

## Award for World Class TPM Achievement

Bajaj Auto Limited

Chakan Plant, Pune, India

### 1. Organization Profile

#### 1.1 Bajaj Group

- Bajaj group was founded in 1926 by Shri Jammalal Bajaj, India's freedom fighter and a strong disciple of Mahatma Gandhi. Jammalal Bajaj's unflinching commitment to Gandhian values by serving the public, respect at all costs for his customers and his integrity are the basic tenets that powered the Bajaj Group since its inception.
- Bajaj Group is amongst the top 10 business houses in India. Its footprint stretches over a wide range of industries, spanning automobiles, home appliances, lighting, iron and steel, insurance, travel and finance.
- For many decades, the Bajaj group was headed by its Chairman Emeritus Shri Rahul Bajaj, a highly respected businessman, who was also known for his adoption of fair business practices and corporate governance. Mr. Bajaj was the Chairman of the Board of many companies. He was also elected to the Upper House of the Indian Parliament. Mr. Bajaj was a member and former Chairman of the International Business Council of the World Economic Forum, Geneva and a Member of Harvard Business School's Global Advisory Board. He also spear-headed the CSR initiatives of the Bajaj group. He was awarded with 'Padma Bhushan' award, the third highest civilian award by the Government of India.

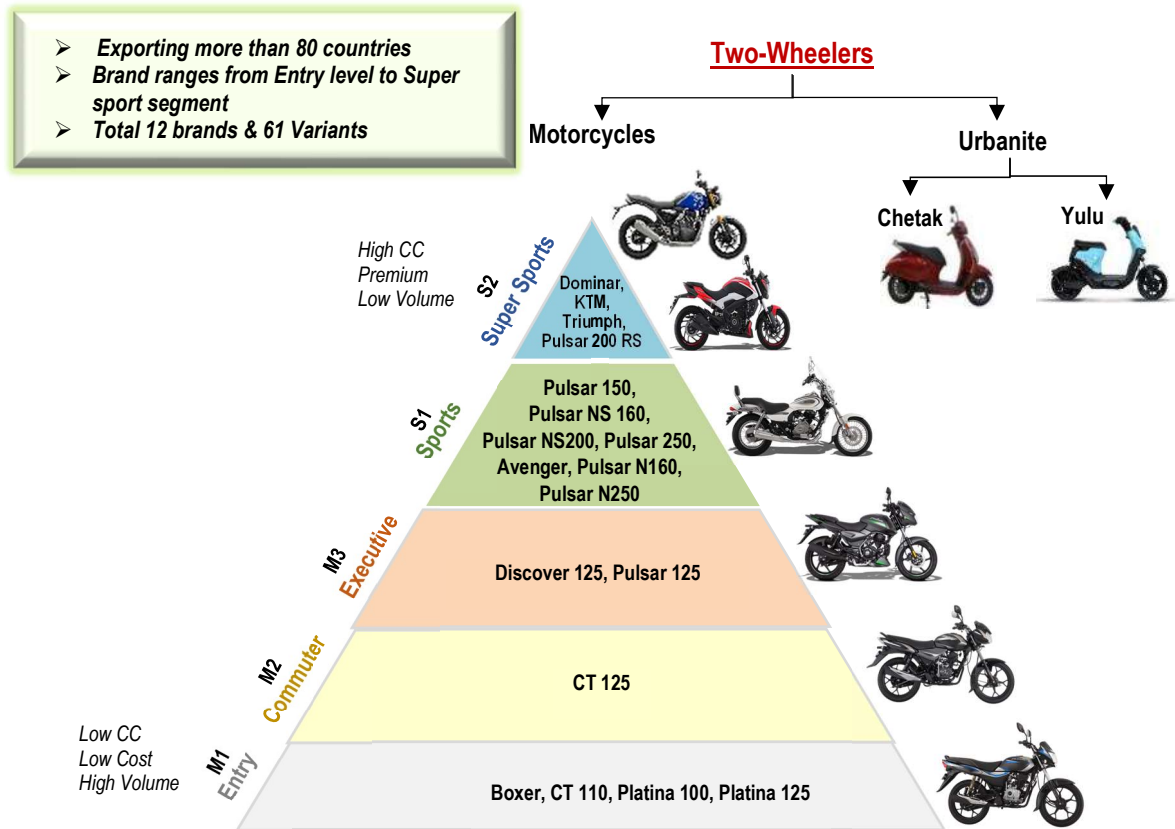
#### 1.2 Bajaj Auto Limited (BAL)

- Incorporated in 1945, Bajaj Auto Limited is a flagship company of the Bajaj group. It started sales and manufacturing of Scooters in India in technical collaboration with Piaggio of Italy and subsequently started making Scooters and Three-wheelers under its brand after the expiry of the agreement.
- BAL entered in motorcycles segment responding to the changes in customer preference in India. Initially, BAL developed its motorcycles in technical collaboration with Kawasaki of Japan. Soon, it set up its own R&D facilities in 2000. Since then, many home-developed and grown brands including the market leaders like the Pulsar range of motorcycles have been launched by BAL.
- Bajaj Auto is the world's third-largest manufacturer of motorcycles and the second-largest in India. It is also the world's largest three-wheeler manufacturer. **In December 2020, Bajaj Auto crossed a market capitalization of ₹1 trillion (US\$13 billion), making it the world's most valuable two-wheeler company.**
- Bajaj brand is well-known across several countries in Latin America, Africa, the Middle East, South and South East Asia. Bajaj Auto Limited is among the FIVE Most Innovative Indian Companies and the only automotive company featured in the coveted list of Forbes World's Top 100 Most Innovative Companies of the Year. (Announced on August 21, 2014 - <http://www.forbes.com/companies/bajaj-auto/>)
- **Bajaj Auto is India's 17<sup>th</sup> most valuable brand**, according to the first-ever BrandZ TM Top 50 Most Valuable Indian Brands ranking (announced on September 19, 2018).
- The growth journey of the company is further continued, under the leadership of our Chairman Shri Niraj Bajaj and Managing Director Shri Rajiv Bajaj.

### 1.3 Product Range

#### Two-wheeler segment

- BAL has products in various segments of Two-wheelers starting from Entry to the Super Sport segment. To cater to the demands of domestic and global customers, BAL produces Pulsar, Avenger, Dominar, KTM and Triumph brand Motorcycles and Chetak and Yulu brands of Electric vehicles.



#### Three & Four-wheeler segment (Intracity)

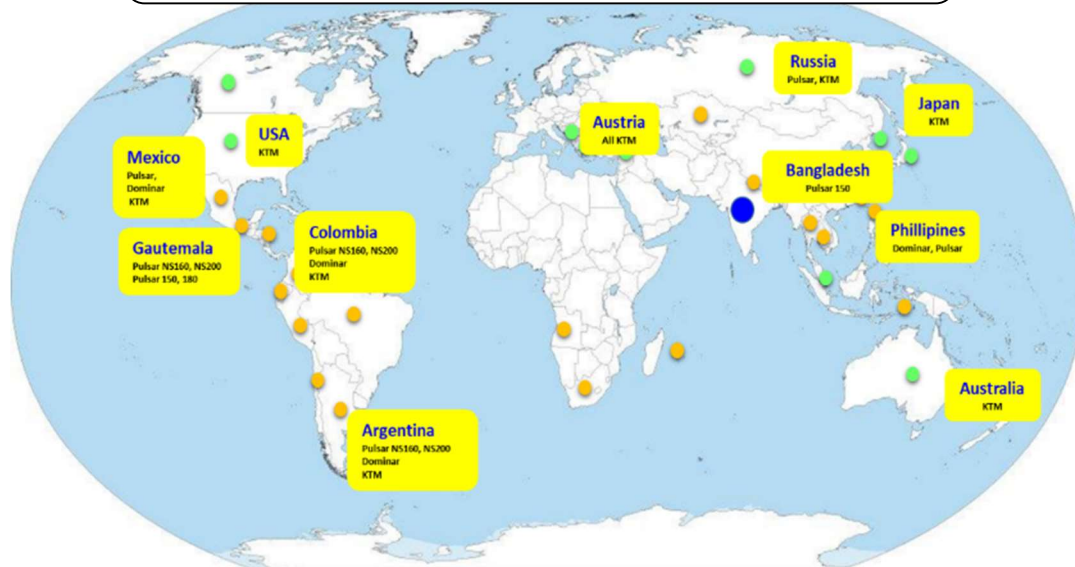
- BAL produces eco-friendly three-wheelers which are world leaders in fuel efficiency & reliability. BAL is catering to small commercial vehicle market with 4 brands and 30 models of three & four-wheelers, offering a vast range of fuels like Petrol, Diesel, CNG & LPG etc. World's first quadracycle; Qute was introduced in January 2012. In April 2023 it has also launched an Electric three-wheeler.



## 1.4 Business International Presence

- Bajaj Auto is India's No.1 motorcycle exporter by a huge margin. Today when consumers buy a Bajaj motorcycles and three-wheelers, they are buying world-class products that are sold in more than 80 countries. This explains the global acceptance of the Bajaj brand.
- BAL also has a significant presence worldwide, including in many of the developed countries across the globe like the USA, Europe, Japan and Australia etc.

**INDIA'S NO.1 MOTORCYCLE EXPORTER**  
**2 OUT OF EVERY 3 BIKES EXPORTED CARRY A 'BAJAJ' BADGE**



## Domestic Presence

- Bajaj Auto's dealer network is spread far and wide both in India and across the world, with more than 10000 customer touchpoints. It also has 413 exclusive and state-of-the-art 'Premium' showrooms for high-end motorcycles.

**Domestic Network -**

- 1,482 Dealers across **India**
- 413 Premium showrooms for Sports Category
- 5,669 Service Centres & 3,216 Authorized Service Outlets



**Key Features -**

- Dynamic Impactful
- Interactive
- Showcase of Technology Prowess
- Informative



## 1.5 Manufacturing Plants

- Bajaj Auto has 4 manufacturing plants in India, out of which 3 are in Western India at Pune and Aurangabad locations. One plant is at Pantnagar in Northern India. Corporate functions like R&D, Process Engineering, Machine Tool Division, Sales & Marketing, Materials, HRD & Finance are located at Akurdi (Pune).

**Pantnagar Plant -**

- Manufacturing of 2-wheelers
- Mass production with low operation cost


**Waluj MC Plant -**


- Manufacturing of 2-wheelers
- Caters to the major export needs

**Waluj CV Plant -**

- Manufacturing of Commercial Vehicles & parts

**Bajaj Auto Ltd, Akurdi, Pune - Corporate Office**





**INDIA**  
States and Union Territories

**LEGEND**  
- - - International Boundary  
--- State Boundary  
Country Capital  
● State Capital

Map not to Scale  
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(Updated on 2nd June 2014)

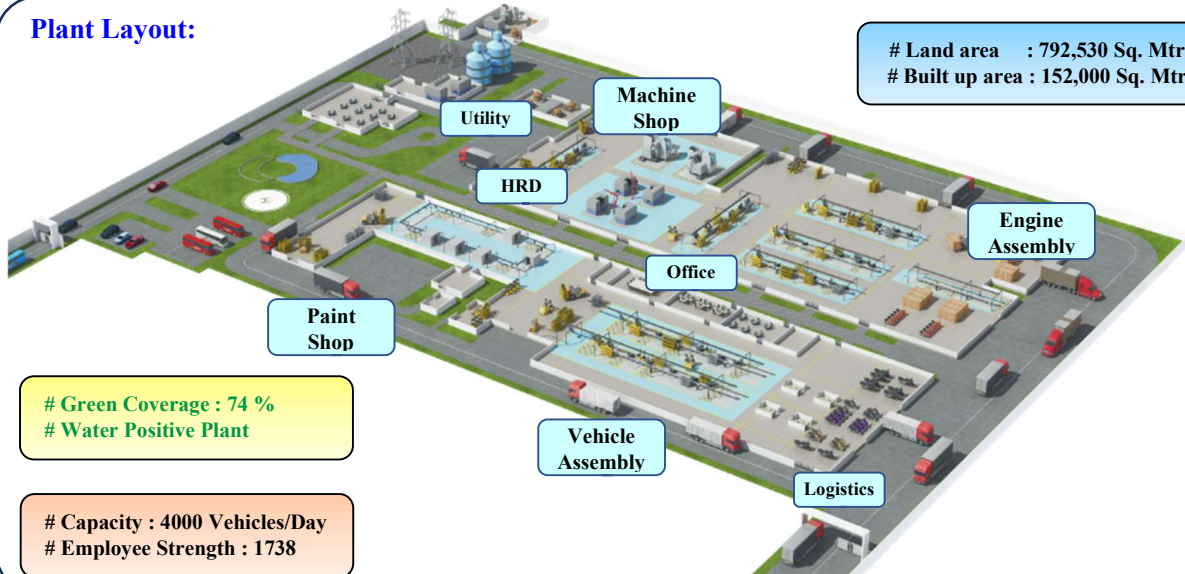
**Chakan Plant -**

- Manufacturing lab for trials and testing of various new concepts.
- Manufacturing of High-Performance bikes in Sports & Super Sports segment

## 2. BAL Chakan Plant:

- The foundation stone of BAL Chakan Plant was laid in 1998 and operations were started in 1999.
- Chakan Plant was established to fulfill increasing market demand in the Sports & Super Sports segment. It intends to build its capacity for producing Pulsar brand Motorcycles along with Avenger, KTM & Dominar brands to cater to global market demands.
- Chakan plant has put millions of vehicles on the road, in India & abroad. Vehicle manufactured at this plant are also exported to developed countries like Europe, Russia, Japan, USA etc. The ability to cater to the changing times is achieved as a result of constant efforts to implement the Bajaj policies of higher quality and continuous improvement in all fields.
- Having tasted the fruits of TPM activities & after successfully challenging the JIPM Award for World Class TPM Achievement”, Chakan plant is committed to the next level of TPM activities.

**Plant Layout:**



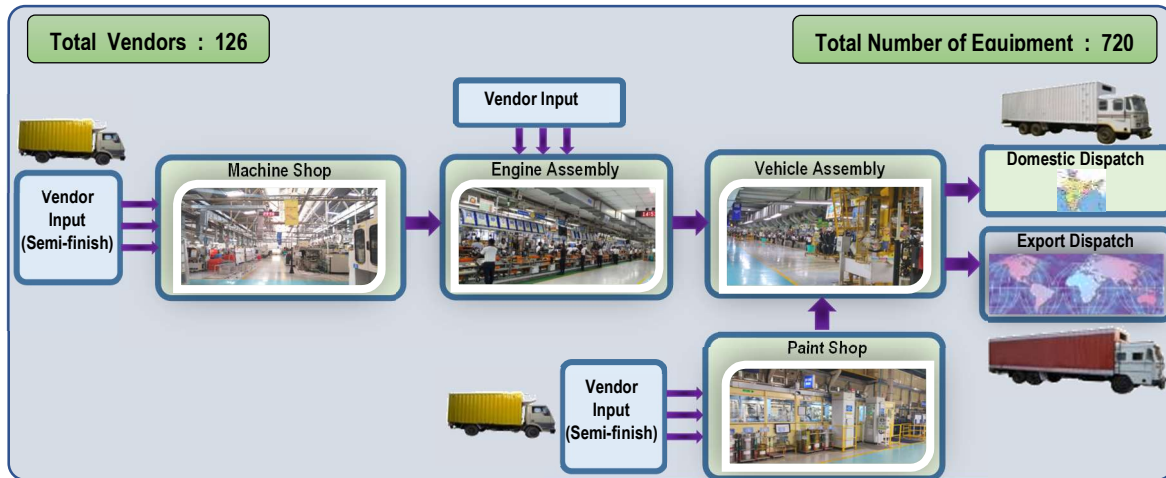
# Land area : 792,530 Sq. Mtrs  
# Built up area : 152,000 Sq. Mtrs

# Green Coverage : 74 %  
# Water Positive Plant

# Capacity : 4000 Vehicles/Day  
# Employee Strength : 1738

## 2.1 Production Processes

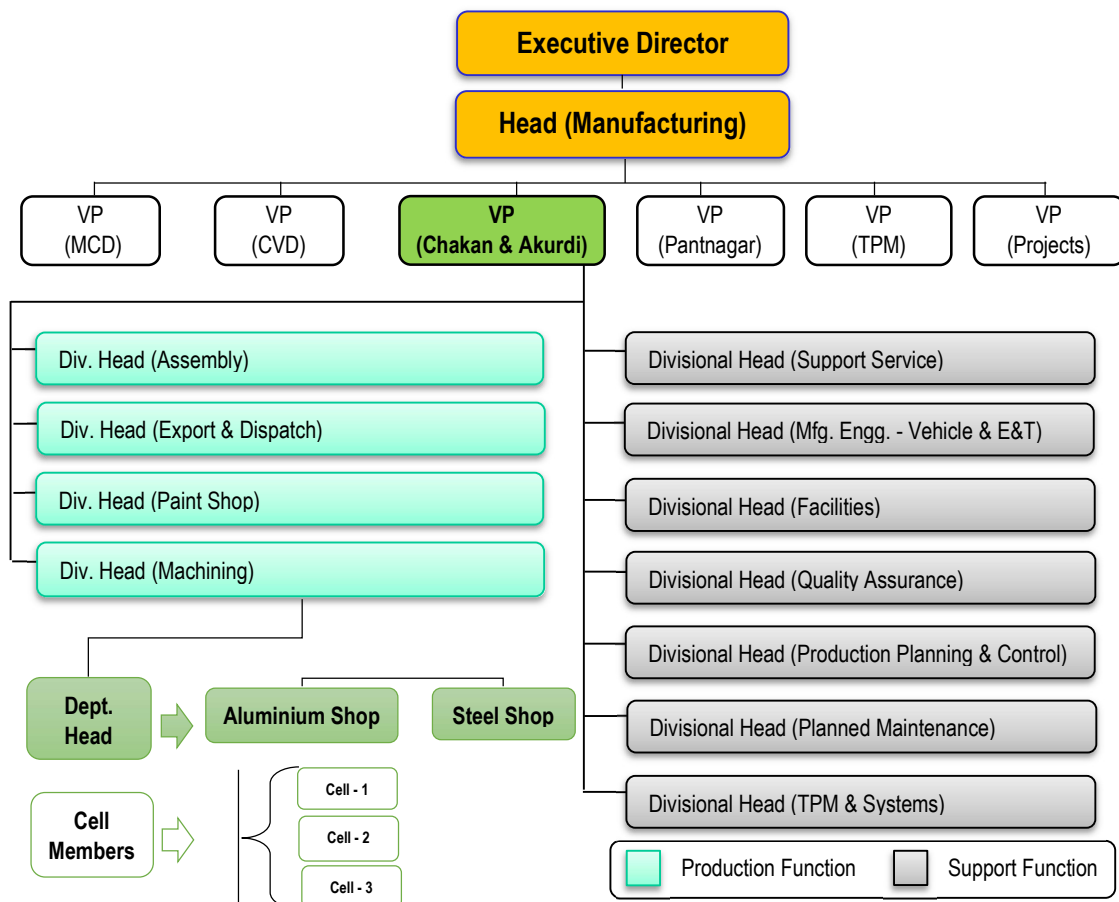
- An overview of production processes available at the Chakan Plant is given below. This plant is established with a compact layout and a unidirectional and streamlined production flow.



## 2.2 BAL Chakan organization structure

### Staffing at BAL Chakan Plant

- Plant organization structure is based on the concept of Lean. This structure helps in collaborative working, focusing on strategic decision-making in line with the Organization's Vision and Mission.



## 2.3 Events & Awards

- The various key milestones in Bajaj Auto Chakan's journey are given below.



1998

- **Foundation Stone Laid**

2005

- **ISO 14001** Certification by Bureau Veritas



2006

- **India Manufacturing Excellence Awards : Super Platinum Award** by Frost & Sullivan

2008

- Awarded **OHSAS 18001** Certificate



2009

- **India Manufacturing Excellence Awards : Super Platinum Award** by Frost & Sullivan

2014

- **ISO 9001** Certification by Bureau Veritas

2016

- 1st Rank for Excellence in **Environment, Health and Safety**



2017

- **Productivity Improvement - Gold Award** (The Machinist Super Shopfloor Award)

2019

- Transition from **OHSAS 18001 to ISO 45001**

2020

- **“Water Positive Plant”** Award by Government of Maharashtra



2021

- **“1 Platinum & 2 Gold”** Awards for TPM Circles at National Level - Organized by CII

2022

- **“National Award for Excellence in Energy Management 2022”** - Organized by CII

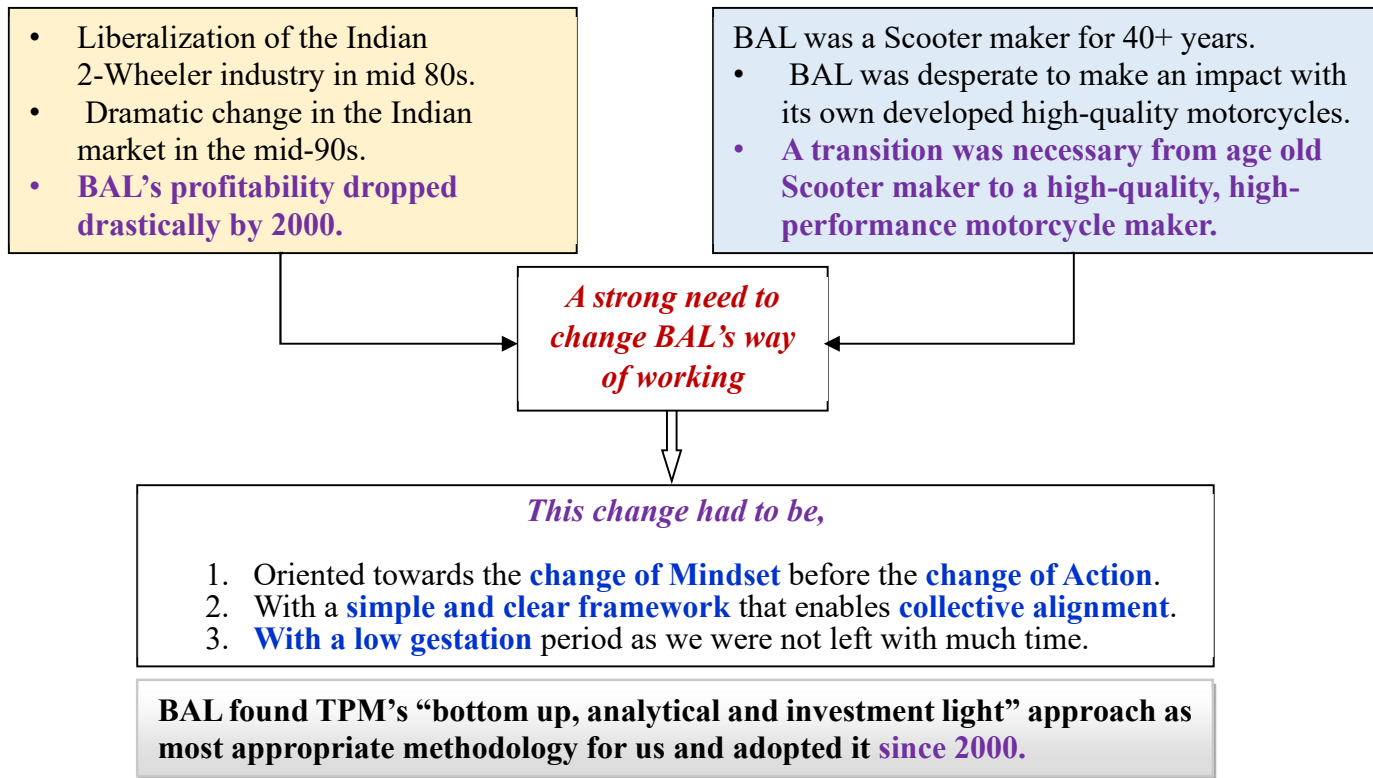


2023

- The Festival of Manufacturing Award 2023 **“Champion of Manufacturing”** Sponsored by Ministry of Heavy Industry (Govt.)

### 3. Milestone on the Journey of Manufacturing Excellence

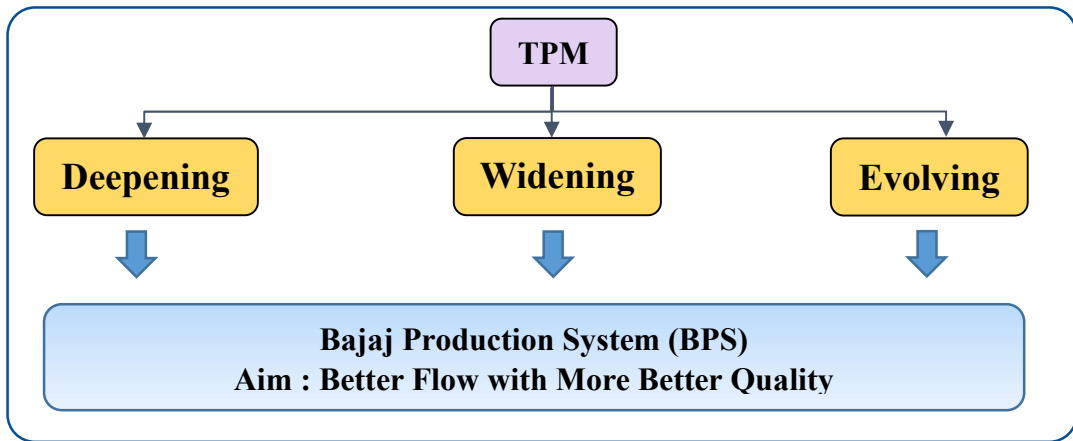
#### 3.1 Background of TPM at Bajaj Auto Ltd



#### 3.2 TPM Activity

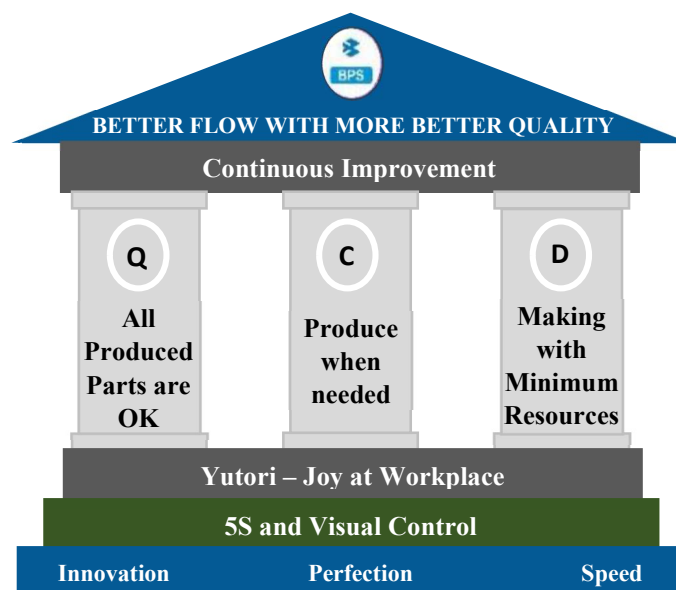
1. At BAL, continuous efforts are taken to make TPM "The Prime Mover towards Excellence" and to imbibe the TPM philosophy in its work culture. Manufacturing Excellence is the essential core philosophy behind all the activities internally and with suppliers.
2. TPM proved its effectiveness and resulted in good improvements in all the work areas (PQCDSME) with an approach of minimal or no investment.
3. After successfully challenging Excellence in TPM at all Plants, BAL decided to go "Deeply" and "Widely" in terms of the depth and scope of its TPM activities, to improve on its own losses and interface losses, with the involvement of interface functions such as Engineering, Research & Development (R&D), Component Development, Purchase, Sales & Service, IB, Finance, MIS (IT) and HR.
4. BAL has widened its TPM activity across the supply chain. Now our inbound supply chain partners (Tier-I & Tier-II vendors) and outbound supply chain partners (dealers and distributors) are also practicing TPM.
5. For strengthening & sustaining standard TPM Pillar activity across the supply chain, BAL has adopted the "Bajaj Model for TPM" with Deepening, Widening and Evolving aspects. To meet the company's vision; strategic goals and objectives are defined. For the achievement of these strategic goals and objectives, BAL has evolved TPM activity with a linkage between various resources and management objectives. This has created a Win-Win situation amongst all stakeholders.
6. To sustain the achievements made and improve these achievements further, BAL has established the 'Bajaj Production System' (BPS). The systems & standards of BPS are meticulously followed by all.

## Bajaj Model for TPM



### 3.3 Bajaj Production System

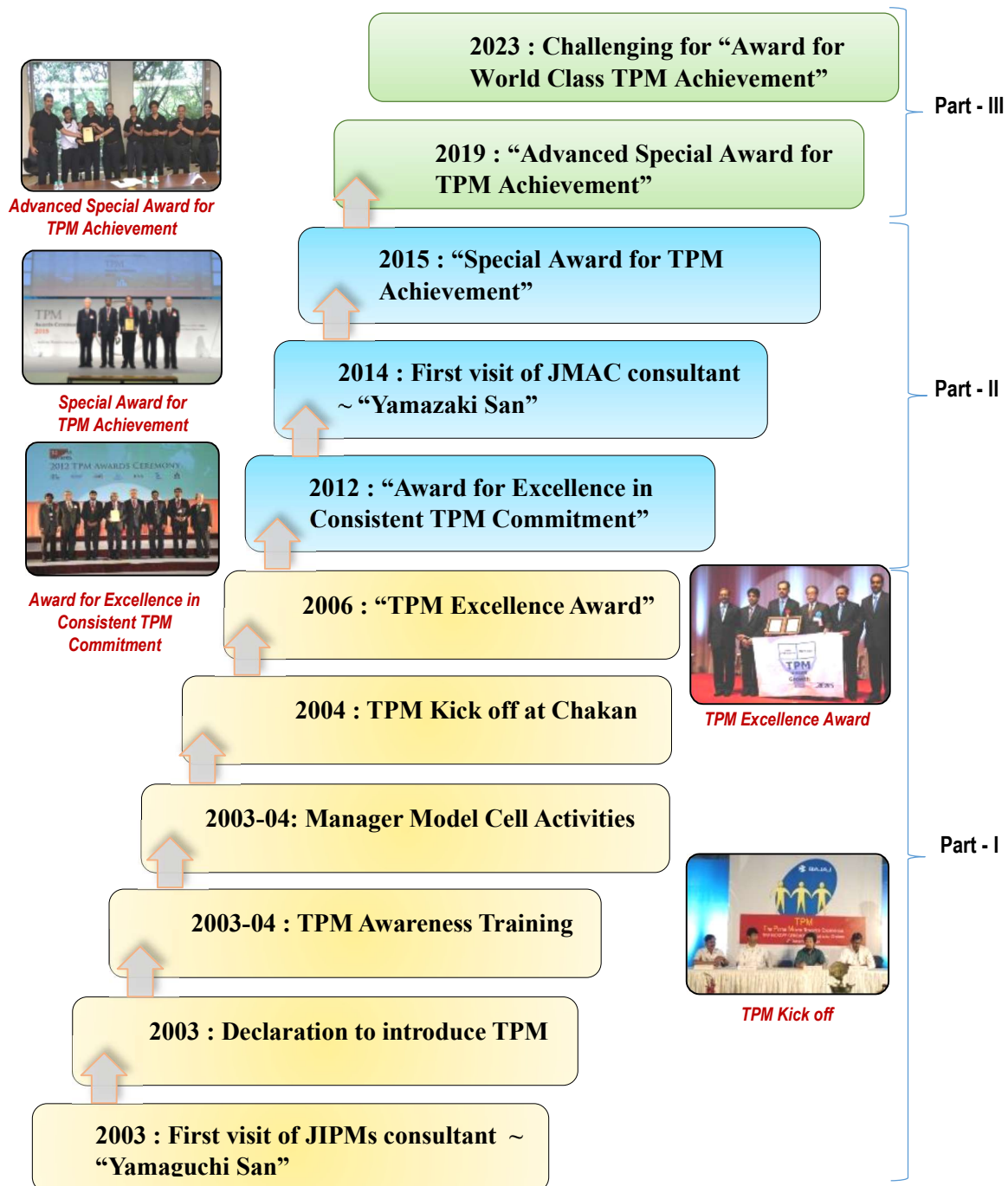
- We follow the Bajaj Production System, intending to ensure **Better Flow with Better Quality**. The target is to produce all products ok, as per demand with minimum resources. In doing so, we ensure joy at the workplace through Yutori practices. Feedback on the activities under Deepening, Widening & Evolving TPM is given to BPS regularly.





### 3.4 TPM Journey of Manufacturing Excellence:

- Since the decision to adopt TPM as a company policy for manufacturing excellence, BAL's TPM slogan has been "TPM - The Prime Mover towards Excellence". The table given below gives key milestones on this Journey of Excellence, achieved so far.



### 3.5 Support given for the growth of TPM:

- Around 73 companies have visited to BAL for understanding TPM practices in the last 3 Years.
- BAL has been Platinum sponsor for TPM National conferences for the last 5 years.
- Assisting CII (TPM Club) in conducting health check audits by nominating our TPM experts.
- Five "Know how" manuals published & given free of cost to CII (TPM Club) for circulation to Indian Auto Industries
- Facilitation for CII & ACMA Delegation visit to our Plants as part of the TPM Learning Mission
- "BAL-TPM Award" for 132 vendors and "BAL Q-Awards" for 366 vendors, reflect our efforts for TPM practice and recognition across the supply chain.

## 4. Benefits Achieved

### 4.1 Tangible business results

- BAL as a company embarked on the journey of Excellence through TPM since 2000 under the guidance of Mr. Sueo Yamaguchi from JIPM and later by Mr. Yoshio Yamazaki from JMAC.
- Table given below gives tangible business results achieved for major business parameters.

Category	Index (Calculation Formula)	Unit	Benchmark (Nov'03)	Actual Status (Dec'23)	
P	Production Volume	Total Motorcycles (Number in Million)	0.35 (12 months)	0.90 (9 months)	
	Production/Hour	Number	63	450	
	Productivity (Output/Man)	Vehicle/Man/Day	1.50	4.55	
	OLE (or Overall Plant Efficiency)	%	87.00	94.95	
Q	Matured warranty cost (2 Years - Pulsar 150)	Rs/Vehicle	2102	34	
	In process Defect	Number of Phenomena	206	2	
C	Conversion Cost	Rs/Vehicle	1067	468	
D	Lead time (Fuel Tank)	Hours	17.36	6.70	
	Delivery Performance: Adherence to Sales Plan	%	100%	100%	
S	Major Accident ( <a href="#">Serious Accident Index</a> )	Number	0	0	
	Minor Accident	Number	7	0	
M	Number of Kaizen/man/ year	Number	1.0	15.1	
E	Resource Generation Solar & Wind	M Kwh	--	19.3	
	Resource Conservation Power	Lacs Kwh	--	7.3	
	Control of Pollutants	Paint Sludge	gm/Vehicle	530	87
	Carbon Neutrality	CO <sub>2</sub> Emission Reduction	Kg/Vehicle	29.36	9.2

### 4.2 Intangible Benefits

Understanding TPM in right spirit and practicing it day-to-day for over 20 years, has brought significant changes in work culture and flexibility in all the manufacturing plants. Some of the key benefits are like:

- Change in Attitude, high spirit of employees and self-esteem
- System Orientation
- Analytical Approach
- Flexibility
- Excellent Teamwork

## 5. Key to our Manufacturing Excellence

- **Productivity:** The company has set itself a vision to be amongst the leaders in motorcycles and small commercial vehicle business. To meet this vision, BAL will enhance its capacity TPM way by maximizing the efficiency (OLE) of existing resources through focused improvement themes like Lean Operations, before deciding on a new investment.
- **Quality:** With a focus on Customer Delight, Quality would continue to be customer-defined and customer-centric parameters for BAL. Its products would be aimed at the highest performance and least cost of ownership. Though World Class Quality theme, we are focusing on Customer Satisfaction and Customer Delight. In line with that, the BAL Chakan plant has been certified for ISO 9001:2015 for Quality Management Systems.
- **Cost:** BAL has adopted Life Cycle Costing (LCC) as a base for all its investments in the future and has aimed to create a benchmark for the industry. As a result, it has an aim to maintain its leadership of the highest EBIDTA in the industry.
- **Delivery:** We are focusing on improvement in material flow and supply chain agility which has significantly benefited us to meet the demand of various markets (Domestic + Export). Implementation of Small Lot Production helps us to achieve optimum inventory levels and minimum lead time.
- **Safety & Health:** BAL has adopted the concept of “Yutori”, which means “Joy at the Workplace”. Three areas under Yutori, which are Body (Physical Happiness), Mind (Mental Happiness) and Soul (Spiritual well-being) focus on fostering a more positive and fulfilling professional experience for all employees. BAL Chakan has been certified for ISO 45001 for its excellent occupational health and safety practices.
- **Morale:** With the active participation and involvement of all employees, BAL has been able to inculcate a TPM culture for excellence and continuous improvements across all plants. BAL has been developing and retaining a diverse pool of talented and motivated employees. The Company has also taken many active steps to engage women’s talent, contributing to enhancing women's workforce participation in the economy.
- **Environment:** Environment protection, including pollution prevention, is being achieved at BAL by minimizing the generation of waste and conserving natural resources through the adoption of better & and cleaner technology. BAL Chakan plant has been certified for ISO 14001 for its environment.

We endeavour to make **TPM** as **The Prime Mover** towards Excellence and imbibe completely the TPM philosophy in our entire work culture. As ‘**Manufacturing Excellence**’ is the essential core process behind all our activities, both in-house and at vendors, we will completely focus on leveraging these efforts to achieve business needs & win-win situation with our stakeholders.

Company & Plant Name		Bajaj Auto Ltd. : Chakan Plant								
TPM Slogan		"TPM - The Prime Mover towards Excellence"								
Category	Index (Calculation Formula)	Unit	Kick off TPM started (Bench Mark: Nov'03)	Actual Status TPM Excellence	Actual Status Consistent in TPM Commitment	Actual status Special Award for TPM Achievement	Actual Status Advanced Special Award	Actual Status (Dec'23)	Target 2024 (Mar'24)	
S	Number of work-related accidents requiring days off work	Cases/ Annually	0	0	0	0	0	0	0	
S	Number of work-related accidents <b>not</b> requiring days off work	Cases/ Annually	7	6	0	0	0	0	0	
P	Productivity for main products	Vehicle/ Man	1.50	1.92	2.34	3.70	4.20	4.55	4.60	
P	OLE (or Overall Plant Efficiency)	%	87.00	89.00	93.54	94.56	94.86	94.95	>95	
P	Number of tags raised (No of equipments)	Number	741 (188)	18076 (188)	23054 (289)	27844 (426)	29072 (458)	34382 (720)	-	
P	Number of breakdowns	Breakdowns /monthly	101	27	1	0.58	0.42	0.17	0	
Q	Number of customer complaints	Number of Phenomena	64	38	48	22	8	2	0	
Q	Inline defect rate	Scrap	Rs/ Vehicle	-	23.71 (2009-10)	10.8	9.0	8.1	4.2	0
		Rework	PPM	14425	9841	4220	3920	2330	1820	0
C	Cost Index : Manufacturing Cost excluding Material Cost	Rs/ Vehicle	1067	714	534	564	497	468	465	
D	Lead time in hours (Fuel Tank)	Hours	17.36	13.36	7.33	7.03	6.88	6.70	< 6.5	
D	Delivery performance : Adherence to Sales Plan	%	100	100	100	100	100	100	100	
S	Safety index	Accidents per 100,000 operator hours	0.40	0.29	0	0	0	0	0	
M	Number of Employee Suggestions	Cumulative Number	412	14982	38900	61817	103704	142392	-	
E	Carbon Neutrality	Kg/ Vehicle	29.36	25.06	19.34	15.73	11.5	9.2	9	
Others		<b>1. Do you have a program where all employees can participate in TPM?</b> All BAL plants have active TPM circles. BAL Chakan has 94 nos. of TPM circles. These circles meet every fortnight as per the schedule. All suggestions/kaizens by circles are recorded and responded to by the Head of the departments.								
		<b>2. Do you have a program allowing employees to be recognized their achievements?</b> All employees participate in Monthly and Quarterly Kaizen Competitions held at the Plant level where they are suitably rewarded. Similarly, the best kaizens from all Plants participate in the Half Yearly Companywide Kaizen Competition where the top 5 are given the Sueo Yamaguchi Trophy. Once a year, the top 3 Kaizens of the year from all Plants participate in the Kaizen Competition for MD's trophy.								
		<b>3. Are top management involved in the audit/verification of completion of TPM pillar steps?</b> Each JH step is declared pass after the audit by the concerned Plant Head. Similarly, each Pillar review is conducted monthly by Plant Head and necessary guidance is given by him. We also carry out Inter-Plant audits for sustenance and improvements.								
		<b>4. Are all pillar activity boards displayed and reviewed by top management?</b> All pillar activity boards are displayed on the shop floor and are reviewed every month by the Plant Head and TPM Secretariat.								