

Conceptual Design of an Executive 2 Seat Hybrid Super-Efficient Vehicle (SEV) for Premium Segment of Indian Uurban Market



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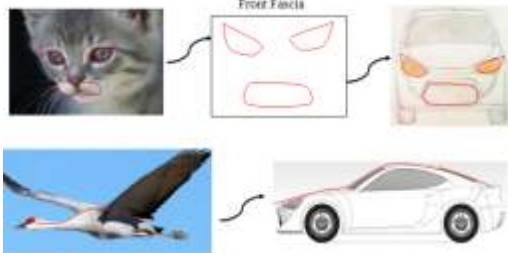
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Abstract:

India is one of the largest car manufacturing countries in the world and one of the fastest growing countries for small car market. More than a decade ago, owing a car was luxury and now we expect every family and youth to own a car as a basic necessity of life. India has the highest youth population. So there is a huge opportunity for economical, premium car with hybrid technology (Hybrid Electric Vehicle - HEV), which has a better fuel economy and a better effect on the environment.

The project is focused towards the design of an executive 2-Seat hybrid vehicle for premium segment focusing on Exterior, Interior and Hybrid architecture for urban Indian market, mainly considering young and middle age executives. Initially, research has been conducted to understand the Indian market and the need for hybrid cars was analyzed by data collected through product study, market study, user study and literature survey. Questionnaires were made for collecting the customer voice and understanding their requirements. Many concepts were generated taking into consideration the buyer's feedback. Three concepts were chosen for concept detailing and digital models were generated for the chosen concept through weighted ranking method.

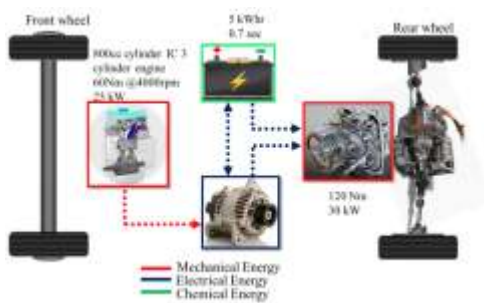
The data analysis revealed that young and middle age executive customer segment have to be considered as they are the future buyers of the hybrid car, especially a compact car for premium segment. They were more interested in buying hybrid cars with hi-tech styling. It also revealed that there is enough scope for hybrid cars in the Indian market. A 3D model of the final concept was created using UG NX Studio software. A scale down 1:10 mock-up model has been developed to validate the final concept and feedback was collected from selected future buyers. Major user needs such as fuel efficiency, low emissions, luxury features, aesthetics, aggressive modern look and ergonomics were addressed in the final design. Selected future buyers response on the final design was positive and satisfactory.



Concept design



Concept modelling



Series HEV configuration for concept vehicle



Final mockup model