Project II

MICRO PASSENGER VEHICLE

A TRANSPORTATION CONCEPT FOR INDIA

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Guide

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Approach



Structured planning

Approach



Reaction of each function on other function.

Design Process





User Survey

•Who will be user?





User Survey

Why Middle class?



To study characteristics of middle class

- •Studied 20 middle class professionals
- Personal interview with 2 Wheeler user
- Activity analysis of 2 wheeler and 4 wheeler user











•Need of compact car.

•Competitors- REVA, TATA ZING, Foreign companies, Maruti and 2 Wheelers etc

- •Need of 2 seater car.
- •Need of styling.
- •Market identity.











It is very important to define clearly the user segment and where the product is being placed. As middle class user is too much vague definition of the user segment .It was further refined by defining it precisely.

•Middle class of urban area (Earning Rs.10000+ P.M.)

- Nuclear family
- •Young couples
- Singles
- •Executives
- •Elder citizens

Other possible user segment

To appeal several markets at once and to broaden the base of potential customers it is always important to define the other or secondary user of the product.

•Second or third car of rich class.

•In professional campus as intra campus vehicle.

•In educational campus as intra campus vehicle.

•In National parks.

•For sales person.

•As a golf cart.

Reasons of Traffic jam

- •Pedestrians are part of the road.
- •Population growth.
- •Big size vehicles (but carrying less people).
- •Parking done on the road.
- •Parking places (Pay n Park) are allotted on road which narrow down the road.
- •Poor road conditions.
- •Encroachment of shops on road.
- •Traffic rule violation.
- •Wrong town planning.
- •Accidents on the road.
- •Formation of traffic Void.
- •Product display on the road.





Traffic

Traffic







Narrow roads



Rule violation



Encroachment

Data collection and analysis

Parking



















Destiny IT



Toyota E-com



Ligier Ambra



Peugot Tulip



Mika



Micro car







Ford Think

Bellier Vario



Smart



Smart cross



Image City



Renault P55







Destiny IT

Ligier Optima

Sulky



Nissan Hypermini



Metro Cubo



Rivolta Isigo

Non car like approach











- •Changing styling trends
- •Oil crisis
- •Fuel dependency on Arab countries
- Pollution
- Nuclear families
- Population growth
- •Heavy traffic
- Per person space allocation





It is intended to design a Micro passenger vehicle which will be used for intra city transport.

•Technical:

- It will carry 2 Adults and 2 Kids and minimum 2 VIP mantra bags 429 x 299 x 186mm.
- 2. The vehicle could be hard top or a convertible (Optional).
- 3. It will have a light weight structure.
- 4. It must be compact to solve the existing traffic and parking problem with innovative design solutions.
- 5. It should have environment friendly power plant with fuel consumption . of 25-40 Kmpl with maximum speed of 60 Kmph.
- 6. The vehicle must be low cost (Approx. Rs. 1, 50,000).
- 7. The vehicle will be mass produced.

Form:

- 1. The vehicle must be a fine piece of styling considering present and future styling trends.
- 2. It must have a new identity in its class and also in over all automotive market.

Safety:

- 1. It must be stable in all running conditions.
- 2. It should protect passenger from outside weather.

Comfort:

- 1. It will accommodate 2 adult (95 th percentile male)
- 2. It will have adequate head and leg room.
- 3. It must provide easy in and out access.
- 4. It must give better front and side visibility.

Engineering & Styling.

- Engineering
- Ergonomics & layouts
- The body
 - a. Profile
 - **b.** Proportions
 - c. Sculpture
 - d. Stance

•Engineering •Ergonomics & layouts



900



A











A

B









S

T

Y

S

B

B







30

DOLPHIN

RHINO

STRONG MASSIVE CONCRETE SERIOUS LOUD AGGRESSIVE







C











D













E







E













F











Scenarios studied

Scenario 1

- •Reducing the price of the vehicle and giving all the features of
- existing competitors (or more than that).
- •Adding some more feathers to solve existing problems.
- •How to make it low cost?
- Mass production, Fewer parts, using lot more existing parts, low cost material.

Scenarios studied

Scenario 2

Innovations in all sense form, manufacturing , detailing .

•Cost is not the constraint, it may be more than competitors.

Scenarios studied

Scenario 3

•Compactness is the key. Much more tight dimensions than

competitors.

•No back seat at all.(Only for 2 Adult)











K



















FORM

- 1. Resemblance with user's temperament
- 2. Futuristic form (5 years ahead)
- 3. Matching with contemporary styling trend
- 4. Unique identity
- 5. Micro car ness
- 6. Individual styling element treatment

COMFORT

- 1. Access / Egress
- 2. Head room
- 3. Leg room
- 4. Loading and unloading of luggage
- 5. Front vision
- 6. Side vision

TECHNICAL

- 1. Solution to traffic and parking problem
- 2. Luggage Space
- 3. Compact
- 4. Cost

- During concept evaluation phase internet survey was carried out and feedback was taken from the people.
- Suggestions were taken from the people regarding the overall form and individual elements, colour etc.

After considering all parameters ,points distribution and also user feedback, it was decided that **concept K** has got maximum potential to develop further. So further refinement and work was done on **concept K**.











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COLOUR SELECTION











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The door opens like wings.It is proposed to tackle the parking problem. After parking the car in grace and egrace is easy with the help of the wing type door.



The co passenger seat is tilted forward easily so that kids can access the rear seat.

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Two doors open in different direction so its very easy to handle luggage. Bottom door is opened to slide things like executive or luggage bag etc.Upper door is opened only when big size luggage is to be put.



MICRO PASSENGER VEHICLE





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FLEET









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