The Journey of the Car pooling man

Master Chetan Duggirala explaining his carpooling project to Dr APJ Abdul Kalam

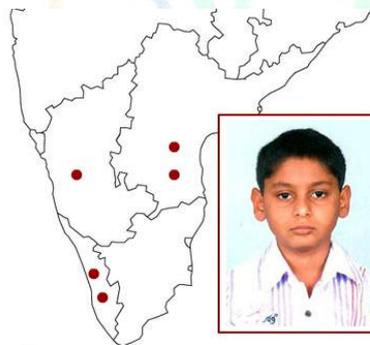07/30/2012 10:24

Chetan Duggirala

Young Leader for Change
2011-12

Chetan and Nishant at UNEP Tunza Asia-Pacific Children & Youth Conference

Explaining Car pooling Project to Padmasri Karthikeya V. Sarabhai, Director, CEE, Ahmedabad

Young Leader for Change

Paryavaran Mitra

Chetan Duggirala
Tejasvi Vidyaranya,
Hyderabad,
Andhra Pradesh

Action Plan

Action Update

Doing the Vehicle Audit at Ahmedabad

Core Group drafting the charter of recommendations by the Children & Youth for Rio+20 Conference

Fuel and carbon audit of vehicles used by Corporate offices
To promote low carbon lifestyles

Objectives

- To determine the number of personal vehicles and buses used by employees in a corporate office with over 500 employees and to calculate the total fuel consumption and carbon emission per head per Km of transport for personal vehicles and buses

- To promote car pooling, use of public transport/ buses and proper maintenance of vehicles for conservation of fossil fuels and to reduce carbon emissions.

- To create awareness about low carbon lifestyles and to inform the employees using different modes of transport about their net saving on account of low carbon lifestyle.

Scientific Principle:

➤ Reduction of Carbon emissions and conservation of fossil fuels can be achieved through `Car pooling' in corporate culture as explained below.

Cost of petrol per Ltr in Hyderabad is Rs.75.4

Cost of Diesel per Ltr in Hyderabad is Rs.45.4

A car with 5 persons capacity consuming one Ltr of petrol gives 17.6 Km mileage on an average

A bus with 40 persons carrying capacity consuming one Ltr of Diesel gives 4.3 Km mileage

A car will emit 2.325 Kg of CO_2 per Ltr of petrol

A Bus will emit 2.73 Kg of CO_2 per Ltr of Diesel

One bus is equivalent to 3.5 cars in space

Considering the above phenomena….

Expenditure on Fuel :

Cost of fuel per head per km by car is '75.4/(5*17.6) = 0.86 Paise

Cost of fuel per head per km by bus is 45.4/(40*4.3) = 0.26 Paise

CO_2 Emission:

CO_2 emission per head by car is (2.325/5)=0.465 Kg/Ltr of Petrol

CO_2 emission per head by bus is (2.73/40) = 0.068 Kg/Ltr of Diesel

Space:

Space wise 3.5 cars can carry (3.5*5)=17.5 persons

Space wise a bus can carry 40 persons

Saving on Road infrastructure (40/17.5)=2.29 times

A Car running for 40 KMs a day and Five days a week with an Average 250 days per year (365-104-11 holidays) will be running for 10,000 KMs per annum would consume (10000/17.6)=568.18 Ltrs of Petrol

Cost of Petrol Per annum for 568.18 Ltrs = Rs.42840.91 @ Rs. 75.4 /Ltr

CO2 emission per annum per car = (568.18*2.325)=1321.02 Kgs.

Shift from `*Solo riding'* to `*Car Pooling'* would result in

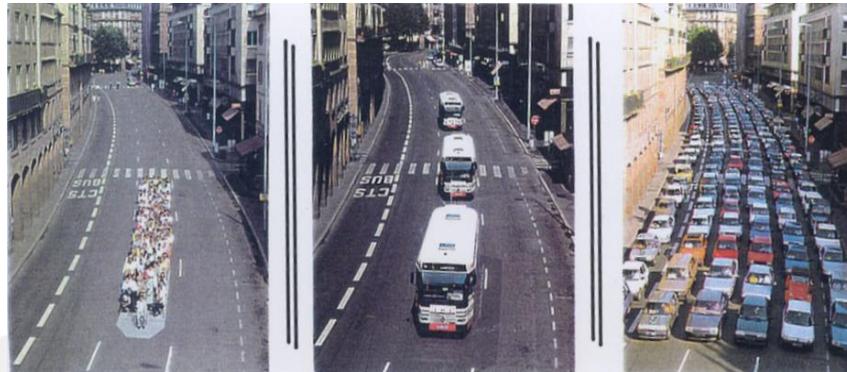Savings in Petrol cost (42840.91*4/5)=**Rs.34272.73** per annum

Reduction in CO2 emissions (1321.02*4/5)=**1056.82** Kgs per annum

Source: *Central Pollution Control Board, Government of India*
Fuel economy information brochure, Society of Indian Automobile Manufacturers

➢ Low Occupancy Vehicles (LOV) add to Global warming

Street space can be used efficiently

1 articulated bus   3 small buses   100 cars

➢ Increased number of LOVs are choking the infrastructure leading to frequent traffic jams and thereby resulting in depleting the fossil fuel resources

➢ With sliding value of Rupee against Dollar for a developing country like India where Crude Oil is imported, the solution is to increase occupancy ratio in the private vehicles and switch over to public transport.

Methodology:

Both Primary and Secondary data sources were used to collect the required information for the project.

Secondary information was collected from the corporate office records and from various sources available on the Internet.

The Primary data for the project was collected using a structured questionnaire developed for the purpose. Pamphlets/placards, PPTs detailing out the importance and strategies for low carbon lifestyles were distributed among the employees and also displayed in the food courts and at the exit gates for **awareness building.**

Multiple trips have been made to the Infosys campus for the campaign. The questionnaires and pamphlets have been refined from time to time on continual basis.

Sampling:

I chose to do the project in Infosys Technology Ltd in Hyderabad. The company has one campus at Gachibowli and one SEZ at Pocharam. The total employee strength at both the campuses put together is 19000 at present, which is likely to go up to 40000 in the near future. These numbers stress upon the need for an aggressive car pooling campaign as it has a great saving potential in terms of environment, money and space as well. The respondents for the project were employees of Infosys Technology, using private transport, who were selected randomly. Detailed primary data was collected from 249 employees of the company. Of the employees who could not spare much time for the survey, basic transport data was collected through a brief questionnaire. This short questionnaire was administered to 67 employees. Therefore, a total of 316 employees were contacted for the project.

Findings of the Project:

✓ Of the total employees contacted, 54 percent are using private transport (2 / 4 wheelers)
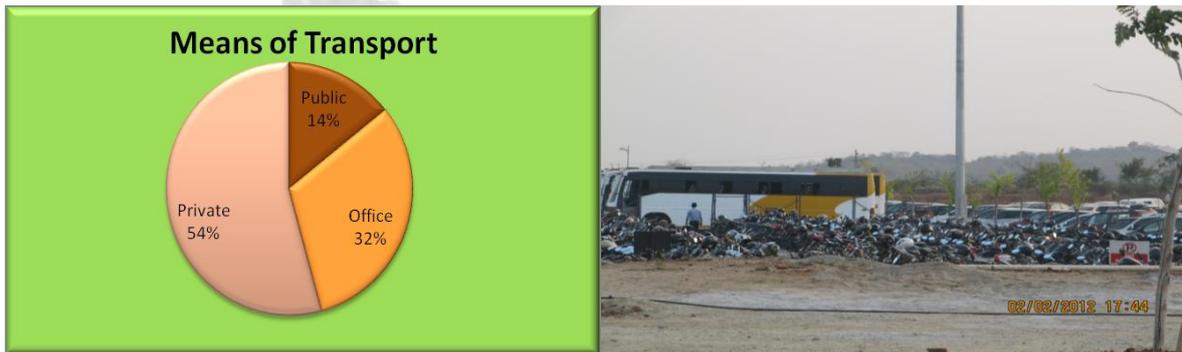
✓ Of those who are using private transport, 34 percent are commuting by Car.

✓ Nearly half of the respondents said that some of their colleagues reside in their area of residence, that too in a walking distance

✓ Several employees have the same working hours

✓ Despite residing in the same area with same office hours, only 14 percent are car pooling currently. But even these cars have an occupancy of only 2 per car.

✓ Almost all the respondents agreed that lesser/optimal use of vehicles would reduce pollution. In fact, 87 percent of the employees have complied with regular Pollution Check i.e. within 6 months period.

✓ Over three fourths of the employees expressed their willingness to reduce carbon emissions by optimal utilization of their vehicles

✓ Among the employees who answered the short questionnaires, 85 percent are willing to go for carpool.

✓ About 28 percent of the owners expressed that they *Can* Carpool

✓ About 45 percent of the employees expressed their *Need* to Carpool.

- ✓ At INFOSYS campus in Pocharam, which is an upcoming campus, targeted to be their biggest green campus, a Car pooling System is already in place. However not many people are using the facility as yet.
- ✓ Some employees wanted to carpool but were not aware that there were car pooling arrangements made within the campus.
- ✓ Some were aware of car pooling but were not using it so we tried to convince them.
- ✓ Some were not car pooling due to mismatch of timings
- ✓ Some were not ready to share their cars with others
- ✓ Some did not want to carpool for security reasons.
- ✓ Some of them wanted to carpool but were hesitant to request the car owners.
- ✓ Though we experienced some negative responses we could finally convince a significant number of employees to carpool.
- ✓ The findings have been shared with Infosys Technologies and they shall take it further.
- ✓ They have requested us to make periodic trips to motivate the employees further.
- ✓ On the whole, the response to the project from the respondents was very good and they appreciated the initiative.

Anticipated impact of the project on the local environment

- This will help in reducing fuel consumption, air pollution and global warming.
- It can lead to reduction in volume of traffic on road and fuel efficiency may be improved if taken to the logical end by major corporate bodies.
- The project will internalize low carbon lifestyle as a corporate culture.
- The project has generated convincing data to show how the efforts of *each individual* could make a big difference.
- Carbon foot print of each employee and the corporate body can be prepared as a reference point for comparing their future foot prints at any point of time later to judge whether there is any real change in the mind set of the employees and the corporate body.
- The project is now ready to be replicated in any number of corporate offices.

Though it is a small but significant initiative, it may turn out to be a catalyst to bring about change in the life styles and contribute in reduction in automobile pollution which is one of the major contributors to Global Warming. Time for the commuters would be significantly saved which can be used productively.

chetan_duggirala@rediffmail.com   chetan.tejasvi@gmail.com
Mob # 9346295826   040 27000369