

**Title of the Case:** **Hero Ultra: Joining Hands for Ultra Success**

**Name of the Author:** 1. **Dr. M. V. Sidhpuria**  
2. **Dr. Renuka Garg**

**Affiliation:** **Veer Narmad South Gujarat University  
Surat.**

**Postal Address:** **Department of Business & Industrial Management  
Veer Narmad South Gujarat University  
Udhna-Magdalla road  
SURAT – 395007.**

**Tele / FAX:** **0261 – 2211412**                      **0261-2256070 (Fax)**

**E-mail:** 1. **mvsidhpuria@yahoo.com**  
2. **kvprgarg@yahoo.co.in**

## **Hero Ultra: Joining Hands for Ultra Success**

The Joint venture between Honda Motors - Japan and Hero group made it a real “Hero” of two-wheeler industry and made Hero-Honda Motors the world’s largest two-wheeler company. When the joint venture agreement between Hero group and Honda Motors Company – Japan came up for revalidation in the year 2004, Honda Motors and Scooters India Ltd announced to enter the motorcycle market. This brought the management of Hero group to re-think their strategy. In order to overcome the emerging challenges, the management thought it appropriate to forge strategic partnering with a firm that brings to the group a technology that is futuristic, eco-friendly and has a promising future. Hero group launched its first electric vehicle in collaboration with Ultra Motors of UK in the middle of 2007 and achieved a landmark sale of 10000 electric bikes within 4 months of its launch. The case attempts to unfold the importance and relevance of cooperative strategies in Indian automobile industry especially two-wheeler industry and unveils the strategic actions initiated by the Hero group to uphold its leadership position in two-wheeler industry with the help of strategic alliance.

## Hero Ultra: Joining Hands for Ultra Success

“India is an important market for us and offers an opportunity in Electric two wheelers. We have found a valuable partner in Hero Group in creating this new opportunity and tapping its potential. Efficiencies of both the companies in marketing and manufacturing respectively, proved to be a strong catalyst for sales and achieving the magic figure of 10,000 units. We will continue to innovate and grow with our current and future customers.” Commented Mr. Ian Woodcock, Chairman, Ultra Motors Company, a technology partner of Hero group – world’s largest manufacturer of two-wheeler on the occasion of celebrating the landmark sales of 10,000 units of electric two-wheelers in India in November 2007<sup>1</sup>.

Hero Cycles Limited had earlier in October 2006, signed a Technical Collaboration-cum-Joint Marketing Agreement with Ultra Motor Company, to produce and jointly market a range of “Hero Electric - Ultra Powered” Electric Two Wheelers in India. Both Hero Cycles Limited and Ultra Motor Company wanted to understand the strength of the market and hence the Technical Collaboration was the first step towards entering the Indian market. In the last six months both the companies understood the strength of the market, witnessed a good response and felt it is the right time to combine resources and leverage the market potential.

Hero Exports Private Limited (HEPL), an affiliate of Hero Cycles Ltd. (HCL), which is part of the \$3-billion Hero Group, has entered into a Joint Venture with Ultra Motor Company (UMC), a Global Electric Vehicle company based in UK. The new venture, to be called Hero Ultra Private Limited, will have equal shareholding by the two companies<sup>2</sup>. Under the aegis of the new venture, Hero Cycles has launched two new models "*Velociti*", an electric scooter with extra speed, and "*Optima*"- an electric scooter with extra range priced between INR 29,000 and 34,000. The existing range of the company’s six "Hero Electric Ultra Powered" two wheelers is priced between INR 14,400 and 27,900.

"Hero Cycles and Ultra Motor have shared a strong partnership under the technical collaboration-cum-joint marketing agreement and this joint venture is a natural extension of that relationship," said Vijay Munjal, Managing Director, Hero Cycles Limited.<sup>3</sup> "Both the companies have worked seamlessly in creating a market for electric two wheelers in India. Going forward, we will put in the necessary resources to make "Hero Ultra" a bigger success."

### **Indian Automobile Sector<sup>4</sup>**

Automobile is one of the largest industries and has been recognised as one of the drivers of economic growth. Government has initiated well-directed and focused efforts to provide a new face to the automobile policy in order to harness the full potential of the automobile sector. Abolition of licensing, removal of quantitative restrictions and initiatives to align the policy with the WTO requirements have put the industry on a fast track. Setting up of growth conducive environment has helped restructuring, and enabled industry to absorb new technologies, aligning itself with the global development and also to realise its growth potential in the country. The liberalisation policies have led to continuous increase in competition, which has ultimately resulted in modernisation in line with the global standards as well as in substantial cut in prices. Aggressive marketing by the auto finance companies has also played a significant role in boosting automobile demand, especially from the population in the middle-income group.

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<sup>1</sup> [http://www.sanepr.com/Hero-Ultra-achieves-the-landmark-of-10000-unit-sales-of-Electric-Two-Wheelers\\_29109.cfm](http://www.sanepr.com/Hero-Ultra-achieves-the-landmark-of-10000-unit-sales-of-Electric-Two-Wheelers_29109.cfm) accessed December 1, 2007

<sup>2</sup> <http://www.financialexpress.com/news/Hero-enters-into-5050-pact-with-UKs-Ultra-Motor/226959/> accessed October 31, 2007

<sup>3</sup> [http://www.domain-b.com/companies/companies\\_h/hero\\_cycles/20071010\\_announces.htm](http://www.domain-b.com/companies/companies_h/hero_cycles/20071010_announces.htm) accessed October 31, 2007

<sup>4</sup> Content of this paragraph has been drawn from “Automobile Sector Outlook” from CAPITALINE – An Electronic Database published by Capital Market Publishers India Pvt. Ltd.

## **Evolution of Two-wheeler Industry in India**

Two-wheeler industry since its existence in 1955 has been growing steadily. It used to sell around 0.1 million units per annum in 1971 and reached to a level of 3 million units per annum by 1998. Similarly, capacities of production have also increased from about 0.2 million units of annual capacity in the seventies to more than 4 million units in the late nineties<sup>5</sup>. It consists of three segments viz. scooters, motorcycles and mopeds. According to the figures published by SIAM, the share of two-wheelers in automobile sector in terms of units sold was about 80 per cent during 2003-04.

In the initial years, entry of firms, capacity expansion, choice of products including capacity mix and technology, all critical areas of functioning of an industry, were effectively controlled by the State machinery. The lapses in the system had invited fresh policy options that came into being in late sixties. Amongst these policies, Monopolies and Restrictive Trade Practices (MRTP) and Foreign Exchange Regulation Act (FERA) were aimed at regulating monopoly and foreign investment respectively. This controlling mechanism over the industry resulted in: (a) several firms operating below minimum scale of efficiency; (b) under-utilisation of capacity; and (c) usage of outdated technology.

Recognition of the damaging effects of licensing and fettering policies led to initiation of reforms, which ultimately took a more prominent shape with the introduction of the New Economic Policy (NEP) in 1985.

The evolution of the two wheeler industry in India can be split up into **five** periods - 4 ten year periods<sup>6</sup> and the developments in the new millennium . This division traces significant changes in economic policy making. The first time-period, 1960-1969, was one during which the growth of the two-wheeler industry was fostered through means like permitting foreign collaborations and phasing out of non-manufacturing firms in the industry. The period 1970-1980 saw state controls, through the use of the licensing system and certain regulatory acts over the economy, at their peak. During 1981-1990 significant reforms were initiated in the country. The final time-period covers the period 1991-1999 during which the reform process was deepened. These reforms encompassed several areas like finance, trade, tax, industrial policy etc. Strategic alliances and technology partnering were the cornerstones of the evolution of the two-wheeler industry in India.

### **a) 1960 – 1969**

The automobile industry being classified as one of importance under the Industrial Policy Resolution of 1948 was therefore controlled and regulated by the Government. In order to encourage manufacturing, besides restricting import of complete vehicles, automobile assembler firms were phased out by 1952 (Tariff Commission, 1968), and only manufacturing firms allowed to continue. Production of automobiles was licensed, which meant that a firm required a licensing approval in order to open a plant. It also meant that a firm's capacity of production was determined by the Government. During this period, collaborations with foreign firms were encouraged. Exhibit -1 illustrates the fact that most firms existing in this period had some form of collaboration with foreign firms.

### **b) 1970 – 1980**

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<sup>5</sup> All sales figures are from various issues of ACMA and its official website, and production capacity figures from various Five Year Plan documents.

<sup>6</sup> The content of this section is largely drawn from: George, Sunila, Jha, Raghendra and Nagarajan, Hari K., "The Evolution and Structure of the Two Wheeler Industry in India" (August 2000). IGIDR Working Paper. Available at SSRN: <http://ssrn.com/abstract=239809> or DOI: 10.2139/ssrn.239809

During this period, the overall growth rate of the two-wheeler industry was as high as 15% per annum largely attributed to the hike in oil prices in 1974, as two-wheelers offered higher fuel efficiency over cars/jeeps<sup>7</sup>. The levels of restriction and control over the industry were also high during this period due to the introduction of regulatory polices such as MRTP and FERA. The impact of MRTP was limited as it affected only large firms like Bajaj Auto Ltd. whose growth rates were curbed as they came under the purview of this Act. However, FERA had a more far-reaching effect as it caused foreign investment in India to be restricted. There was virtual technological stagnation in motorcycle segment as a very serious impact of FERA as neither new products nor firms entered the market since this segment depended almost entirely on foreign collaborations for technology. The scooter and moped segments on the other hand were technologically more self-sufficient and thus there were two new entrants in the scooter segment and three in the moped segment (Exhibit -1).

### **c) 1981 – 1990**

The technological backwardness of the Indian two-wheeler industry was one of the reasons for the initiation of reforms in 1981. Foreign collaborations were allowed for all two-wheelers up to an engine capacity of 100 cc. This prompted a spate of new entries into the industry (Exhibit 1) the majority of which entered the motorcycle segment, bringing with them new technology that resulted in more efficient production processes and products<sup>8</sup>. The variety in products available also improved after 'broad banding' was allowed in the industry in 1985 as a part of NEP. This, coupled with the announcement of the Minimum Efficient Scale (MES) of production for the two-wheeler industry<sup>9</sup>, gave firms the flexibility to choose an optimal product and capacity mix which could better incorporate market demand into their production strategy and thereby improve their capacity utilization and efficiency. These reforms had two major effects on the industry: First, licensed capacities went up to 1.1 million units per annum overshooting the 0.675 million units per annum target set in the Sixth Plan. Second, several existing but weaker players died out giving way to new entrants and superior products<sup>10</sup>.

### **d) 1991 – 1999**

The reforms that began in the late seventies underwent their most significant change in 1991 through the liberalization of the economy<sup>11</sup>. The two-wheeler industry was completely deregulated. In the area of trade, several reforms were introduced with the goal of making Indian automobile exports more competitive<sup>12</sup>.

The two-wheeler industry in the nineties was characterized by a) an increase in the number of brands available in the market which caused firms to compete on the basis of product features and b) increase in sales volumes in the motorcycle segment, largely at the cost of scooter segment. In the beginning of the period, motorcycles, scooters and mopeds were contributing 52%, 26% and 22% respectively, which changed to 43%, 36% and 21% respectively in 1997.

### **e) 2000 – 2007**

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<sup>7</sup> During the period 1974-79, sales of two-wheelers increased by 60%, while that of cars declined by 21% and jeeps grew only by 11%.

<sup>8</sup> In the seventies, motorcycle mileage was on an average between 25 to 50 kmpl (kilometer per liter), which went up to 50 to 80 kmpl. For mopeds it improved from 50 kmpl to 80 kmpl. Output of the engines also increased from 3-4 HP to 10 HP per 100 cc.

<sup>9</sup> In the two-wheeler industry, MES was pegged at 2,00,000 units and 5,00,000 units of annual licensed capacity for non-exporting and exporting firms respectively (CMIE, 1990).

<sup>10</sup> In the scooter segment, models with features like self-starter facility, gear-less riding etc. were introduced. In the motorcycle segment, the new 100 cc models compared well against the existing heavier models of 250 cc, 350 cc etc.

<sup>11</sup> Joshi and Little (1996) discuss the economic crisis of 1991 and the policy response of the Indian government.

<sup>12</sup> The EXIM Policy granted exporters entitlements worth 40% of their export earnings. Quantitative restrictions were replaced with import duties which were around 85% for the two-wheeler industry (GATT Secretariat, 1993).

This period witnessed major structural changes in the two-wheeler industry, as government allowed entry of foreign players with 100% foreign investment. Honda Motors – the Japanese major and technology partner of Hero group (Hero Honda Motors Ltd.) entered on its own in India. Suzuki Motors – the technology partner of TVS group also joined the bandwagon. In a period of 5 years (2000-01 to 2004-05), the share of motorcycle rose from 50% to 80% of the total two-wheeler sales in India.

**Table 1: Two Wheeler Industry: Segment wise break up**

	1990	1997	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05
Motorcycle	26	36	50.2%	60.3%	68.4%	75.8%	77.4%	79.7%
Scooters	52	43	28.9%	20.4%	21.8%	17.1%	16.7%	15.0%
Mopeds	22	21	20.9%	19.2%	9.9%	7.0%	5.9%	5.3%

(Source: Sector Outlook: Two-wheeler Industry, CAPITALINE – Corporate Database on Capital Market Publishers India Pvt. Ltd.)

### Industry Structure

The two-wheeler manufacturing business is capital-intensive, and requires facilities for making engines, body fabrication and assembly. Huge investments are required to increase capacity or set up new manufacturing facilities. The cost of setting up a full-fledged motorcycle manufacturing line with a capacity of 0.4 million units, is estimated at Rs 2.5-3.0 billion. A motorcycle assembly line of the same capacity costs around Rs 750 million. A scooter manufacturing line of 0.1 million units costs around Rs 2 billion.

Hero Honda, Bajaj Auto, TVS Motor have been the main players of the two wheeler industry. While Hero Honda operates dominantly in the motorcycle segment, a modest entry has been made in the scooterette segment by launching Hero Honda Pleasure. Bajaj Auto and TVS Motor ride in all the three segments – motorcycle, scooter and moped. The other players in the industry have been LML, Kinetic Motor, Kinetic Engineering, Yamaha and Royal Enfield. Hero Honda's overall sales raced much above industry growth and registered a CAGR of 28% between 1999-00 and 2004-05. Bajaj Auto and TVS Motor followed with CAGR growth of 10.5% and 8.4% respectively. Other than Royal Enfield Motors, who registered a CAGR growth of 3% during the said period, all other players registered a negative growth in the period under review. Thus if overall two wheeler market is considered, Hero Honda commands a 40% share in the market, followed by Bajaj Auto at 24% and TVS Motor at 17.8%. Honda Motorcycle & Scooters entered the Indian scooter market during 2001-02 and made its foray into the motorcycle market in 2004-05. In a span of 4 years, the company today has 8.4% share in the overall Indian two wheeler market.

**Table 2: Two-wheelers: Player-wise Market Share**

(%)	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Hero Honda	22.0	28.8	33.1	33.2	36.8	39.9
Bajaj Auto	28.0	24.9	27.8	24.8	22.9	24.4
TVS Motor	22.5	24.2	20.1	22.1	20.4	17.8
Honda Motorcycle & Scooters	0.0	0.0	1.3	3.3	6.1	8.4
Yamaha Motors	7.3	4.8	5.4	6.0	4.7	3.8
LML	8.2	5.8	4.0	3.8	3.7	1.6
Kinetic Motor	3.5	3.6	2.9	2.6	2.2	1.6
Kinetic Engineering	4.7	4.3	2.9	2.0	1.4	1.1
Majestic Auto	3.2	3.1	1.9	1.6	1.3	1.0

Royal Enfield Motors	0.7	0.6	0.6	0.6	0.5	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

(Source: Sector Outlook: Two-wheeler Industry, CAPITALINE – Corporate Database on Capital Market Publishers India Pvt. Ltd.)

## Motorcycle

Consumer demand in India has moved in line with the demand pattern followed in other countries by switching over to motorcycle from the traditional geared scooters preferred in the past. Motorcycle sales have witnessed an astounding CAGR growth of 24.7% during 1999-2000 to 2004-05. The growth in sales picked up strongly in 2001-02 as motorcycles became affordable since April 01 following the decline in excise duty levels on the >75 cc motorcycles. A large influx of new models in the past few years at various price points, power, performance attributes and aesthetic levels led to increased consumer interest in the motorcycle segment.

The motorcycle segment can be further subdivided into economy, executive and premium segments on the basis of price range, fuel efficiency, target income groups and margins.

**Table 3: Motorcycles: Economy vs Executive vs Premium**

	Target Income groups	Price Range (Rs'000)	Fuel Efficiency	Margins
Economy	Low	Upto 38	High	Low
Executive	Medium	38-50	High	Moderate
Premium	High	50-60	Moderate	High

(Source: Sector Outlook: Two-wheeler Industry, CAPITALINE – Corporate Database on Capital Market Publishers India Pvt. Ltd.)

The price sensitive economy segment caters largely to the lower middle class common man and low-income buyers from rural areas, which are highly dependent on monsoons and overall economic performance of the economy.

Increasing competition has narrowed down the price differential between the economy and executive segments. While CT-100's success has proved that the price-conscious economy segment customers are ready to pay a few thousands more for better styling and mileage and hence pulled in some executive customers, aggressive pricing of 125 cc Discover effectively reduced the prices in executive segment. This triggered price cuts, mainly in the form of discounts by select players (as direct price cuts can dilute the brand value of a model).

The premium segment witnessed the entry of HMSI in motorcycles segment through the launch of Honda Unicorn. Though the product was well received, it was not able to fuel high growth in the segment. The premium segment was estimated to account for around 10.5% in 2004-05 as against 11.5% in 2003-04.

Hero Honda remains the undisputed leader in the motorcycle market. Though in 2002-03, it lost some of its market share to TVS Motors and LML, it regained back soon and today has a 50% share in the motorcycle market as against 43.7% during 1999-2000. Bajaj Auto has a commendable 28% market share (2004-05) as against 24% (2002-03) and TVS Motor has a share of 13% (2004-05) as against 18.8% (2002-03). Yamaha stands at a distant fourth with a share of 4.8% as against 7.9% three years back.

## Scooters

Though sales in the scooter segment grew at a CAGR 6.7% between 2000-01 and 2004-05, due to the rising popularity of auto-gear scooters, offsetting the plunge in demand for geared scooters, if one considers the CAGR growth from 1999-2000, scooter sales witnessed a 0.3% negative growth. The segment registered the greatest ever fall in sales during 2001-02 with a 28% drop in sales (y-o-y). Overall scooter sales started growing from 2003-04; sales grew by around 8.1% during 2003-04 and then by 5% during 2004-05.

The demand for auto-gear scooters is driven mainly by growing household income, increasing preference for a vehicle for all in the family, increasing number of female students and workers and availability of finance at affordable interest rates. With the rise in the income levels of Indian households, coupled with the increasing proportion of female workers, has augmented to an increasing preference for gearless scooter.

The auto-gear scooters segment can be divided into heavy and light scooters. While < 100 cc gearless scooters (popularly known as scooterettes i.e. Scooty Pep, Kinetic Zing) are classified as light scooters, the heavy auto-gear scooters are > 100 cc gearless scooters (e.g. Honda Activa, Kinetic Nova). Around 60% of the demand for the heavy auto-gear scooters comes from male consumers, out of which 50-60% is replacement demand). In the case of scooterettes, over 60% of the consumers are female and are mostly first-time buyers.

Honda's Activa dominated the major heavy scooter segment and is estimated to constitute more than one third of the scooter sales during the past couple of years. TVS Scooty/Pep dominated the light scooters/scooterettes.

Bajaj Auto, which was one of the main scooter players in the two wheeler industry with a 47% share in the scooter market, lost its share considerably to HMSI once it entered the market. Since 4 years after its first forayed into the Indian scooter market, HMSI today has 50% share in the Indian scooter market leaving Bajaj Auto with a share of 14% and TVS Motor with a share of 23%.

### **Mopeds:**

Demand for mopeds declined at a CAGR of 13.6% between 1999-2000 and 2004-05. However, after several continuous years of fall, demand grew by around 4.8% during 2004-05 (owing to lower base). The availability of fuel efficient motorcycles at a competitive price has lured away customers away from this segment since 2001-02. TVS Motor is the leader in the moped segment with 75% share.

**Table 4: Two-wheeler segments: Player-wise Segment-wise Sales (volumes)**

<b>Company</b>	<b>1999-2000</b>	<b>2000-01</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>	<b>2004-05</b>	<b>CAGR (%)</b>
Motorcycles							
Hero Honda	761,700	1,029,591	1,425,302	1,677,562	2,072,903	2,621,400	28.0%
Bajaj Auto	431,347	542,631	723,969	922,453	1,056,135	1,468,872	27.8%
TVS Motor	270,962	354,497	450,206	718,507	706,610	679,535	20.2%
Honda Motorcycle &	-	-	-	-	-	64,936	
Yamaha Motors	251,865	171,307	231,387	302,718	264,673	252,196	0.0%
LML	10	36,160	44,723	120,231	164,576	77,125	499.0%
Kinetic Engineering	-	-	43,530	57,246	55,606	43,039	
Royal Enfield Motors	25,504	21,928	24,623	28,294	28,361	29,576	3.0%

Majestic Auto	-	-	-	5,004	8,869	4,863	
<b>Total</b>	<b>1,741,388</b>	<b>2,156,114</b>	<b>2,943,740</b>	<b>3,832,015</b>	<b>4,357,733</b>	<b>5,241,542</b>	<b>24.7%</b>
<b>Scooter</b>							
Honda Motorcycle &	-	-	55,590	167,033	341,450	486,911	
TVS Motor	127,554	142,428	144,087	152,494	188,933	224,587	12.0%
Bajaj Auto	470,874	288,686	474,258	329,402	232,775	133,693	-22.3%
Kinetic Motor	120,232	127,663	126,687	133,519	126,435	107,814	-2.2%
LML	282,891	171,830	128,031	71,829	42,951	29,249	-36.5%
Majestic Auto	-	-	7,916	11,932	5,643	2,078	
<b>Total</b>	<b>1,001,551</b>	<b>730,607</b>	<b>936,569</b>	<b>866,209</b>	<b>938,187</b>	<b>984,332</b>	<b>-0.3%</b>
<b>Moped</b>							
Bajaj Auto	69,173	57,411	-	-	-	-	
TVS Motor	381,850	366,517	271,388	248,308	251,153	263,393	-7.2%
Majestic Auto	112,450	111,242	74,161	63,817	56,602	55,820	-13.1%
Kinetic Engineering	162,507	152,465	80,199	43,793	25,988	30,497	-28.4%
Yamaha Motors	72	-	-	-	-	-	
<b>Total</b>	<b>726,052</b>	<b>687,635</b>	<b>425,748</b>	<b>355,918</b>	<b>333,743</b>	<b>349,710</b>	<b>-13.6%</b>
<b>GRAND TOTAL</b>	<b>3,468,991</b>	<b>3,574,356</b>	<b>4,306,057</b>	<b>5,054,142</b>	<b>5,629,663</b>	<b>6,575,584</b>	<b>13.6%</b>

(Source: Sector Outlook: Two-wheeler Industry, CAPITALINE – Corporate Database on Capital Market Publishers India Pvt. Ltd.)

## Alternative Fuel fired vehicles

Bio-diesel, Electric Vehicles (EV), Hybrid vehicles, and fuel cell vehicles are seen as an answer to the “fossil deficient” country like India. The Government in order to give a boost to such vehicles has announced a reduction of excise duty on hybrid vehicles from 24% to 14% in the Union Budget 2008. According to Automonitor “If we can have three lakh Electric Vehicles on the roads by 2020, including three-wheelers, cars and scooters, this could result in a reduction of over 16 lakh metric tons of CO, NOx and HC by 2020, savings of over Rs 3,700 crore in foreign exchange and significant health cost savings<sup>13</sup>”.

### Electric vehicles

Electric vehicles have no gears, no engine, zero emission, no pollution, electronic start and accelerator. E-bikes or the “plug and ply” bikes do not require registration or license as are exempted from the Central Vehicles Registration Act by the Automotive Research Association of India (ARAI). This means they have to follow certain statutory norms that specify that the speed of such two-wheelers should not be more than 25 kmph. According to Deba Ghoshal, Director (Marketing), Ultra Motor Company “there is a wide (market) gap between a bicycle and, say, a scooter or a motorbike. EVs will serve as a great in-betweens”.

In 2005-06, more than 7 million two-wheelers were sold in the country. Of these, 5.81 million were motorcycles, 9.08 were largely scooterettes and another 3.32 lakhs were mopeds<sup>14</sup>.

### E-Bikes: The Emerging Segment

Electric vehicles are a totally new category in India. The industry has witnessed a lot of activity in the last 15 months. According to a 2006 survey conducted by AC Nielsen, the category potential of

<sup>13</sup> <http://www.vicky.in/straightfromtheheart/electric-vehicles-in-india/>; accessed on 12.3.2008

<sup>14</sup> Venkatesh Babu and Aman Malik “Electric Dreams” *Business Today*, March 25, 2007 available on <http://archives.digitaltoday.in/businesstoday/20070325/features3.html>

electric vehicles for 2007-08 is approximately 190,000 units and is projected to grow to 490,000 units in 2008-09.

E-bikes in many countries are nothing beyond electric motorized bicycles. China happens to be the largest market with annual sales of 20 million e-bikes, according to an estimate. Elsewhere it is targeted at cyclists wanting to move up, whereas in India, it is targeted at those seeking value for money - a substitute for motorcycles and scooters. In the words of Vijay Munjal, Managing director, Hero Cycles Ltd., "In a market where there are 1.6million two-wheelers sold every month, the technology innovation in electric two-wheelers will definitely herald a major change in the industry."

### **Players in E-bikes Segment<sup>15</sup>**

Apart from some of the major players like Indus – Division of Electrotherm from Gujarat (Yo Bykes), EKO Vehicle - a Bangalore based company (EKO cosmic-I scooter and EGO bike), Hero Ultra Motors Pvt. Ltd., (Velocitii, Maxi, etc.), TVS Motors (Scooty Teenz Electric), AVON Cycles, KEV India, Kaiser Auto Moto, Standard Group, Atlas Cycles, ACE Motors, SAR Group under the name of Lectrix Motors, there are regional players. Lohia Auto Industries (LAI) has invested Rs 150 crore to manufacture electric two and three wheelers and would be able to "roll out its power-driven two and three wheelers in July and September respectively this year" (TOI, April 7, 2008, p-13). There is no organised body to represent these manufacturers. According to estimates, there are about 75-80 manufacturers of e-bikes in the country.

#### *Electrotherm (India) Ltd.*

Electrotherm (India) Ltd., Ahmedabad, (ET) - a trusted name in foundry and steel business now has forayed into electric and hybrid electric vehicles by opening up a separate auto division – Indus Elec-Trans to manufacture electric vehicles and hybrid electric vehicles. It currently produces hi-tech electric two wheelers under the brand *YObykes*. It offers two scooterette and four models of bikes with the motor power range 200-250W. YO-smart scooter model from Indus come with a very compact dimension. The vehicle weighs less and has a payload of 75kg. YO-smart vehicle clocks a top speed of 25km/hr and the vehicle offers a range/charge mileage of 75km. Charge duration required is 6 – 8 hours. YOBikes are ranged between Rs 13,999 and Rs 23,249.

It started offering e-bikes in 2005 with a manufacturing plant in Kutch district of Gujarat with an initial capacity of 1 lakh units per annum. In 2006, the company invested Rs. 60 crores for in-house technology development for electric vehicles and expanded the capacity to 2.8 lakh bikes per year. Today, 80% of the product has been indigenised.

In the first year of operation, it sold about 28,000 e-bikes and has sold 35,000 e-bikes during April to August 2007<sup>16</sup>.

According to an estimate, Yobykes command approximately 70% of the market in India. In future, it plans to develop electric three wheelers, four wheelers and hybrid electric low floor buses.

#### *EKO vehicle*

EKO vehicle a Bangalore based company offers EKO cosmic –I scooter and EGO bike. This company has been in this business for a long time and has dealers in various locations in India than its counterparts. Battery weighs at 28kgs and has a life of 12000 – 15000kms. The company offers a rapid charger, which will charge the bike at 10 – 15 minutes (good for Institutional consumers). Cosmic offers a variable mileage depending on the payload. The maximum speed is 40 km/hr and

<sup>15</sup> The contents of this section are largely drawn from reference cited in footnotes 13 and 14.

<sup>16</sup> <http://www.livemint.com/2007/08/21013559/Indian-ebikes-gear-up-for-sec.html> accessed March 12, 2008

Cosmic noise is less than 60decibel. Cosmic is offered in five colours and is exported to many countries.

*ACE motors*

Pune based Ace motors manufacturers e-bike (electric bike) and the majority of the components of this bike are imported from China based company Changtong E Bike Company Ltd. The e-bikes from Ace Motors weigh almost 60kg. The bike offers a load-carrying capacity of 100-140 kg. To cover a distance of 220 km, you need to charge the bike for 6 - 8 hours at 220 volts. The maximum speed of the bike is 25 km/hr and is priced at Rs 26,500.

*Kaiser Auto Moto*

After establishing a strong presence in the Chinese market, the company plans to do the same in India as well. The company wants to sell at least 1,000 bikes in the first year.

*TVS group*

The South-based two-wheeler major TVS is also in the fray with the announcement for the launch of its electric scooter Scooty Teenz Electric<sup>17</sup>. Aimed at teenagers and young women, the product is aimed to be positioned as a reliable but green option for youngsters.

According to the company, the Scooty Teenz Electric has an edge over existing models as it offers best-in-class comfort, ride quality, gradability, load carrying, fit and finish and is fitted with the maximum power pack in its category. It's USP is ease of use and maneuverability particularly for people whose daily travel is limited to around 15-25 km per day.

**Hero Group<sup>18</sup>**

Over the years, Hero Group has strengthened its joint ventures, forged profitable relationships with its partners and allied itself with some of the best players in the market. Technology assimilation through wide sourcing has been and will continue to be an integral part of the progression of the Hero Group.

<b>Technology Related Partnerships/ Alliances &amp; Joint Ventures</b>	<b>IT Related Alliances</b>	<b>Product Engineering Related Alliances</b>
<ol style="list-style-type: none"> <li>1. Honda Motor Company of Japan</li> <li>2. Showa Corporarion, Japan</li> <li>3. Honda Foundry Company Limited, Japan</li> <li>4. Fein Tools, Switzerland</li> <li>5. Gujarat Industrial Investment Corporation</li> <li>6. Wean United, USA</li> <li>7. Kawasaki Steel Corporation, Japan</li> <li>8. <b>National Bicycle, Japan</b></li> <li>9. Aprilia, Italy</li> </ol>	<ol style="list-style-type: none"> <li>1. Microsoft, Singapore</li> <li>2. DynEd International</li> <li>3. ACS. USA</li> </ol>	<ol style="list-style-type: none"> <li>1. PTC</li> <li>2. Porsche Design</li> <li>3. Target Design</li> <li>4. Universal Cycles Plc, UK</li> <li>5. EralMetall, Germany</li> </ol>

(Source: <http://www.herogroup.com/alliance.htm>, accessed October 15, 2007)

Hero entered a joint venture for technical and financial participation with one of the world's largest automotive makers, **Honda Motor Company Limited of Japan**, in 1984 for the manufacture of 100cc motorcycles in India.

<sup>17</sup> [http://economictimes.indiatimes.com/Specials/Auto/TVS\\_Motors\\_enters\\_the\\_e-bikes\\_fray/articleshow/2799461.cms](http://economictimes.indiatimes.com/Specials/Auto/TVS_Motors_enters_the_e-bikes_fray/articleshow/2799461.cms) , accessed March 13, 2008

<sup>18</sup> Hero group's official website [www.herogroup.com](http://www.herogroup.com), accessed October 15, 2007

Hero's quest for a low-budget, fuel-efficient and environment-friendly two-wheeler led Hero Motors to enter into a Technical Collaboration with **Steyr Daimler Puch of Austria** in 1987 for the manufacture of the 65cc, Porsche-design mini-motorcycles.

Under the Hero and Ultra Motors Company agreement, UMC has agreed to provide electric vehicle technology and the complete 'Ultra Power Kit' consisting of Ultra Motor, Electric Controller, Special Batteries and Charger. Hero would be responsible for integration and assembly and manufacturing and service of the final product. Both the companies have agreed to jointly develop the market and to invest not only in 'Joint Marketing' but also for setting up of distribution network. According to Ian Woodcock – Chairman, UMC, their business model is to partner with leading vehicle manufacturers in the different parts of the world to develop and market electric vehicle for the local market<sup>19</sup>.

The Hero Group has done business differently right from the start and that is what has helped us to achieve break-through in the competitive two-wheeler market. The Group's low key, but focussed, style of management has earned the company plaudits amongst investors, employees, vendors and dealers, as also worldwide recognition.

The growth of the Group through the years has been influenced by a number of factors such as just-in-time inventory principle, cooperation through ancillaries and strategic alliances, favourable employee policy, a strong dealer network, strong family values, and diversification.

In ancillary development, Munjals have gone one step forward. The ancillary units are manned by friends, relatives, ex-employees or close associates of the Munjal family since the Group patriarch, Mr Brijmohan Lall Munjal says, "... *never wanted to march alone.*" In nutshell, the Hero Group's phenomenal growth is the result of constant innovations, a close watch on costs and the dynamic leadership of the Group Chairman, characterized by an ethos of entrepreneurship, of right attitudes and building stronger relationships with investors, partners, vendors and dealers and customers.

### **Latest Developments in Electric Vehicle Segment**

Euphoria apart some of the shortcomings in the EVs are related to the product, distribution, service elements and price. It is felt that the vehicles give underpowered performance, the driving range per battery charge is restrictive, there are minimal devices as these would drain the battery, and the luxuries that are offered by gasoline powered vehicles are wanting. Though touted as maintenance free vehicles, there could be problems with electrical kits, spare parts and battery charging stations. Moreover, availability of qualified mechanics and the dealer network are some of the major barriers. Electrotherm and Ultra hope to have a strong network of dealers and service support. This may not be possible for the large number of regional players who have jumped in the fray. According to Ganesh Mahalingam, Managing Director, Ultra Motor Company, "I feel that only national players would survive. All those who have done investment in equipment and service would not have any trouble growing." According to Avinash Bhandari, Director of Ahmedabad-based Electrotherm (India) Ltd., "They are not supposed to have a speed of over 25 kmph, but many do as they use a motor of higher capacity. Some of them launch their vehicle and also give warranty but do not have adequate dealer or service network. They also do not have spare parts. All this creates a very negative image in the minds of people and can badly affect the growth of this industry in the medium and long run<sup>20</sup>."

Electrotherm though is upbeat. "We are now all set to launch a new e-bike – Yo speed – that would have an engine of 750 watts, compared with 250 watt engines that existing e-bikes have. It would require registration and license to ride and the average speed would be 35 – 40 kmph. This would help explode the demand for e-bikes in India," says Avinash Bhandari, which sells e-bikes under the Yo Bykes brand. "The real game would begin when we launch our high powered engine e-bike to

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<sup>19</sup> <http://www.newstodaynet.com/06jan/bu1.htm> , accessed on 13.3.2008

<sup>20</sup> <http://www.livemint.com/2007/08/21013559/Indian-ebikes-gear-up-for-sec.html>

compete with TVS Scooty Pep+ and Honda Activa.” Bhandari believes that over the next five years some e-bike companies will see 100% growth<sup>21</sup>.

Ganesh Mahalingam, says that they too are working on a faster electric vehicle that would have a speed of about 50-70 kmph. “It would take us six more months but remember that the electric bike market has come of age only in last six months as, unlike in the west where e-bike is a lifestyle product and for some an environment friendly technology, in India it is an economical mode of transportation.. Primarily it is an ‘aam admi’ (common man) vehicle as it is 10 times cheaper to operate an electric two-wheeler than the traditional petrol bike<sup>22</sup>”.

Major players like Electrotherm and Hero-Ultra are eyeing the home delivery segment- the retailers, fast food chains for growth. Electrotherm has sold to Hypercity Mall and McDonald in Mumbai and according to Bhandari “Leading fast-food chains have opted to rely on Yobykes as a viable delivery solution, which speaks volumes on the quality of our product, its economy and dependability”. Ultra Motor Company is working on a portfolio of bikes that would hold a large carry-box at the back without adding much weight to the vehicle. In the words of Ghosal “We are customising our products to meet the home delivery segment<sup>23</sup>”.

Electrotherm presently has over 200 dealers, company trained engineers and mechanics at its dealer’s workshops, and intends to educate roadside garage mechanics for fixing small problems.

Ultra Motor Company has entered into a distribution memorandum with Reliance Retail Ltd. to exclusively sell the “Ultra Powered” LEVs. In collaboration with Hero Group, Ultra Motor will also assist with after-sales service and marketing.

India being a price sensitive market, higher cost of EVs has meant slower adoption. Companies like Avon Cycles has tied up with GE Finance, Electrotherm with ICICI and Citibank for vehicle financing. A cut in the excise duty on electric two- and- three-wheelers from 8% to 0% is likely to reduce the prices of electric two-wheelers by Rs.1800/- Rs. 2400/- and thereby increase sales of electric vehicles<sup>24</sup>. Development of high speed motor, low weight high power battery (with fast discharge and fast charging), and other accessories that can make an electric vehicle capable of giving a feel of an internal combustion engine fired vehicles could drive the industry on the fast track as in the words of Naveen Munjal, Chief Executive of Hero Exports, "EVs will remain (a niche segment) for the next two years and in the third year we will see it gain critical mass and become mainstream<sup>25</sup>".

Ian Woodcock, chairman, Ultra Motor Company, however, is quite optimistic about EV scenario in India. In his words, “.....we will bring about a paradigm shift in Indian transportation with EV technology.” For Hero will electric vehicles bring Ultra success?

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<sup>21</sup> *ibid.*

<sup>22</sup> *ibid.*

<sup>23</sup> <http://www.mumbaimirror.com/net/mmpaper.aspx?page=article&sectid=5&contentid=20071223200712230315296402ee0f85f> accessed on March 12, 2008

<sup>24</sup> --- “FM lifts duty on electric two & three wheelers”, *Times of India*, May 1, 2008, P. 13

<sup>25</sup> Venkatesh Babu and Aman Malik “Electric Dreams” *Business Today*, March 25, 2007 available on <http://archives.digitaltoday.in/businesstoday/20070325/features3.html>

### Exhibit-1 Details of Alliances in Two-Wheeler Industry

Period of Entry	Name of the Indian Firm	Name of Foreign Collaborator	Segment	Brand Name of Product
<b>1955-1969</b>	Enfield India Ltd. (EIL)*	Enfield Ltd, UK	Motorcycle	Royal Enfield 350 cc
	Automobile Products of India (API)*	Innocenti Ltd., Italy	Scooter	Lambretta
	Bajaj Auto Ltd. (BAL)	Piaggio Ltd., Italy	Scooter	Vespa
	Ideal Jawa Pvt. Ltd. (IJPL)*	Jawa Ltd., Czechoslovakia	Motorcycle	Yezdi 250 cc
	Escorts Ltd. (EL) *	CEKOP, Poland	Motorcycle	Rajdoot 175 cc
<b>1970-1980</b>	Kinetic Engineering Ltd. (KEL)	-----	Moped	Luna
	Scooters India Ltd. (SIL)*	-----	Scooter	Vijai
	Maharashtra Scooters Ltd. (MSL)	-----	Scooter	Priya
	Majestic Auto Ltd. (MAL)	-----	Moped	Hero Majestic
	Sundaram Clayton Ltd. (SCL)	-----	Moped	TVS 50 cc
<b>1981-1990</b>	TVS	Suzuki, Japan	Motorcycle	Ind- Suzuki 100 cc
	Bajaj Auto Ltd.	Kawasaki, Japan	Motorcycle	Kawasaki Bajaj 100 cc
	Escorts Ltd.	Yamaha, Japan	Motorcycle	Yamaha RX 100 cc
	Hero Majestic Ltd.	Honda, Japan	Motorcycle	Hero Honda 100 cc
	Kinetic Engineering Ltd.	Honda, Japan	Scooter	NH 100 cc
	Lohia Machinery Ltd.	Piaggio, Italy	Scooter	Vespa XE
	Enfield India	Zundapp-Werke, GmBH	Moped Motorcycle Motorcycle Motorcycle	50 cc 50 cc 80 cc 100 cc
<b>1991-1999</b>	Bajaj Auto Ltd.	----	Moped – Scooterette	Sunny
	TVS	----	Scooter – Scooterette	Scooty
	Kinetic	Honda	Scooter – Scooterette	Marvel
	TVS	----	Scooter	Spectra
	Kinetic Motors**	----	Scooterette	Style
<b>2000 onwards++</b>	Bajaj Auto Ltd.	----	Motorcycle	Pulsar and Platina
	Honda, Japan	FDI in India	Motorcycle Scooter	Unicorn Honda Activa
	Suzuki, Japan	FDI in India	Motorcycle Scooter	Zeus Access 125 (125 cc)
	Electrotherm (I) Ltd.	-----	E-Bike	Yo Bykes
	Hero Exports Ltd.	Ultra Motors, UK	E-Bike	Velociti, Maxi

\* Indicated firms/brands whose sales declines in the eighties.

\*\* In 1998, the joint venture between the Firodias Group of India (Kinetic) and Honda of Japan came to an end when the former bought out Honda's stake of 51%. However, in return for royalty and technical fees, Honda continued to supply technical know-how to the new Kinetic Motors Company Ltd. (KMCL).

++ From the year 2000 onwards, major two-wheeler producers such as Bajaj, TVS, and Kinetic started producing their indigenously developed models.

(Source: Adapted from George, Sunila, Jha, Raghendra and Nagarajan, Hari K., "The Evolution and Structure of the Two Wheeler Industry in India" (August 2000). IGIDR Working Paper. Available at SSRN: <http://ssrn.com/abstract=239809> or DOI: 10.2139/ssrn.239809)

**Exhibit-1 (A) Details of Alliances in Two-Wheeler Industry**

	<b>Nature of Alliance</b>	<b>Company</b>	<b>Product</b>
<i>Bajaj Auto</i>	Technological tie-up	Kawasaki Heavy Industries Ltd, Japan	Motorcycles
	Technological tie-up	Tokya R&D Co Ltd, Japan	Two-wheelers
	Technological tie-up	Kubota Corp, Japan	Diesel Engines
<i>HHML</i>	Joint Venture	Honda Motor Co, Japan	Motorcycles
<i>KEL</i>	Technological tie-up	Hyosung Motors & Machinery Inc	Motorcycles
<i>KEL</i>	Tie up for manufacturing and distribution	Italjet, Italy	Scooters
<i>LML</i>	Technological tie-up	Daelim Motor Co Ltd	Motorcycles
<i>Hero Motors</i>	Technological tie-up	Aprilia of Italy	Scooters

*Compiled by INGRES*

[Source: [http://www.fadaweb.com/two\\_wheeler\\_industry.htm](http://www.fadaweb.com/two_wheeler_industry.htm), accessed January 1, 2008]

## **Exhibit-2 Details of Alliances (Bajaj Auto Ltd.)**

**1971**

- On 31st March the technical collaboration with M/s. Piaggio & Co. expired and the brand name of the vehicles manufactured by the company was changed from Vespa to Bajaj from April.

**1975**

- Under the an agreement with Western Maharashtra Development Corporation Ltd., a joint sector company was incorporated under the name Maharashtra Scooters Limited on 11th June. Its plant has started manufacture of Scooter in the brand name PRIYA. A three wheeler with rear engine was developed and marketed in this period.

- On 2nd February, the company entered into a technical collaboration with P.T. Tunas Bekasi Motor Co. of Jakarta for providing technical know-how for the manufacture of two wheelers and three wheelers in Indonesia. It also entered into an agreement with Paijifa Industrial Co. of Taiwan for manufacture of scooters in Taiwan.

**1981**

- The Bajaj M80 was entirely developed by the company and introduced in the market. The licenced capacity of 2 wheelers was increased from 80000 to 160000 vehicles per year and that of 3 wheelers from 15000 to 20000 numbers per annum and scooter CKD packs from 30000 to 32000 numbers per annum.

- During the year the company made a further investment of U.S.\$ 15000 in the equity capital of Bajaj America Incorporated.

**1983**

- The licensed capacity was increased to 3,00,000 scooters during the year. The company entered into two agreements for technical know how. One with Kawasaki Heavy Industries for the manufacture of motorcycles upto 100cc engines. Another with Vigel Spa of Italy for the manufacture of special purpose machine tools for Company's own use.

**1987**

- The Kawasaki-Bajaj 'RTZ' model was launched in February 88.

**1989**

- During this period company undertook a project of metal replacement by polymeric materials in association with Department of Science & Technology and National Chemical Laboratory.

- A new generation magneto was also under development in collaboration with a Spanish company and work on the initial design had commenced.

- During this year it entered into a technical collaboration with Orbital Engine Co., Australia for development of fuel injection system for 150cc scooters to reduce fuel consumption and emissions.

- The Company developed on its own an 80cc motorcycle under the brand name Bajaj M-80.

**1990**

- The production of 'Bajaj Sunny' the new 50cc scooter commenced in March.

**1991**

- During this period production of a 4 stroke motor cycle in collaboration with Kawasaki Heavy Industries Ltd. Japan was started at Waluj.

1993

- Bajaj Stride, will be launched with certain improvements based on initial feed back. During the year 'Chetak Classic' a powerful and fuel efficient 4S Champion a highly fuel efficient 4-Stroke Motorcycle and M-80Motorcycle with additional utility features were introduced.

1994

- Bajaj Auto is planning to produce two new models in the motorcycle and scooter segment each. Bajaj Trotter, an 80cc, three gear motorcycle would soon be in the market at an estimated price of Rs. 20,000. The Company entered into an agreement with a Japanese, R & D firm for design of a 74 cc 4-stroke variomatic vehicle

- Some specific technical assignments and/or joint development projects were also undertaken with AVL, Austria, CSIR, New Delhi and Indian Institute of Petroleum; Dehra Dun.

1998

Bajaj Auto Ltd., the two and three wheeler major, has for the first time, entered into a marketing tie-up for scooters with the Italian company, Cagiva. The Company has introduced during the year under review, Boxer, a 4-stroke motorcycle, targetted at semi-urban and rural markets.

Bajaj Auto launched its latest four-stroker, the Caliber motorcycle at its Waluj plant, in Aurangabad, early last month. Named Kawasaki Caliber, it is the largest-engined Indo-Japanese four-stroker in India.

The first four stroke geared scooter in the world, Legend was developed in 36 months from the concept of production.

- Caliber a 111 cc four stroke motorcycle took the market by storm and Spirit designed in-house, a two wheeler with an innovative two speed automatic transmission was introduced in October.

2000

Bajaj Auto Ltd launched India's first three speed, automatic, four stroke Scooter 'Saffire'.

- Bajaj Auto Ltd launched its indigenous, emission-friendly autorickshaw with a four-stroke compressed natural gas (CNG) engine.

Bajaj Auto has entered into a tie-up with Kasanki of Brazil to set-up a two-wheeler assembly line in Brazil that will produce and sell its motorcycles for the entire South American market.

2001

Bajaj Auto launched 'Kawaski Bajaj Eliminator', the country's first cruiser motorcycle.

2002

- Bajaj Auto is setting up a new product development and testing complex at its Akurdi plant in Pune, to consolidate its in-house research and development (R&D) capability.

2003

Launches Wind 125 bike

2004

Bajaj Auto Ltd (BAL) has created a network in Japan and Europe

-Bajaj Auto has unveiled its latest offering - the Bajaj 'CT 100', a four- stroke, 100 cc motorcycle

Bajaj Auto launches Discover

2006

-Bajaj unveils new bike Platina

-Bajaj Auto unveils CNG 3-wheelers in Indonesia.

-Bajaj Auto Ltd unveiled its first product in Indonesia, Bajaj Pulsar DTS-i (Digital Twin Spark Ignition), a 180-cc sport motorcycle on Nov 9.

2007

- Bajaj Auto unveils 4th Pulsar variant.

[Source: [http://indiaearnings.moneycontrol.com/sub\\_india/company\\_history.php?sc\\_did=BHI](http://indiaearnings.moneycontrol.com/sub_india/company_history.php?sc_did=BHI), accessed on 23.4.2008]