TATA STEEL
WeAlsoMakeTomorrow

TATA

CASE STUDY

2025

steel-a-thon
Prove your Metal
Season XII 2025

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Case Title

Supply Chain Innovation for Enhanced Customer Value

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Introduction

Tata Steel has an annual crude steel production capacity of **35 MTPA** across its operations in India, the Netherlands, the UK, and Thailand.

In India, Tata Steel has **5 major production units**, specifically located across Jamshedpur, Kalinganagar, Meramandali, Gamharia, and Neelachal Ispat Nigam Limited (NINL).

Tata Steel's supply chain supports the movement of approximately 105 million tonnes of raw materials, finished goods, scrap, and by-products across its India operations. Over 70 million tonnes of more than 200 grades of raw materials sourced globally are delivered to over 40 internal consumption centres.

Simultaneously, 21 million tonnes of finished goods, encompassing 55,000 SKUs from 65 production units (including Steel Processing Centres), are distributed to a diverse group of customers across India and for export. This extensive movement of material is enabled by a well-integrated network of nine ports, 28 stockyards and 35 Steel Processing Centres. As the capacity expands, the scale and complexity of supply chain operations are expected to grow further.

mn tonnes

Category	**FY25**	**FY24**
Automotive & Special products	3.11	3.19
Branded Products, Retail & Solutions	6.98	6.53
Industrial Products & Projects	7.25	7.4
Domestic	**17.34**	**17.12**
Exports	1.22	1.04
Domestic + Exports	**18.56**	**18.16**
Transfers (Tinplate*, Wires, Tubes, IBMD, Agrico)	2.38	1.75
Total Deliveries	**20.94**	**19.91**

* Includes sales of Tinplate Company of India (TCIL) after its amalgamation in Tata Steel Ltd w.e.f. January 15, 2024.

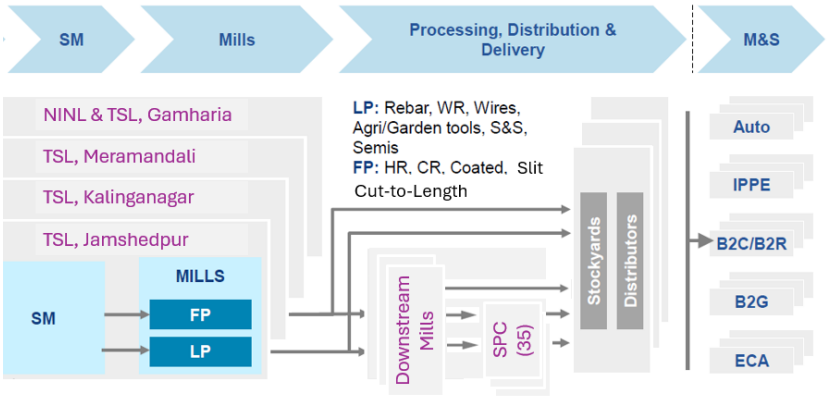
Manufacturing Process at Tata Steel

The hot metal is converted into steel through a steelmaking process called the LD process. To produce Flat Products, steel is first cast into slabs, which are then rolled into hot rolled coils in the Hot Rolling Mills. Some of these coils are further processed into cold-rolled and galvanized products in the Cold Rolling Mill. Depending on the end-use, the steel may undergo surface treatments, such as coating with tin, paint, or zinc, to enhance durability and corrosion resistance.

To produce Long Products, steel is first cast into billets, which are then rolled into rebars and wire rods in the Long Product Rolling Mills. Steel can further be sent to Steel Processing Centres for Slitting, Shearing, Pickling & Oiling, Cutting-to-length, Roll Forming, Plate Burning, Cut & Bend depending upon actual end use at customer end.

Material can flow to customer either from

(i) Hot Rolling Mill / Long Product Rolling Mills
(ii) Downstream Mills (Cold Rolling/Coating)
(iii) Steel Processing Centres
(iv) Stockyards



TSL: Tata Steel Limited
SM: Steel Manufacturing
FP: Flat Products
LP: Long Products
HR: Hot Rolled
CR: Cold Rolled

WR: Wire Rods
S&S: Services & Solutions
SPC: Steel Processing Centre
EPA: External Processing Agency
IPPE: Industrial Products, Projects & Export

B2C: Business to customer
B2R: Business to Retailer
B2G: Business to Government
ECA: Emerging Customer Accounts

Supply Chain Challenge:

At Tata Steel, we are challenged to consistently achieve the increasingly stringent delivery timeframes demanded by our key customers, including Just-in-Time (JIT) delivery requirements. We cater to varied customer needs in different Customer Segments, each having their own set of expectations:

1. AUTO: Delivery within 24 hours after placing indent, visibility of pipeline inventory
2. IPPE/B2G/ECA: Strict adherence to promised delivery timeline
3. B2C/B2R: Delivery at distributors' end within 3 days of placing demand

Fulfilling customized customer demand on time in steel production is complex due to several interconnected factors. The basic oxygen furnace (LD process) mandates a minimum order quantity of 2-4 heats per steel grade (1 heat = 150 tons), which limits flexibility, and any grade change requires a highly controlled, gradual transition to prevent material commingling, often restricting production to just one or two campaign-based runs for multiple grades each month. In addition to this, there are production sequencing challenges in downstream processes, such as the "coffin schedule" in Hot Rolling Mills that requires precise width sequencing, with similar intricacies present in Cold Rolling and Galvanizing process. Finally, even with careful planning, unplanned maintenance (breakdowns) can significantly disrupt production schedules, further increasing order fulfilment times and directly impacting reliability and customer service levels. So, for Hot Rolled finished goods (FG), production takes 3-4 weeks, while Cold Rolled FG typically requires 6-8 weeks.

We aspire to achieve full compliance to demand fulfilment in-spite of the long value chain and month-on-month SKU wise demand variation from customers. This necessitates to adapt swiftly to dynamic changes in demand while ensuring optimum inventory balance, to avoid both costly overstocking and disruptive stock-outs, which can impact customer service levels and overall operational efficiency. So, a transition of Tata Steel's supply chain from a reactive model to a proactive, truly demand-driven system is needed.

Critical Questions:

1. How can Tata Steel re-architect its supply chain design to achieve 95%+ demand fulfilment across diverse customer segments while optimizing delivery speed, responsiveness, and cost efficiency?
2. Design a system to improve inventory visibility (e.g., real-time) and its management across Tata Steel's value chain to support a proactive, demand-driven model?
3. How Tata Steel can effectively and reliably promise delivery timelines considering complexities in steel production, so that to align with stringent delivery windows demanded by its diverse customer base.
4. Outline a system-driven strategy for managing delayed orders (may be due to production disruptions), focusing on rapid impact assessment, dynamic prioritization, transparent communication, and proactive recovery actions to safeguard customer relationships.
5. Propose a robust KPI framework to evaluate Tata Steel's transition to a demand-driven supply chain, including leading indicators for customer satisfaction, operational efficiency and adaptability.