

1.0 Company Profile






1.1 History of company

Established in 1870 by Mr. Florenz Sartorius, Sartorius Stedim has been a global leader in biotechnology and laboratory equipment for over 150 years. With over 60 sites in 30+ countries and 16,000 employees, the company achieved a stellar FY2022 revenue of 4,175 million euros. Committed to excellence and innovation, Sartorius Stedim continues to shape the future of scientific progress worldwide.

1.2 Sartorius Stedim India Pvt. Ltd., Bangalore- India

Established in 1987 in Bangalore, Sartorius Stedim India Pvt. Ltd. is a hub of innovation spanning across area of 40,682 sq. m. This ASME, PED, and China Export license certified facility houses stainless steel fermenter manufacturing, advanced CNC machines, and clean rooms. The company's commitment to sustainability shines through a Miyawaki forest with 400+ saplings. Site is aligned to ISO 9001, 14001, and 45001 certifications. Our unwavering commitment to excellence and support customers even under challenging business environment including Covid 19 lockdown times stand as testimony to our customer centric approach. Sartorius Stedim India embodies excellence. Embarking on a TPM journey in 2019, now we stand ready for the prestigious JIPM TPM Excellence Award, marking a legacy of precision and continuous improvement.

1.3 Our Products

				
<p>Pressure Vessels</p> <ul style="list-style-type: none"> Capacity to build Pressure vessels from 5L-6500L capacity. Pressure vessel manufacturing as ASME, PED, China License, KEA 	<p>Inso Systems</p> <ul style="list-style-type: none"> Build engineered systems for Upstream and Downstream process. Capability in ASME, DN ISO pipe sizes. 	<p>Biostat C plus & DDCU systems</p> <ul style="list-style-type: none"> Group Supplier for Biostat systems. In house Manufacturing capability from Component level to Qualified system 	<p>STR Bagholders</p> <ul style="list-style-type: none"> Group supplier for 50L & 200L STR3 Bagholders 	<p>Cross flow holders & FRT Components</p> <ul style="list-style-type: none"> Supplies to China Market. Supplies to ETO Projects Group supplier for FRT components

1.4 Our Customer

Trusted by major biopharma manufacturers, Sartorius division is a key player in the industry. Renowned for excellence, we provide vital solutions that drive innovation and shape the landscape of biopharmaceuticals.



1.5 Process Technology

Sartorius specializes in stainless steel vessel manufacturing, precision machining, and operates world-class inspection facilities.



Vessel manufacturing area



FAT Area



Welding Process



Electropolishing



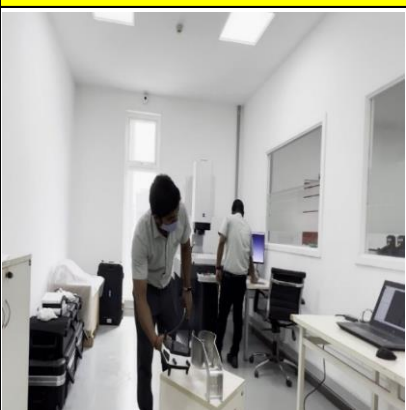
Filter manufacturing area



Tubing kit manufacturing area



O Inspect



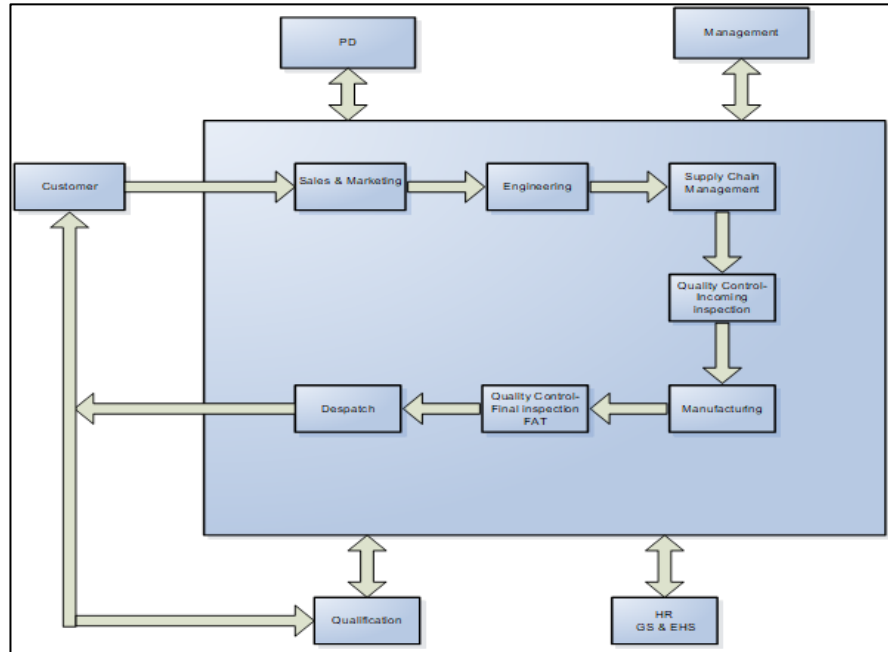
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FARO

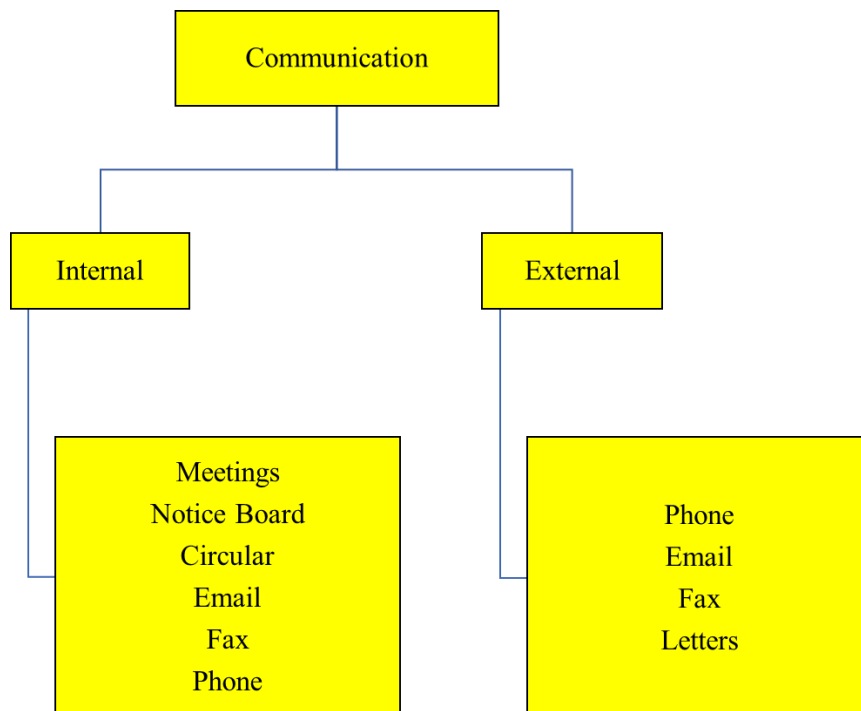
1.6 Production process flow

Sartorius employs a seamless process flow encompassing in-house design, manufacturing, and rigorous testing. Our dedication to precision ensures top-tier products, making us leaders in the biotech industry.



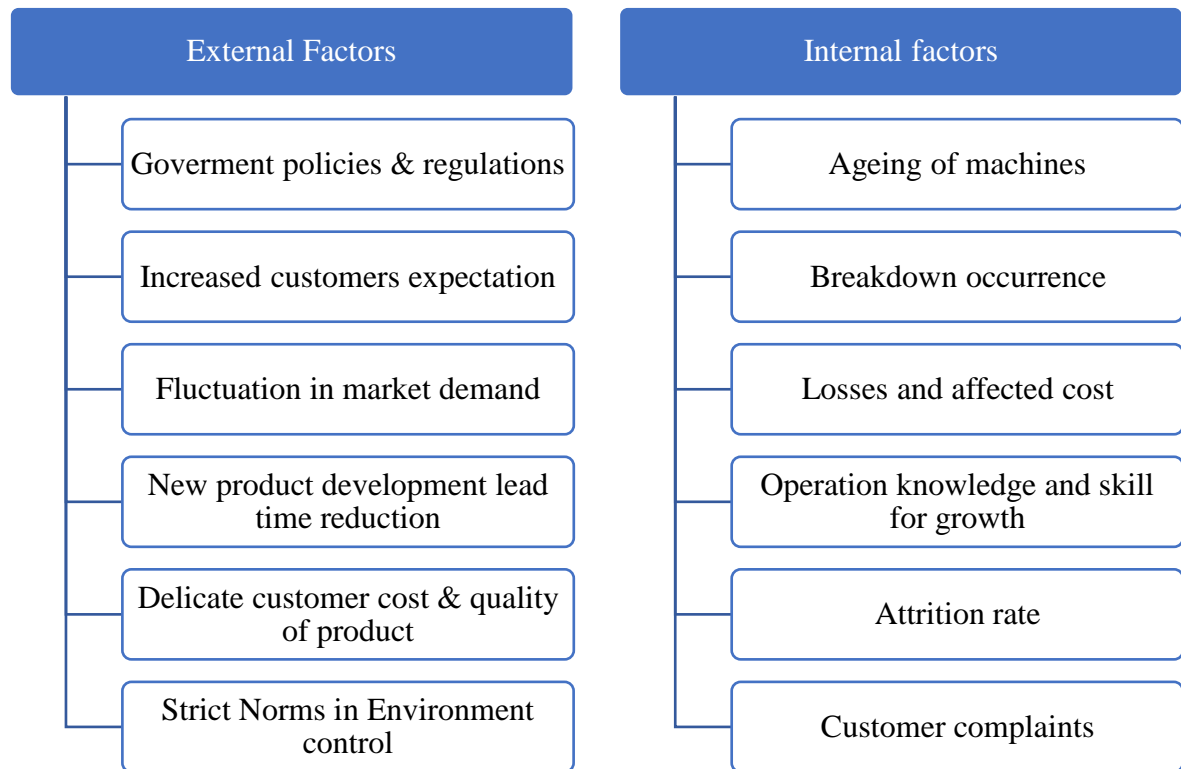
1.7 Communication

Regarding integrated management aspects, following methods are established and maintained for effective internal & external communication between various levels and functions of the organization.



2.0 Milestone on the Journey of Manufacturing Excellence

2.1 Need for TPM implementation



We considered the internal and external factors and understood TPM is the best tool to adopt for systematic growth and sustenance

2.2 Other Critical internal factors

Other than the above factors, there were few more affecting factors which made us to implement TPM & its 8 pillars.

Pillar wise need of TPM is shown below,

KK Pillar

- Low OEE of 64%

JH Pillar

- Poor basic condition of machines
- Frequent minor stoppage (1056 occurrences / Year)
- Mind-set of operator – I operate You Maintain

PM Pillar

- High breakdown occurrence-96 Occurrence/Year
- High MTTR 5 hrs. /Machine
- High R&M cost – 0.33TINR
- High specific energy consumption –549.1 KWH/Sales revenue in INR Million

QM Pillar

- High customer complaints of 67 Nos / Year

DM Pillar

- High lead time for new product development
- High rejection in new product development

E&T Pillar

- Breakdown due to inadequate skill was high as 10 Nos / Year
- TEI Participation was low as 50%

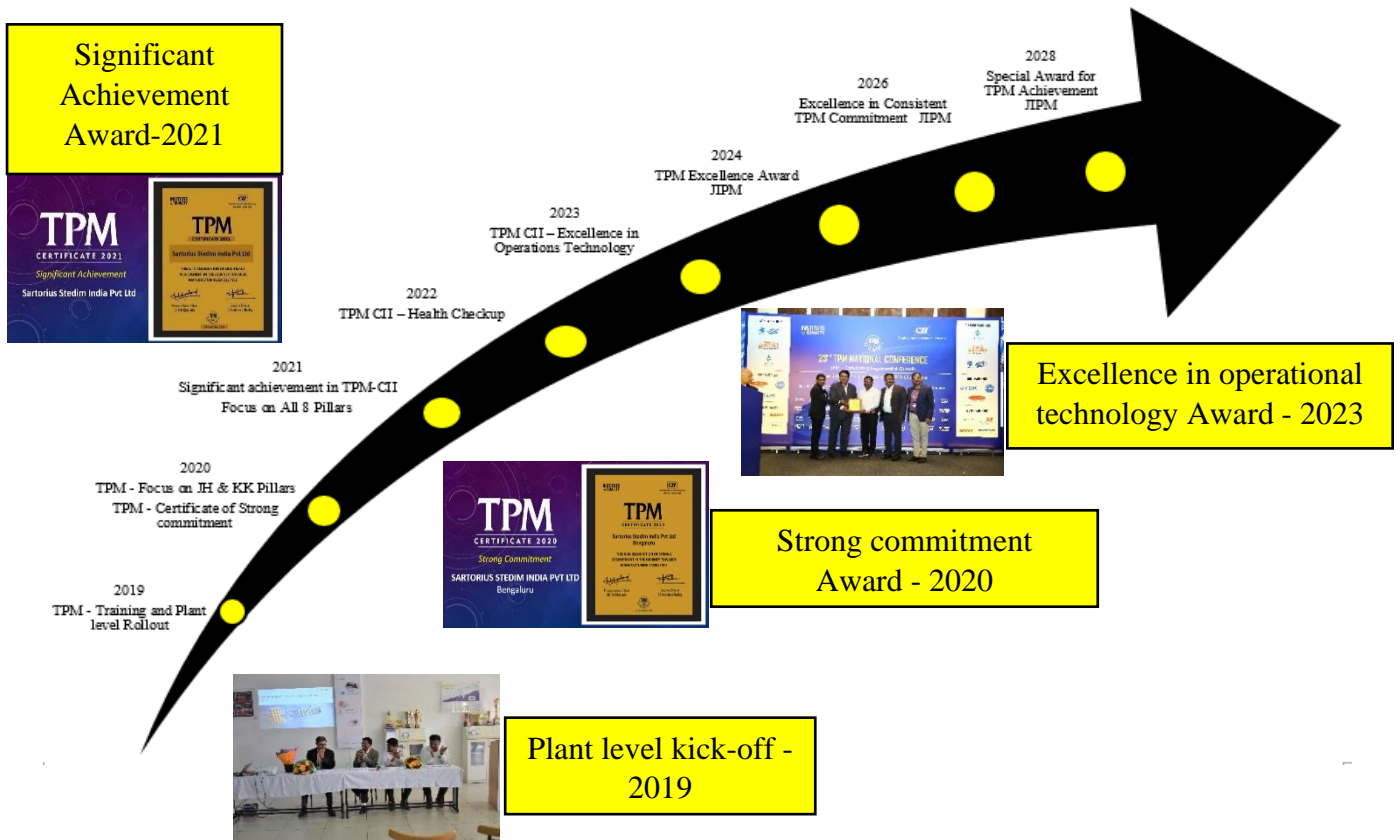
OTPM Pillar

- High management Loss of 20 % /Year
- High raw material inventory coverage 175 days

SHE Pillar

- Minor accidents 6 Occurrences/Year
- Poor industrial Hygiene
- Ineffective utilization of resources
- Unsafe working environment

2.3 Our TPM Journey:

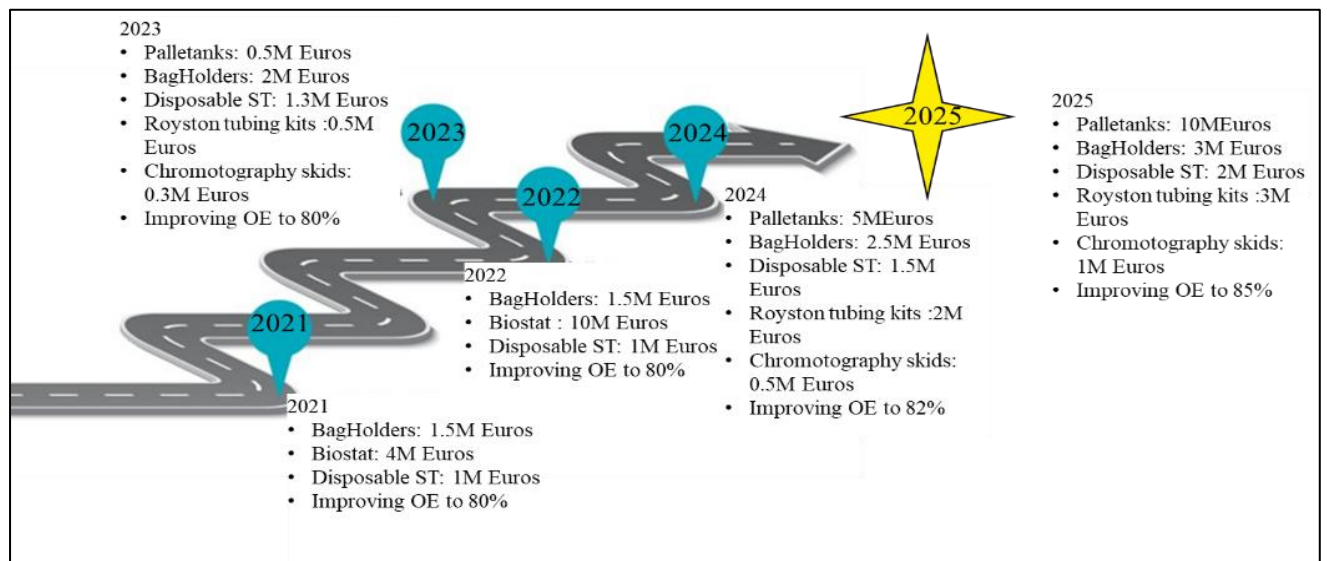


3. Benefits Achieved

3.1 Business Growth

Area	Parameter	UOM	Benchmark (2019)	Actual 2023 (Till Nov -2023)	Target 2023
Business	Manufacturing Revenue	INR in Crore	138	238	246

3.1.1 Sartorius India manufacturing revenue future plan



Road map for achieving 2025 revenue target

3.2 Employee Morale and Cultural Change

The goal of the TPM is to enhance production with increased employee morale and job satisfaction. TPM helps us in,

- Increasing the TEI Participation & Suggestion
- Increasing in multi-skilled workers
- Making employees proactive

Glimpses of TPM promotional activities are shown below.



Quiz Winner



Slogan Winner



Best JH Circle



TPM Circle Competition



Safety day Competition

TPM implementation has also contributed to behavioral changes of employees, team building, develop the competency and inhibit the discipline.

3.3 Intangible Benefits

Enhancement seen in: -

- Employees morale due to clean, safe & pleasant work environment
- Sense of pride in employees about the company
- Enhanced operator capability by grasping Knowledge and Experience through sharing
- Increased involvement and enthusiasm of Workforce

Increase in Awareness: -

- Better understanding of equipment performance
- Better understanding of Equipment criticality to take focused Improvement efforts & achieve benefits
- Shift in approach from reactive to proactive.
- Enhanced operator capability by grasping Knowledge and Experience through sharing

4.0 Key of our Manufacturing Excellence



Implementing innovative/break through kaizens across workplace to achieve zero losses.

- Up keeping the momentum of all our employees by maintaining the positive work culture
- Develop subject matter experts from the shop floor for JH and PM topics
- Increased involvement and enthusiasm of Workforce

5. Achievement Record

Area	Parameter	UOM	Benchmark 2019	Actual 2023 (Till Nov-2023)	Target 2023
Productivity	Overall Equipment Efficiency	Percentage	64	80	80
	Breakdown Hours	Hours/Year	495	0	0
	Breakdown Occurrences	Nos/Year	96	0	0
	MTTR	Hours/Year	5	0	0
Quality	COPQ	Percentage	0.17	0.02	0.04
	First pass yield	Percentage	95	99.9	100
	Supplier Rejection	PPM/Year	13792	6394	7500
	Customer Complaints	Nos/Year	67	10	0
Cost	Manufacturing cost saving	INR in Lakhs/Year	5,00,000	76,61,935	50,00,000
	Repair and maintenance cost	% to sales revenue	0.33	0.18	0.21
Delivery	Delivery on time	Percentage	77	98	100
	Reduction of raw material inventory coverage days	No of Days	175	103	120
Safety	Major Accidents (Reportable accidents)	Cases/Year	0	0	0
	Minor Accidents (Recordable accidents)	Cases/Year	6	2	0
Morale	No of suggestions	Nos/Year	120	394	400
	No of kaizens	Nos/Year	200	339	400
Environment	GHG Emission	Kg Co2 /INR Million	805	310	300
	Specific energy consumption	KWH/Sales revenue	549.1	238.42	360.2

5.1 Others

Sl. No.	Activity	Justification	Sample												
1	Do you have a program where all employees can participate in TPM?	Yes	 <p>Best circle winner</p>												
2	Do you have a program allowing employees to be recognized their achievements?	Yes	 <p>Spot reward for circle member</p>												
3	Are top management involved in the audit/verification of completion of TPM pillar steps?	Yes	<table border="1"> <thead> <tr> <th>Review Frequency</th> <th>Meeting/Review</th> <th>Agenda</th> </tr> </thead> <tbody> <tr> <td>Weekly</td> <td>Pillar Meeting</td> <td>Pillar activity progress Discussion on Open points (Pillar chairman & Members)</td> </tr> <tr> <td>Weekly</td> <td>TPM Steering Committee Meeting</td> <td>Review on pillar progress with TPM Chairman (Head of Operations)</td> </tr> <tr> <td>Monthly</td> <td>TPM Monthly Review</td> <td>Review on pillar progress & Gemba walk with TPM Consultant</td> </tr> </tbody> </table>	Review Frequency	Meeting/Review	Agenda	Weekly	Pillar Meeting	Pillar activity progress Discussion on Open points (Pillar chairman & Members)	Weekly	TPM Steering Committee Meeting	Review on pillar progress with TPM Chairman (Head of Operations)	Monthly	TPM Monthly Review	Review on pillar progress & Gemba walk with TPM Consultant
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4	Are all pillar activity boards displayed and reviewed by top management?	Yes	