# Exterior Styling of Futuristic car that Reflects the Essence of Indian Design

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## Abstract

India is going through dramatic change across different fields. Today every Nation is aware about the Indian consumer and their buying Power and has ambitious plans of Investments. In a situation like this it has become important for the Country to establish its own identity itself into every field.

The Project begins with collecting information on what is perceived to be Indian design in every evident form possible (pictures, images, journals, books, videos etc.,) along with this a research is also made to get the picture of Indian consumer market (market survey) to understanding the consumer behavior. Interviews are held with people in different fields. Every opinion is carefully analyzed. To approach the subject on hand from different perspectives a comparative study is done with other nations that have similar history like India but that have a strong signs of design identity in the global market today.

The analysis carried out based on the information gathered during the research phase and it is observed that though India has a strong design Identity of it's own as far as the tradition is concerned (Traditional Design), the existence of a Design Identity becomes doubtful in the days of Modern manufacturing and Mass production. Therefore with all the data and information it is concluded that India doesn't have a genuine design Identity of it's own. This drives rest of the project towards exploring how the Indian elements can be implemented in the designing the car and thus number of car concepts are made that not only have a strong Indian appeal but also at the same time look futuristic.

**Key words:** Styling, Design, Cars

## 1. INTRODUCTION

" India is land of Colors", "India is a Land of Gods", " India is a land of Diverse Cultures", "India is a Hub of Spirituality" etc., these are some of the common opinion among foreigners who visit India. Though the globe in a variety of perspectives knows India, it is worth noting that all these views and opinion point at one thing " The rich diverse Culture and Tradition" of India. The famous "Taj Mahal" which is considered to be one among the seven wonders of the world is a proof of architectural marvels that India had centuries ago.

### 1.1 The Need for Modern Indian Design Identity

The British introduced the Industrial revolution to India in the beginning of the 20th century. Since British ruled India they tapped Indian resources to manufacture products that they would cater to the western world. The same trend continued to this day today. Though India has all the necessary requirements of being called a "Developing country" it still remains a manufacturing hub for most of the Multi National Companies. The reason for this are many most of which will be discussed later, but one of the main reasons being lack of Creative and Original ideas. Because of this Industrial Design didn't gain momentum in India until recently.

Globalisation, Internet technology and Fluency in English have placed India in the Limelight of Global village. The standard of living of Indian Middle class has undergone a dramatic change and the buying power of the consumer has become surprisingly huge. Therefore today Indians don't mind shelling out that extra "moolah" for whatever they feel they should get it. Hence today there is a need to be a original design identity that caters and to this segment of the market and is genuinely Indian also.

## 2. RESEARCH AND OBSERVATIONS

Surprisingly it was observed that there are many similarities between three major categories namely Housing, Clothing and Food Habits. The "Design Elements" that are observed in one category are similar to the Design Elements that are found in some other category. For example a design element in a clothing may be similar to the one used in an architecture building. This is illustrated in **Fig 1** where the highlighted similar colors show the similarities in three major categories like Food, Clothing and Architecture. All these three represent the basic foundation of the Indian society and even Indian takes these terms seriously. Hence the popular Indian slogan goes like " Roti, Kapada aur Makaan"

## 3. CONSUMER BEHAVIOUR



**Fig. 1 Research and Observations**

To understand the what goes to through the psyche of a Middle class Indian while buying any product is pictured in brief in **Fig 2** where the consumer is buying a car and his thought process is divided into Primary (blue) and Secondary (green) concerns. It can be seen that all the Primary concerns are either directly or indirectly related to the "Cost" of the car like Cost, Servicing cost, Mileage etc., however it is interesting to see that the consumer is also thinking of the resale value of the car right at the time of purchase.
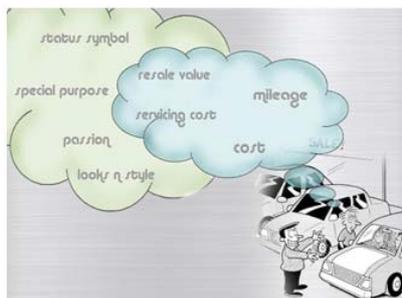


**Fig. 2 Consumer Study**

## 4. JAPANESE DESIGN (Comparative study)

### 4.1 The Need to Compare

The need to compare with Japanese design trends is essential, as this not only helps us understand how they successfully established a strong design identity in the global market, but also realize our own setbacks for not doing the same when it could have been possible to do so. Also today Japanese products are one of the best among the best and most respected in the global market, sometimes even leaving behind the western products. The motive of this comparison is also to arrive at an all-important question "If India has a genuine design identity in the mass produced objects?"

### 4.2 Japanese Tradition, Products and Designers

Japanese have a Warrior tradition with the thrilling history of Samurai and Shaolins as shown Fig 3 Both are warriors with a strong sense of discipline and organisation. In fact Shaoline is a Fighter who also a Saint with strong morals and doctrines to abide by. He fights only to protect himself from the enemies. These fighters transmitted their sense of strong Discipline responsibility to the forth-coming generations. Therefore even today Japanese have a strong sense of social responsibility, which is one of the major causes of their tremendous successes worldwide. This was further strengthened when Japan was completely shattered after the Second World War and the same determination that helped them make a strong come back.

Though there have been many influences on the Japan since a long time the impact of the Shaolin and Samurai has been most profound and beneficial. In the Years1970 to 1980 Japanese caught up with semi conductor revolution and they contributed to the world a range of amazing products (electronic) that later became their identity in the Global market. It's quite amazing to see that though Japanese have a traditional history of Warriors the products that are made by them are highly sophisticated and Modern. This is shown in

Fig 3 where other than this special kind of toy called "Bandai gundam" toys that look a little fighter like, all the other products bear no connection or resemblance with their tradition whatsoever. This revolution is brought about by Japanese word called "Dokuritsu Kei" which means, "Freelance designers" in Japanese.

It's because of the sheer creativity of these Freelance designers from the past 20 to 30 years who were able to establish a Design identity that Japan has today. Freelance designers were usually free in designing and making creative products than the designer who is working for a company. Indirectly Freelance designers also challenged those working for the company because ultimately even the later has to compete to sustain. This way the entire country underwent a creative phase that gave rise to the Japanese design identity that we now see.



**Fig. 3 Japanese Tradition and Products**

## 5. ANALYSIS

Traditionally India has a strong design identity in variety of fields like Clothing, Jewellary, Foot ware, Food, Housing and architecture that also holds good for the diverse culture that India has in the fields of Music, Dance and recreation. This is strongly evident in every part of India even today though there has also been an equally strong western influence in every aspect of the Indian lifestyle. In almost every field India has a unique and distinct place, except when it comes to mass production.

The question of having a genuine Indian design identity as far as Mass production is concerned needs to be addressed. Chapters 3 shows that the Indian Mass production industry till recently was completely engaged in providing Value added products to the Indian consumer who was primarily driven by the cost of the product. Therefore there was not much importance for the Aesthetics and styling of the product and hence they were not competitive in the global market.

A comparative design study with Japan shows how the Freelancers in Japan made all the difference in their products and successfully established a Japanese design identity. The same creative spirit was completely lacking in India and at times when Japan was busy rolling out their creative products in Japan and entire world, India was copying designs from outside and struggling to cater to the local market. Industrial design is just being given importance in India from very recently. Much of the mass production industry was influenced by designs that are not genuinely Indian. Therefore the conclusive answer to the question if India has genuine design identity in mass production, the answer is "NO".

Therefore being aware of the fact that a New Design Identity can be established regardless of Traditions and Previous history, this part is based on exploring what is Indian and putting it into creative ways of generating concepts. The concepts are categorized into four parts as follows:

- Colours
- Form and Shapes
- Materials and Textures
- Spirituality (Spiritual Design)

## 5.1 Colours

India is truly the land of Colours. There are innumerable varieties of colours that can be seen mingled with every part of our life. One gets to see colours on the streets, buildings, food, clothes etc., almost everywhere. The "Sari", which is the traditional dress in India might probably also the most colourful one in the world. Everywhere one gets to see the bright and diverse colours. India cannot be imagined without colours being the integral part of it.

The idea is to use these colours and pictures that strongly give the Indian feel and blend them with any object and suddenly the object becomes Indian. The power and the effect of these colours to reflect Indian feel is so strong that once these colours are applied on any object the original identity of the object is lost and it then becomes exclusively Indian.

The colours chosen of the study are shown in **Fig 4**

- Indian Mythology.
- Bollywood poster and banners.
- Patua Paintings
- Indian images

**Fig 5** shows how any object can be given an Indian feel by applying these colors on to them.



**Fig. 4 Indian Colours**



**Fig. 5 Effect of Colors**

## 5.2 Materials and Textures

Any object has an ability get associated with any other object or place because of its Usage, Smell, Taste, Colour and Texture, Form and Shape and most importantly its availability. For example Beetle nut is popularly associated with India because of its usage. It is very common in India to chew Beetle nut. Therefore the object becomes identified with the place. In this chapter some popular objects are selected whose texture when applied on the cars give that sense of Indian feel.

## 5.3 Concept 1 and 2– Indian Wooden Architecture

The Indian wooden architecture has an amazing history of craftsmen who have created marvels that are splendid to this day. The royal furniture called "deewan" is proofs of extraordinary works with complex curves of wild twigs and wild animals in pouncing positions crafted in great detail. The familiarity of Indians with the wooden architecture is as old as the origin of the art itself. Every Indian home will have some part of their structure where wooden architecture is used. The liberal use of the wooden architecture crafted in expensive wood shows off the status of the owner.The texture of and the craftsmanship of the wooden architecture can be spread to other fields also in the future if technology makes it feasible. Concepts shown in **Fig 6** uses the texture of the craftsmanship on the Window panels and the Front grill of the car.
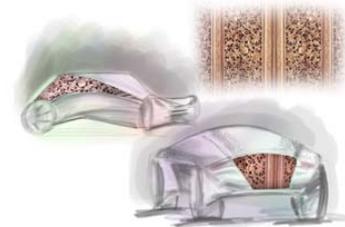


**Fig. 6 Indian Wooden Architecture**

## 5.4 Concept 3 – Banana Leaf

Banana leaf is one of the most familiar objects used in India. In southern India banana leaf is used instead of plates not only in homes but in public functions like marriages etc., this is considered to be Hygienic and Healthy. Car concept inspired by banana leaf is shown in **Fig 7.**
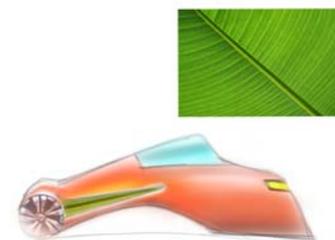


**Fig. 7 Banana leaf concept**

## 5.5 Concept 4 - Cane Baskets

The Cane is a material that is extensively used in India. Because of its low cost, dexterity and wide application it is very widely used and adored. Cane is used for many reasons, cane baskets being highly used end product as shown in the **Fig 8.**



**Fig. 8 Cane Basket Concept**

## 6. FORMS AND SHAPES

### 6.1 Concept 5 - The Cobra

The form and shape of this car is inspired from the amazing form and shape of King Cobra's hood. The hood of the King cobra is Elegant, Majestic and surprisingly Aggressive. It's one of the rare species in the world found in few countries. India is one among them. In India people worship King cobra as a form of god. Festival called "naga panchami" is celebrated when cobras are allowed to come inside and people offer them milk. The car concept inspired by the form and shape of King Cobra is shown in **Fig 9.**
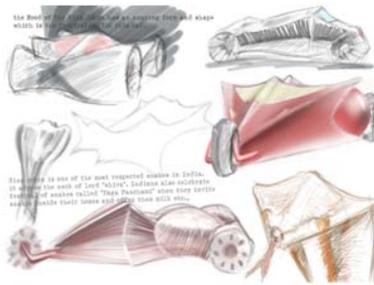


**Fig. 9 The Cobra**

### 6.2 Concept 6 – The Cow Car

In India Cow is believed to be a very holy animal by Hindus. Since beginning cow is believed to be a form of God. There are temples in India that are meant for the cows. Like the famous Bull temple in Mysore, Karnataka. Cow is the vehicle of the Popular Mythological god Lord "Shiva". Therefore cow is very close to Indian mind and hearts. This concept is inspired by the skull of the cow, which has very organic shape and form as shown in the **Fig 10.**
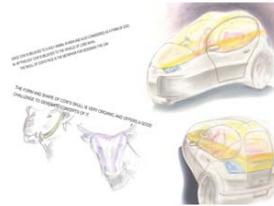


**Fig. 10 The Cow Car**

## 7. SPIRITUALITY

Spirituality is the essence of India. This is something because of which India is genuinely known and respected across the globe. People around the globe are attracted towards India because of this. People like Buddha, Mahaveera and Maharshi Mahesh yogi who revolutionised the spiritual world are from India. From the ancient times till now India has been spreading its spiritual fragrance around the world. Spirituality is difficult to define, but in layman's terms it is said to be a feeling that brings about feelings of Bliss, Ecstasy, Contented and Calmness. Attaining these feelings of bliss is rare for the people because of worldly reasons. Therefore spirituality is rough path. But there can be some other alternative where these elated feeling can be induced by an external means. There can be a design that has the effect on the user that resembles a spiritual experience. This can be defined as "Spiritual Design".From the time there has been a revolution in Automobiles people spend more and more time in their cars. In the future people could spend even greater time in cars. Therefore automobiles are the ideal field for applying Spiritual design. The future cars where we'll spend most of time not only serve the basic purpose but also give us some sort of Ecstatic, Elated and Calm feeling.

### 7.1 TRIZ the Ideal Situation

Before the concepts for Spiritual Design are arrived at, it is worth a bit of study on way of we are going to commute in the future. TRIZ provides an ideal solution for this. According to the Ideal Final Result (IFR) the ultimate purpose of the Travelling is "To be in a Particular place at a particular time". But since man has his own limitations imposed on himself like his body that need to be carried etc., (and body has its limitations). Therefore there is need of a device

However when we are designing for the future, it is assumed that we at least climb a step up the IFR, where we see Self-driven automobiles. That is the machine itself takes us wherever we want without the need for Handling or driving it. Therefore all the following concepts for spiritual design are based on this theory.

**Fig. 11 TRIZ and the Ideal Situation**

### 7.2 Concept 7 Theme: Entangled Soul

The man ever since his birth has many desires and ambitions all the time. He lives with his desires and dreams forever. But the same bring him unhappiness as once Buddha said "Desire is the cause of Misery". The more the man desires the deeper his miseries will be. These desires and aspirations will cause Delusions which in turn cause Depression and finally depression will take man to the point of dejection. And this becomes a junction few brave men will start out in search of Truth about life or in search of true happiness. The Fig 12 shows man tangled in chains showing his Soul entangled in the misery of life. Similarly based on the theme "Spiritual design" all the cars are inspired by the theme and concepts are iterated imagining that one part of the car is encapsulated by another part shown in **Fig 12.**



**Fig.12 Entangled Soul**

### 7.3 Concept 8 -- Mystic roof

The concept is inspired from the undersea aquarium and it gives the feelings of elated happiness, excitement and mesmerises the person inside and outside the car. This is achieved by incorporating two polycarbonate sheets that trap a gelatinous colourful liquid between them and a pump is used for making the liquid flow between the sheets **Fig 13.**



**Fig. 13 Mystic Roof**

### 7.4 Cosmological Cycle

The theme for the concept is inspired from the Chinese Yin and Yang cycle that signifies the balance between the opposite forces in the nature. The wheel is powered by a battery pack that is located around the rim of the wheel and there is separate seating chamber for the interiors, which is

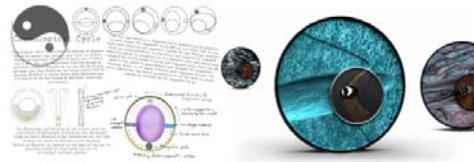completely isolated from the exterior revolving magnetic strip.



**Fig. 14 Cosmological Cycle**

The excess electric current that is generated because of the magnetic strip revolution itself is used for styling the exterior of the vehicle as shown in **Fig. 14.**

## 8 CONCEPT SELECTION

The basic five criteria based on which all the nine concepts are evaluated are as follows:
- Relevance to India and Indian Feel
- User friendliness
- Styling and Aesthetics
- Practicability
- Eco-Friendliness

**Fig 15** shows the Pugh's chart with concept ratings:



**Fig. 15 Pugh's Table**

## 9. FINAL CONCEPT AND ITS FEATURES

### 9.1 Ergonomics

The ergonomics of the car like getting inside, space accommodation, and driving ergonomics are applicable from $5^{th}$ percentile Indian woman to $95^{th}$ percentile Indian man. Which means that the same ergonomics will apply to any other person who fall between this range and is Indian? The dimensional details are shown in the **Fig 16.**



**Fig. 16 Ergonomics**

### 9.2 Power transmission System

The power required is generated by the Lithium ion battery pack located at the base of the car (under the footboard). The power generated then transmitted to the Generator motor located at the base of the vehicle which then is connected to

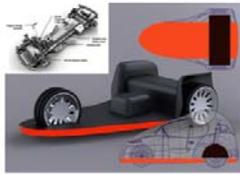the rear wheels through the connecting equipment as shown in the **Fig. 17**



**Fig. 17 Power Transmissions**

### 9.3 Anti-Infra Red Coatings

Since the Top canopy of the car is transparent means that the Infra red radiation of the sunlight gets trapped inside the car and then causes "Green house effect" inside the car. This causes discomfort for the people sitting inside it. Therefore a coating is applied to prevent this from happening **Fig 18.**



**Fig. 18 Anti Infra Red Coating**

### 9.4 Other Safety Features

Other safety features include a safe top canopy, which is made of Composite carbon plastic that is as tough as Stainless steel. Air balloons for the driver and air balloons for rear seat passengers. These air balloons are located on the either side of the door panel as shown in **Fig 19.**



**Fig. 19 Air Balloons**

### 9.5 Comfort Features

The comforts in the vehicle are plenty. Since this is only a threes eater. Two can comfortably sit in the back with spacious legroom available for them in the front. There is also sufficient amount of Luggage space at the back. This is one of the important features that will satisfy the Indian consumer. There are "Cup holders" on the either side of the hand rest to store drinking water etc., all the passengers will have a sufficient head room as well as shown in the **Fig 20.**



**Fig. 20 Comfort Features**

### 10. MODEL MAKING STEPS

Following are the steps followed in making the model:



**Fig. 21 Model Making Steps**

### 11. CONCLUSIONS

The first half of the project shows that there is no genuine Indian design as such in the mass production presently. But there is a possibility that a fresh start can be made a genuine Indian design identity can be established by the sheer Creativity and Enthusiasm of the Designers in India. Part B of the design focuses on how this spirit of creativity can be applied to the car concepts that look Futuristic at the same time is truly Indian.

The Cow car is the result of this. Among the many concepts generated this car is specially selected as it shows its deep association with the Indian feeling. The entire form of the car is inspired by the shape and form of the cow's face, which is in fact a very organic form with lot of curves around it. Therefore the design of the car that completely follows the form of cows faces breaks away from the boxy car designs of present. This makes the car entirely futuristic. Apart from this the Top canopy of the car is made of Composite carbon fiber that is not only as tough as the Stainless steel but also has Anti Infra red coating on its surface to prevent the Green house effect inside the car. Therefore this not only makes the car Futuristic but also truly Indian.

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