

**COMPANY PROFILE:**  
**MAHINDRA & MAHINDRA**  
**OCTOBER 2008**

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**COMPANY PROFILE:**  
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**INTRODUCTION**

This is Off-Highway Research's first profile of **Mahindra & Mahindra Ltd.**, more commonly known as **Mahindra** or **M&M**. This report presents an overview of Mahindra's operations in India, with a specific focus on the company's farm equipment business.

The US\$6.7 billion Mahindra Group has diversified business interests, but its main activities are the manufacturing and marketing of automobiles and agricultural tractors. In addition, the company has a presence in financial services, trade and logistics, automotive components, aftermarket supplies, information technology and infrastructural development. This report briefly describes the major business sectors and financial situation of the Mahindra Group.

Mahindra's financial year starts on 1st April and ends on 31st March of the following year. All references to specific calendar years in this report therefore refer to the financial year that starts in it. For example, 2007 corresponds to the period 1st April 2007 to 31st March 2008. As a result, the data provided in this report will not match that in Off-Highway Research's Equipment Analysis on Mahindra agricultural tractors, published in April 2008, as all the data in that report relates to calendar years.

This report does not cover subsidiary companies of the group, and only concentrates on Mahindra & Mahindra.

**SUMMARY**

The gross revenues and other income (turnover) of Mahindra in 2007 was Rs132.38 billion, a growth of 14.5 per cent compared to the Rs116 billion earned in the corresponding period in 2006. The company's turnover, which remained in the range of Rs40 billion to Rs46 billion from 1997 to 2002, started growing rapidly in 2003: turnover of Rs60 billion in 2003 almost doubled to reach Rs116 billion in 2006.

**Table 1. Mahindra & Mahindra: Statistical Summary, 1997-2007**

	Turnover (Rs Mns)	Net Profit (Rs Mns)	Production (Units)	
			Tractors	Vehicles
1997	40,527	2,514	71,468	77,510
1998	41,670	2,259	66,211	70,639
1999	44,092	2,635	73,222	76,983
2000	43,529	1,206	80,261	63,146
2001	39,968	969	54,524	66,256
2002	45,968	1,455	45,183	87,088
2003	60,012	3,485	50,102	117,670
2004	78,041	5,127	67,117	148,025
2005	94,514	8,571	87,010	148,213
2006	115,580	10,684	103,847	169,557
2007	132,380	11,034	98,922	196,959

Source: Company Information

Altogether, the Mahindra Group employs more than 65,000 people, of whom approximately 14,000 work for Mahindra & Mahindra. The company's Farm Equipment Sector alone employs approximately 4,000 people.

**Table 2. Mahindra & Mahindra: Number of Employees as on March 31, 2004-2007**

2004	2005	2006	2007
11,830	12,089	13,089	13,960

Source: Off-Highway Research

## HISTORICAL DEVELOPMENTS

Mahindra was founded in India in October 1945 by the Mahindra brothers (K.C. Mahindra and J.C. Mahindra), who joined with Ghulam Mohammed to establish a company called Mahindra & Mohammed. The company was set up as a franchise for assembling Jeeps, a general purpose vehicle manufactured by Willys Overland Corporation (USA), now part of the Daimler Chrysler group. When India became independent in 1947, Ghulam Mohammed migrated to Pakistan and became the first Finance Minister of Pakistan. In 1948, the company was renamed Mahindra & Mahindra.

In 1947, the company imported its first batch of 75 utility vehicles in CKD 'completely knocked down' form from Willys Overland Export Corporation and in 1949 produced the first 'Jeep' in India at an assembly plant in Mazagaon, Mumbai.

In 1954, Mahindra began manufacturing Jeeps in technical and financial collaboration with Willys Overland Corporation and, in 1962, the indigenous contents of these Jeeps increased to 70 per cent. The company purchased 137 acres of land in Kandivali (Mumbai) for establishing a production facility and moved production of the Jeep to the Kandivali plant in 1965.

The company's Farm Equipment Sector was established in 1963 in the form of a joint venture with International Harvester Inc, USA, and christened the International Tractor Company of India (ITCI). The International Harvester collaboration ended in 1971, and in 1977 ITCI merged with Mahindra & Mahindra and became its Tractor Division. The first agricultural tractor, with the brand name Mahindra, was launched in 1982 and the company became the leader in the domestic market in 1983, a position it still retains.

After restructuring in 1994, the tractor division was renamed the Farm Equipment Sector. In 2001, the Farm Equipment Sector began an engine application business and entered the power generation field with diesel generating sets.

In 1965 the company also started production of light commercial vehicles (LCV) with the launch of the FC 150 petrol truck. In 1988, the company signed a memorandum of understanding with Hyderabad Allwyn Nissan Ltd to form Mahindra Nissan Allwyn Ltd with an LCV manufacturing plant in Zaheerabad, Andhra Pradesh. Mahindra Allwyn Nissan merged with the company in 1994.

Mahindra entered the international market in 1969 with the export of 1,200 utility vehicles together with spare parts to Yugoslavia. A year later, it exported vehicles to Ceylon, Singapore, the Philippines and Indonesia. Currently, the company exports its products to several countries in Europe, Africa, South America, South Asia and the Middle East.

In 1994, Mahindra USA Inc, a wholly owned subsidiary of Mahindra, was established for the distribution of agricultural tractors in the USA. In 2005, the company acquired the tractor manufacturing assets of Jiangling Tractors Company, a subsidiary of Jiangling Motor Company Group of China, and together formed the Mahindra (China) Tractor Company with an 80 per cent stake in the joint venture.

In 1999, Mahindra acquired a controlling stake in Gujarat Tractors, an agricultural tractor manufacturing company based in Vadodara, and renamed it Mahindra Gujarat Tractors. Later in 2007 it acquired a majority stake in Punjab Tractors Ltd, another agricultural tractor manufacturing company based in Mohali near Chandigarh.

Mahindra formed a 50:50 joint venture with Ford Motor Company (Mahindra Ford India Ltd), USA in 1996 to manufacture passenger cars in India, but in 1998 the company decided not to contribute further to the equity funding and let Ford Motor assume complete control.

Mahindra ventured into three-wheeler manufacturing and marketing in 2001 with the launch of the Mahindra Champion. Later in 2002, it launched India's first indigenously developed sports utility vehicle (the Mahindra Scorpio), which was received well in the urban domestic market.

In 2005, Mahindra Renault Ltd, a 51:49 joint venture was formed between Mahindra and Renault of France, to manufacture and market the Logan, a sedan passenger car which was launched in the domestic market in 2007.

In the same year, a new 51:49 joint venture was formed with the International Truck and Engine Corporation of the USA for manufacturing medium and heavy trucks and buses in India.

Mahindra International Engines Ltd, a 51:49 joint venture with Navistar International Corporation of the USA, was established in 2007 to produce diesel engines for medium and heavy trucks and buses.

**Table 3. Mahindra Group: Historical Highlights**

<b>1948</b>	• Steel trading business commenced, in association with suppliers in UK.
<b>1953</b>	• Otis Elevator Company (India) established.
<b>1956</b>	• Shares listed on the Bombay Stock Exchange.
	• Dr. Beck & Company established - a joint venture with Dr. Beck & Company, Germany.
<b>1957</b>	• Mahindra Owen established, a joint venture with Rubbery Owen & Company Ltd, UK.
<b>1960</b>	• Mahindra Sintered Products Ltd formed, a joint venture with Bir Field (GKN Group, UK)
<b>1962</b>	• Mahindra Ugine Steel Company started a joint venture with Ugine Kuhlmann, France.
<b>1965</b>	• Vickers Sperry of India Ltd established, a joint venture with Sperry Rand Corporation USA.
<b>1970</b>	• Mahindra Engineering & Chemical Products Ltd commenced operations.
<b>1975</b>	• Developed an indigenous diesel engine for its vehicle to overcome fuel crisis.
<b>1979</b>	• License from Automobile Peugeot, France, to manufacture XDP 4.90 Diesel engines.
<b>1982</b>	• Siro Plast Ltd (now Mahindra Composites) established.
<b>1984</b>	• Mahindra Hellenic Auto Industries SA established, a joint venture in Greece to assemble and market utility vehicles in Europe.
<b>1986</b>	• Tech Mahindra (formerly Mahindra British Telecom) established, a joint venture with British Telecommunications Plc (BT), UK, leading the way for the group's entry into information technology.
<b>1991</b>	• Mahindra Financial Services Ltd established as wholesale fund provider.
<b>1993</b>	• Incorporation of Mahindra British Telecom International Inc., USA, a wholly owned subsidiary of Mahindra British Telecom.
	• Mahindra Steel Service Centre Ltd established in association with Mitsubishi Corporation and Nissho Iwai Corporation of Japan.
	• Mahindra Acres Consulting Engineers Ltd established a joint venture with Acres International Ltd (Canada) to provide multidisciplinary engineering consultancy services.

(continued)

**Table 3. Mahindra Group: Historical Highlights (continued)**

<b>1994</b>	<ul style="list-style-type: none"> <li>• Mahindra Realty &amp; Infrastructure Development Ltd established.</li> <li>• EAC Graphics (India) Ltd established in collaboration with The East Asiatic Company Ltd A/S, Denmark.</li> </ul>
<b>1995</b>	<ul style="list-style-type: none"> <li>• Mahindra Holding &amp; Finance Ltd becomes a subsidiary of the company to carry out business as an investment company.</li> </ul>
<b>1996</b>	<ul style="list-style-type: none"> <li>• Agricultural tractor plant in Nagpur (Maharashtra) started.</li> <li>• Mahindra Holiday &amp; Resort India Ltd established.</li> <li>• Mahindra Consulting (now Bristlecone) set up.</li> </ul>
<b>1997</b>	<ul style="list-style-type: none"> <li>• Mahindra World City Developers Ltd established to set up integrated township.</li> </ul>
<b>1999</b>	<ul style="list-style-type: none"> <li>• Launch of Bijlee, a battery operated environment friendly three wheeler vehicle.</li> <li>• Mahindra Logisoft Business Solution Ltd established.</li> <li>• Mahindra Intertrade Ltd established as the trading arm of the group.</li> </ul>
<b>2000</b>	<ul style="list-style-type: none"> <li>• Mahindra Auto Specialities established – a wholly owned subsidiary.</li> <li>• The first satellite plant for tractors established at Rudrapur in Uttarakhand.</li> </ul>
<b>2001</b>	<ul style="list-style-type: none"> <li>• Mahindra &amp; Mahindra collaborated with Renault to manufacture petrol engines.</li> <li>• A separate division established to provide defence solutions.</li> <li>• Mahindra Special service group established to provide information security.</li> <li>• Mahindra Infrastructure Developers set up.</li> <li>• Mahindra Lifespaces Developers Ltd established.</li> </ul>
<b>2003</b>	<ul style="list-style-type: none"> <li>• Ventured into industrial engine business.</li> <li>• An alliance formed between Mahindra Defence and Lockheed Martin Information Systems, UK, for defence Products.</li> <li>• Mahindra Engineering Services established.</li> </ul>
<b>2004</b>	<ul style="list-style-type: none"> <li>• Systech (earlier known as MSAT) established.</li> <li>• Bolero and Scorpio models of vehicles launched in Latin American, Middle Eastern and South African markets.</li> </ul>
<b>2005</b>	<ul style="list-style-type: none"> <li>• Acquired 51 per cent share in SAR Transmission Private Ltd.</li> </ul>
<b>2006</b>	<ul style="list-style-type: none"> <li>• Announced plan to establish 3,000 acre special economic zone (SEZ) in Jaipur, Rajasthan.</li> <li>• Tech Mahindra announced the acquisition of Texas-based Axes Technologies, a global telecom solutions provider.</li> <li>• Fifth full-scale automotive plant opened at Haridwar in Uttarakhand to manufacture three wheeler vehicles.</li> <li>• Acquired Stokes Group of UK, the largest automotive forging company in the UK.</li> <li>• Mahindra Lifespaces announced the establishment of a special economic zone spreading over 3000 acres in Pune.</li> <li>• Global launch for Mahindra Pik Up range, a cargo vehicle with manual transmission, held in South Africa.</li> <li>• Scorpio and Bolero range of vehicles launched in Kenya.</li> <li>• Entered US market by signing a distribution agreement with Global Vehicles, USA inc. for the import and distribution of Mahindra vehicles, spare parts and accessories.</li> </ul>
<b>2007</b>	<ul style="list-style-type: none"> <li>• Pik Up vehicle with double cabin launched in Chile and Pik up range of vehicles launched in Australia and France</li> <li>• Acquired 90 per cent stake in Schoneweiss &amp; Co. Gmbh, a company engaged in forgings and based in Germany.</li> <li>• Signed an agreement for design and development of a new general aviation aircraft with National Aerospace Laboratories, council of Scientific and Industrial Research, Government of India.</li> </ul>

Source: Company Information

## ORGANISATION AND CORPORATE STRUCTURE

The company, with its registered office in Mumbai, is currently listed on the Bombay Stock Exchange and the National Stock Exchange. The promoters of the company include the Mahindra family, individuals, corporate bodies, the employee stock ownership plan trust and the employee welfare trust. The promoters of the group held 22.64 per cent of shares at the end of June, 2008.

**Table 4. Mahindra & Mahindra: Ownership Structure, 30 June 2008**

	No. of Shares	% Share
<b>Promoter and Promoter Group</b>		
– Indian	43,192,199	17.58
– Foreign	12,456,020	5.07
<b>Public Shareholding</b>		
– Institutions	129,693,497	52.78
– Non-Institutions	42,367,294	17.24
<b>Shares Held by Custodians and Against which Depository Receipts have been Issued</b>	18,032,803	7.34
<b>Total</b>	<b>245,741,813</b>	<b>100.00</b>

Source: Company Information

In public shareholdings, the Life Insurance Corporation of India with 17.49 per cent, HSBC Global Investment Fund (on account of HSBC Global Investment Fund Mauritius Ltd) with 4.66 per cent, ICICI Prudential Life with 3.42 per cent, and the New India Assurance Co. Ltd with 2.03 per cent, are the major shareholders. Total public shareholding was 70.02 per cent at the end of June, 2008.

Mahindra Group comprises 84 subsidiaries, four joint ventures and 10 associates. The major companies of the group are Mahindra & Mahindra Ltd, Mahindra Finance, Tech Mahindra, Mahindra Holiday and Mahindra Lifespaces. The group's business is divided into nine major sectors. These are:

#### **Automotive Sector**

The automotive sector manufactures and markets utility vehicles, three wheelers and light commercial vehicles. It is the market leader in utility vehicles in India and currently accounts for half the domestic market for this category of vehicles. The company has a wide product range in this sector catering to rural and semi-urban markets, defence requirements, and urban markets.

In addition to vehicles for passenger applications, the company produces the 'Pik Up' range of vehicles, which are mini trucks with manual transmission and are used in cargo applications. Mahindra manufactures three wheelers for use by passengers and in cargo applications.

- **Mahindra Renault Private Limited** is a joint venture for the manufacture and sale of Logan cars in India.

- **Mahindra Navistar Automotives Ltd** plans to manufacture and market medium and heavy trucks and buses for domestic and international markets. The company currently manufactures light commercial vehicles.
- **Mahindra South Africa** in Pretoria, a subsidiary company, was established in 2004 to market products from the Automotive Sector in African countries. It has approximately 45 dealers.
- A year later, **Mahindra Europe**, a subsidiary company, was established in Italy to market its products in Europe.
- In 2006, the company entered the US market with an arrangement for the distribution of vehicles by **Global Vehicles Inc.**
- Last year, the company launched its Pik Up range of vehicles in Australia with distribution by **TMI Pacific Pty Ltd**, in New South Wales, and it currently has 24 dealers.
- The group has an assembly plant for the Pik Up range of vehicles in Uruguay for Latin American markets, which are sold under the brand name of Cimarron.
- Mahindra has arrangements with local partners for assembling vehicles in Brazil and Egypt. The local partner in Brazil is **Bramont Montadora Industrial E Commercial De Veiculos Ltda** and in Egypt is **Bavarian Auto Manufacturing Company**.

### **Farm Equipment Sector**

This sector manufactures and markets agricultural tractors for the domestic and international markets. In addition, the company has an agriculture input and commodities supply business. Manufacturing and marketing diesel engines for generating sets and other applications is also a part of the sector.

Mahindra is the domestic market leader in the agricultural tractor industry, and in volume terms is among the top three tractor manufacturers in the world. The company has captured approximately one-third of the domestic market with a strong presence in medium horsepower tractors (31-40 horsepower).

- **Mahindra Gujarat Tractor** produces approximately 3,000 tractors per annum at its plant located in Vadodara. Currently, the Mahindra Group has a 60 per cent stake in the company and the remaining 40 per cent is owned by the Government of Gujarat.
- In 2007, Mahindra acquired a controlling stake in **Punjab Tractors Limited (PTL)**, a Swaraj Group company. The plant is located in Mohali, Punjab, near Chandigarh. Currently, the Mahindra Group has a 64.64 per cent stake in the company. Punjab Tractors produces approximately 30,000 tractors a year. By virtue of PTL's stake of 26 per cent in **Swaraj Engines Ltd (SEL)**, an engine supplier to PTL, the management control of SEL has also come under Mahindra. At the time of writing this report in late September 2008, Mahindra has announced that PTL would be merged with this company.
- **Mahindra USA**, with headquarters located in Tomball, Texas, is a wholly owned subsidiary of Mahindra & Mahindra. The company has three assembly plants in the USA – Houston (Texas), Calhoun (Georgia) and Redbluff (California).
- **Mahindra Australia**, located in Brisbane, is a branch of Mahindra's Farm Equipment Division.
- **Mahindra China Tractors Company Ltd** is a joint venture company between Mahindra and the Jiaqing Motor Company Group (JMCG). Mahindra owns an 80 per cent stake in the venture and the remaining 20 per cent is owned by JMCG. The company is located in Nanchang, Jiangxi province and the plant has the capacity to produce 12,000 agricultural tractors per year.
- **Mahindra Powerol** focuses on the engine applications business. These engines are used for generating sets, cranes, compressors, concrete mixers and rice mills as well as agricultural and marine applications.
- **Mahindra Shubhlabh Services Ltd** (Mahindra Agribusiness) provides input and farm solutions to post-harvest management of high value agricultural produce.

The Mahindra Farm Equipment Sector signed an agreement in August 2008 to form a joint venture (JV) in China with **Jiangsu Yueda Yancheng Tractor Manufacturing Co. Ltd (Yancheng Tractor)**. The tractor-related assets and current liabilities of Yancheng Tractors will be transferred to this JV. The value of net assets transferred to this JV will be approximately

US\$50 million. Mahindra will hold a 51 per cent stake through its subsidiary, Mahindra Overseas Investment Company (Mauritius) Ltd. Yancheng Tractor's Huanghai Jinma is a high volume tractor manufacturer in China and its purchase will help in enhancing Mahindra's global sales. By virtue of the JV, the company's range of tractors will also go up to 125 horsepower. Mahindra intends to utilise this low-cost production base for domestic and export markets.

### **Financial Services Sector**

In order to strengthen the company's automotive and tractor business, Mahindra has also entered the financial sector.

- **Mahindra & Mahindra Financial Services Ltd (MMFSL)** is engaged in the financing of commercial and non-commercial vehicles and agricultural tractors, with a focus on semi urban and rural markets.
- **Mahindra Insurance Brokers**, a wholly owned subsidiary of MMFSL, provides direct insurance broking for retail and corporate sectors for life and non-life insurance.
- **Mahindra Rural Housing Finance Ltd (MRHFL)**, a wholly owned subsidiary of MMFSL, provides loans for the housing needs of rural and semi-urban customers.

### **Trade, Retail and Logistics Sectors**

- **Mahindra Intertrade**, established in 1999 as an independent company, is the trading arm of the group. Steel and steel-related services, including a service centre facility, constitute a major part of the company's portfolio of offerings.
- **Mahindra Steel Service Centre** was established in 1993 in association with **Mitsubishi Corporation** and **Metal One Corporation** (formerly **Nissho Iwai Corporation**) of Japan. The company intends to provide raw materials to the automotive sector on a just-in-time delivery basis in order to reduce the inventory carrying cost. The company also manufactures components for home appliances and the electrical, electronics and transformer industries.
- **Mahindra Middle East Electrical Steel Service Centre** was set up in 2005 in the Sharjah Airport International Free Zone, to process and market cold roll grain oriented (CRGO) and

cold roll non-grain oriented (CRNGO) steel required for manufacturing transformers and compressors respectively.

- **Mahindra Logistics** (formerly Transport Solutions Group), set up in 2000, takes care of transportation needs for inbound and outbound logistics and inter-plant movements. It offers logistics solutions for in-house needs and also to external clients all over the world.
- **Mahindra Retails** focuses on retailing toys, games and apparel in the domestic market under license from international manufacturers such as LEGO, Disney and Mattels.

### **Infrastructure Development Sector**

Mahindra Group has a presence in infrastructural development including real estate, the hospitality industry, special economic zones, project engineering consultancy and design.

- **Mahindra Holiday & Resorts** is one of the leading hospitality providers, which offers holiday resorts on a membership basis.
- **Mahindra Lifespaces Development Ltd.**, a real estate company, aims at building homes and complexes that provide healthy and satisfying living experiences.
- **Mahindra World City** focuses on developing integrated business cities and townships close to major cities. The Mahindra World City near Chennai is already operational and the company's two projects at Jaipur (Rajasthan) and Pune (Maharashtra) are underway.
- **Mahindra Infrastructure Developers**, a joint venture between the Mahindra Group and **International Finance Corporation**, Washington DC, USA, focuses on the development, ownership and management of infrastructural projects in the country.
- **Mahindra Acres Consulting Engineers**, a joint venture between Mahindra Group and **Acres International Ltd.**, Canada, provides in-house engineering consultancy as well as to external clients such as the Government of India, public sector companies, large private sector companies and corporations.

### **Information Technology Sector**

- **Tech Mahindra** (formerly Mahindra-British Telecom) provides telecommunication solutions and services to the telecommunication industry worldwide.
- **Bristlecone** provides supply chain consulting, business process engineering, ERP implementation and technology consulting services to its clients with offices in the USA, UK, Germany, Middle East and India.
- **Mahindra Logisoft** provides information technology solutions in dealer management, inventory management, system integration and design and development to the automotive, defence and hospitality industries.

### **Systech Sector**

Systech, established in 2004, is a component supplier for many applications and its companies that span the range of “design to delivery”.

- **Mahindra Engineering Services** (MES) is the design arm that focuses on the engineering design and product development processes of components. Its subsidiary **Mahindra Aerospace Ltd**, focuses on the aerospace sector. MES has recently acquired a Europe based company called **Engines Engineering** that specialises in the design and development of motorbikes.
- **Mahindra Forging India** manufactures crankshafts, connecting rods and stub axle forgings.
- **Mahindra Forging Europe**, produces forged machined components in its plants located in Germany and the UK.
- **Mahindra Gears** is a manufacturer of gears and other transmission components. It has two plants located in India, and one in Italy.
- **Mahindra Composites** produces polymer composites used as components for the electrical, automotive, medical, defence and construction industries.

- **Mahindra Hinoday** has two divisions. **Castings** produces SG Iron castings for automotive and other applications. **Ferrites** produces electromagnet-based products for automotive and electrical applications.
- **Contract Sourcing Division** is engaged in sourcing activities for non-group companies from non-Mahindra suppliers. It offers competitively priced components sourced from low cost markets.
- **Mahindra Ugin Steel Company Ltd (MUSCO)** has two divisions. The **Steel Division** manufactures alloy steel from a plant located at Khopoli near Mumbai. The **Stamping Division** manufactures stamping parts and sub-assemblies required for automotive, auto components and general engineering applications.

### **After Market Sector**

The sector's main activities are sales, service, spare parts and finance for multi-brand used cars.

- **First Choice Ltd**, co-promoted by **HDFC** and **Sah and Shanghi** (Mumbai based company), deals in buying and selling of multi-brand pre-owned cars.
- **Mahindra Spares Business Units** focuses on the supply of spare parts in the after market for automotive and farm equipment sectors.
- **First Choice Services Ltd** provides servicing and maintenance support for multi-brand cars through its retail network.

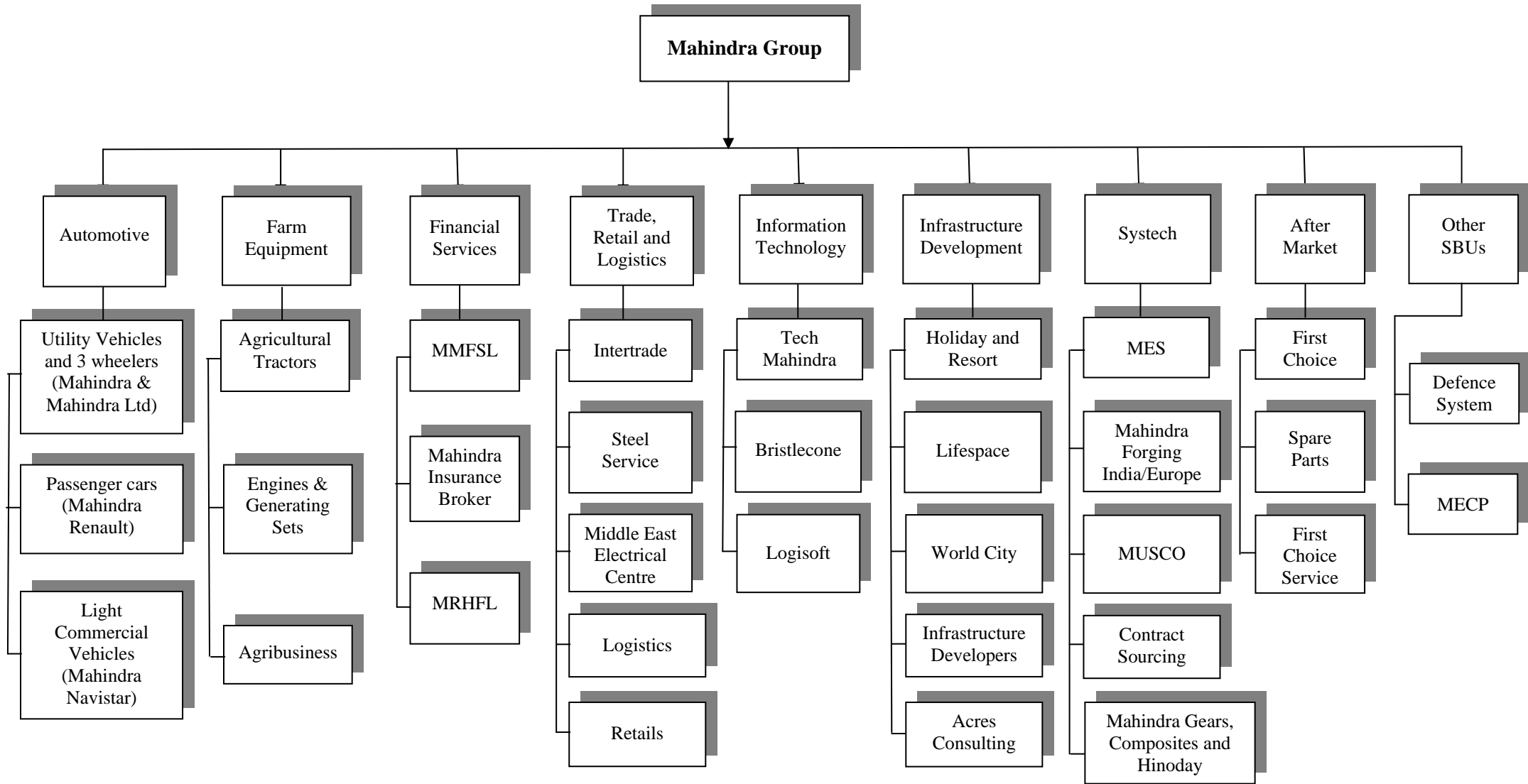
### **Other Strategic Business Units (SBUs)**

- **Mahindra Defence Systems**, with its head office in New Delhi, provides solutions for the entire range of light combat and armoured vehicles and their derivatives for defence and security forces. It provides government import substitution or indigenisation for specific segments such as arms and sea mines. It also supplies bullet proof vehicles. It has joint ventures with BAe for land systems and WASS (Finmechancial) for naval systems.
- **Mahindra Engineering & Chemical Products Ltd (MECP)**, a wholly owned subsidiary, is a supplier of material handling equipment and systems (bulk handling and unit handling

systems) for specialised applications such as conveying equipment for the cement industry, power plants and chemical and mineral processing plants.

In addition to the above, Mahindra & Mahindra has recently acquired the business assets of **Kinetic Motor Company Ltd (KMCL)**, a motorbike manufacturing company. The acquisition is being done through a Special Purpose Vehicle (SPV) for a sum of Rs 1,100 million, subject to closing due diligence. M&M will hold 80 per cent in the new company while KMCL will hold a 20 per cent stake. With this deal, M&M has entered the large motorbike market, with the intent of establishing an end-to-end motorbike business in all segments of the market.

**Table 5. Mahindra Group: Corporate Structure, 2008**



## FINANCIAL DATA

The gross revenues and other income (turnover) of the entire Mahindra Group for 2007 increased by 37 per cent to Rs266 billion (US\$6.7 billion) from Rs194 billion (US\$4.5 billion) in 2006.

**Table 6. Mahindra Group: Consolidated Segment Results, 2006-2007**

**(Rs Millions)**

	2006		2007	
	Net External Revenue	Profit	Net External Revenue	Profit
Automotive	64,801	6,560	85,258	7,456
Farm Equipment	43,346	5,024	53,511	6,074
Steel Trading and Processing	5,398	493	6,206	890
Financial Services	8,395	2,076	12,253	2,791
Infrastructure	1,315	96	2,125	753
Hospitality	2,325	640	3,577	1,109
IT Services	31,172	6,862	39,135	8,023
Systech	15,862	1,667	33,286	2,070
Other	5,566	314	7,326	1,197
<b>Total</b>	<b>178,179</b>	<b>23,730</b>	<b>242,676</b>	<b>30,363</b>
Interest (Net)	-	724	-	-824
Other Unallocated Expenditure Net Off Un-Allocable Income	-	192	-	-1,474
Exceptional Items	-	-1,173	-	-3,025
<b>Total Profit Before Tax</b>	<b>-</b>	<b>22,025</b>	<b>-</b>	<b>25,040</b>

Source: Company Information

The total net external revenues of the group increased by 36 per cent to Rs243 billion in 2007 (April 2007 to March 2008). The company Mahindra & Mahindra, comprising the automotive and farm equipment sectors, constitutes 57 per cent of the group's net external revenue. The next most important contributors are the information technology sector with 16 per cent, Systech with 14 per cent and financial services with five per cent.

The company's (Mahindra & Mahindra) net sales grew rapidly from 2003 to 2007 to reach Rs115 billion. The total income more than doubled to Rs117 billion in this period.

The company's operating profit increased by 15 per cent in 2007 compared to 2006. The operating profit increased by 36 per cent in 2006 over the previous year and in 2007 had more than doubled compared to 2003. The operating profit margin of 14.51 per cent in 2006 remained unchanged in 2007.

**Table 7. Mahindra & Mahindra: Financial Highlights, 2003-2007**

**(Rs Millions)**

	2003	2004	2005	2006	2007
<b>Net Sales</b>	49,591	66,606	82,227	100,503	115,035
<b>Other Income</b>	867	1,085	1,039	1,950	1,681
<b>Total Income</b>	<b>50,458</b>	<b>67,691</b>	<b>83,266</b>	<b>102,453</b>	<b>116,716</b>
<b>Operating Profit</b>	6,255	8,791	10,711	14,578	16,697
<b>Operating Profit Margin (%)</b>	12.61	13.20	13.03	14.51	14.51
<b>Net Profit</b>	3,485	5,127	8,571	10,684	11,034
<b>Net Profit Margin (%)</b>	7.03	7.70	10.42	10.63	9.59

Source: Company Information

The net profit followed a similar trend with a more than three fold increase between 2003 and 2007. In 2005 net profit grew by 67 per cent compared to 2004 which itself had seen a growth of 47 per cent over the previous year. In 2006 the increase in net profit slowed to 25 per cent with respect to 2005 and grew only a further three per cent in 2007. Nevertheless, the net profit margin has remained close to 10 per cent in the last three years in spite of a marginal decline in 2007.

The automotive sector contributes approximately 60 per cent of total revenue followed by the farm equipment sector which accounts for 34 per cent of the company's net sales. The proportion of overall profit from the automotive sector was similar at 58 per cent of the total in 2007 (derived from 65 per cent of capital employed), but the farm equipment sector contributed 41 per cent to overall profit from only 35 per cent of the capital. Mahindra's tractor sales decreased by 3.7 per cent (including exports) in 2007, but revenue increased by 7.5 per cent. The total revenue from the farm equipment sector almost doubled to reach Rs39.97 billion in 2007 compared to 2004, while revenue from the automotive sector grew by 57 per cent during the same period. The automotive sector registered an increase in profits of 11 per cent in 2007 as compared to 2006.

The gross revenue of the "Powerol" business (a part of the farm equipment sector) in 2007 was Rs5,530 million compared to Rs3,210 million for the previous year, a growth of 72.2 per cent.

**Table 8. Mahindra & Mahindra: Segmental Revenue, Results and  
Capital Employed, 2004-2007 (Rs Millions)**

	2004	2005	2006	2007
<b>Segment Revenue</b>				
– Automotive Segment	45,682	52,403	60,961	71,792
– Farm Equipment Segment	20,299	28,538	37,165	39,969
– Other Segment	1,993	3,071	4,690	6,701
<b>Total</b>	<b>67,973</b>	<b>84,012</b>	<b>102,816</b>	<b>118,462</b>
<b>Less: Inter Segment Revenue</b>	<b>-1,368</b>	<b>-1,786</b>	<b>-2,554</b>	<b>-3,462</b>
<b>Net Sales (Income from Operations)</b>	<b>66,606</b>	<b>82,226</b>	<b>100,262</b>	<b>115,034</b>
<b>Segment Results</b>				
– Automotive Segment	4,663	5,812	6,806	7,632
– Farm Equipment Segment	1,882	3,158	5,087	5,420
– Other Segment	82	125	264	145
<b>Total</b>	<b>6,627</b>	<b>9,095</b>	<b>12,157</b>	<b>13,198</b>
<b>Interest (Net)</b>	<b>56</b>	<b>184</b>	<b>674</b>	<b>-242</b>
<b>Other Unallocated Expenditure Net Off Un-allocable Income</b>	<b>458</b>	<b>1,716</b>	<b>1,546</b>	<b>1,111</b>
<b>Total Profit Before Tax</b>	<b>7,141</b>	<b>10,995</b>	<b>14,377</b>	<b>14,067</b>
<b>Capital Employed</b>				
– Automotive Segment	10,320	11,490	11,343	15,974
– Farm Equipment Segment	5,612	5,991	7,426	8,560
– Other Segment	182	219	213	224
<b>Total</b>	<b>16,114</b>	<b>17,700</b>	<b>18,982</b>	<b>24,758</b>

Source: Company Information

In 2004 the company raised US\$100 million through the issue of five-year, zero coupon foreign currency convertible bonds (FCCB) which provided the company with substantial, low cost funding to finance its expansion and product development plans. The company also completed US\$200 million FCCB in 2006 with a broad geographical distribution of investors from Europe and Asia.

#### MANUFACTURING FACILITIES

Mahindra has four tractor manufacturing plants with a total annual production capacity of 189,000 units. The oldest plant is located at Kandivali (Mumbai) with a total production capacity of 60,000 tractors which includes an installed manufacturing capacity of 25,000 and a letter of intent from the government for expansion by an additional 35,000 units annually.

The company's second plant, located in Nagpur (Maharashtra), was opened in 1996. In addition, Mahindra has two more satellite plants in Rudrapur (Uttaranchal) and Jaipur (Rajasthan). The Rudrapur plant, which was the first satellite plant of the company, was set up in 2000.

The company has been increasing the production of low cost plants in order to reduce manufacturing costs. It reduced the production of the Kandivali plant from 21 per cent of total output in 2005 to 13 per cent in 2007 and at the same time increased the production of the Rudrapur plant from 32 per cent of total production to 48 per cent.

**Table 9. Mahindra & Mahindra: Manufacturing Facilities of Agricultural Tractors, 2007**

Factory Location	Total Area ('000 m <sup>2</sup> )	Production		
		2005	2006	2007
Nagpur (Maharashtra)	170	34,804	41,539	35,612
Rudrapur (Uttarakhand)	69	27,843	37,385	47,483
Kandivali (Mumbai)	146	18,272	19,731	12,859
Jaipur (Rajasthan)	73	6,091	5,192	2,968
<b>Total</b>	<b>458</b>	<b>87,010</b>	<b>103,847</b>	<b>98,922</b>

Source: Company Information

The company has four automobile manufacturing plants and one plant exclusively for engine manufacturing. Kandivali, the oldest plant, has a total area of 255,000 m<sup>2</sup> and has been operational since October 2, 1964. It currently produces Pik Up and soft top vehicles. In addition, the plant manufactures engines, transmissions and axles.

**Table 10. Mahindra & Mahindra: Manufacturing Facilities for Automobiles and Engines, 2008**

Factory Location	Covered Area ('000 m <sup>2</sup> )	Production Capacity, Annual	Employee	Products
Kandivali (Mumbai)*	109	60,000	3,060	Utility Vehicles, Engines, Transmissions and Axles
Nasik (Maharashtra)	170	150,000	5,029	Utility Vehicles and Passenger cars
Zaheerabad (Andhra Pradesh)	68	65,000	641	Light Commercial Vehicles, Buses and Three Wheelers
Haridwar (Uttarakhand)	47	24,000	226	Three Wheelers
Igatpuri (Maharashtra)	25	135,000	869	Engines

\* In addition to vehicle capacity, the plant has an annual production capacity of 60,000 engines, 162,000 transmissions and 300,000 axles

Source: Company Information

The second-oldest plant for automobile manufacturing, located in Nasik (Maharashtra), is now the biggest plant, spread over a total area of 457,900 m<sup>2</sup>. The plant opened in February, 1981

and currently manufactures the Scorpio and Bolero range of utility vehicles and the Logan, a passenger car launched in 2007.

The Zaheerabad (Andhra Pradesh) plant was originally acquired from Allwyn Nissan, a manufacturer of light commercial vehicles (LCV), which merged with the company in 1994. The plant has a total area of 139,000 m<sup>2</sup> and the products manufactured here include three wheelers, Pick Ups, LCV and buses.

The Haridwar (Uttarakhand) plant, inaugurated in December 2005, manufactures a range of three wheelers and is spread over a total area of 140,700 m<sup>2</sup>.

Located in the Western Ghats in Maharashtra, the Igatpuri plant is dedicated to manufacturing engines for the Automotive Sector including NEF, MDI and XD3 engines. The plant has a total area of 400,000 m<sup>2</sup>.

## RESEARCH AND DEVELOPMENT

**Table 11. Mahindra & Mahindra: Research and Development Expenditure, 2003-2007**

	2003	2004	2005	2006	2007
<b>Rs Mns</b>	769	1,044	1,266	1,700	2,453
<b>% of Turnover</b>	1.27	1.34	1.33	1.47	1.85

Source: Company Information

Mahindra set up a separate research and development centre in 1971, and here there are a total of 1,200 employees.

The company has rapidly increased its research and development expenditure in the last few years. In 2006 it increased by 34 per cent over the previous year to reach Rs1,700 million and increased again by a further 44 per cent to Rs2,453 million in 2007. The total outlay on research and development remained at around 1.3 to 1.4 per cent of the turnover from 2003 to 2005 and then increased to 1.47 per cent in 2006. The company's investment on research and development increased to 1.85 per cent of turnover in 2007.

Mahindra started manufacturing agricultural tractors in a joint venture with International Harvester Company, USA and subsequently developed its own in-house research and development capabilities. In 2003 the company launched the Mahindra Sarpanch 595DI Super

Turbo (a 45 horsepower tractor), India's first turbo tractor, and in 2007 it introduced the Sarpanch 295DI, a 39 horsepower turbo charged model.

An indigenously designed 75 horsepower tractor was launched for the international market in 2004 and in 2007 its 80 horsepower tractor, the 8000DI, was introduced as a key model for Africa. In addition, the company has also introduced the 30 series, two-wheeled drive and four-wheeled drive tractors (in the 40-70 horsepower range) and upgraded engines to Tier-III and Tier-IV emission standards for the US market.

The company has also worked on alternative fuels and developed India's first bio-diesel tractor early this year. The Mahindra tractor division has applied for nine patent applications and eight design registrations including five in the USA. Seven patents were awarded to the tractor division from April 2007 to March 2008.

This tradition of research and development is long-established. In 1975, at the time of the fuel crisis, the company developed its own diesel engine for use in vehicles. More recently, in the automotive sector, the company launched the Scorpio, an indigenously developed sports utility vehicle, in 2002. The company has also developed common rail direct injection technology which was introduced in the Scorpio's engine.

## **CORPORATE STRATEGY**

Mahindra is a diversified group with a wide range of businesses. The company started in the automotive business and today is present in many sectors of the economy. It is evident from this approach that the group believes in in-house specialisation and the development of its own capability to meet the requirements of its group companies rather than outsourcing. Each business area or company within the group is complementary to other group businesses. Mahindra & Mahindra Financial Services was formed to meet the financing needs of its own automobile and tractor customers, and this was later extended to other product areas.

The Mahindra group has developed its core competencies in various fields such as engines, transmissions, hydraulics, automotive steel and automotive and tractor components. It has also developed core competencies in business support fields such as information technology, logistics, the aftermarket and consultancy services, primarily to cater to the requirements of the group's companies as well as external customers. The flow of revenues within the group has helped the company to strengthen its financial capabilities.

The corporate strategy of the group has been to upgrade technology through joint ventures and acquisitions and also through its own research and development. Mahindra started assembly of automobiles and agricultural tractors through the technical know-how of foreign companies, which then led to the development of its own in-house technical competencies for engineering and manufacturing.

The company made an entry into the information technology market through a joint venture with British Telecommunication Plc (BT), UK. It entered the passenger car market through joint ventures initially with Ford and later with Renault. It intends to manufacture medium and heavy commercial vehicles and buses through a joint venture with the International Truck and Engine Corporation, USA.

Subsequently, the Scorpio and Bolero vehicles were designed and developed in-house, and the common rail diesel engine and bio fuel technology are the outcome of the company's own research initiatives.

Mahindra's global vision is evident from its history of acquiring overseas companies and international joint ventures all over the world. It has acquired tractor manufacturing plants (Jiagling Motors Company) in China and has recently signed an agreement to form a joint venture with another Chinese company, Yancheng Tractors. It has three assembly plants in the USA and one in Australia.

The company's other acquisitions include SAR Transmission, Stokes Group of the UK, Jeco Holding AG and Schoneweiss & Co GmbH of Germany. Mahindra's global subsidiaries include Mahindra Europe Srl of Italy, Mahindra USA Inc and Mahindra South Africa. Recently the company has signed an agreement to acquire a 100 per cent stake in Engine Engineering Spa.

The company's manufacturing plants are located in various geographical areas with a view to minimising the cost of production and achieving better distribution at a lower cost. The company utilises its plant facilities according to demand, capacity utilisation and vendor base.

The group aims to make Mahindra & Mahindra known worldwide for the quality of its products and services.

The company believes that its **core values** are influenced by its history, tempered by the present, and will shape the future of the company. These values are:

- **Good Corporate Citizenship:** Mahindra believes in long term success in line with the country's needs, achieved by following ethical business practices.
- **Professionalism:** The philosophy is to recruit good people, and give them enough freedom to work and grow with support for innovation and well reasoned risk taking. At the same time, the company will demand performance.
- **Customer First:** The group believes that the prosperity of the company comes from customers. As the customer's needs and expectations are changing, Mahindra intends to address the customer's expectations and needs speedily, courteously and effectively.
- **Quality Focus:** Mahindra aims to provide value for money to the customer by making quality a driving value in the company and a **first time right** approach.
- **Dignity for Individuals:** Mahindra believes in individual dignity with the right to express disagreement and respect for the efforts and time of others.

In addition, Mahindra has a well defined code of conduct for its directors, senior management and also for its employees.

## **MARKETING AND DISTRIBUTION**

Mahindra has sold more than 13 million agricultural tractors since its inception. The company's marketing head office is located in Kandivali, Mumbai. The whole country is divided into four zones catered for by:

- Bhopal in central India
- Lucknow in the north
- Delhi in the north
- Hyderabad in the south

Mahindra has a wide network of approximately 625 dealers for agricultural tractor sales and service. The network is supported by 29 area offices with geographically larger states having more than one office.

**Table 12. Mahindra & Mahindra: Distribution Network for Agricultural Tractors, 2008**

Area offices	State	Number of Dealers	Area offices	State	Number of Dealers
Ahmedabad	Gujarat	34	Kolkata	West Bengal and North-East	21
Bangalore	Karnataka	16	Lucknow	Uttar Pradesh	19
Bhopal	Madhya Pradesh	12	Madurai	Tamil Nadu	13
Bareilly	Uttar Pradesh	24	Nagpur	Maharashtra	20
Bikaner	Rajasthan	37	Patna	Bihar	28
Chennai	Tamil Nadu	12	Pune	Maharashtra	26
Coimbatore	Tamil Nadu	13	Raichur	Karnataka	13
Delhi	Delhi	20	Raipur	Chhattisgarh	14
Gwalior	Madhya Pradesh	10	Rajkot	Gujarat	13
Hyderabad	Andhra Pradesh	18	Ranchi	Jharkhand	6
Indore	Madhya Pradesh	11	Tirupati	Andhra Pradesh	11
Jabalpur	Madhya Pradesh	26	Udaipur	Rajasthan	22
Jaipur	Rajasthan	49	Varanasi	Uttar Pradesh	29
Jalandhar	Punjab	49	Vijayawada	Andhra Pradesh	16
Karnal	Haryana	43			
	<b>Sub Total</b>	<b>374</b>		<b>Sub Total</b>	<b>251</b>
				<b>Total</b>	<b>625</b>

Source: Company Information

There are three levels of distribution:

**Stockyard:** The company has stockyards or regional sales offices (RSO), controlled by the respective area offices, to supply tractors at the right time and in the right quantity. The company first transfers agricultural tractors to the stockyard and from there the tractors are invoiced to the dealers or distributors falling under the area office. Mahindra has 22 stockyards, which are listed in Table 13.

**Table 13. Mahindra & Mahindra: Location of Stockyards, 2008**

Location	State	Location	State
Ahmedabad	Gujarat	Kolkata	West Bengal
Bangalore	Karnataka	Lucknow	Uttar Pradesh
Bhopal	Madhya Pradesh	Noida	Uttar Pradesh
Bhubaneswar	Orissa	Patna	Bihar
Chennai	Tamil Nadu	Palakkad	Kerala
Gwalior	Madhya Pradesh	Pune	Maharashtra
Guwahati	Assam	Raipur	Chhattisgarh
Hyderabad	Andhra Pradesh	Ranchi	Jharkhand
Jaipur	Rajasthan	Rudrapur	Uttarakhand
Jalandhar	Punjab	Sriganganagar	Rajasthan
Karnal	Haryana	Varanasi	Uttar Pradesh

Source: Company Information

**Distributors:** These operate in a large territory and supply tractors to the smaller dealers in their area. With the involvement of distributors, financial control is easier for the company as it has to monitor only a few entities instead of a large number of dealers located in small towns. In addition, the company can have a larger number of dealers – for better penetration – with less financial risk. The distributor is not allowed to retail tractors.

**Dealers:** These are in direct contact with the end-users of tractors. They have one or more outlets, and are also responsible for attending to failures under warranty. They maintain workshops as per the guidelines of the company. Generally, supplies to large dealers located in the bigger towns come directly from the company while small dealers operating in remote areas receive agricultural tractors from distributors. The small dealers operating under distributors are known as **franchisees**. Some of the large dealers also have **sub-dealers**.

**International Distribution:** The company is gradually creating a local presence in some international markets. Mahindra USA, for example, has three assembly plants in the USA with 270 dealers.

Mahindra China Tractor Company Ltd has resulted in the rapid entry of Mahindra into China as well as other export markets. Mahindra has plans to utilise this partnership to source components from China and sell tractors in China through JMCG's network.

The company launched its Australian operation in February 2005 which is supported by its branch office and assembly operations in Brisbane. Mahindra has a network of 40 dealers in Australia.

The company has recently launched its product in New Zealand and is establishing its dealer network.

In May 2005 Mahindra exhibited its products in the European market at the Novi Sad Fair, the largest agricultural exhibition in Europe, held in the capital of Serbia. At the beginning of June 2008, the company entered into a partnership with the IICE group of Turkey for sales and service of the company's Farm Equipment products and a range of vehicles. IICE also manufactures Mahindra agricultural tractors in Turkey, and currently has 10 sales points in eight cities and 19 service points in 22 cities.

In October 2006, Mahindra signed a deal with Tractor Sazi Commercial Company (TCC), a subsidiary of Iran Tractor Manufacturing Company (ITMCO), the largest tractor manufacturing

company in Iran, to market Mahindra agricultural tractors in the country. ITMCO has 220 dealers which should help Mahindra to establish its products and offer service and spare parts to the customers. Mahindra's first tractor model to be launched in Iran was the ITMCO-Mahindra 6000 DI 2WD, a 59 horsepower agricultural tractor. The company has set up assembly plants in Nigeria, Chad, Mali and Gambia.

**Table 14. Mahindra & Mahindra: Distribution Network for Engines and Diesel Generating Sets, 2008**

State	Number of Dealers	Number of Service Dealers	State	Number of Dealers	Number of Service Dealers
Andaman	-	5	Madhya Pradesh	3	7
Andhra Pradesh	9	5	Maharashtra	14	11
Assam	2	7	Manipur	-	1
Bihar	4	7	Mizoram	-	1
Chandigarh	1	1	Nagaland	1	-
Chhattisgarh	1	1	Orissa	3	4
Delhi	1	2	Puducherry	1	1
Goa	1	-	Punjab	4	4
Gujarat	4	2	Rajasthan	10	7
Haryana	7	5	Sikkim	1	-
Himachal Pradesh	1	2	Tamil Nadu	14	9
Jammu and Kashmir	2	3	Tripura	1	-
Jharkhand	4	5	Uttar Pradesh	11	13
Karnataka	7	6	Uttarakhand	1	1
Kerala	3	1	West Bengal	3	3
<b>Sub Total</b>	<b>47</b>	<b>48</b>	<b>Sub Total</b>	<b>67</b>	<b>55</b>
			<b>Total</b>	<b>114</b>	<b>103</b>

Source: Company Information

Engines and diesel generating sets are part of the Farm Equipment Sector, but have a separate distribution network. The company currently has a network of 114 sales dealers and 103 service dealers, supported by four regional offices located in New Delhi, Mumbai, Chennai and Kolkata.

## **EQUIPMENT ANALYSIS**

### **AGRICULTURAL TRACTORS**

#### **Model Ranges**

Mahindra currently offers 16 models of agricultural tractors for the domestic market, with engine capacities ranging from 23.5 horsepower to 57 horsepower. Mahindra tractors are sold under

four different brand names – Shaan, Sarpanch, Bhoomiputra and Arjun – and each brand has a range of models.

**Shaan** has only one model with a built-in trolley, a cab with windscreen and a maximum speed of 39.5 kilometres per hour.

The **Sarpanch** brand offers six models in the range of 30 to 50 horsepower. The Mahindra Sarpanch 595 DI, launched in 2003, was the first turbo tractor in the country. The Sarpanch 295 DI, a 39 horsepower tractor, was launched last year.

**Table 15. Mahindra & Mahindra: Agricultural Tractors Available in India, 2008**

Series	Model	Engine		Product Source
		HP	Manufacturer	
<b>Shaan</b>	Shaan	23.5	Mahindra	India
<b>Sarpanch</b>	265DI	30	Mahindra	India
	275DI	39	Mahindra	India
	475DI	40	Mahindra	India
	575 DI	45	Mahindra	India
	595DI	52	Mahindra	India
	295DI	39	Mahindra	India
<b>Arjun Altra 1</b>	445DI	42	Mahindra	India
	555DI	52	Mahindra	India
	605DI	57	Mahindra	India
<b>Bhoomiputra</b>	235 DI	23.5	Mahindra	India
	245DI	25	Mahindra	India
	255 DI	25	Mahindra	India
	265DI	30	Mahindra	India
	275DI	39	Mahindra	India
	475DI	40	Mahindra	India
	575DI	45	Mahindra	India

Source: Company Information

The **Arjun** brand has three models ranging from 42 to 57 horsepower with features such as adjustable seats, power steering, constant mesh gear box and oil immersed brakes.

**Bhoomiputra** offers six models with engine power ranging from 23.5 to 45 horsepower.

**Production**

**Table 16. Mahindra & Mahindra: Production of Agricultural Tractors, 2003-2007**

(Units)

2003	2004	2005	2006	2007
50,102	67,115	87,010	103,847	98,922

Source: Off-Highway Research

The production of agricultural tractors has increased rapidly in the last five years and doubled in 2006 as compared to 2003. In two successive years – 2004 and 2005 – the company registered annual growth of over 30 per cent, but this decreased by 5 per cent in 2007 compared with 2006. The decline has resulted from the general slow down in the domestic market as the company has registered a growth in exports during the period.

The company has grown most strongly in the higher horsepower ranges (41-50 horsepower and over 51 horsepower). The 21-30 and 31-40 horsepower ranges have declined by 16 per cent and eight per cent respectively in 2007 compared to 2006, which is attributable to the tightening of the credit available for farm equipment by banks and non-banking finance companies (NBFC).

**Table 17. Mahindra & Mahindra: Production of Agricultural Tractors by Horsepower**

**Category, 2005-2007**

(Units)

	21-30	31-40	41-50	Over 51	Total
<b>2005</b>	19,832	45,067	17,311	4,800	87,010
<b>2006</b>	20,583	52,834	24,138	6,337	103,847
<b>2007</b>	17,196	48,825	24,556	8,345	98,922

Source: Off-Highway Research

**Component Sourcing**

**Table 18. Mahindra & Mahindra: Component Sourcing for Agricultural Tractors, 2008**

<b>Engines</b>	In-house
<b>Transmissions</b>	In-house
<b>Axles</b>	In-house
<b>Hydraulics</b>	In-house
<b>Cabs</b>	In-house

Source: Company Information

During its 45 years as a manufacturer, the company has developed the ability to manufacture all its major components in-house.

**Sales**

**Table 19. Mahindra & Mahindra: Domestic Sales of Agricultural Tractors, 2003-2007**

**(Units)**

<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
44,807	60,005	78,048	95,003	90,037

Source: Off-Highway Research

Sales have increased rapidly over the last five years and the company registered a growth of 34 per cent in 2004 as compared to 2003. This growth continued with a further 30 per cent increase in 2005 and 20 per cent increase in 2006. However, sales then declined by five per cent in 2007. Total domestic sales last year from all major tractor suppliers were 302,241 units as against 318,328 sold in 2006, a decline of 5.1 per cent. High interest rates and more stringent lending norms were the adverse factors which contributed to the decline in both the industry and the company's performance.

**Table 20. Mahindra & Mahindra: Sales of Agricultural Tractors (Including Exports) by Horsepower Category, 2005-2007**

**(Units)**

	<b>21-30</b>	<b>31-40</b>	<b>41-50</b>	<b>Over 50</b>	<b>Total</b>
<b>2005</b>	19,428	41,124	19,759	4,717	85,028
<b>2006</b>	19,069	50,796	26,313	6,350	102,528
<b>2007</b>	18,293	48,003	24,431	7,978	98,714

Source: Off-Highway Research

Sales of machines in the **21-30 horsepower** category were similar in 2005 and 2006 but declined by four per cent in 2007.

The **31-40 horsepower** range, which registered a growth of 24 per cent in 2006, decreased by five per cent in 2007.

Sales of **41-50 horsepower** tractors dropped by seven per cent in 2007 after a growth of 33 per cent in 2006.

The **over 50 horsepower** market continued to grow and increased by 35 per cent in 2006 followed by 26 per cent in 2007.

**Sales by Region**

**Table 21. Mahindra & Mahindra: Sales of Agricultural Tractors by State, 2005-2007**

(Units)

	2005	2006	2007
<b>Andhra Pradesh</b>	10,691	15,262	18,656
<b>Assam</b>	230	373	413
<b>Bihar</b>	1,926	2,566	3,601
<b>Jharkhand</b>	924	1,088	1,156
<b>Gujarat</b>	6,423	7,825	6,364
<b>Haryana</b>	2,962	4,208	4,656
<b>Himachal Pradesh</b>	77	161	76
<b>Jammu and Kashmir</b>	318	276	404
<b>Karnataka</b>	7,538	7,194	5,373
<b>Kerala</b>	376	1,205	104
<b>Maharashtra</b>	6,503	10,001	10,679
<b>Madhya Pradesh</b>	4,863	4,490	4,920
<b>Chhattisgarh</b>	2,646	2,877	2,718
<b>Orissa</b>	2,414	2,402	1,451
<b>Punjab</b>	3,087	4,137	4,380
<b>Rajasthan</b>	6,694	8,155	7,436
<b>Tamil Nadu</b>	7,643	8,056	5,918
<b>Uttar Pradesh</b>	10,325	11,611	8,504
<b>Uttarakhand</b>	381	725	736
<b>West Bengal</b>	1,910	2,391	2,324
<b>Others</b>	117	-	168
<b>Total Domestic Sales</b>	<b>78,048</b>	<b>95,003</b>	<b>90,037</b>

Source: Off-Highway Research

Mahindra has a significant presence in all regions of the country. The company sells approximately one-third of the agricultural tractors sold in Southern India (comprising Andhra Pradesh, Karnataka, Kerala and Tamil Nadu). Northern India, comprising Punjab, Haryana, Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh, Uttarakhand and Rajasthan, accounts for almost 30 per cent of the company's sales; Western India, which includes Gujarat, Madhya Pradesh, Chhattisgarh and Maharashtra, contributes around 27 per cent of the company's total domestic market while the remaining states of Eastern India account for only 10 per cent of sales.

The combined sales of four states, Andhra Pradesh, Maharashtra, Uttar Pradesh and Rajasthan, constitute almost 50 per cent of total sales for the year ending March, 2008.

**ENGINES**

**Model Ranges**

**Table 22. Mahindra & Mahindra: Engines Available in India, 2008**

Type	Model	No. of Cylinders	Displacement, cc	Power Output		Product Source
				HP	rpm	
<b>Generating Set Constant Speed (rpm)</b>	15LD440	1	442	9	3,000	India
	2185GM	2	1,365	18	1,500	India
	3255GM	3	1,895	25	1,500	India
	3305GM	3	2,048	30	1,500	India
	4335GM	4	2,523	33	1,500	India
	4375GM	4	2,730	37	1,500	India
	4445GM	4	3,190	44	1,500	India
	4445TCGM	4	2,730	44	1,500	India
	4575GM	4	3,190	57	1,500	India
	4575TCIGM	4	2,730	57	1,500	India
	4725GM	4	3,190	72	1,500	India
	4905GM	4	3,532	90	1,500	India
	2205G-18	2	1,366	20	1,800	India
	3305G-18	3	1,892	30	1,800	India
	3335G-18	3	2,049	33	1,800	India
	4425G-18	4	2,730	42	1,800	India
	4505G-18	4	3,192	50	1,800	India
	4665G-18	4	3,192	66	1,800	India
<b>Bharat Stage III Engines</b>	595DI	4	2,523	52.5	2,100	India
	575DI	4	2,523	44.5	2,300	India
	475DI	4	2,523	40.5	2,300	India
	275TU	3	1,892	39	2,600	India
	275DI	3	1,892	35	2,300	India
	255DI	2	1,285	24	2,400	India
	265DI	3	1,892	31	2,300	India
	605 Arjun	4	3,192	57	2,100	India
	405 Arjun	3	2,394	40	2,000	India
	445 Arjun	3	2,394	42	2,100	India
	455 DI	3	2,394	44	2,200	India
	555 Arjun	4	3,054	52	2,100	India
235 DI	1	1,735	23	1,650	India	
<b>Tier II Engines</b>	6000	4	3,192	56.5	2,100	India
	5500	4	3,052	52	2,100	India
	6500/6520	4	3,532	62	2,200	India
	7010TYM	4	3,192	72	2,500	India
	4500	4	3,192	42	2,100	India
	C35	3	1,895	35	2,300	India
	C27	3	1,895	27	2,100	India

Source: Company Information

Mahindra entered the field of power generation in 2001 and today it produces diesel generating sets under the brand name of **Powerol**. It manufactures constant speed diesel generating set engines with ratings from 5kVA to 62.5 kVA. The company also manufactures a range of engines for several other applications which include:

- Construction and mining equipment
- Generators
- Industrial and material handling operations
- Agricultural applications

Mahindra engines are mainly used in mobile compressors, forklifts, cranes and concrete mixers, rice mills and water pumps.

### **Sales**

**Table 23. Mahindra & Mahindra: Sales of Engines and Generating Sets, 2003-2007**

**(Units)**

2003	2004	2005	2006	2007
1,813	6,672	15,776	24,141	31,922

Source: Off-Highway Research

Sales of diesel engines and generating sets have increased significantly in the last five years and the company registered a sales growth of 32 per cent in 2007 as compared to 2006. Sales had previously increased by more than 50 per cent in both 2006 and 2005 compared to previous years.

### **EXPORTS**

**Table 24. Mahindra & Mahindra: Exports of Agricultural Tractors, 2003-2007**

**(Units)**

2003	2004	2005	2006	2007
4,769	5,385	6,980	7,525	8,677

Source: Off-Highway Research

The company exports tractors to the USA, Australia, South Africa, Mali, Chad, Gambia, Nigeria, Zimbabwe, Iran, Sri Lanka, Bangladesh, Nepal, Chile, Turkey, Spain, and some other European countries. Between 80 and 90 per cent of exported tractors are delivered to the USA.

Exports grew by 15 per cent in 2007 and have fluctuated between seven and 10 per cent of the company's production in the last five years.

**Table 25. Mahindra & Mahindra: Sales of Agricultural Tractors, 2006-2007 by Subsidiary**

**Companies in USA and China**

**(Units)**

	<b>2006</b>	<b>2007</b>
<b>Mahindra USA</b>	9,301	9,413
<b>Mahindra China</b>	3,327	4,459

Source: Off-Highway Research

Sales of agricultural tractors by Mahindra USA, a subsidiary company, reached 10,000 units in 2005. Sales then dropped slightly in 2006 but increased marginally in 2007. China registered an impressive growth of 34 per cent from 2006 to 2007.

The company sold 1,324 tractors in Africa in 2007, a growth of 21 per cent over 2006.

## **FUTURE DEVELOPMENTS**

The company has a global vision and through acquisition, joint ventures and sales of products in international markets, intends to consolidate its position in the global market. Mahindra aims to become the largest tractor manufacturer in the world by 2009. In order to achieve this goal, the company has acquired both Indian and Chinese tractor manufacturing companies, and has been creating its presence in other parts of the globe. A wholly owned subsidiary company is already operational in the USA, and Mahindra has a presence in Africa, Australia, Europe and the Middle East as well.

Mahindra intends to exploit the production capacity of its recently acquired subsidiary, Punjab Tractors Ltd (PTL), which is capable of producing 60,000 tractors per year although, almost half of this capacity is currently unutilised. Mahindra tractors will be produced at this plant and the company will also introduce new models of the PTL brand of Swaraj Tractors with the help of Mahindra's Research and Development team. It intends to maximise synergies in component

sourcing for both companies to reduce costs, especially in high value components such as fuel pumps and wheel rims. The company is also planning exports of Swaraj agricultural tractors to several African countries.

In order to compete with the latest technology, the company plans to establish a new research and development centre, to be called the Mahindra Research Valley, a facility that will house engineers and the product development team under one roof.

Mahindra's plan to develop ultra-low cost agricultural tractors in India is currently at the concept stage. The current cost of tractors varies between Rs0.3 million to Rs0.6 million while an ultra-low cost tractor would cost around Rs0.2 million. The machine would be small but will do all the primary functions of a tractor and the company is targeting small-holding farmers with this model.

Mahindra is setting up a vehicle plant at Chakan in Maharashtra with production capacity of around 300,000 units and expected investment of Rs40 billion.

The company is working on alternative fuels for both agricultural tractors and vehicles. Mahindra has already developed a five per cent bio-diesel option for tractors and plans to develop hybrid vehicles, an electric passenger vehicle and a hydrogen combustion engine vehicle.

The company also plans to diversify into new business areas where it can leverage its engineering and manufacturing capabilities, and is currently exploring various avenues for growth.