy)	120
Heavy Rail (US)	116
Hybrid Car (45 MPG)	116
Scooter (80 MPG)	96
Coach (US)	85
Metro (NYC)	50
Electric Car (Solar)	50
School Bus (US)	26
Eurostar Rail (France)	20
Cycling	17

Legend: Manufacturing, Direct fuel, Indirect fuel

Transport is responsible for around a seventh of greenhouse gas emissions globally.

Of these emissions almost two thirds are the result of passenger travel while the rest is due to freight.

The chart illustrates carbon intensity of different types of passenger transport on a per passenger kilometer basis.

Source: DEFRA, EIA, EPA, Chester & Horvath

Cycle Chalao! India's first Bike Sharing Model

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How it all started

Cycle Chalao![5] was instigated by a sentence told by an auto-rickshaw driver to Raj (the founder of Cycle Chalao! and I-initiate[6]), who was in a hurry to reach to his college and was imploring the driver to move faster. The auto-rickshaw driver snapped at him saying, *"Itna ghaai hai to cycle se kyu nahi jaate?"* (If you are in such a hurry then why don't you use a bicycle). Raj wished he could cycle to college or work every day but looking at the traffic and the famous jams in Mumbai, safety on road and secure parking places, was a big issue and such a wish was not easy to achieve.

Frustrated with the travelling, Raj discussed the issue with his friends in the college, to enlist the various problems faced by Mumbaikars in their daily life. High cost of transportation, congested traffic seemed to be one of the major issues in life of a Mumbaikar. Raj and his friends made a team, who started looking for practical and feasible ways in which this issue could be resolved. Consistent deliberations and discussions led them to a solution which was tested and tried in many parts of the world and that was - use of 'bicycles'. They researched on various Public Bicycle Sharing Schemes (PBSS). Statistics showed phenomenal increase in the number of bike sharing systems from around 100 to 400 systems running worldwide[7]. There were many evidences of successful bicycle sharing models and each model seemed to be convincing. This led to the dilemma for the team which model to be adopted in Mumbai.

Some of the examples of Bike Sharing Models across the world are given in **table 1** below.

To experiment with this the team came up with the concept of renting cycles for short distance travelling from railway station to college, work place and nearby locality. This was when the concept of 'Cycle Chalao!' was born.

Success Story

The Cycle Chalao! project was kicked off on a pilot basis in Mulund in February 2010, when the team purchased 60 bicycles, with 30 available for daily transport from the railway station. They received almost 750 registrations, mostly from students of a neighbouring college, and the users were charged a nominal subscription fee.

Table 1 : Public Bike Sharing Schemes across the World

Sr. No.	Country / Model	Entity responsible for Infrastructure	Operations	Advertising
1	Vélib, Paris[8]	Government	Government	Combined with operations contract
2	Capital Bikeshare[9], Washington D.C.	Government	Private contractor	No advertisements
3	Bicing, Barcelona[10]	Government	Private Contractor	Combined with operations contract
4	Hangzhou[11], China	Government	Government	No advertisements
5	Barclays Cycle Hire[12] London	Government	Private Contractor	Sponsorship model

[5] Cycle Chalao![TM] is the flagship program of 'Impact Carbocuts Private Limited' which is a for-profit limited liability company managed by co-founders Raj Janagam and Jui Gangan and 'I-initiate' Charitable Society.

[6] I-initiate is an NGO founded by Raj and Jui to work on various social development activities, Retrieved in March 2012 from http://www.i-initiate.org/

[7] The Bike Sharing Blog; Retrieved on 2nd of March 2012 from http://www.bikesharingblog.org/

[8] Velib's, Paris data retrieved in March 2012 from, http://en.wikipedia.org/wiki/V%C3%A9lib' and http://www.npr.org/templates/story/story.php?storyId=111487751

[9] Capital Bikeshare, Washington D.C, data retrieved in March 2012 from, http://en.wikipedia.org/wiki/Capital_Bikeshareand http://capitalbikeshare.com/about

[10] Bicing, Barcelona's bike sharing data retrieved in march from http://en.wikipedia.org/wiki/Bicingand https://www.bicing.cat/

[11] Hangzhou bike sharing system data retrieved in march 2012 from http://en.wikipedia.org/wiki/Bicycle_sharing_system

[12] Barclays cycle hire scheme data retrieved in march 2012 from http://www.tfl.gov.uk/roadusers/cycling/14808.aspx

Some of the main challenges faced were in finding parking spots since there were several permissions required. Even for getting advertisements on the bicycles, which was the primary revenue model for the project, permissions from the local municipality were required, which was quite a challenge.

Cycle Chalao! was successful in converting the mode of transport of many students who used to travel by auto-rickshaws to bicycle. Apart from reducing their carbon footprints and burning calories they also saved money and made the vicinity of their college a bit cleaner, greener and quieter. Cycle Chalao! achieved its own benchmark of assuming 30 people to use their cycles in the first month to actually having 62 people using their services! See **Table 2** that explains the operational and financial success in numbers.

The success of the model operationally and financially showed the feasibility of Cycle Chalao! and this success answers all the doubts raised by the critics in the best way possible. Some of the common doubts among the critics were -

- People in the Mumbai will not use Cycles as they are so used to the motorized transport.

- There is no infrastructure for people to use the cycle as a way to commute every day.

- What happens if the user never comes back with your cycle?

- You are a direct threat to the Auto – Cab driver, how will you manage it?

Challenges in scaling up

As part of the expansion plans, Cycle Chalao! entered into the tender process of implementing first Government supported Bike Sharing System in India. Cycle Chalao! won the contract to provide 25 docking stations and 300 bikes in Pune.

The financial model adopted was that 50% of the initiative will be funded by the Pune Municipal Corporation (PMC), and the other 50% would be raised through advertisement and corporate sponsorships. The actual rent would be low, just enough to help in the maintenance of the bikes. However, after a year's efforts, Cycle Chalao! could not find enough sponsors and hence had to give up the project. No corporate was ready to fund as they did not see the viability to work with the Government because of their delayed and unfair work process.

When Cycle Chalao! was started in 2010 in the city, the team was optimistic that the mode of transport would be a hit amongst frustrated citizens who rely on autos and taxis for short-distance travel. Due to paucity of funds and sponsorships and lack of support both from government and corporates led to shut down of all their efforts in Pune, hence the concept could not be scaled up.

Last Remarks

Of all the things that the team went through from starting up, pilot testing, winning the PMC contract; they feel victorious because their efforts were recognized and acknowledged by many. They are happy to know that Urban Development Ministry, Govt. of India has released a bicycle sharing toolkit with emphasis on the business model that Cycle Chalao! team has advocated. It is also appreciated that today some of the cities have modified and announced contracts in the way the team have actively pursued.

The conclusion of our entire research, piloting, advocacy and working with government contracts is that the bicycle sharing systems to be successful in India needs to be fully sponsored by the public authorities wherein the private corporations shall act as contractors to provide construction, operations and maintenance support.

Table 2 : Assumed and Actual numbers that depicts Operational and Functional Success of the Initiative

Pilot Project	Assumptions	Actual
Number of Users / Month	30	60+
Number of User / Year	350 – 400	750
Savings in Travelling cost of user	Rs.1,50,000/-	Rs.3,00,000/-
Fuel saved	3,000 litres	4,600 litres
Investments	Rs.2,00,000/-	Rs.3,50,000/
Return on Investments	Rs.2,00,000/-	Rs.4,50,000/
Number of Cycles Stolen	8 – 12	0

Sustainable Transport for Mumbai

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Transport is an essential part of development; transport enables business, meeting friends and family, leisure and delivery of goods and services. Indian cities see a traditional approach to transport planning which aims to facilitate only the movement of vehicles but doesn't always consider the wider environmental, economic or social impacts. Some of the best planned cities around the world are beginning to realise that sustainable transport principles are the way forward.

The present article focuses on the larger impact of transport on society and the environment and makes a case for why sustainable transport should be pursued purely from a selfish perspective with the possibility of bringing enormous improvements to the quality of life of people in Mumbai and indeed all Indian cities.

In the environmental context it is important to understand that globally transport consumes almost 20 percent of all energy consumed. Transport is powered with fossil fuel burning, which creates green house gases which are leading to a warming planet. Another impact in urban areas is reduced air quality from emissions and consequent health impacts on citizens.

Sustainability in the context of urban transport means having an administration, which is committed in continuously lowering the environmental impact from the city transport systems while ensuring the highest quality of mobility experience to its citizens; improving public transport, making cities walking and cycling friendly and focusing on place making are integral components of this approach.

Photo: Rishi Aggarwal

Is there something called as unsustainable transport? Yes there is. As things stand today, all of us in the developing countries are following ways of living which have first originated in Europe and America - essentially the West. The 20th century was powerful in terms of shaping the thinking around transportation in the West. The western countries saw the first wave of people living in large cities; millions living within a land mass of few hundred square kilometres. The rise of the automobile in the 1930-40s saw cities which were designed around the movement of cars. By the 1970s these cities were beginning to realise that this model of transport planning fuelled by more and more roads and encouraging the growth of cars was not sustainable. It was leading to more congestion on the roads, increasing commute times, increasing air pollution and an overall deterioration in the quality of life of the city. By the 1990s a lot of cities started taking pioneering steps to reverse the damage by putting movement of people not cars in the focus and following sustainable transport policies. Figure 1 below encompasses the key characteristics and benefits of sustainable transport. This article will discuss the key principles of sustainable transport and expand on the first principle by using the example of Bandra Kurla Complex.

Millions of people commute daily in Mumbai, some undertake multiple trips within the same day. Transport helps Mumbaikars to reach to their workplace, which ensures output and services in the economy and income for individuals, profits for companies and taxes for the government. Transport is an extremely important life system for the city.

Considering the importance of transport systems in a city, it is important to be very alert and conscious about the process and the decisions we take. Good transport systems do not happen accidentally; they need continuous oversight and intervention. In Mumbai travel has become the number one persistent problem in the lives of its citizens. People rue that they have no life beyond their commute. They cannot imagine coming from work and deciding to go out to meet friends or family.

It is in this context that sustainable transport needs to be understood and implemented. In 2008 Mumbai was presented with the Comprehensive Transport Survey report. The report mentions that the largest numbers of transport trips in Mumbai are by walking followed by rail and bus. 25 million transport trips take place daily in the Mumbai Metropolitan Region (MMR) and of these 15 million trips are walking trips of which 40 percent trips are completed by walking alone and the rest of the walking trips are combined with either taking the train or a bus. This is where the focus for improvement should be and not only to cater to private motorized class which comprises the least trips and is responsible for increased congestion.

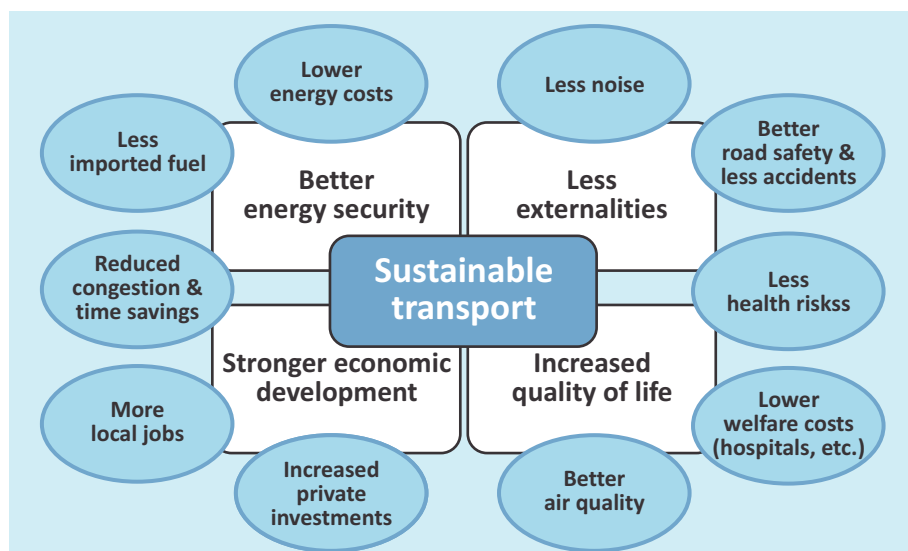## Some guiding principles of sustainable transport

In recent years Avoid Shift Improve approach has become a nice catchy way to give a quick overview of what sustainable transport is. One of the first principles of sustainable transport is to completely avoid trips as a first step and reduce the trip length as much as possible subsequently. This is to be accomplished by intelligently planning your land use in such a manner that as many people live as close as possible between where they stay, where they work and where they engage in leisure activities.

The second principle talks of shifting people as much as possible from personal modes of transport to high quality public transport systems. The enormous harm from personal motorised transport, its impact on society and the environment has by now been well experienced in western cities.

The third principle - improve focuses on continuous improvements in the energy efficiency of all modes of transport especially public transport but could also entail over all improvements in service benchmarks.

Bandra Kurla Complex as an example

Bandra Kurla Complex (BKC) and Kalbadevi area provide great examples - on opposite sides - of the first principle of sustainable transport.

Today in the evening hours BKC is a ghost town, the streets are deserted and dark and it feels eerie and unsafe walking there. The whole area has been planned for offices only. There is no housing in BKC. Had there been housing within the same area the streets would be alive with people returning from work or taking leisurely walks, children to and fro from tuition or school. With people around shops and various forms of retail and entertainment would have found financial viability and there could have been a complete and vibrant neighbourhood.

Today people are travelling from distances 5-20 kms away from BKC - Andheri, Kandivali, Borivali, Thane and even beyond. Would it not be ideal if at least 20-50 percent of those working in BKC were staying a walking or cycling distance of the place of their work?

In a location like BKC even today the first principle of sustainable transport can be supported by hiking FSI on some of the last remaining plots to aid the building of the right kind of housing stock. If not within then some of the surrounding areas can be supported.

If suitable housing is available then it will enable a significant number of people who work in BKC and the surrounding Kalina, Kurla commercial belt to stay within walking distance of their office. Two benefits will immediately follow, the quality of life of these employees will improve significantly, second the Western Express Highway, L.B.S.Road and other arterial roads, which ferry employees to their offices in BKC will be relieved of a certain number of cars on them thus easing congestion. Reduced congestion on roads will also improve the quality of life of those who do not have the option of being close to work and have to necessarily take the highway and arterial roads.

This would demonstrate well the first principle of sustainable transport to avoid trips or considerably shorten their length by influencing land use, which is already incorporated in some of the old neighbourhoods like Kalbadevi where you can work, stay and undertake in leisure all within walking distance.

A BRTS for Mumbai

A few individuals have been committed supporters of bus rapid transit system in Mumbai for a decade now. As per the first phase of plans two corridors were to be developed on Western Express Highway and Eastern Express Highway. Segregated bus lanes would allow only buses to ply in them between Dahisar and BKC. This would ensure that even during peak hour traffic jams, buses would be able to flow through at speeds of 20 kmph and above, making all the difference during peak hours. Since there would be no other vehicles on this lane buses could be run like a train at every three minutes or even less.

A bus which is transporting 100 and more people - and occupying a fraction of road space, had all these people been travelling in individual cars - should be given a special status on the road.

Mumbai Metropolitan Region Development Authority (MMRDA) has already invested for BRTS and prepared detailed drawings in 2010. But it is four years now and the matter is all forgotten even as the administration promises to develop Metro corridors which seem nowhere close to fructifying.

Nothing beats a BRTS when it comes to cost of development and the speed with which it can be rolled out compared to a Metro. Lahore in Pakistan got a fully featured BRTS operational in February 2013, constructed from scratch in a period of less than two years. The BRTS spans a 27 km corridor high capacity buses move at speeds of 40-50 kmph

transporting 12000 people and more in an hour each direction. More corridors are being planned for Lahore as well as other cities in Pakistan after the success of the first corridor.

Walk friendly Mumbai

There could be no easier achievable target for adopting sustainable transport than making Mumbai pedestrian friendly; it is already a city where citizens walk a lot but due to bad conditions are being faced to take motorised means thus increasing the load on roads. In 2012 an effort called Walking Project was started with the aim of advocacy for improved walking conditions in Mumbai. But outcome has been very poor due to lack of support from all stakeholders.

Conclusion

Nobody likes to be behind the wheel (or even be driven about) in traffic jams, it is only faulty urban planning that is to blame. The beauty of the problem can be solved provided those who are suffering and those who are in a position to solve the problem work together with sincerity. Chambers of commerce should play an important role in bringing stakeholders together to advocate for sustainable transport for the benefit of the Mumbai's economy directly or indirectly.

The author hopes India does not become a case study in how to consistently not follow first principles and then rue about managing difficult situations after overseeing wrong decisions being taken over years.

Institutional Reforms - Comprehensive Solution to Parking Management

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The ample provision of parking, especially free parking, contributes to excess car use by making driving the most convenient and affordable travel option. While parking is an essential component of the transportation system a typical automobile is parked 23 hours each day, and uses several parking spaces each week. Parking convenience affects the ease of reaching destinations and therefore affects overall accessibility. Parking facilities are a major cost to society, and parking conflicts are among the most common problems facing designers, operators, planners and other officials.

India's urban population is projected to grow to about 473 million in 2021 and 820 million by 2051 as against 285 million in 2001 (National Urban Transport Policy). There is an urgent need for cities to not only meet the mobility needs of the current population but also to provide for the needs of the future urban population. With growing urbanization, Indian cities are also witnessing rapid motorization and space for parking.

The rapid motorization of Indian cities has led to crisis in the form of inaccessible streets for non-motorized modes, poor urban form, lack of transit priority and increased congestion levels. There is an urgent need to address parking, both on-street and off-street, to minimize the negative impacts. The concept of managing parking for sustainable growth has now started to gain traction in the global cities.

Unfortunately, parking reflects the socio-political and socio-economic mind-set of a very small segment of society in Indian cities who claim their rights over the road space. It calls for introspection in a city like Mumbai where 52% of total daily trips are walking alone and 78% of the motorized trips happen through public transport, it calls for introspection (Comprehensive Transportation Study- Mumbai Metropolitan Regional Development Authority, 2008).

Despite having lower levels of car ownership and high dependency on public transport, off street parking requirements within plots in Great Mumbai in general are much higher than that of corresponding parking requirements of cities such as Hong Kong, Singapore and Delhi. In contrast to this reality, the real estate prices in Central Business District areas of Greater Mumbai are above those in other global cities such as Shanghai, Abu Dhabi, Chicago, Singapore, Los Angeles, Washington DC, among others and compared to those in New York midtown and Milan. This situation reveals hidden subsidies to car users because the proportion of free parking on roads is ample and the parking cost is low - between Rs. 5 and Rs. 20 per hour.

In addition, incentives in the form of Floor Space Index (FSI) are given for building public parking lots which have led to high-rise buildings affecting the urban fabric and leading to inactive and unsafe frontages. This also results in a vicious circle of meeting the excessive demand for parking by creating more supply, which attracts more cars resulting in an automobile oriented land use and transport planning that is not sustainable.

Institutional Reforms

Just providing enough off-street parking supply is not the solution for addressing parking. Drivers will not find any incentive to park in lots unless on-street parking is priced. Cities around the globe have realized that tackling on-street parking first is the key to success for managing

Image: One India Bulls, Elphinstone Station Area- Walking along high parking lots and compound walls

parking. Streets have to be prioritised for their usage and managed accordingly. It is very important to note that the key to successful implementation is the participation of local stakeholders. This is because local residents/ business owners have vested interest in protecting their area in comparison to traffic police whose key priority is movement of vehicles. Therefore few pilot projects for on-street parking management should be launched with the support of local stakeholders to learn the models that will be successful. Figure 1 depicts the structure for involving local stakeholders for better parking management.

Currently, there is little to no coordination among different agencies involved in framing, implementing and enforcing parking policy in India cities. This leads to mismanagement of parking. Therefore, at a city level, the Municipal Corporation should look into setting up a separate Parking Cell- Comprehensive Parking Unit (CPU) which should have both technical and personnel capacity to manage parking at ward level in the city.

o The Parking Cell should be set up under the administrative body of the city-Municipal Corporation. The Chief of Parking Cell (CPC) would be headed by a Transportation Planner/Engineer

o Each of the planning sector/ward will have a Parking officer who will be responsible for overall management of the parking

o The Parking cell would be responsible for overall policy and strategies (total supply of on-street and off-street), level of fine and severity of violation

o Parking management should be handled by private organisations working under the parking cell. They would carry out demand and supply inventory at planning unit area level and forecast the future needs. They will be responsible for operating public parking - off-street facilities and on-street, and for provisions of on-street parking supply. It is recommended that only one private organisation be contracted for a particular planning sector.

o Parking enforcement should also be handled by a private

organisation. The enforcement agency will be responsible for issue of fine, payment of fines, control of parked areas based on the regulations prescribed by the Parking Cell. Since, situations may lead to Law and Order situation, therefore, it is recommended that the Traffic Police support for better enforcement. Example- Makati in Manila Metropolitan Region

o A good revenue sharing model needs to be in place. So that the revenue collected is shared with the Traffic Police, Municipal Corporation and to pay for the services of private organisation.

o Finally, a percentage of revenue earned should be invested back in neighbourhood improvement projects such as improving pedestrian infrastructure, prioritising public transport etc. Example- Ecoparq program for parking management in Mexico city requires 30 % of the revenue to be invested locally for neighbourhood improvements.

Concluding Remarks

The structure of city government, makeup of the community and a number of other factors influence parking policy. It is important to spend some effort on learning from other cities. Reforms both at institutional level and policy level have to be addressed on a priority basis to manage parking in Indian cities for achieving sustainable development. As cities witness rapid motorization, parking should be used as a travel demand management tool to create compact and liveable cities. There is a paradigm shift needed at all levels in the mind-set of politicians, bureaucrats and the residents of the city.

Figure 1: Institutional structure for parking management

Updates

Rahgiri Day in Gurgoan!

November 17, 2013 was India's first sustained car free day event – "**RAAHGIRI DAY**" launched by the Gurgaon administration along with support by few Corporate houses, organized entirely by the residents and hobby groups of Gurgaon. Raahgiri day, the first of its kind in India, is a street event in which every Sunday one whole street is set aside for non motorized transport users like walkers, runners, skaters and a bike lane is created on the street in order to make it safe for cyclists to ride. It is not a one day event, but an ongoing festival for about four months (until March 30, 2014) to celebrate vehicle-free and pollution free roads and will be supported by all the major administration units in Gurgaon – HUDA, MCG, PWD and Traffic Police.

It was modelled on the Ciclovia festival of Bogota in Columbia - a weekly event now over three decades old. As in Ciclovia, a few stretches of road were cordoned off for motorists from 7am to 12 noon for Raahgiri Day to provide space for cyclists, joggers and skaters. For the first time, the streets of Gurgoan were car free. Over 10,000 citizens enjoyed the 4.5 km circuit, reclaiming the streets. The streets were abuzz with citizens playing soccer, badminton. Walkers, runners enjoyed having unlimited access to the streets.Unlike first time when general mood was cautious or "to support a cause", on second Sunday the general mood was 'more relaxed' and the visitors were more to have a good time and fun on the streets.

Ecocabs - Technology Meets Tradition

An "Ecocab" is basically a dial-a-rickshaw service developed on similar lines as a dial-a-cab service. The main

idea was to bridge the gap between demand and supply through equal distribution of fleet and automation using latest IT tools and real time

technologies. The concept was first time launched in the world at Fazilka, a small town in the state of Punjab near India Pakistan Border.

Complete with a fleet of uniform-wearing pullers and a strict etiquette code to follow, Dial a rickshaw is a modern twist to an old mode of transport. One can locate the nearest Ecocab call centre by using Google Maps or GPS. Ecocab also has a website where one can check details of the registered rickshaw pullers. Every day about 500 rickshaw pullers ferry 10,000 passengers. Each zone in the town has a dedicated phone number and at least 30 rickshaw pullers are available round-the-clock. Every puller owns a cellphone. Around 65 per cent of the pullers own their

rickshaws. Ecocab provides each puller an insurance policy worth Rs 50,000. A set of woollens every winter and medical checkup and medicines are also offered at discounted prices. They also get legal aid and support for children's schooling.

To read more, visit
http://www.ecocabs.org/about/

Updates

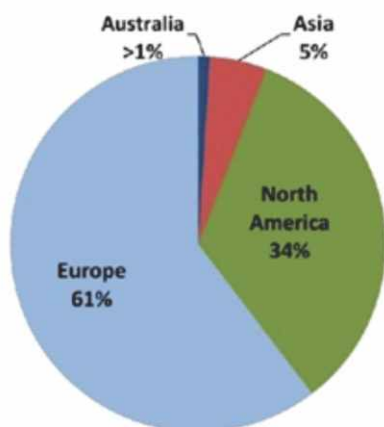## Car Sharing Worldwide

WORLDWIDE CARSHARING THEN AND NOW: SIX YEARS OF GROWTH (2006-2012)

2006

346,610 Worldwide Members
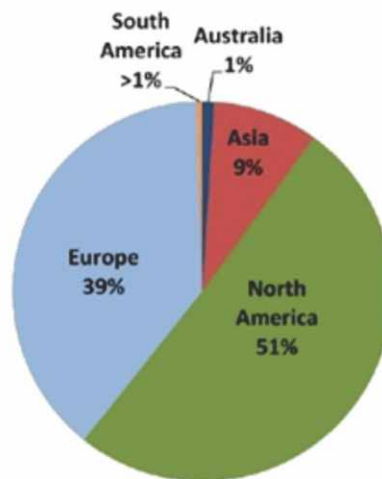
11,696 Worldwide Vehicles

Percent of Worldwide Membership

Australia >1%
Asia 5%
North America 34%
Europe 61%

2012

1,788,027 Worldwide Members

43,554 Worldwide Vehicles

Percent of Worldwide Membership

South America >1%
Australia 1%
Asia 9%
North America 51%
Europe 39%

REGION	AVERAGE ANNUALIZED GROWTH RATE 2006-2008	AVERAGE ANNUALIZED GROWTH RATE 2008-2010	AVERAGE ANNUALIZED GROWTH RATE 2010-2012
ASIA	-11%	155%	40%
AUSTRALIA	115%	56%	41%
EUROPE	26%	29%	12%
NORTH AMERICA	64%	27%	33%
SOUTH AMERICA	LAUNCHED OPERATIONS IN 2009		269%
WORLDWIDE	39%	37%	20%

Source: Innovative Mobility Carsharing Outlook: Carsharing Market Overview, Analysis, and Trends - Summer 2013, Study conducted by The University of California, Berkeley's Transportation Sustainability Research Center (TSRC). Visit: http://tsrc.berkeley.edu/node/629

The Update section has been compiled by Sonal Kaushik, Associate Vice President, Environmental Management Centre LLP, Mumbai.

Series of Sessions on Sustainability

- The Sustainability Committee has organised Series of sessions on various aspects of Sustainability. The key focus areas of the Committee are creating awareness on Sustainability, sharing of best practices to establish sustainability practices as business case. In this connection the Committee has arranged for Sessions for the benefit of the members of the industry. KPMG was the knowledge partner.

  The details of the Sessions were as follows :

Topic	Date	Speaker
Product Sustainability	Nov. 13, 2013	Mr. Anand Joshi Associate Director, KPMG
Integrated Reporting	Dec. 5, 2013	Mr. Santhosh Jayaram, Technical Director, KPMG

  The presentations can be downloaded from the below link :
  http://www.bombaychamber.com/Activities.aspx?CommitteeId=71&Type=5

- Three Day Auditor Conversion Training Program on **Energy Management System- IRCA 5002 Based on ISO 50001:2011** from February 24 - 26, 2014 at Bombay Chamber of Commerce and Industry, Mackinnon Mackenzie Bldg., Ballard Estate, Mumbai 400 001.

  Faculty: Mr. Mahesh Khemani, Senior Lead Auditor and Tutor, Bureau Veritas.

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