



Logistics model - Economics and reach

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JSW group has strong footprints across viz Steel, Energy, Infrastructure, Cement, Ventures and Sports



JSW Group : Corporate Snapshot

With Steel as the focal point, expanding presence across core economic sectors of India



Steel
18 MT



Energy
4,531 MW



Infra.
33 MT



Cement
6.4 MT



Ventures
100 Crs



Social
Initiatives

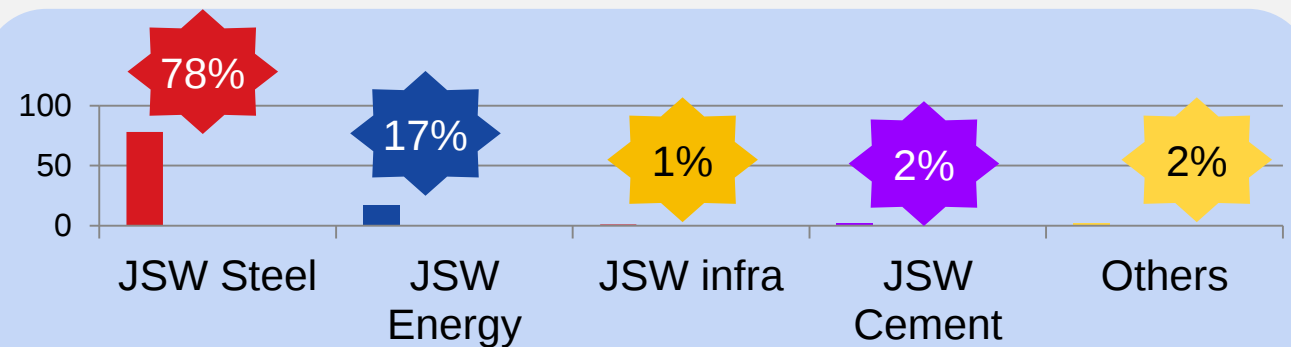


Sports
Sponsor.12
Athletes in Rio 16

Highlights of FY 16

Gross Turnover:	INR 58,929	Crs
EBITDA:	INR 11,687	Crs
PAT:	INR 891	Crs
Cash Profit:	INR 4,078	Crs
Market Cap :	INR 42,352	Crs

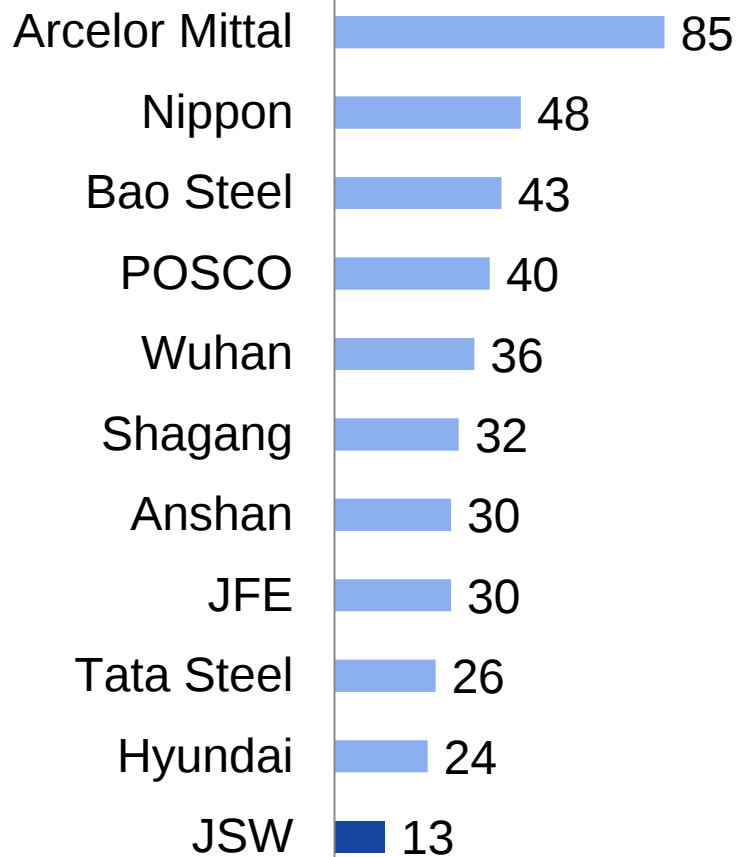
JSW Group Turnover



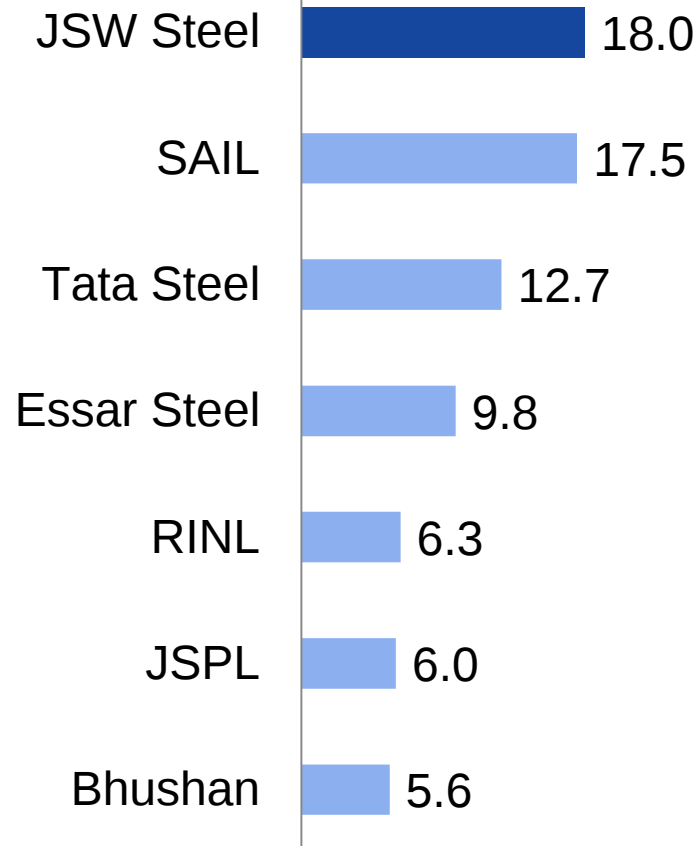
JSW Steel is the flagship company of the JSW Group and the largest integrated steel producer in India



#19 Globally in terms of production¹



#1 steel producer in India in terms of capacity



Key facts

- PM's Trophy for Excellence in Performance in 2012–2013 for Vijayanagar Works - Best Integrated Steel Plant in India
- **Ranked #10** on list of winning performers among steel producers globally by World Steel Dynamics 2016
- Ranked among the top 5 lowest-cost steel producers in the world
- 6 manufacturing locations in India
- Widest product portfolio with high grade steel for auto and electrical segments
- Partnerships with global sector leaders such as JFE Steel, Marubeni

JSW has a complex supply chain network supporting movement of ~54 mn MTPA of raw material and ~18 mn MTPA of finished steel p.a.



JSW Network

Raw Materials

RM :FG Ratio

3:1

50+ load ports

5 continents

6 manufacturing locations

7500+ Retailers
2000+ customers

425 Shoppe
300 **Connect**
20 **Explore**

7+ discharge ports,
3 captive ports

25+ distribution centres

3 service centres

Multimodal Connectivity

Road

2000+ trucks per day
100+ transporters

Rail

35+ rakes per day

Ocean

200+ voyages annually

Coastal

180+ voyages annually

JSW's spend on logistics is one of the largest among its peers in India comprising ~20% of revenue



	~20% of revenue ¹	Second largest cost bucket for JSW after raw materials
	2000+	Payroll & contracted manpower engaged in logistics
	30% of spend	Comparable to ~8% ² of Revenue of some of the world's largest bulk carriers
	50% of spend	As one of the largest customers of Indian Railways, JSW contributes ~4% ³ of Indian Railway Goods Revenue
	15% of spend	Comparable to ~50% ⁴ of revenue of some of the largest Indian private transport companies
	5% of spend	25 stockyards, 2.2 mn sq ft of warehousing space equivalent to 30 international standard football fields

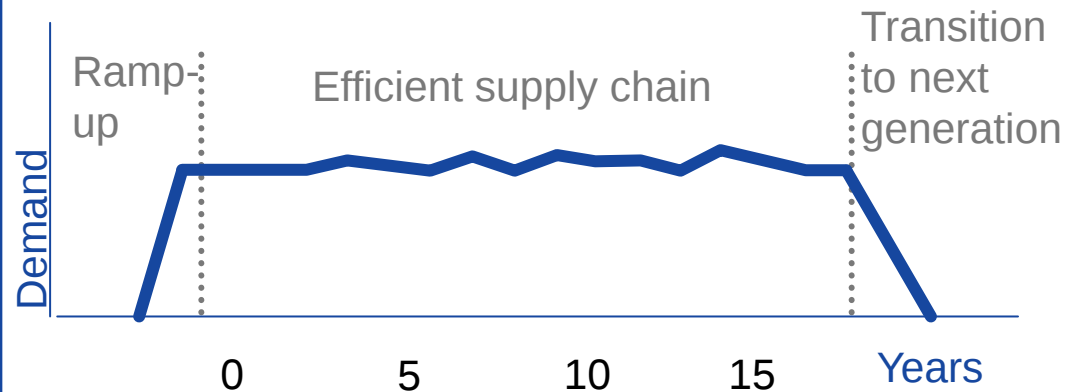
Note: 1. Based on standalone FS for FY16-Steel 2. Revenue for Oldendorff: \$ 5 bn , Revenue of Kline: \$ 5.3 bn in 2015

3. On the basis of Indian Railways Goods Revenue from Annual Report for 2014-15 4. Based on revenue of TCI for FY16

Emerging trends in supply chain requires re-engineering of supply chain strategy

THEN

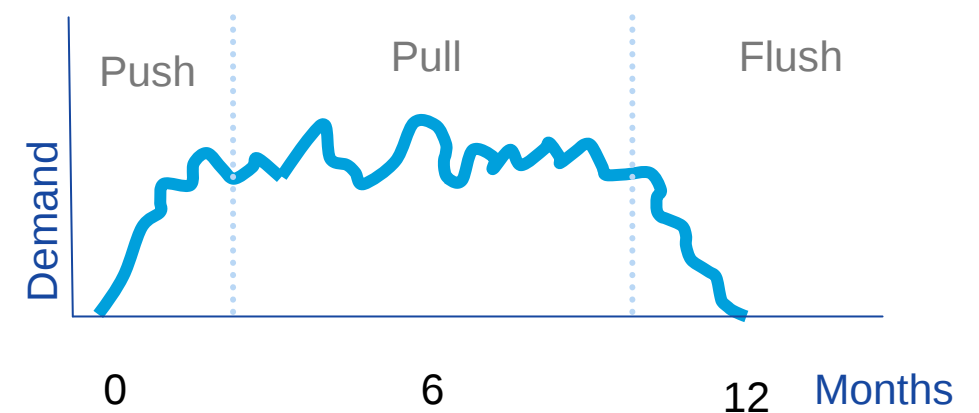
Long life cycle was the norm in the good old days of industrial growth...



Focus areas	Surface Transport
	Vanilla warehousing
	Customer delight
	Digitization
	Vendor Management

NOW

...but life cycle of today's products are short and require an overhauling of supply chain strategy



Multimodal Connectivity
Smart Logistics Hubs
Customer need
Digitalization
Partnership Management

With the vision of expanding to 40 mn MTPA by the year 2025, JSW has undertaken a journey of logistics transformation focusing on 6 pillars



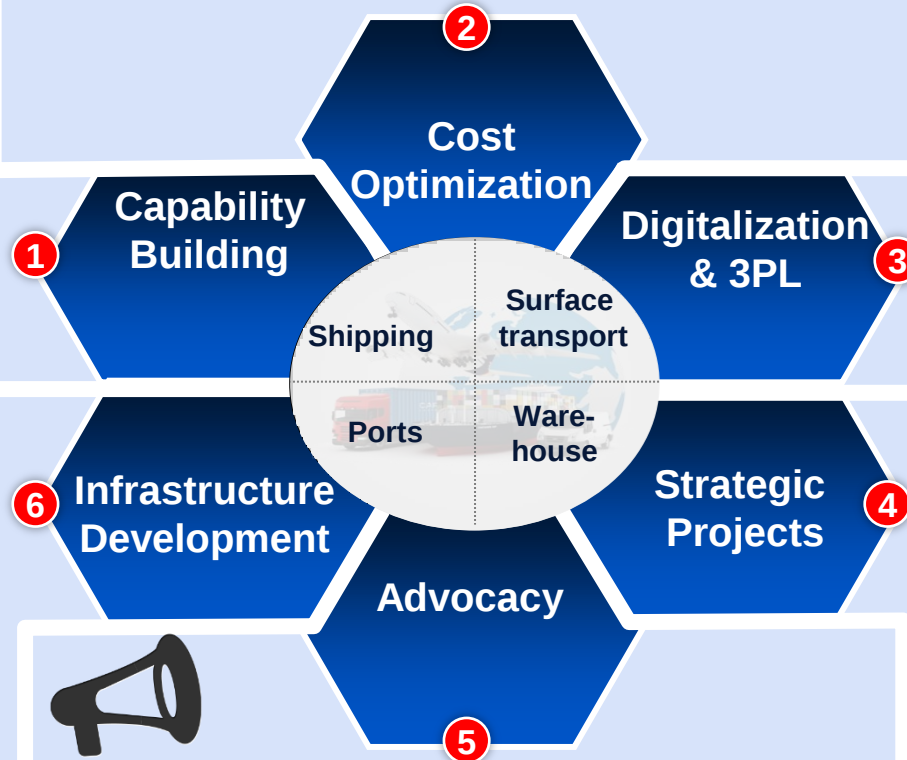
- Logistics Centre of Excellence
- Best in class contract management system
- Smart sourcing
- Talent enablement
- Sustainability and green practices/Social responsibility



- Optimization of Freight, Idle Freight, Demurrage, Network, Modal Mix, TAT etc.



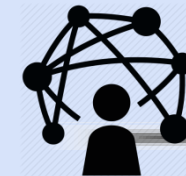
- CXO Dashboard
- Trace & Track
- In-plant automation
- 3PL & Control Tower



- Port capacity enhancement
- Pipe Conveyor
- Owned River Sea Vessels
- Investing in Cape compliant ports
- Owned rakes



- Advocacy with government and key stakeholders



- Smart Logistics Hub
- Coastal Movement
- Integrated supply chain
- Delivery Branding and Reach

1

JSW believes in nurturing the best people and focusing on building capability to boost performance



Set up of a strategy cell in 2015 – **Logistics Centre of Excellence** to drive transformation across JSW Group

6 member core team with multi faceted experience across consulting, infrastructure, supply chain and analytics



Standardising partner contracts across plants and adopting best practices

Contracts standardised across 6 plants

Ensuring sustainability and green practices



**Phasing out old vehicles
In-plant pollution checking station
Coastal movement**



Driving efficiency and cost optimization @ digitally enabled supply chain management system

5-10% cost optimization apart from substantial value enhancement

Frequent summits on Supply Chain excellence; partnership with digital startups

**15+ boot camps
70+ key employees
6+ Idea generation sessions
2 Summits**



Organization restructuring

**Re-defining roles and responsibilities
Right person for right job**

Capability Building

2

Cost optimization strategies have yielded up to 40% benefits on major routes

Sea Freight reduction by restructuring contract terms by leveraging strategic alliances...

- Extending partnership in lieu of lowering Time Charter rates
- Panamax to Cape option
- CVC to COA

15% reduction in freight & operational flexibility

Modal mix optimization through dynamic planning among rail, road and coastal

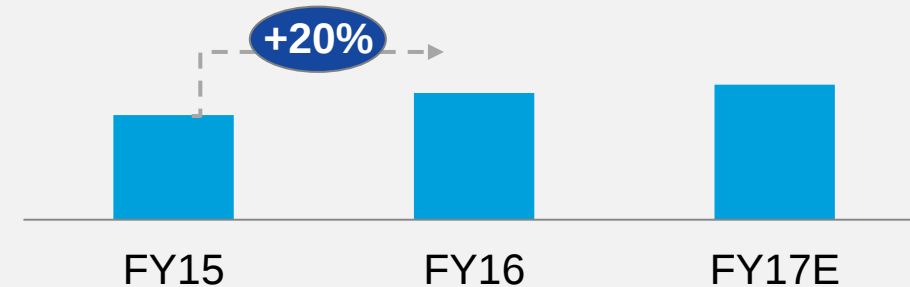
- Operating dedicated fleet on high volume routes and maximizing return load opportunities; instituting 3PL; increasing road dispatches opportunistically
- Coastal movement by developing coastal hubs, investing in owned mini bulk carriers

20-40% reduction in freight on key routes

Maximizing Goa port utilization to >100%

RAKES/DAY

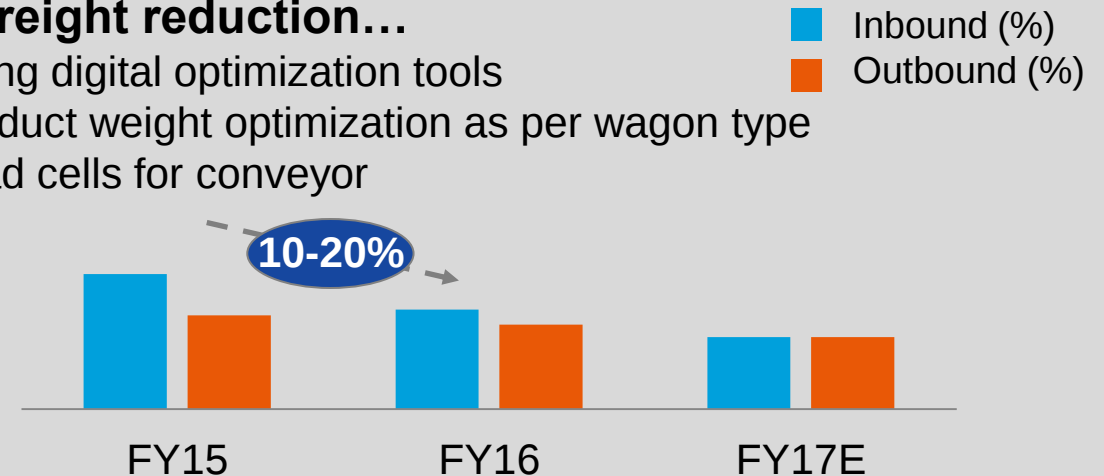
- Installing silo loading system



20% reduction in inland freight & charges from port to plant

Idle Freight reduction...

- Using digital optimization tools
- Product weight optimization as per wagon type
- Load cells for conveyor



2-3% reduction in inland freight from port to plant

3

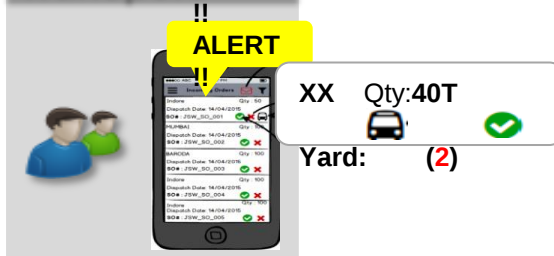
3PL Control tower on a gain sharing collaborative model to improve customer satisfaction and optimize cost of delivery

Description

1 Trace & track

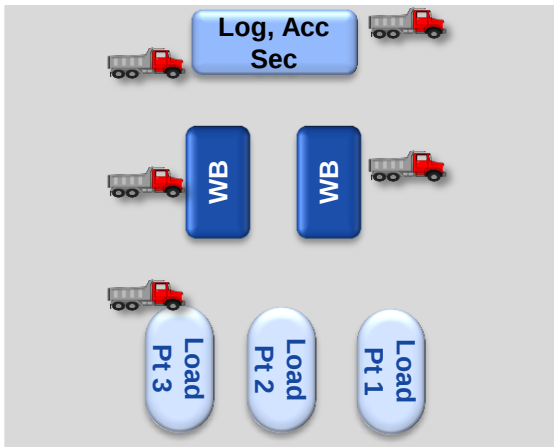
- Fleet tracking
- GPS enablement
- Customer Notifications
- Control Tower Monitoring

Transport



2 In-plant automation

- Automated truck guidance systems
- App based navigation and tracking



What will it do?

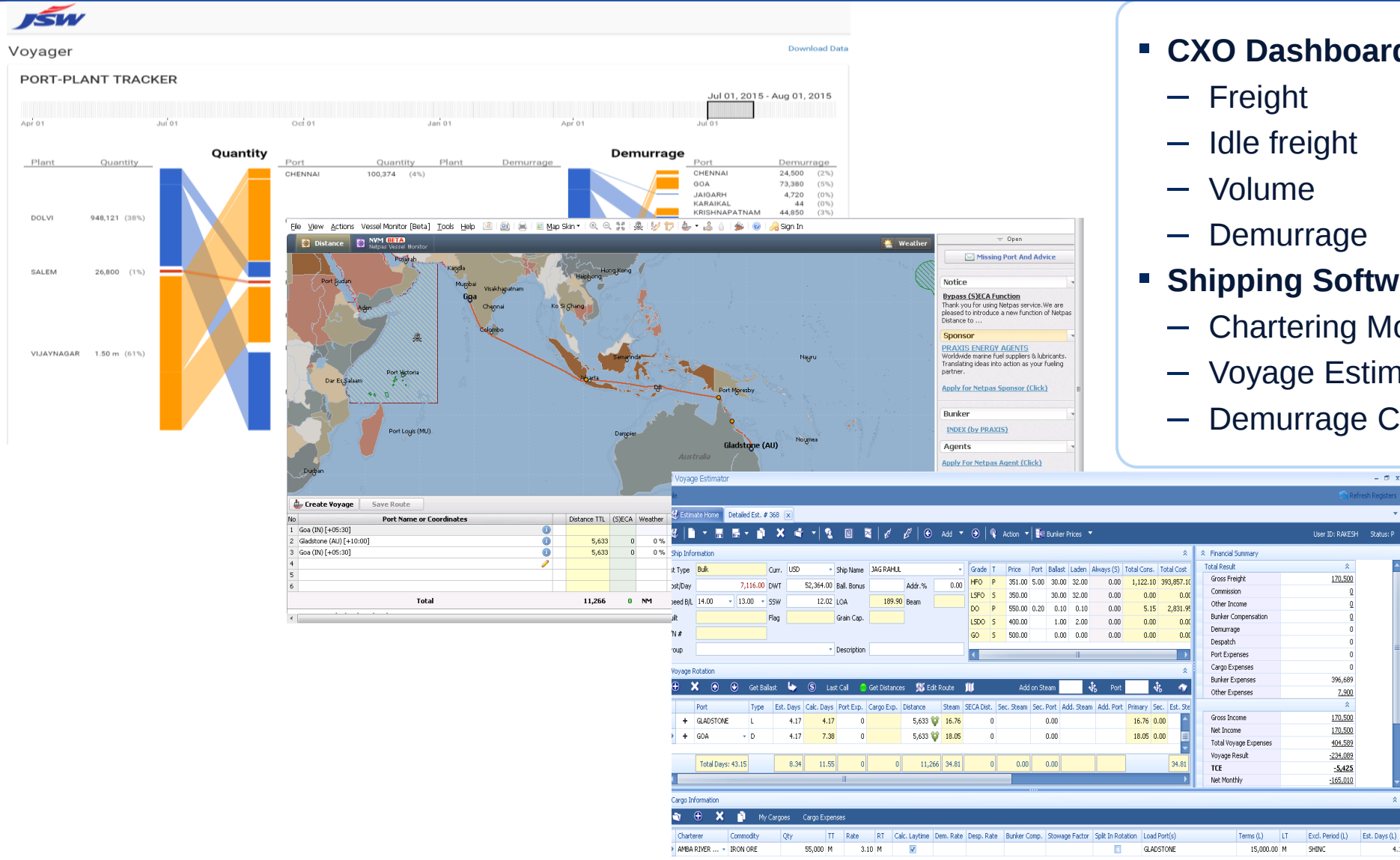
- **End to end truck trace & track functionality**
 - >Ensure time management
 - >Minimize idle time
 - >Maximize truck utilization
- **Dispatch planning**
 - >Optimize truck planning
 - >Ensure capacity and cost >maximization
- **Value added services**
 - >Over-speed reporting
 - >Notification of delays via email, SMS, etc.

Benefits

- **Transparency**
- **Customer satisfaction**
- **Reduced TAT**
- **Performance Benchmarking**
- **E-payment and Online POD**
- **Increase in availability of vehicles**

3

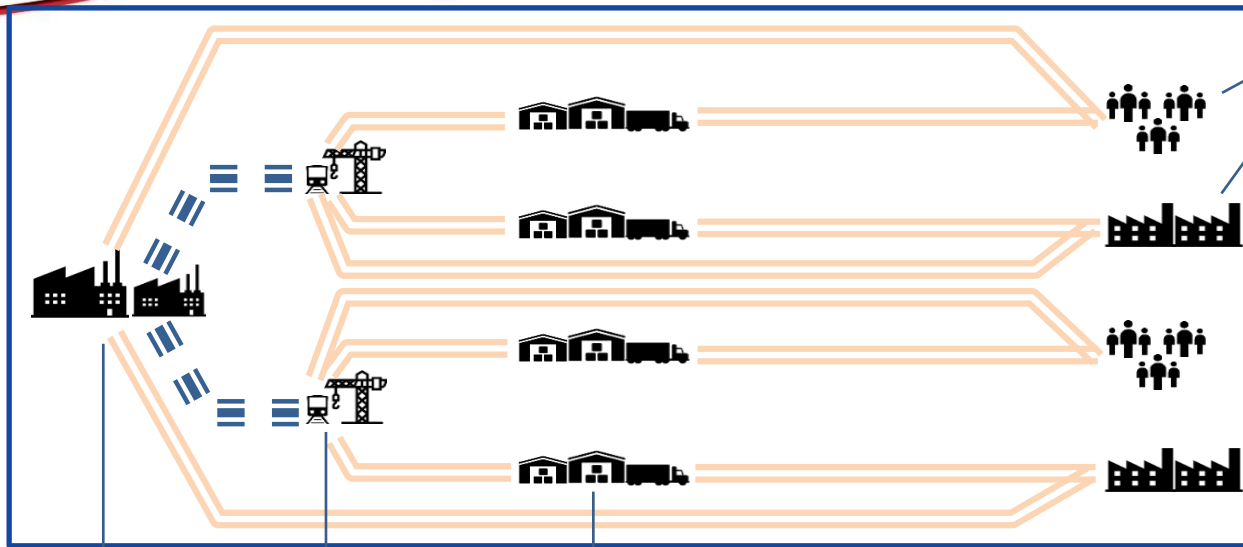
Digital platforms that aid decision making help taking real time advantage of optimization opportunities



- CXO Dashboard KPI measurement
 - Freight
 - Idle freight
 - Volume
 - Demurrage
- Shipping Software: ShipNet
 - Chartering Module
 - Voyage Estimator
 - Demurrage Calculations and Reporting

4

Smart Hubs are envisioned as a centralised distribution system modelled on a hub and spoke approach



Auto/Non-auto/OEM's



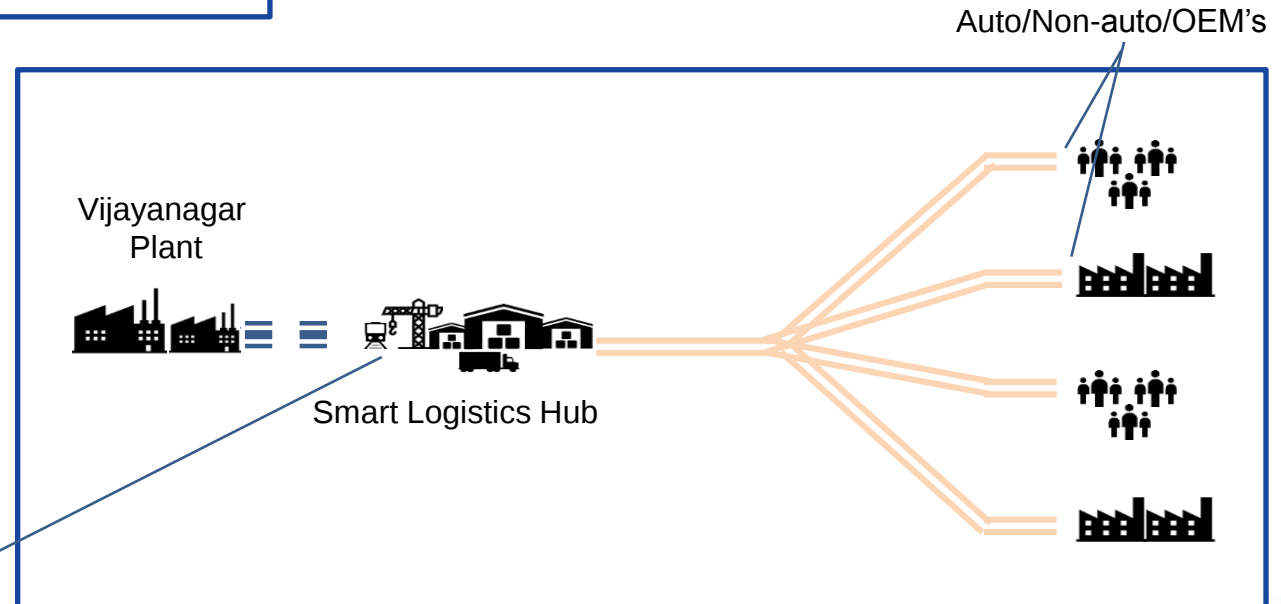
Current System of distribution

Need to optimize

- Last-mile delivery costs
- Vehicle turnaround time
- Empty haul charges
- Handling

Proposed system of distribution

Lowering of end to end cost and time and increased quality of service due to consolidated handling

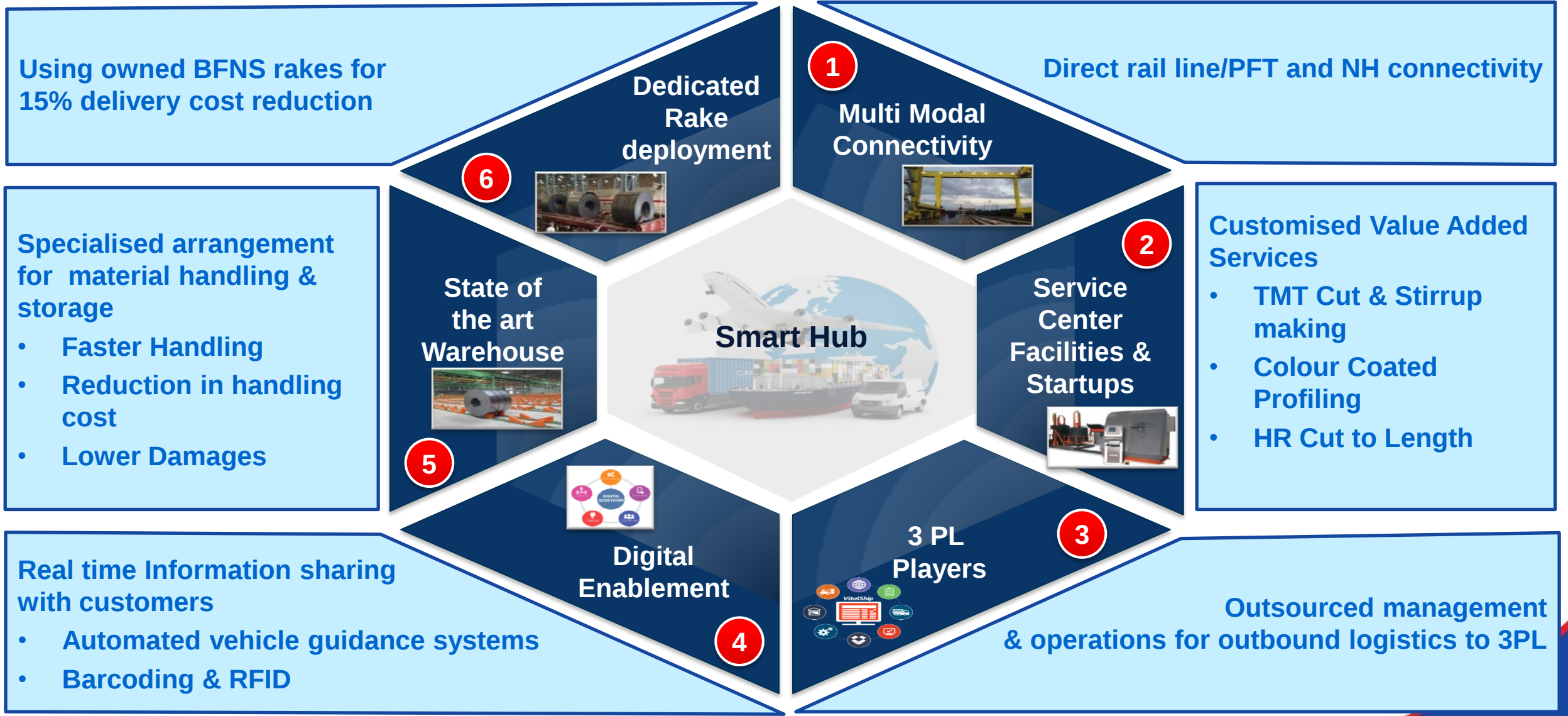


Private siding/PFT

* Co-existence of current stockyards

4

Smart logistics hubs will be state of the art, technology driven, providing value added services at lower operational costs



4

...and accompanied by smart distribution centers across the country with state of the art facilities following global best practices



Geo fenced warehouses



Quick invoicing through bar code scanners



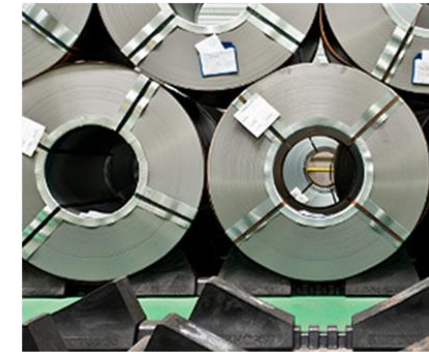
Appropriate and sufficient equipments for loading/unloading



PFTs as "first choice" for new warehouses



Improved security with CCTVs to record operations

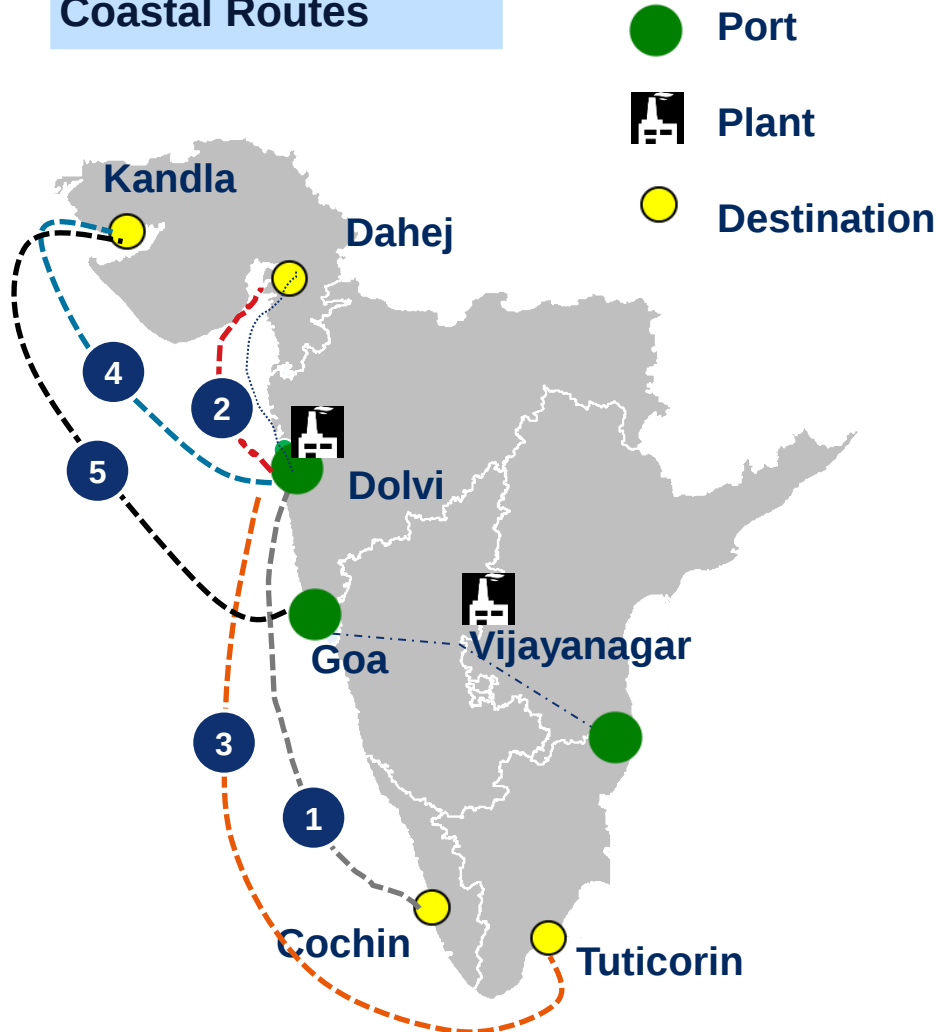


Best stacking practices at all warehouses

4

Coastal Movement: Project CORAL launched for utilizing vast coast line of India for FG movement

Coastal Routes



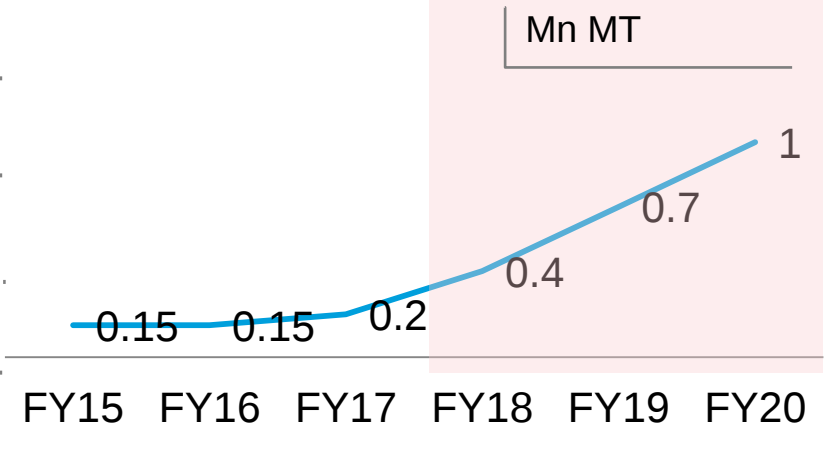
1 Dolvi - Cochin

2 Dolvi - Dahej

3 Dolvi - Tuticorin

4 Dolvi - Kandla

5 Vijaynagar - Kandla



Benefits

- Per MT cost through Coastal is lower by 30-40% than Road/ Rail cost
- Governments incentives on Coastal Shipping (Sagarmala project) not factored
- Bulk evacuation from plant
- Reduction in carbon foot print

Products planned under coastal movement

- HR Coil, TMT & WRC

- Positioning stockyards near ports will unlock further value – 4 coastal hubs planned

4

JSW is the first mover of TMT bar Coastal Shipments in India with state of the art handling facilities



4

Integrated engineered supply chain ensures resilience and continuous supply of raw materials for plant operations

▪ Strategically located ports

- Developed ports of Goa, Jaigarh and Dharamtar under JSW Infrastructure
- Jaigarh (cape compliant), Goa (dredging under progress)
- Long Term contract with Krishnapatnam

▪ Efficient operations

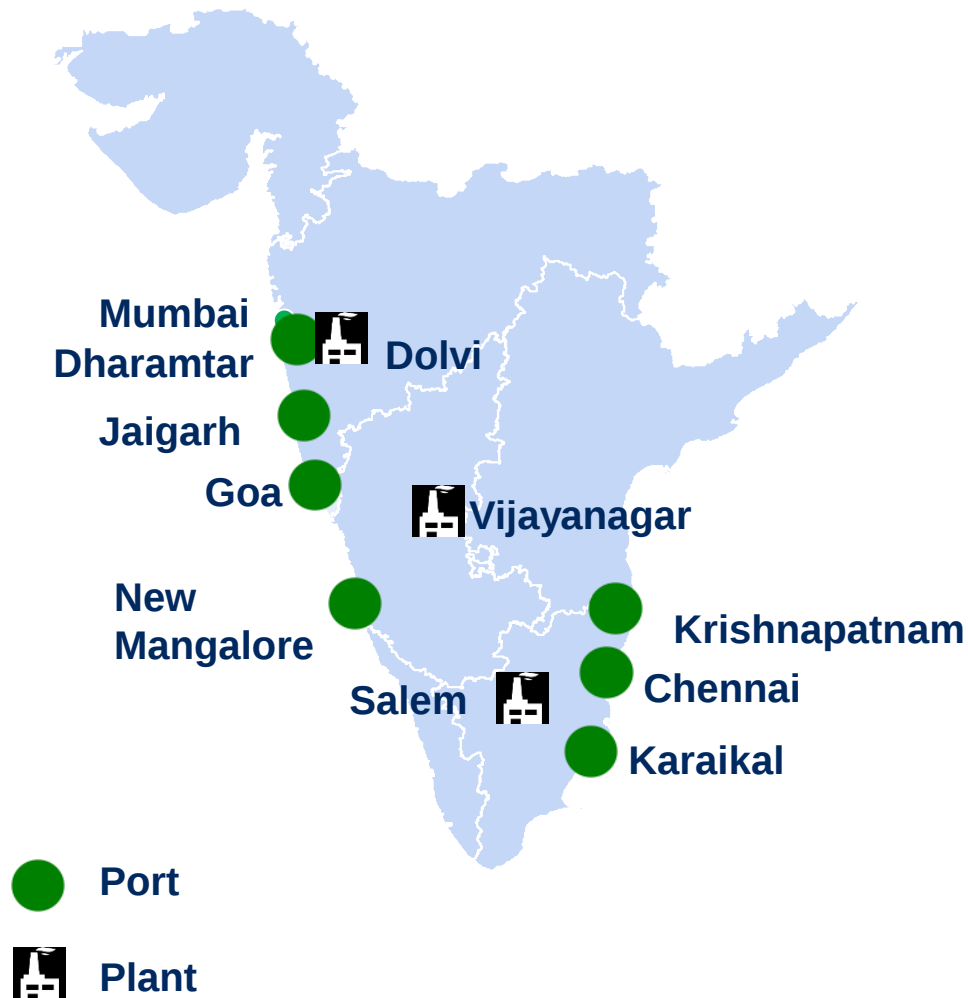
- Goa port is one of the most efficient per metre of berth length due to mechanised operations

▪ Dilution of risks from natural weather events

- Multiple port options with a mix of captive and alliances assures raw material security even in case of unforeseen circumstances

▪ Coastal location of Dolvi

- Limits multiple handling
- Direct feed from Dharamtar Port to plant
- Minimal handling loss



4

JSW adapts to changing customer needs as it increases its reach and penetration...

Objective

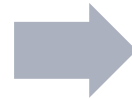
- Offer customised lot sizes
- Accept smaller lot sizes
- Reduced Delivery lead time
- Clear visibility of order status
- JIT Delivery

Increase in distribution hubs

Presently JSW has 25 stockyards across 19 locations in India and proposes to have 12 more stockyards to move closer to the customer

Size of stockyard

- Large stockyards
- Medium stockyards
- Small stockyards



Monthly sales quantity

- > 10k MnT
- 5k-10k MnT
- < 5k MnT

Increasing retail penetration

65% growth in retail presence in 2 years



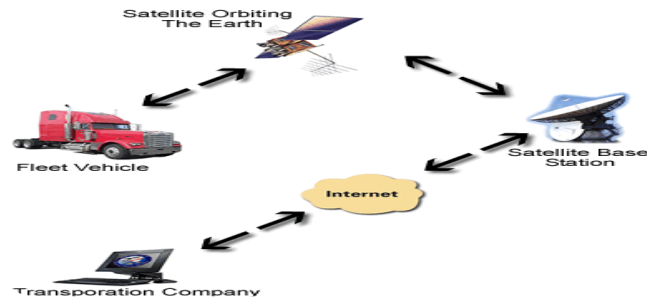
4

...while ensuring the integrity of the supply chain through enhanced security and handling measures



Dedicated Vehicles
-CR
dispatches
-650 GSM
Tarpaulin

**Open top
Container
Rakes for
critical
products**



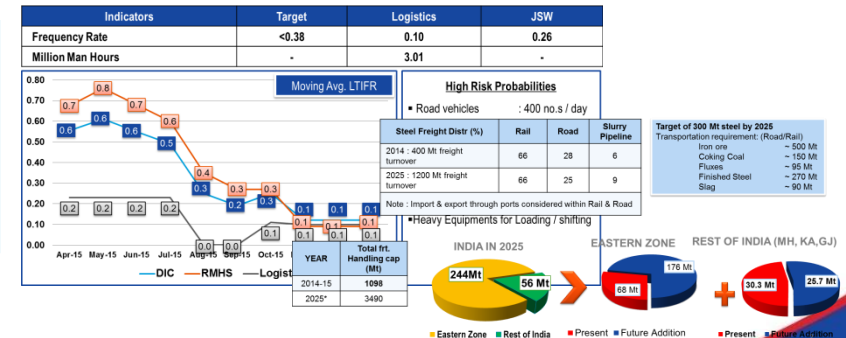
**Trace &
Track**

**Complaints
Redressal**



**Rubber
Saddles**

**Monitoring
KPIs**



5

Various policy issues are under discussion with Indian Railways yielding substantial savings



	Issue	Status
1	Revising Charges as per actual distance	Achieved
2	Short lead concession on freight	Achieved
3	Removal of Port Congestion Surcharge (PCS) of 10%	Achieved
4	Excise Weight consideration for Railway Receipts for all Steel Products	Achieved
5	Revising classification of Steel to class 140	In progress
6	Merry Go Round : Nandihalli to JSWT	In progress
7	Impractical Permissible Carrying Capacity (PCC) for Imported Coal/Coke	In progress
8	In-motion Weighment Policy	In progress
9	KK Line (Kirandul-Kottavalasa) Iron ore transport surcharge omission	In progress

6

Projects over the medium to long term are expected to yield value through operational efficiency

Making Jaigarh and Goa ports cape compliant



- Jaigarh Port: 15 mn MTPA (Cape compliant)
- The MoS has commenced cape dredging at Mormugao to berth large, cape-sized vessels

Lower demurrage and freight (~\$1-1.5/ton)

Expansion at Dharamtar Port



- Riverine terminal with 8 berths in line with a quay length of 1044 meters to handle 8,000 dead weight (DWT) mini bulk carriers

Quicker evacuation of barges, lower demurrage

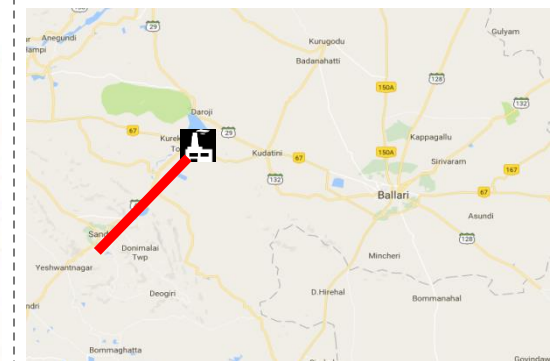
Investing in owned Mini Bulk Carriers



- 8000 tonner mini bulk carriers to arrive in February '17
- To ply between Jaigarh and Dharamtar ports

5-7 Rs/MT advantage in demurrage

Pipe Conveyor from mines to Vijaynagar



- Sandur to Vijayanagar
- Investment: 650 cr

Iron ore transport savings of 80-90%

6

Investments in owned wagons under LWIS scheme yields 15% freight benefit on rail movement



EXISTING WAGONS



PROPOSED WAGON

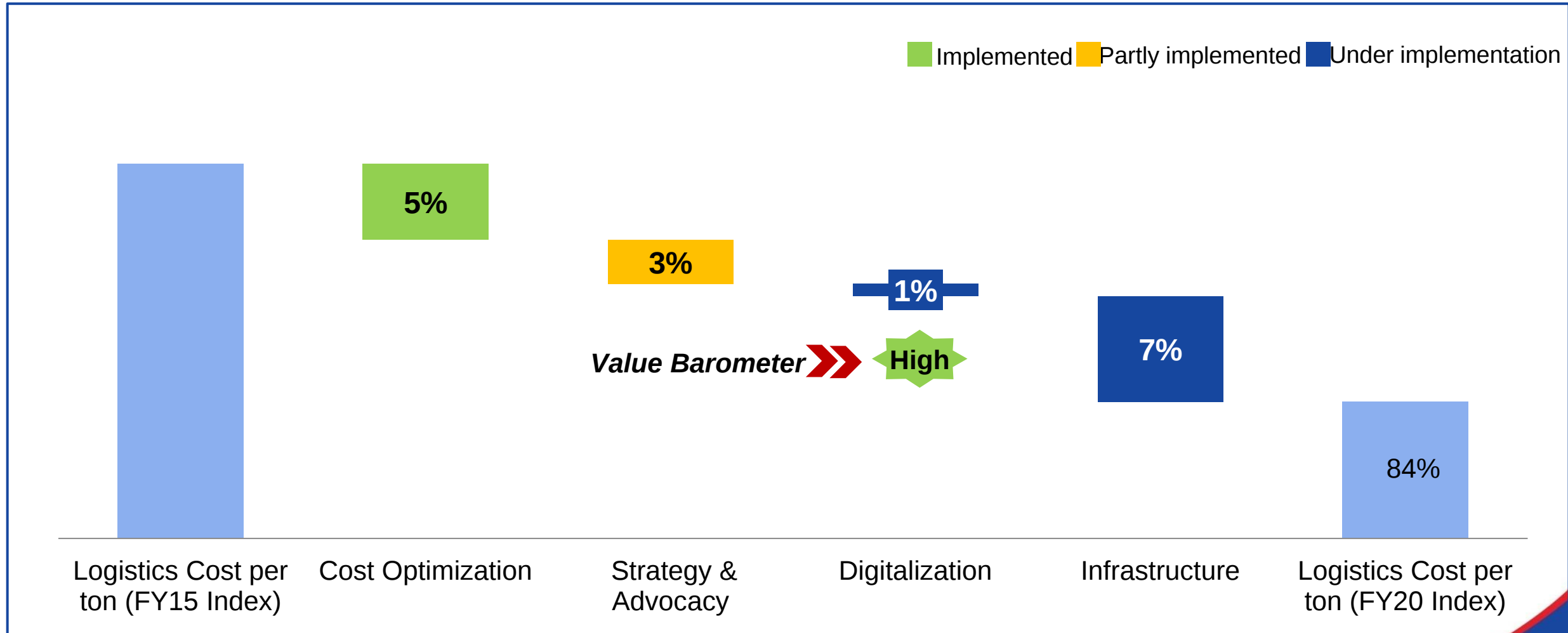
Objective

- Cost optimisation
- Improve availability of rakes
- No demurrage, reduced idle freight and unitization cost
- Improve service quality

Potential impact

- ~50% increase in HR Coil loading capacity
- Rake demurrage reduction to zero
- Reduction in loading/unitization cost
- Fewer rakes handled increases operating efficiency
- 6% Reduction in idle freight by optimizing coil weight as per wagon loading capacity

Through this transformation process JSW aims to enhance the value gain across the supply chain with cost optimization of ~15%



Thank you