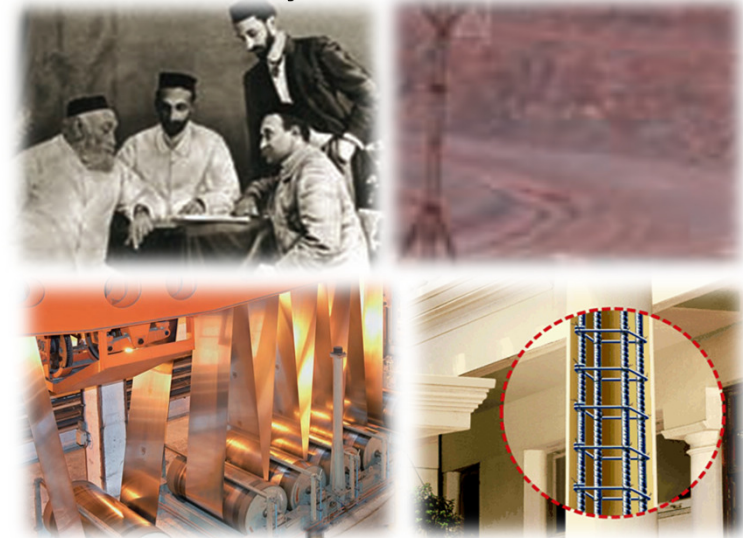




Supply Chain & Logistics Evolution at Tata Steel

Prasanna Kumar Jha
Tata Steel Ltd.

A century of **Trust**





Prasanna Kumar Jha

- 21 years of experience in Steel Operations and Supply Chain Management.
- TOCICO Certified Practitioner in Supply Chain and Project Management. Additionally a certified Six Sigma Black Belt
- Involved in implementation and institutionalisation of Supply Chain, Logistics and Project Management solutions at Tata Steel.
- Instrumental in implementing Replenishment solution in Flat Products Division of Tata Steel.
- Also involved in execution of around 300 maintenance and sustenance projects using CCPM.
- Holds a post graduate degree in Business Management with specialisation in Systems and Marketing



Head TQM TOC (Tata Steel Ltd.)

prasannakjha@gmail.com

pk.jha@tatasteel.com

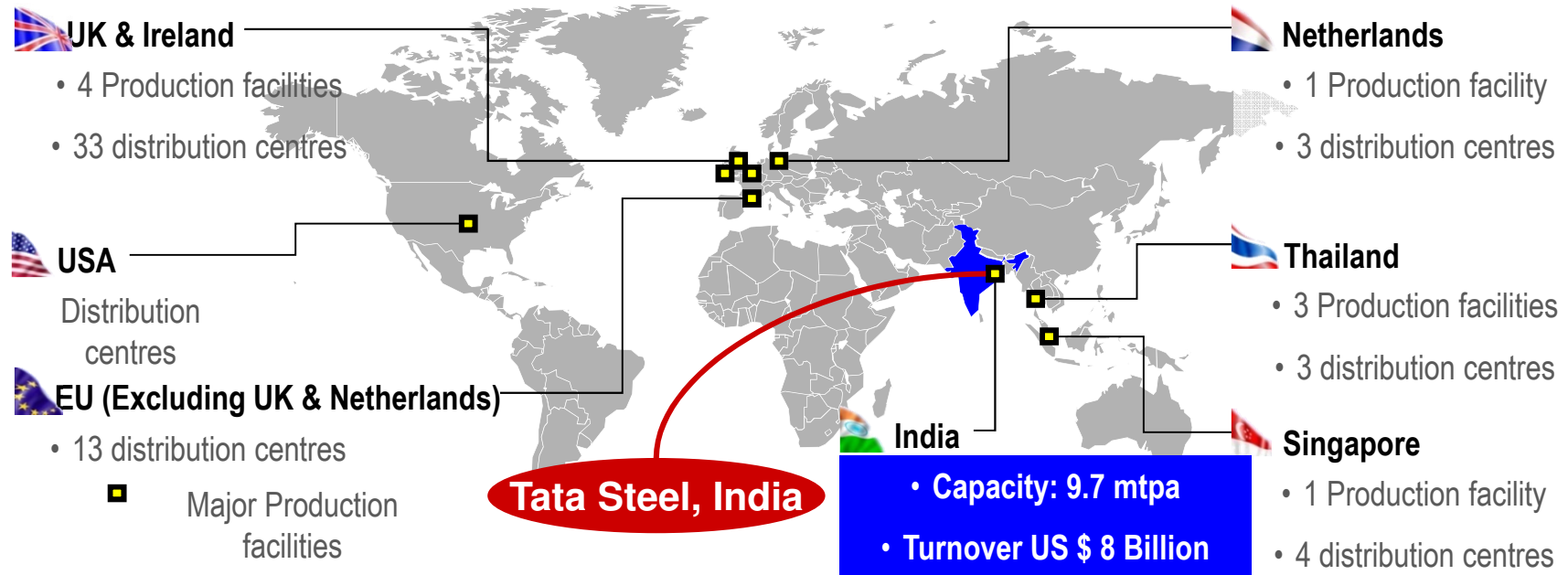


Agenda:

- **Organisation Profile**
- **Supply Chain and Logistics Evolution**
 - ✓ Availability- A significant customer need
 - ✓ Problem identification – 2006
 - ✓ Understanding root cause
 - ✓ Change in measurement- Commitment to availability
 - ✓ FY10-FY12 – Focus on improving channel availability
 - ✓ Availability at Dealers' outlets
 - ✓ Transforming distributors and dealers
 - ✓ Effects



Organisation Profile- Tata Group and Tata Steel Group



Tata Group

- 144 years old
- 114 companies, 425000 employees

Tata Steel Group

- 2nd Largest revenue earner in Tata Steel group – Turnover US \$ 26.13 Billion (FY12)



TATA STEEL



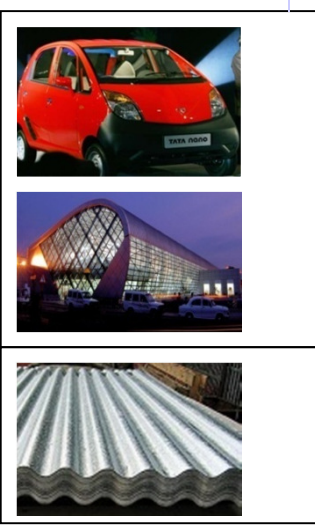
Key Customers

Application

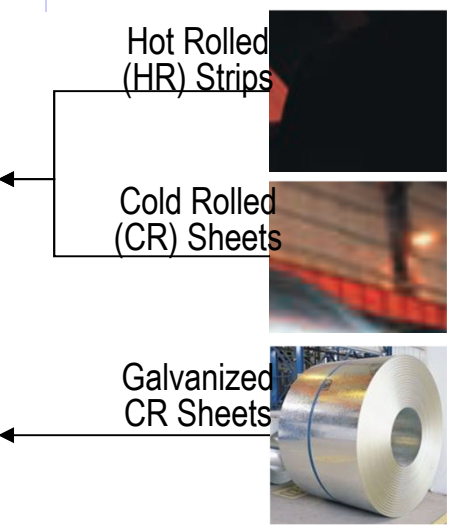
Unique offering

Focused segment

Products



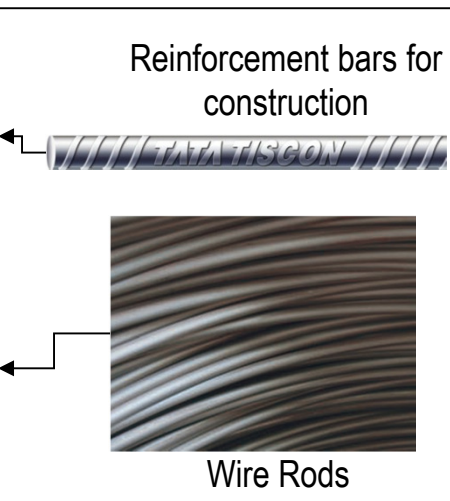
- Tata Shaktee retail
- Auto,
 - Construction industries
 - General Engineering, Appliances
 - Industry
 - Housing Applications



Flat Products



- steeljunction
- Large construction projects
 - Individual houses
 - Fastners
 - Tyre bead wire
 - Construction electrodes
 - Springs



Long Products



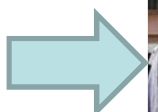
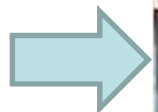
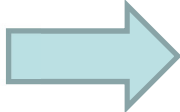
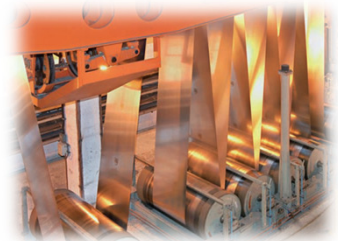
Tata Steel India – Retail Sales Channel

PLAN

DISTRIBUTOR

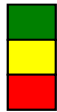
DEALER

CONSUMER



**70
Distributors
spread
across the
country**

**7500
Dealers
across
the
country**



Stock



Agenda:

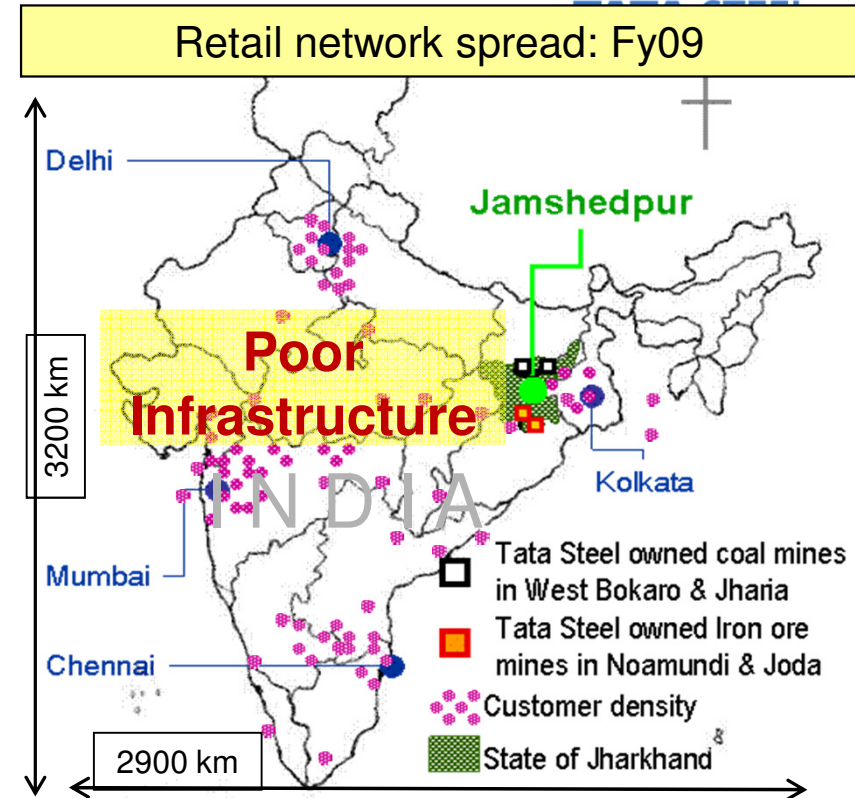
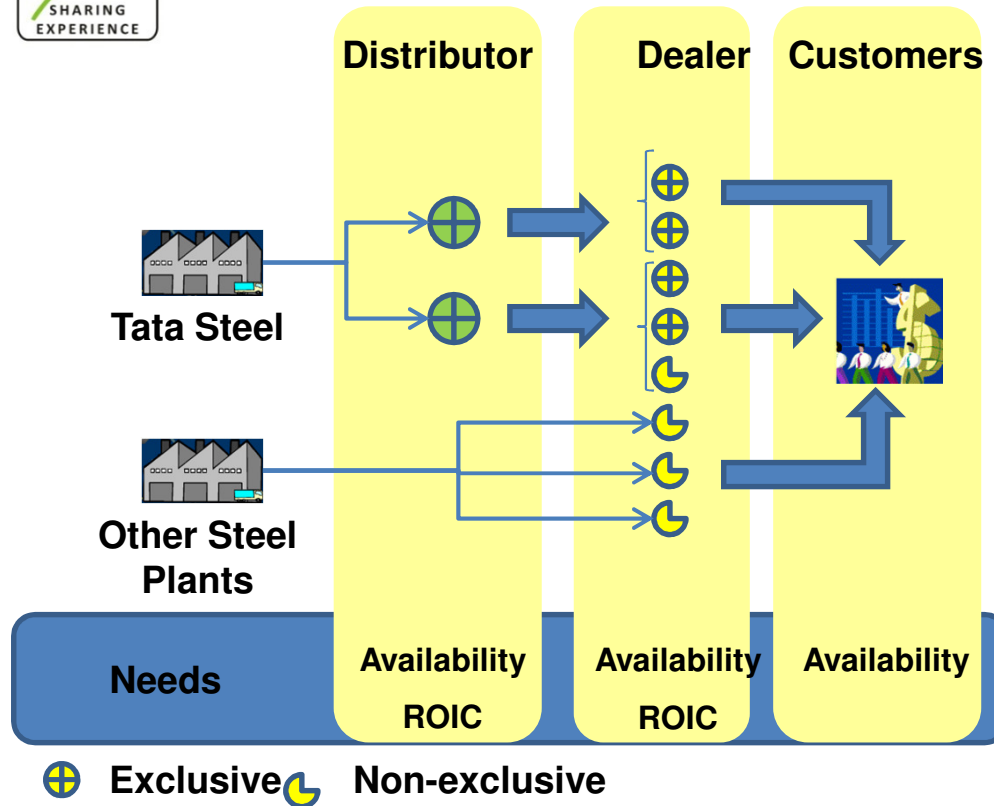
- **Organisation Profile**

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Availability – A Significant customer need



- Due to poor infrastructure in India and internal constraints, no steel manufacturers were offering availability to customers.
 - Availability was not even measured in Tata Steel till FY-06
- Customers had no choice but to keep high inventory to protect their interest, even then stock-out was common

A Decisive Competitive Edge (DCE) can be created with very high availability with very low inventory, which no other significant competitor can give



Voice of Customer strengthened by Customer Satisfaction survey & QFD

Retail shops – We **lose sales** due to stock outs because consumers buy the brand whose complete section-mix is **available off-the-shelf**.

COUNTERMEASURE

Distributors & Retailers would keep more stocks

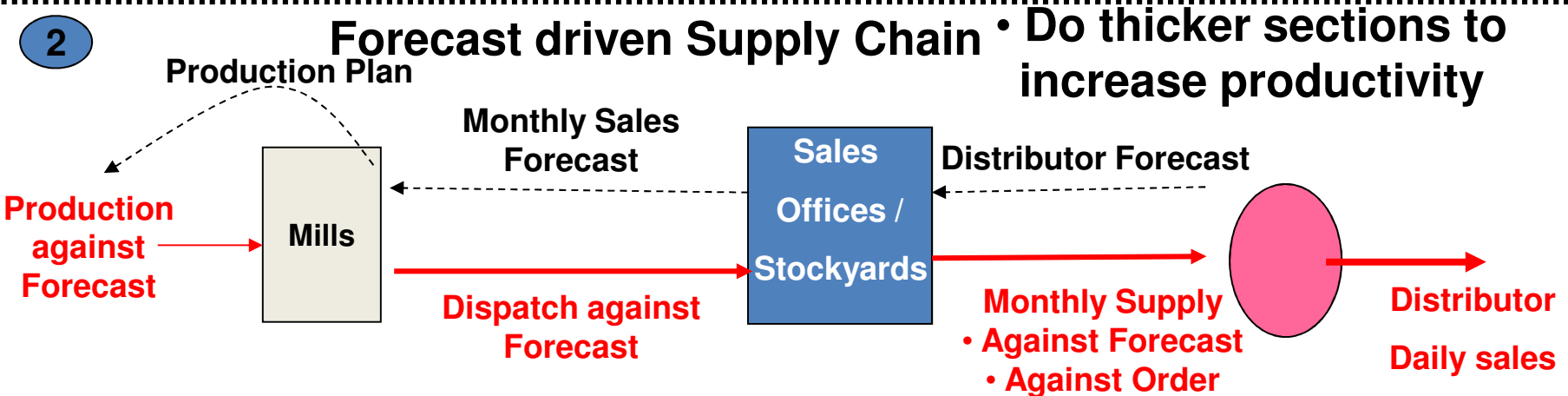
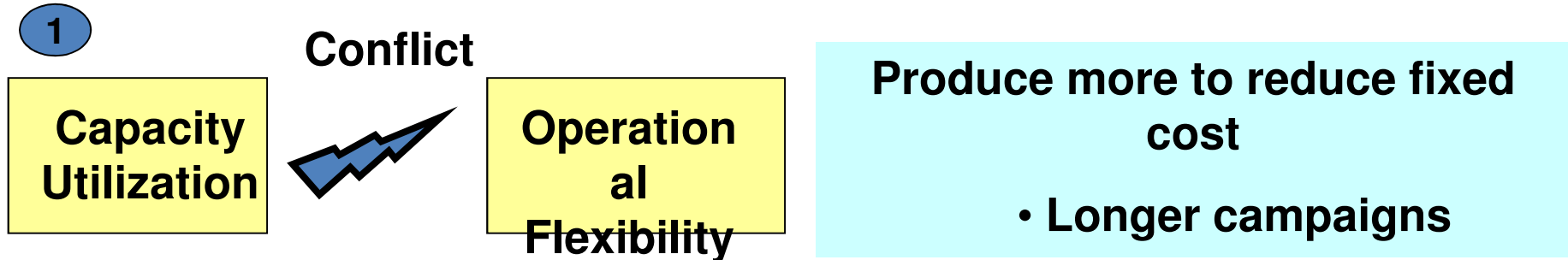
Situation in 2006

	Tata Steel	Distributor	Retailer
Inventory (Total 75 Days)	15	25	40
Stock out %		30-40%	40-50%

Other Related issues

- Additional Space for storage
- De-gradation of material
- Pilferage

Task force formulation with cross- functional members



The solution

1. Align measurement systems from customers' point of view to support the above action
2. Supply against actual daily consumption by the customers – A replenishment model



Change in measurement – Commitment to Availability

Old measurement : Despatch Compliance = Compliance against a final despatch week at an item level against sales order or stock transfer order

New measurement : Availability= Physical availability of stock at distributors/dealers yard at an SKU level for a month

Example: Distributor stock status for a day

6	8	10	12	16	20	25	DIST Name	GRADE	6
11	153	68	8	147	19	20	DESON MKTG JHARGRAM	FE500D	40
2	256	48	15	196	26	22	NANDAN SAHA STEEL CHANDPARA	FE500D	40
52	535	0	344	227	35	55	BMW VENTURE LTD PATNA	FE500D	55
19	103	19	2	69	23	29	SILIGURI BUILDERS PVT LTD SILIGURI	500SD	43

Calculation:

$$\sum \text{stockout day opportunities} = 28$$

$$\sum \text{stockout days} = 1$$

$$\% \text{ stockout} = ((28-1)/28)*100 = 96.5\%$$

$$\text{tockout} = ((28-1)/28)*100 = 96.5\%$$



Supply against actual consumption by customers

Challenges

Consumption variability

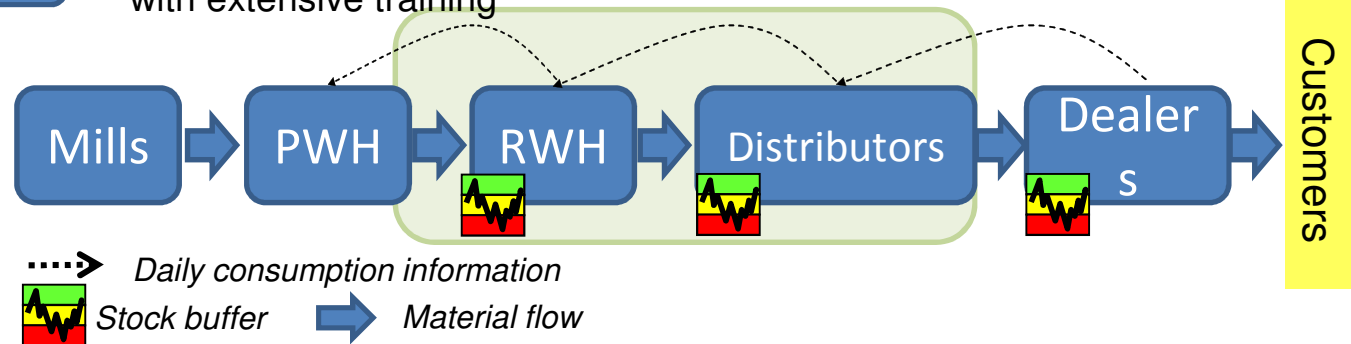
Changing roles of distributors from chasers to value creators

IT for uneducated users

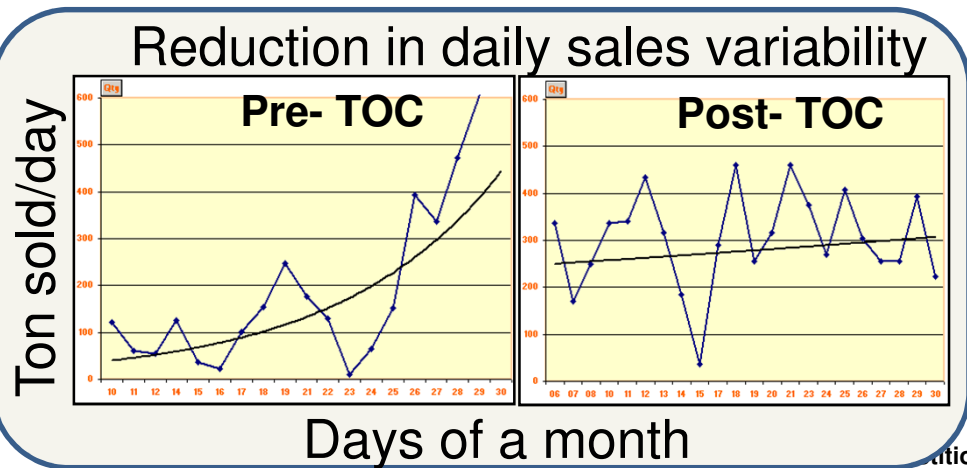
Countermeasures

- Define buffer stocks based on aggregation principles
- Education and training for the sales force, Distributors
- Provide consumption data daily to Tata Steel to replenish.
- IT enablement of data flowing all across the country.
- In-house developed accounting package “Ex-package” for the distributors with extensive training

Pull based supply chain



Effects



By FY-09:
Availability:
63% to 80%

System Inventory:
80 to 45 days

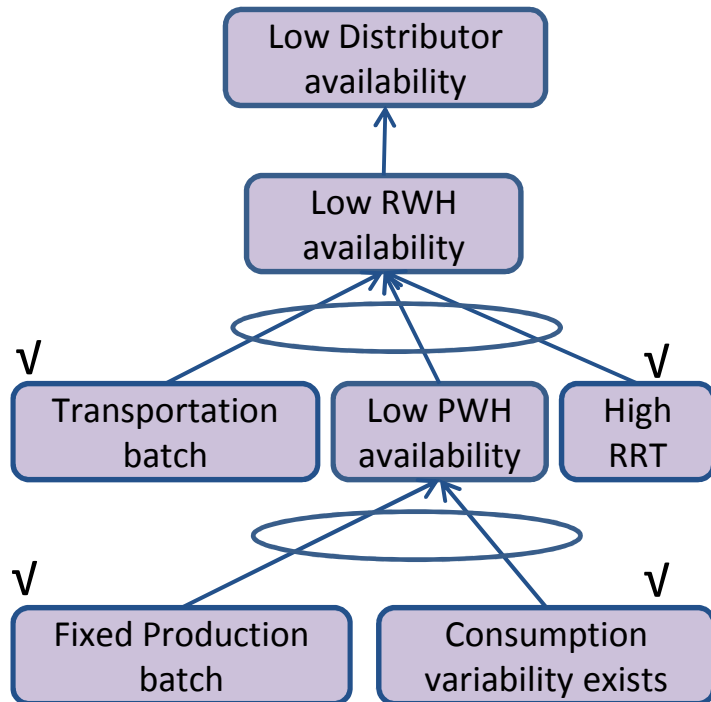
Remaining problems

- All links of supply chain not covered
- Availability at distributor still much below target of 95%



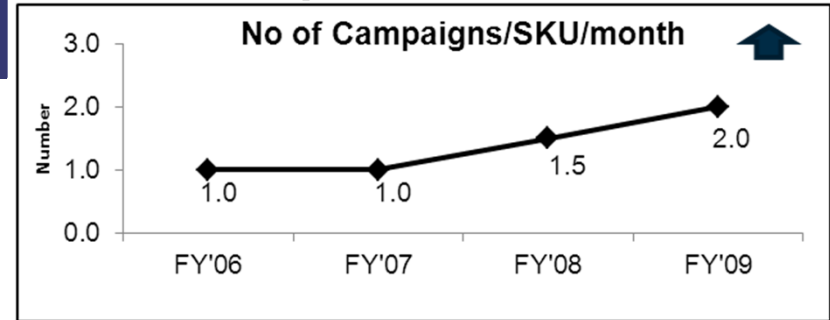
FY10 to FY12 – Focus on improving channel availability

Causal analysis of past period



Problem areas 1

Fixed production batch



Action Plan

Aligning production to market needs:

- Produce only to fill buffer

Stock depletion at Plant Ware House (NBM)

Sep'09 days →		1	2	3	4	5	6
SKUs	10mm	72%	43%	14%	-25%	-48%	-35%
	12mm	22%	35%	38%	50%	55%	54%
	16mm	21%	25%	29%	41%	60%	82%

Section change

Challenge Loss of production due to setup

e

- Projects to reduce setup time₁

FY10 to FY12 – Focus on improving channel availability

Problem areas 2

Action Plan

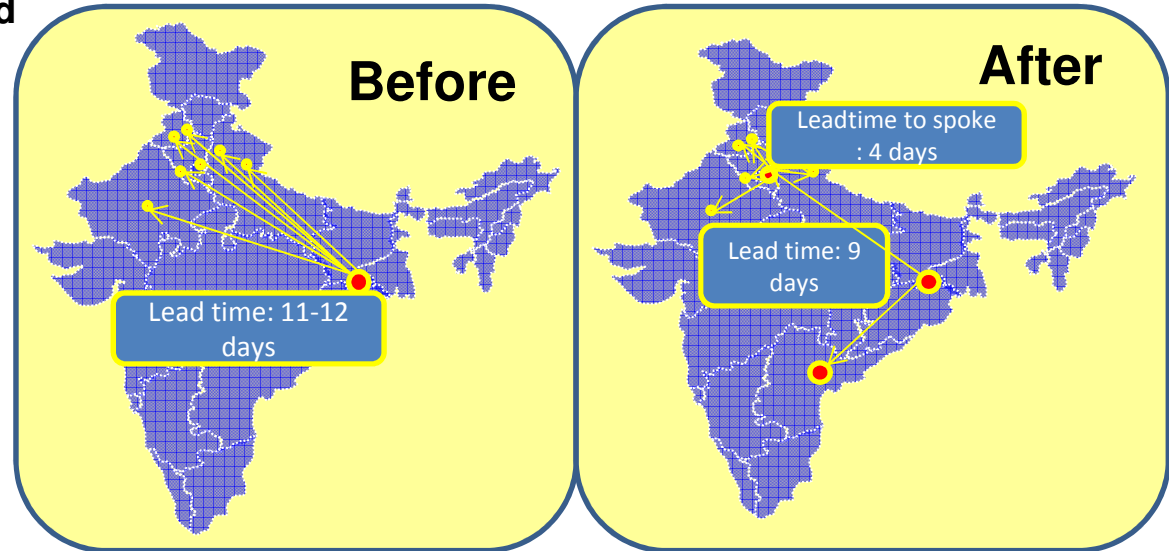
Challenge

Large transport batch and high lead time

Redesigning of supply network

Increased cost:

Planned to cover through low inventory and enhanced sales



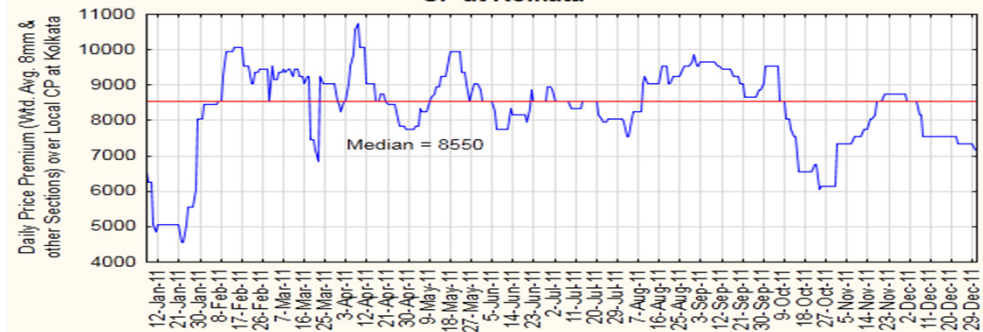
Problem areas 3

Action Plan

Consumption variability

- Demand management through capacity and market buffer concept
- Demand management through pricing:

Run Chart of: Daily Price Premium (Wtd. Avg. 8mm & other Sections) over Local CP at Kolkata

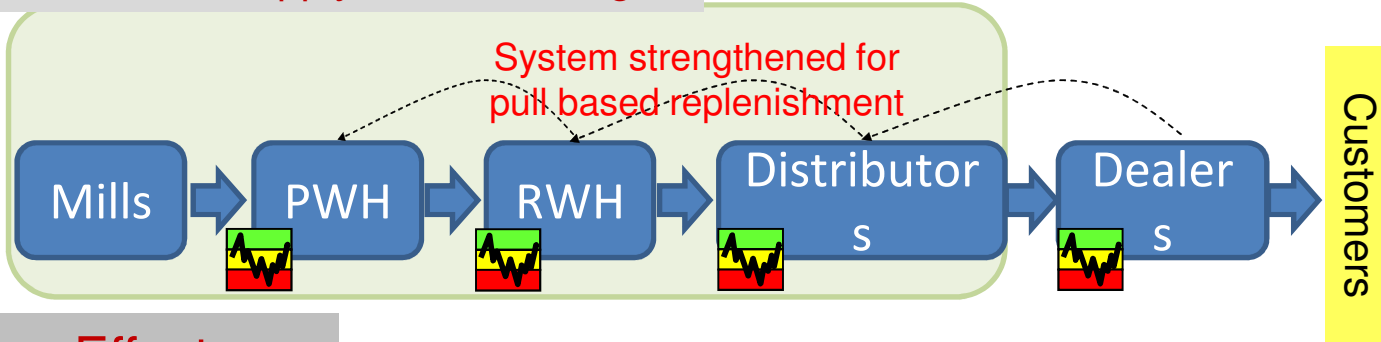




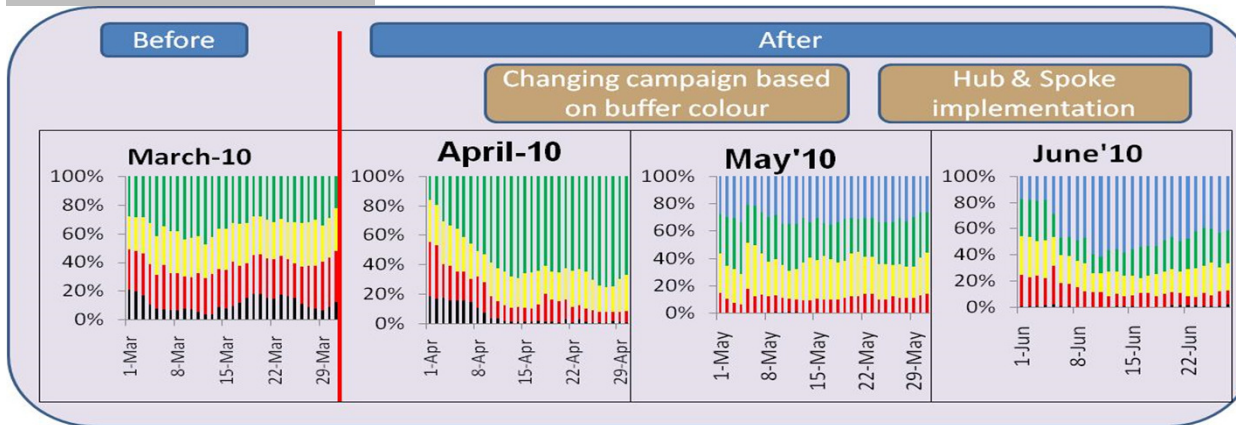
Changes and its effect in FY11



Pull based supply chain coverage



Effects



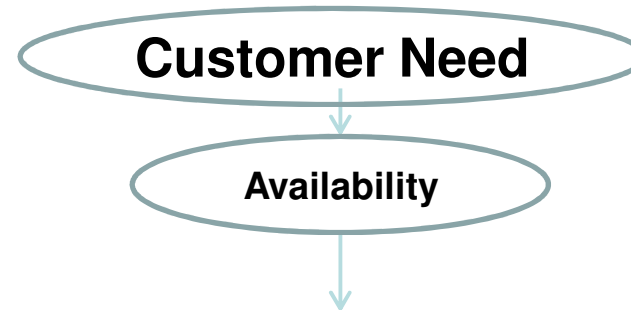
- Focused actions resulted into coverage of the entire supply chain under pull based replenishment process

By FY-11:
Availability: 80% to 98%

- Remaining problems:
- Availability at dealers during FY'11 was still at 94%



Availability at Dealer Outlets



Problems/Abnormality

Present Problem:- Large number of Days of stockouts & Moderately High Month-to-Month Variation in Dealer Availability (Coefficient of Variation (CV%) is 4.5% (Apr-Oct Fy12)).

Challenges Associated

Large All India Dealer Network of around 3,500 Dealers with a wide Geographic Reach in all Districts.

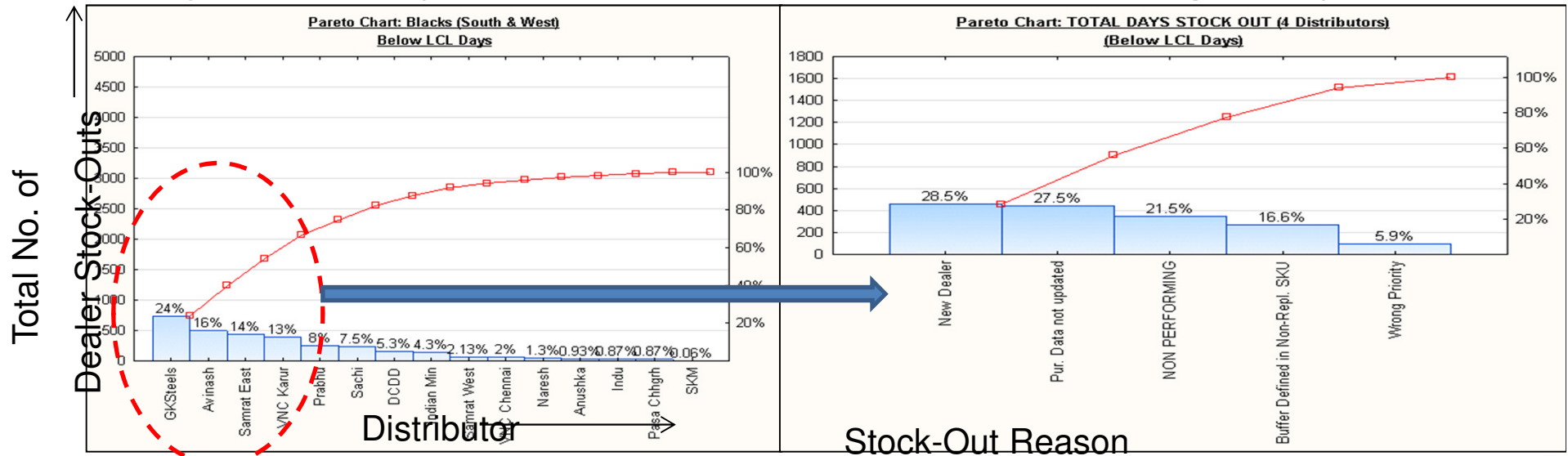
Buffer Management as per changing consumption trends

Variation and Uncertainties in Transportation leading to high RRT variation (Reliable Replenishment Time).



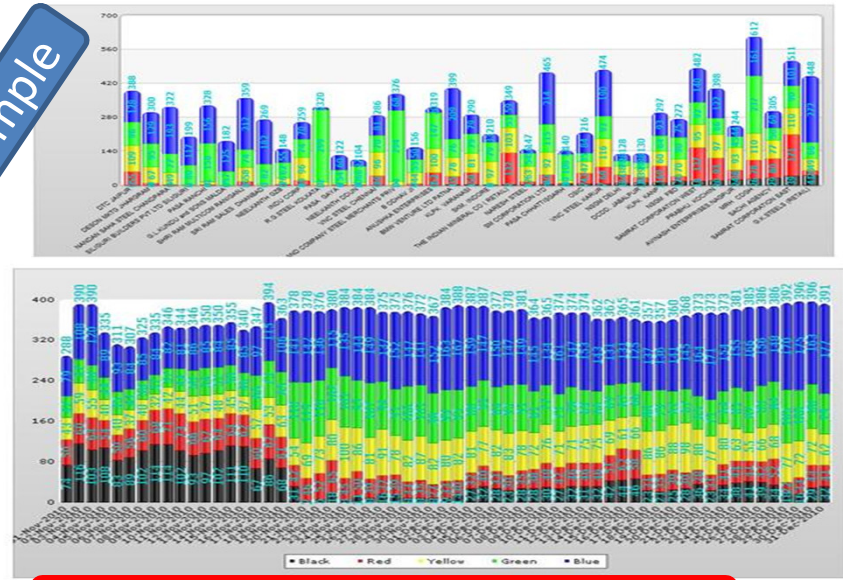
Analysis of Dealer Availability – FY12

High Stock-Out Days – distributorwise for dealers: IT enabled flow disruptor analysis



- Counter-measures**
- Buffer level for New Dealers to be defined as 0.001 for the initial trial period till sales stabilization
 - Prioritization rules set for Dealers based on Categorization
 - IT-enabled Visualization & Monitoring started for different categories of Dealers.
 - Flow Disruptor analysis to identify reasons for Stock-outs on a day to day basis

Example

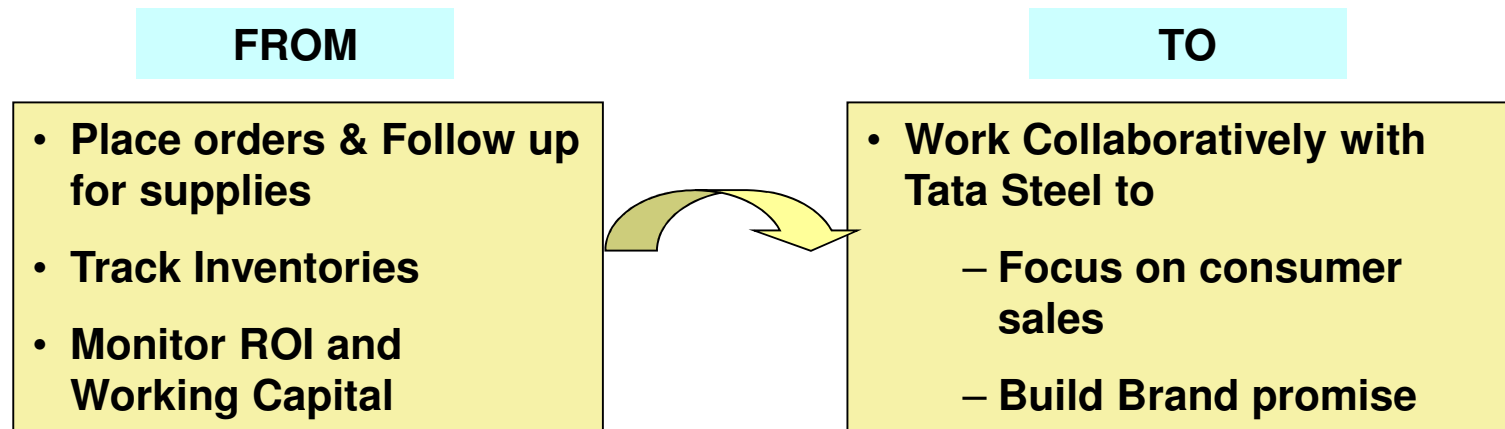


Buffer color based monitoring



Transforming Distributors and Dealers

Changing role of the Distributors & Retailers



Key Enablers

- Education and training for the sales force, Distributors and Retailers
- Distributor & Retailer has to provide consumption data daily for Tata Steel to replenish accordingly. This was not possible without IT enablement of data flowing all across the country.



Visibility across the channel through IT

Challenges Faced

- Spread to Remote locations where Connectivity is a concern
- Retailers and Distributors were uneducated

Countermeasures

- Mobile based SMS option for the retailers
- In-house developed accounting package “Ex-package” for the distributors

The screenshot shows the TOC DASHBOARD interface. At the top, it features the TATA logo on the left, the title "TOC DASHBOARD" in the center, and another TATA logo on the right. Below the title, it says "Version 2.1 Copyright 2007 Information Technology Services, TATA STEEL All Rights Reserved" and "Where you come first".

The main content area includes a date picker set to "3/21/2013" with a "Go" button. Below this, there is a navigation menu with several categories:

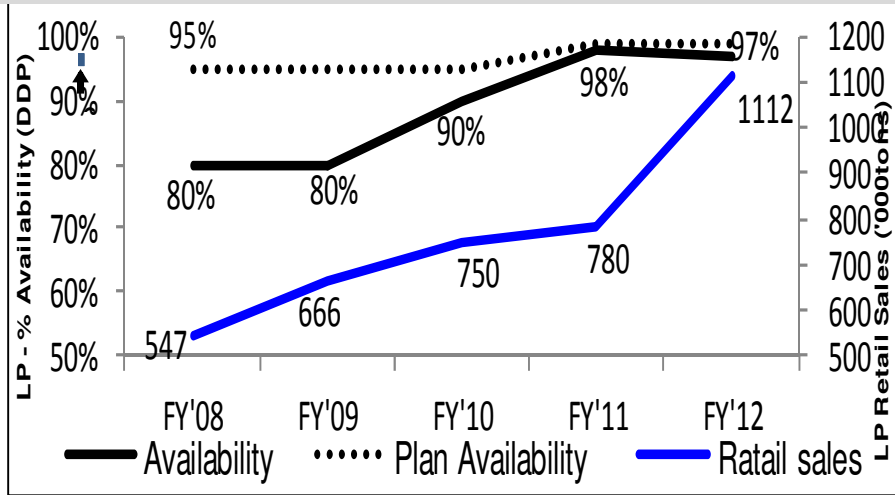
- BUFFER PENETRATION**: FlatProducts., Wires, Tubes., CSI**, Inbound SCM, Bearings., Procurement, Agrico
- CONSUMPTION GRAPH**: Tubes/Flat/Wires, CSI**
- TOO MUCH RED**: Tubes
- EIS/MIS**: Common.., Flat.., Long.., Tubes., Wires., Bearin, CSD..
- Help Line**: Upgraded LPSCM System.., Distributor MIS., Dealer MIS., Dealer E-Connect, Dealer Buffer Penetration, Flash Report-DEALER, Data Sending Compliance, Dealer Categorization Graph, Summary Report for Dealer Categorization
- NEWS**



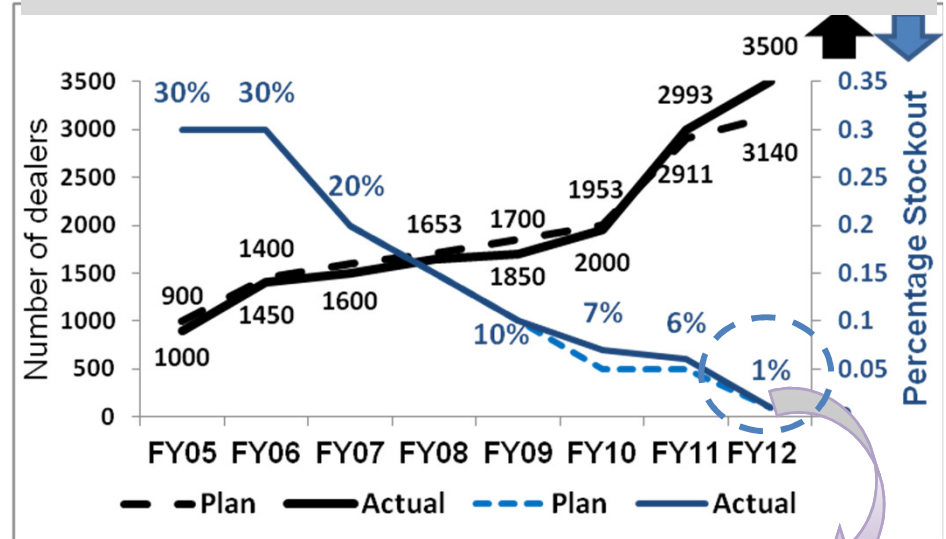
Effects



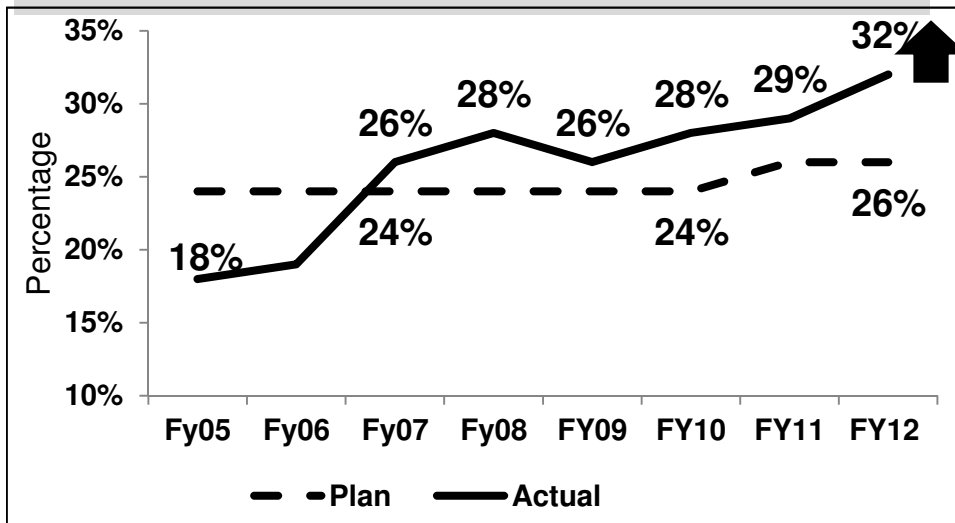
Availability of distributors & retail sales



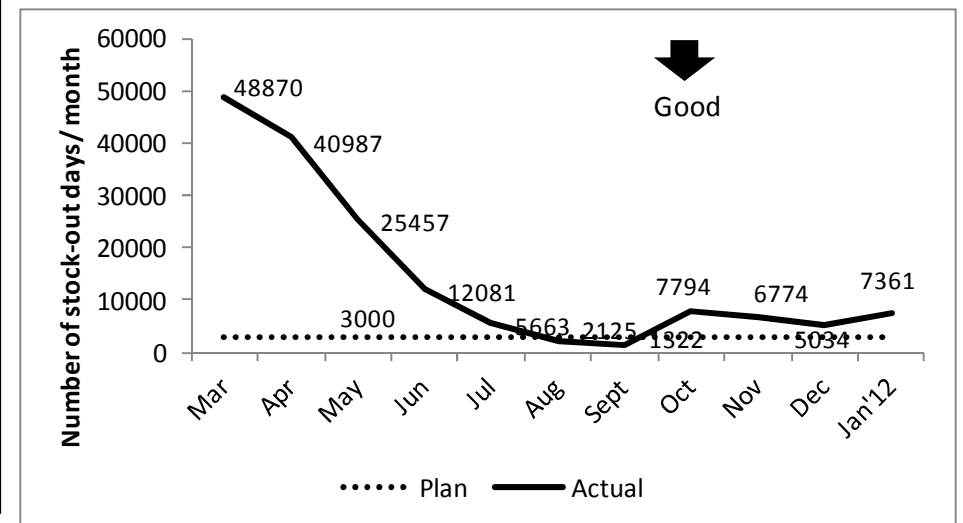
Number of dealers and stock out



ROIC at Distributors

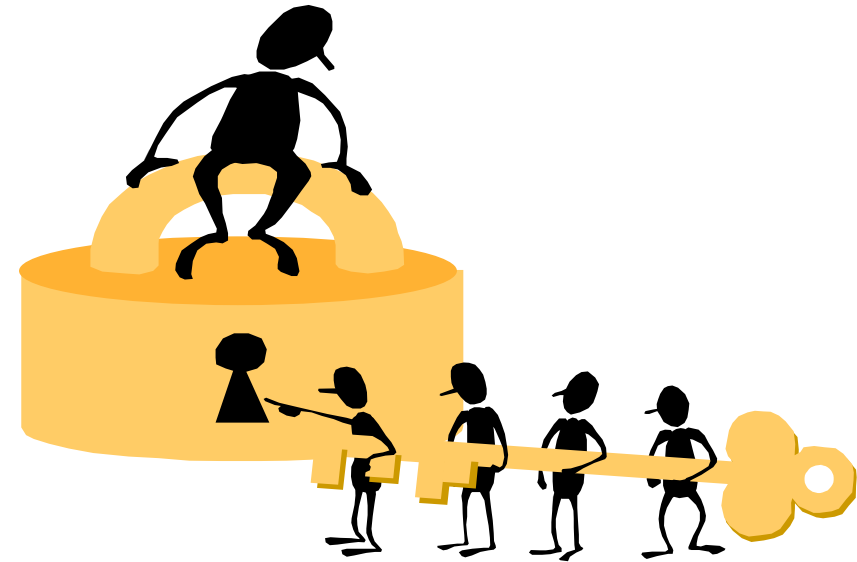


Number of stock out at dealers





Challenges Ahead: Sustaining the organisational energy



Thank you

Will be happy to take any question...