

Motorbike Styling for Sustainability

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Abstract: India is one of the largest producer and consumer of motorbikes in the world. Out of more than eight million two wheelers that were produced in India, in 2007-2008, around 90% were sold in the domestic markets.

With the increase in competition and diminishing technological differences, design rather than technology has become the prime differentiator among various motorbikes. The use of design as a strategic tool for business advantage offers a spurt of choices to Indian consumers. More than one hundred motorbike models are seen on Indian roads which are primarily differentiated by users on the basis of their aesthetic and emotive qualities in the first instance. However, among these only a very few designs enjoy sustained attachment and longevity among bikers in India. The frequent changes of motorbike style lead to unsustainable consumption of environmental, economic and human resources. This paper proposes a model for sustainable styling of motorbikes in India.

Keywords: *Sustainability, Emotion, Styling, Motorbikes, and Longevity*

1. Introduction

The way Man understands himself in the context of others and the environment is a crucial issue which has concerned mankind since many generations and centuries. Today the society has become citizen centric by virtue of a democratic system of governance. Citizen centric implies that all citizens have to be cared for. Designers and engineers engaged in creating a man made world comprehend the importance of making all citizens equal participants in this man made world. It is said that “all men are alike”, “some men are alike” and “no two people are alike”. It is these three levels of understanding that designers must think of and incorporate in their day to day work. We can facilitate growth only when we create an environment which takes care of people from diverse social cultural back grounds.

Products that we use in society are also becoming citizen centric. Consumers today have a spurt of choices to choose from. The advancement in manufacturing processes and technologies allows manufacturers to develop products specific to the heterogeneous desires and aspirations of people. This not only allows manufacturers to penetrate new markets but enhance business potential in the existing markets as well. Designers are therefore

constantly striving to develop new methods and tools which can help them to create products which resonate with the needs and aspirations of the target user. It is in this context that this study proposes a model for styling motorbikes in order to evoke sustainable emotive experiences.

2. Motorbikes in India

As per the Society of Indian Automobile Association (SIAM, 2009), two-wheelers (primarily motorbikes) constitute over 76% of the total automobile sales and are therefore seen as significant drivers for economic growth in India at present and in future. Unlike the West, where motorbikes are essentially used for fun and sports, in India these are the most common mode of personal transport. As per the Automotive Mission Plan 2006-2016 (AMP, 2006), released by the Department of Heavy Industries, Government of India, Asia, with 90% global market share, is the major producer of motorbikes in the world. Within Asia, China accounts for the largest motorbike production followed by India. Out of the total 40 million motorbikes which were produced globally in 2005, 7.7 million units were produced in India alone (AMP, 2006).

As per the AMP report, the automobile industry is expected to grow from 34 billion USD (5% of the GDP) in 2006 to over 145 billion USD (10% of the GDP) in 2016. As shown in Table 1, the two-wheelers sales in India grew from 48,12,126 vehicles in 2002-03 to 74,37,670 vehicles in 2008-09. More than 88% of the total two-wheelers, which were produced in India in 2008-09, were sold in domestic markets (Table 1).

The surge in number of people with growing aspirations and high purchasing power, along with strong economic growth, over past few years has attracted major motorbike manufacturers to the Indian market. Companies have put in much needed investments in R&D realizing the role of product design, development and innovations to be crucial for surviving the competitiveness in the industry. With the increase in competition and diminishing technological differences, design rather than technology has become the prime differentiator among various motorbikes. The use of design as a strategic tool for business advantage offers a spurt of choices to Indian consumers. More than one hundred motorbike models are seen on Indian roads which are primarily differentiated by users on the basis of their aesthetic and emotive qualities in the first instance. Among these only a few evoke sustained emotional attachment among large number of customers. The motorbike industry in India and South East Asia is essentially a volume driven industry and a certain critical sales figure is a pre-requisite to justify the expenditure incurred on product development. The failure of a motorbike model to satisfy the needs and aspirations of the prospective owner can critically dent the manufacturer's business objectives. It is for this reason that most of the unsuccessful motorbike models are often re-launched with frequent styling changes in the hope of enticing the customers and rationalizing the business strategy. Knowledge of "Designing for whom?" rather than "How to design?" has become one of the key parameters to measure a manufacturer's design competency.

Automobile Domestic Sales Trends							(Number of Vehicles)
Category	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Passenger Vehicles	7,07,198	9,02,096	10,61,572	11,43,076	13,79,979	15,49,882	15,51,880
Commercial Vehicles	1,90,682	2,60,114	3,18,430	3,51,041	4,67,765	4,90,494	3,84,122
Three Wheelers	2,31,529	2,84,078	3,07,862	3,59,920	4,03,910	3,64,781	3,49,719
Two Wheelers	48,12,126	53,64,249	62,09,765	70,52,391	78,72,334	72,49,278	74,37,670
Grand Total	59,41,535	68,10,537	78,97,629	89,06,428	1,01,23,988	96,54,435	97,23,391

Automobile Production Trends							(Number of Vehicles)
Category	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Passenger Vehicles	7,23,330	9,89,560	12,09,876	13,09,300	15,45,223	17,77,583	18,38,697
Commercial Vehicles	2,03,697	2,75,040	3,53,703	3,91,083	5,19,982	5,49,006	4,17,126
Three Wheelers	2,76,719	3,56,223	3,74,445	4,34,423	5,56,126	5,00,660	5,01,030
Two Wheelers	50,76,221	56,22,741	65,29,829	76,08,697	84,66,666	80,26,681	84,18,626
Grand Total	62,79,967	72,43,564	84,67,853	97,43,503	1,10,87,997	1,08,53,930	1,11,75,479

Table 1: Motorbike domestic sales and production trend for India (Source: SIAM, 2009).

It is in this context that a series of studies were conducted with more than 3,000 motorbike owners of 23 different motorbikes in different states of India (Das & Singh 2008, 2009). The objective of the studies was to investigate the diversity in emotive needs and the emotive quality associated with motorbike ownership experiences (biking) in India. The following section explains the model for sustainable styling which was developed on the basis of the findings of these studies.

3. Model for sustainable styling of motorbikes

A biker and bike (motorbike) together complete a biking experience. A biker desires for a particular biking experience to fulfill his emotive needs. Thus, a he appraises a bike in the context of his emotive needs. This appraisal of a bike in specificity to its visual styling characteristics gives it a distinct personality. The biker's personality and bike's persona (perceived personality) together complete the emotive quality of a particular biking experience. This relationship represents the bike's emotive ability to satisfy or dissatisfy a biker's needs. A congruent emotive quality signifies a harmonious relationship between the biker-bike personalities whereas, an incongruent emotive quality refers to an incongruency that exists between them.

According to Govers and Mugge (2004), congruency between the personality of a person and the personality of the product leads to a stronger product attachment. However, a biker may desire to own a motorbike which is incongruent to his current personality or congruent to his desired personality. Therefore, it is in fact the congruency between the emotive needs for biking and the emotive quality of biking that leads to a stronger motorbike attachment (Figure 1-A).

Interestingly the emotive quality of an experience, just like emotions, is temporal in nature. A biker can associate different personalities to a bike at different points of time. Thus, product attachment does not warrant longevity (Mugge, 2007). For longevity or sustained motorbike attachment it is important that the congruency between the emotive needs and emotive quality of biking should remain unchanged (Figure 1-B). This is possible when the emotive needs of a biker remain same or if the bike is able to adapt its personality to the changing needs of the biker. There is also a third possibility, though less common, wherein a biker's personality adapts to his changing needs to continue the same emotive experience with his bike.

Parkinson (1992) has defined emotions, as reactions, to the personal meanings of situations. The personality of a bike, like emotions, is personal to the biker. As different people experience different emotions in the same situation, likewise different bikers can perceive different personalities of the same bike. But then there are certain bikes which imbibe and reflect cultural codes and evoke a communal emotive experience and a sustained attachment over a long period of time. In case of shared emotive experiences two aspects are noteworthy in the context of this paper. Firstly, the bike should communicate the same emotions to a large number of bikers. This is possible when a bike's perceived personality and its relationship with the biker is similar for different bikers thereby creating a shared emotive quality of biking. Secondly, bikers should have common emotive needs for owning a bike. In case if the concerns and expectations from the situation are similar among the people then it is possible that the experience of the situation or its outcome may result in similar emotions among the participants. A congruent relationship between the shared emotive quality and shared emotive needs of a biking leads to universal motorbike attachment (Figure 1-C).

For a prolonged attachment it is imperative that the object invites continued interpretation and that it has several layers, which continuously add to its meaning (Borjesson & Woolley, 2008). Thus, for longevity and universal motorbike attachment it is important that there is an uninterrupted congruency between the shared emotive needs and the shared emotive quality of biking (Figure 1-D).

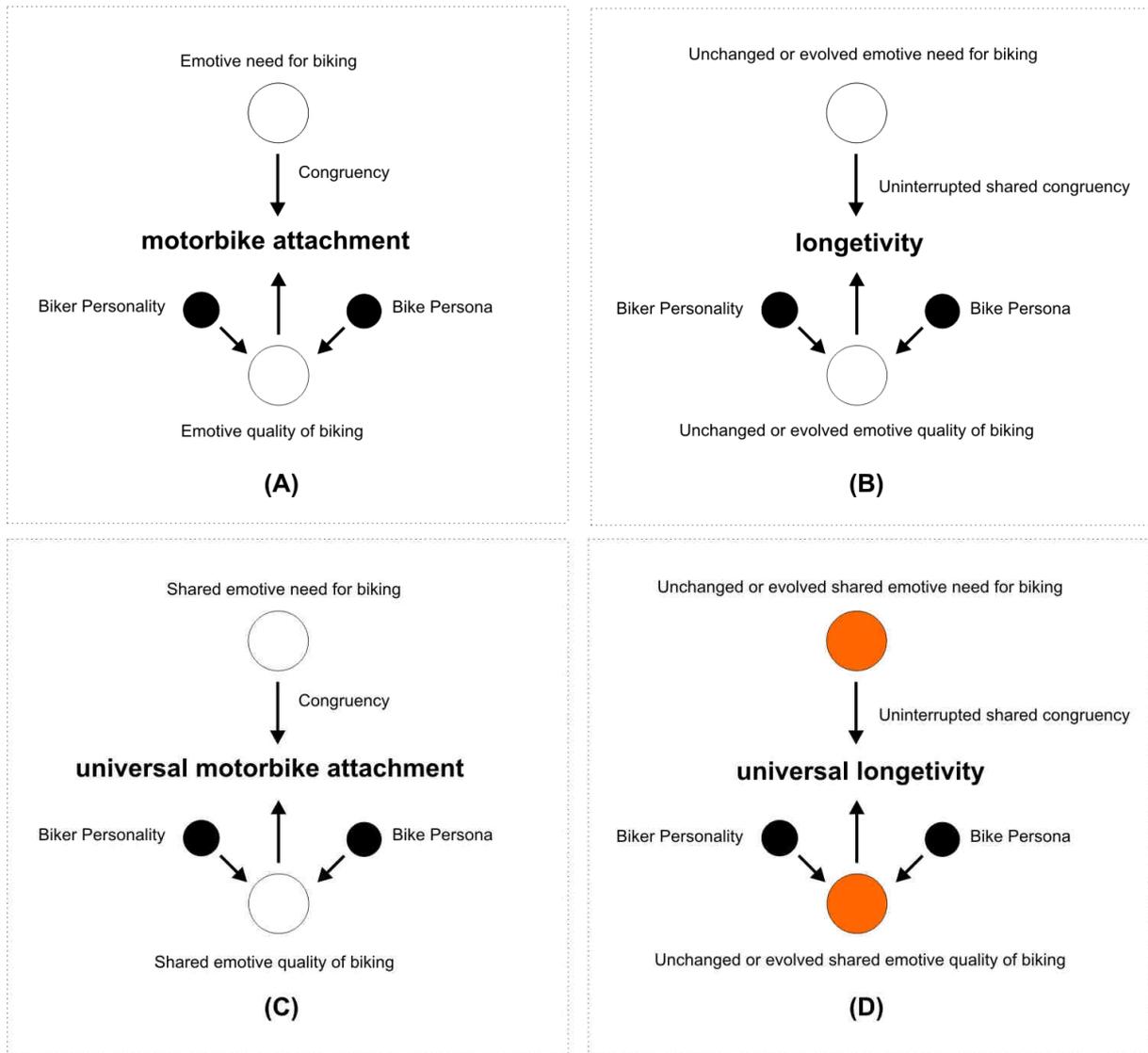


Figure 1: Model for sustainable styling of motorbikes.

4. Conclusion

Automobile manufacturers across the world are continuously developing cutting edge products to meet the aspirations of the people. With the advent of advanced digital tools for prototyping, tooling and testing the product development time has reduced tremendously, in the past few years. The advancement in technology coupled with the growth in demand for motorbikes has encouraged manufactures to frequently launch new products and their variants. This has resulted in reducing the lifespan of a product. Though customers do benefit from this competitive environment but reducing lifespan of a product has its disadvantages as well. Designing and manufacturing of a motorbike consumes enormous environmental, economic and human resources. The frequent changes in motorbike style leads to unsustainable consumption of these resources. The entire supply chain gets affected with frequent replacement of products.

The proposed model for universal attachment and longevity of motorbikes represents a framework for developing sustainability assessment tools for motorbike styling. The knowledge of the desired emotive quality and emotive needs of a particular biking experience would facilitate in reducing styling failures and enable designers to design motorbike styles for sustained attachment and longevity.

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