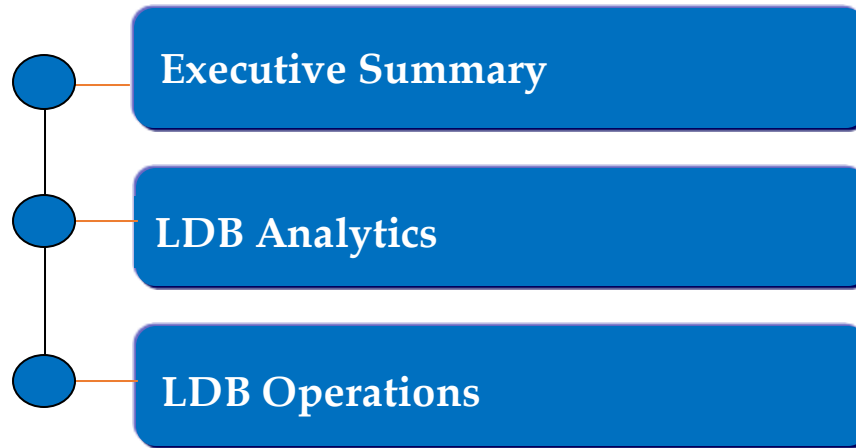


DLDS

LDB Analytics Annual Report for JNPT

Oct 2016- Sep 2017





DLDS's Logistics Databank Project(LDB) is currently providing Container visibility services for more than 70% of India's Container Volume and as on date has provided services for more than **5 million EXIM Containers of India** in the western corridor starting from the port till the ICD's through a single window.

DLDS Analytics Report which is being published for the trade has been able to provide insights to the stakeholders in terms of identification of various challenges leading to increase in Time & Inefficiencies/ bottlenecks .The Performance Benchmarking has helped in inculcating competition to provide better services.

DLDS started publishing Analytics starting Oct 2016 and the reports have been able to bring in Visibility to the Stakeholders across JNPT Region enabling them in improvising the key performance Indicators as below:

- Improvement in the Dwell Time of Port terminals, Inland Container Depots, Container Freight stations.
- Congestion Analysis have helped in identification of areas of challenges to be addressed between Port Terminals & CFS/ ICD's for both Truck bound and Train bound container movement.
- Bringing more Accountability of the stakeholders across the supply chain.
- Inculcating competition to promote better Logistics Services.
- Due to heavy monsoon rain, July-August September (JAS 2017) quarter saw a comparative dip in performance in JNPT Mumbai region in comparison to the earlier timelines.



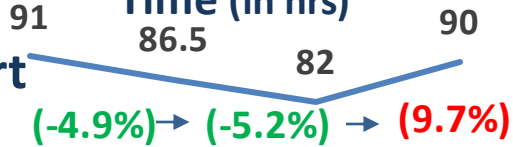
Executive Summary- JNPT Dwell Time Performance



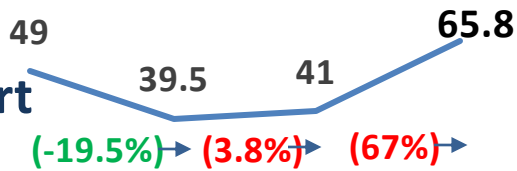
JNPT Region Port Dwell

Time (in hrs)

Export



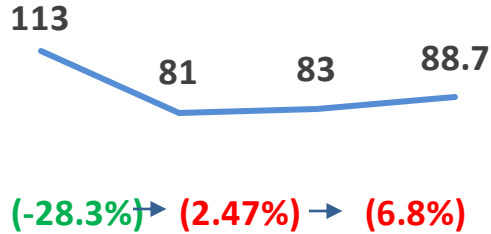
Import



OND'16 JFM'17 AMJ'17 JAS'17*



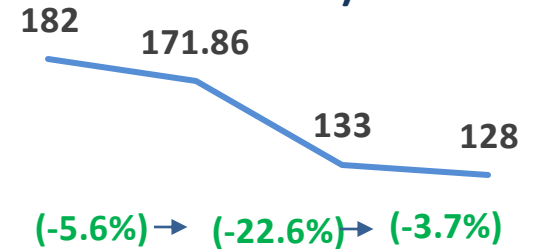
CFS Dwell time : JNPT Region (in hrs)



OND'16 JFM'17 AMJ'17 JAS'17



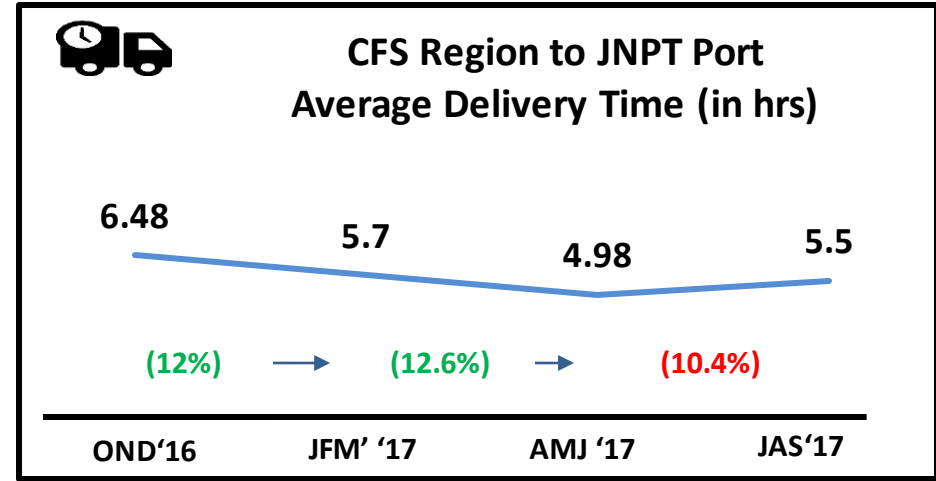
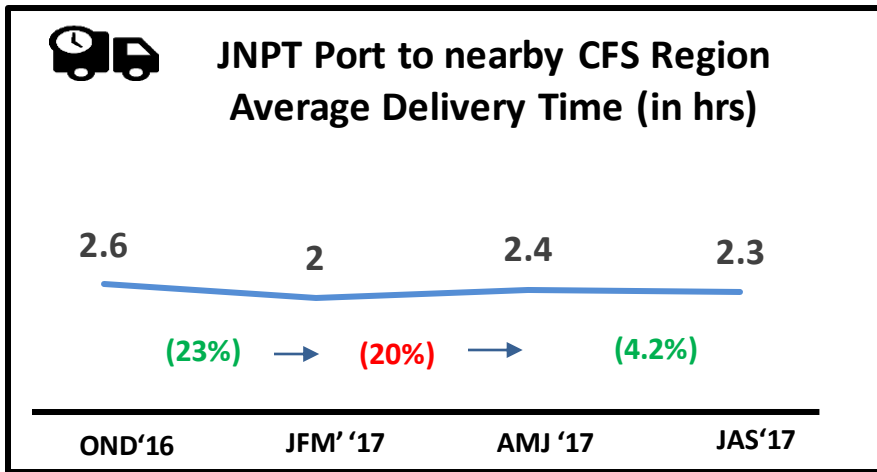
ICD Dwell time (in hrs)



OND'16 JFM'17 AMJ'17 JAS'17

- The Dwell Time of Port terminals of JNPT region (JNPCT, APM, NSICT, NSIGT) which was around **91 hours during the Oct Nov Dec -2016 (OND 16) quarter** saw an **improvement of 10 %** until April-May-Jun (AMJ 17) 2017 quarter prior to Monsoons and is currently recorded at 90 hours.
- There has been an 22% improvement in the Dwell Time of the Container Freight stations across the JNPT Region starting OND 16 quarter..
- Continuous improvement in Inland Container Depots Dwell Time which has currently improved to around **30 %** in comparison to its performance during the Oct-Nov-Dec 2016 Quarter.
- Other than Monsoons, during the July-August-September (JAS 17) Quarter , APM Terminals Mumbai was hit by Ransomeware virus leading to increased Dwell Time of the Port Terminal.

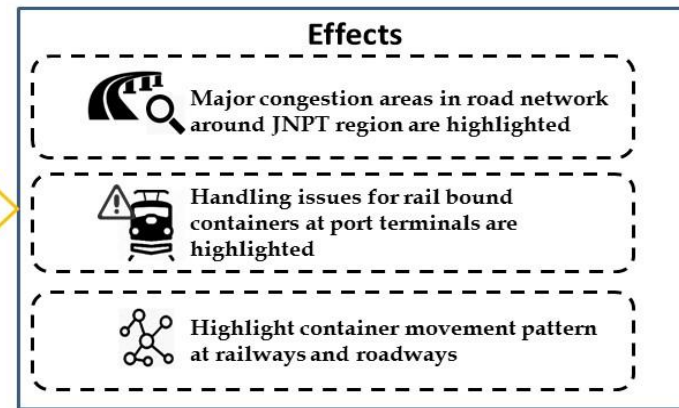
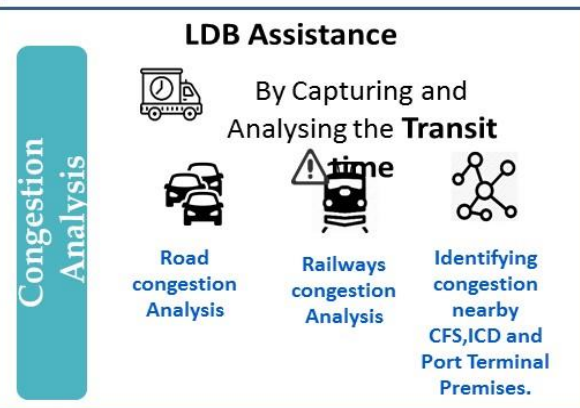
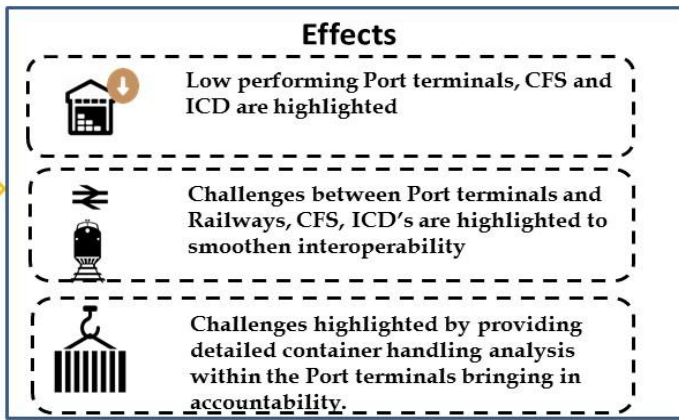
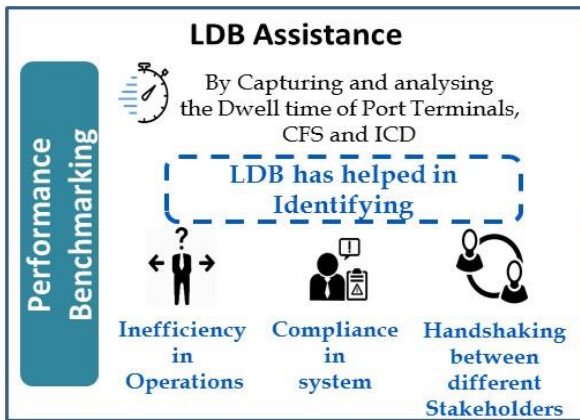




- **12.5 % improvement** in the transit time of Container Movement from JNPT Port terminals & nearby Container Freight Stations (CFS).
- **15 % improvement** in the transit time of Container Movement from Container Freight Stations to JNPT Port terminals.
- Due to Congestions as well as early arrival of trailers around JNPT region, there is increase in Container Delivery time from CFS- Port in comparison to movement of Containers from Port-CFS.
- DLDS has categorized various CFS around the JNPT region in smaller clusters (areas) to help in identifying the clusters with maximum congestions resulting in overall high delivery time and same is being published on a monthly basis to the relevant stakeholders.



- LDB is one of the key projects featured in Indo Japan Global partnership Summit and the project featured in the joint statement issued by the Hon'ble PM's of India & Japan during Japanese PM visit to India in Sep 2017 as well as in December 2015.
- LDB Project won the Express Logistics & Supply Chain Leadership Award for providing Best in Class Visibility across the supply chain.



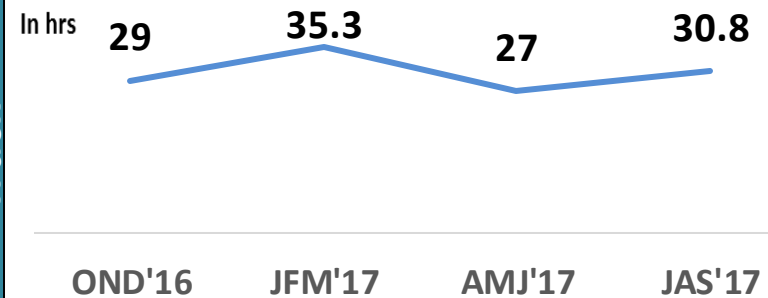
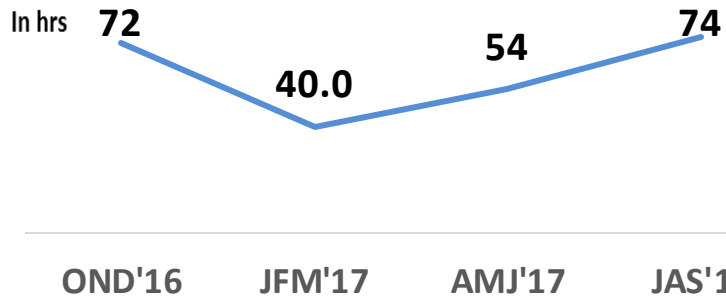
By bringing in Visibility & Transparency across Supply Chain, LDB is helping the trade in streamlining the processes and bringing in efficiencies.



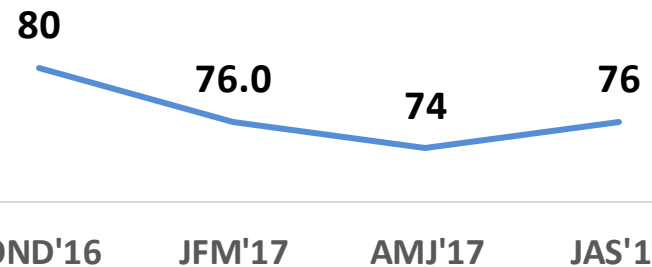
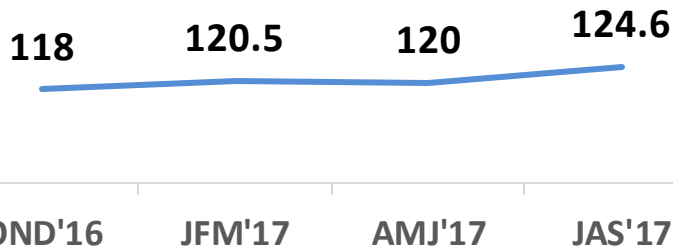
Best Performing Terminal: JNPCT Port Terminal

JNPCT is the top performing terminal in comparison to the other port terminals in JNPT from OND'16 to JAS'17.

IMPORT CYCLE



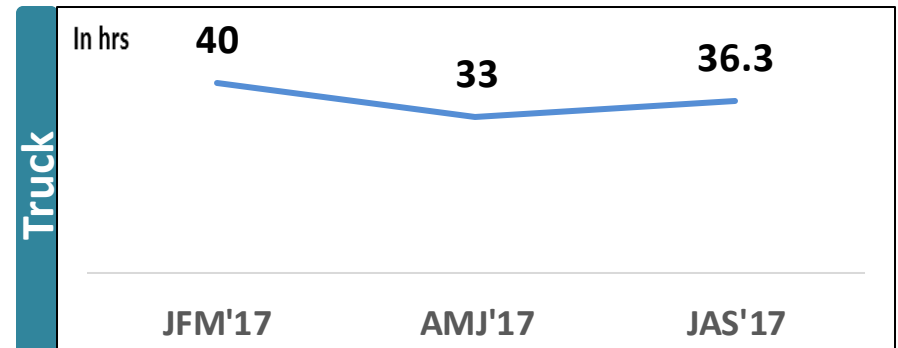
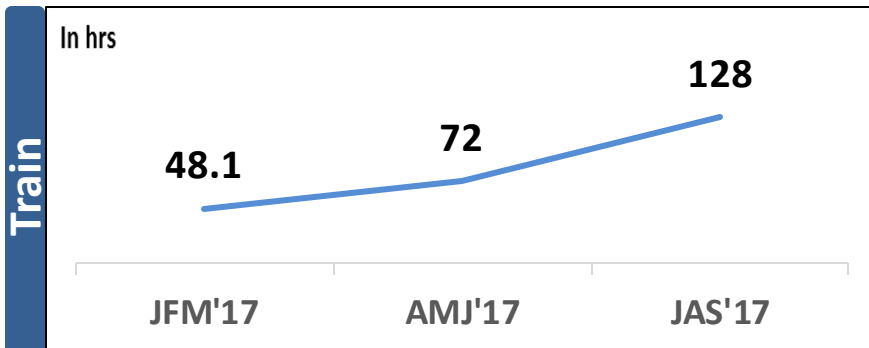
EXPORT CYCLE



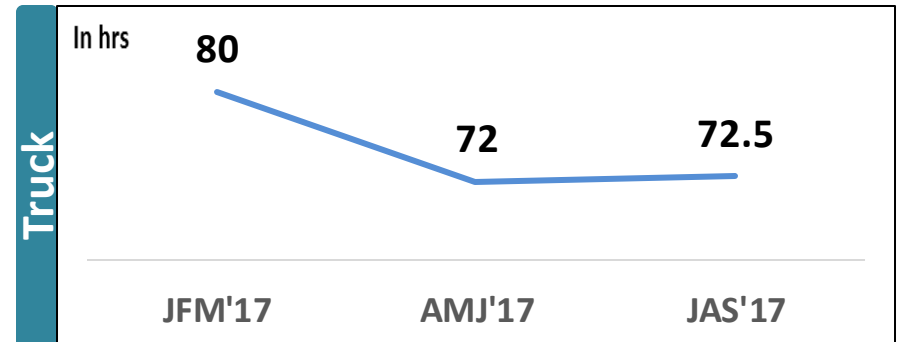
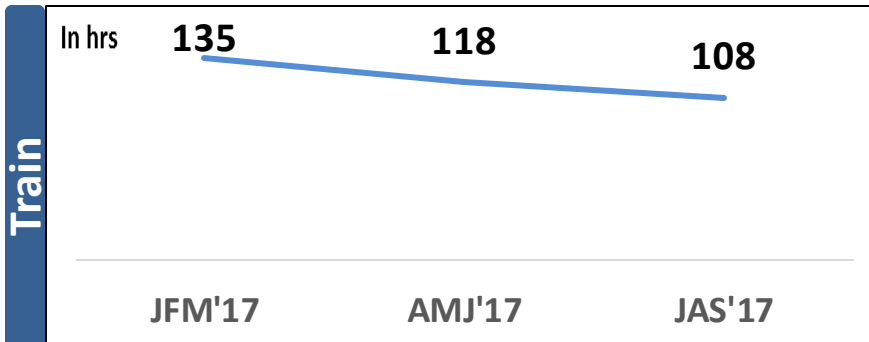
Low Performing Terminal: NSIGT Port terminal

In comparison to other Port terminals in the JNPT region , performance recorded for NSIGT Port terminal was on the lower side (Import cycle primarily) for the given time period as below.

IMPORT CYCLE

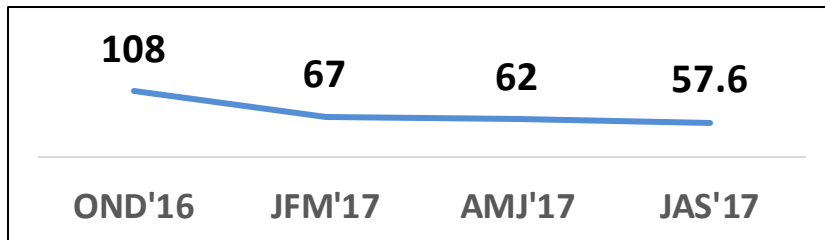


EXPORT CYCLE

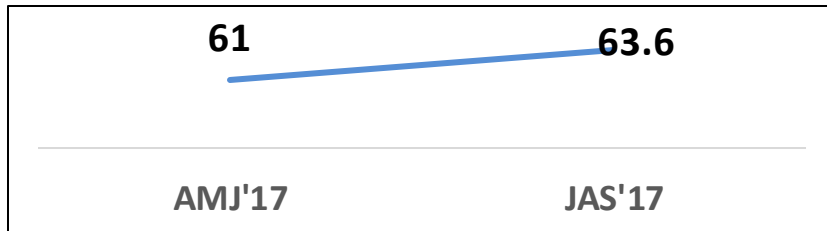


Top Performing Container Freight Station (CFS)

1. All Cargo logistic CFS, Navi Mumbai

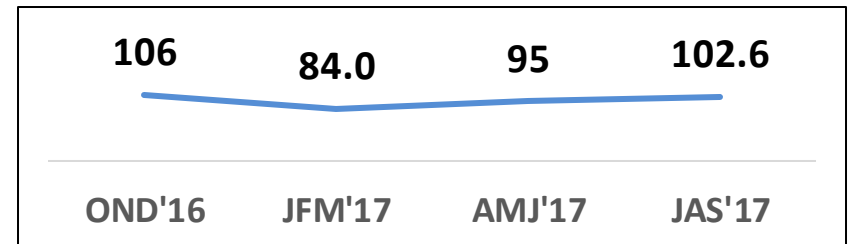


2. CWC Dronagiri CFS, Navi Mumbai

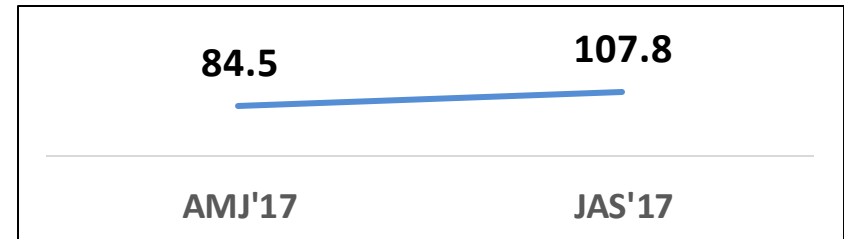


Low Performing Container Freight Station (CFS)

1. Ashte Logistics CFS, Panvel

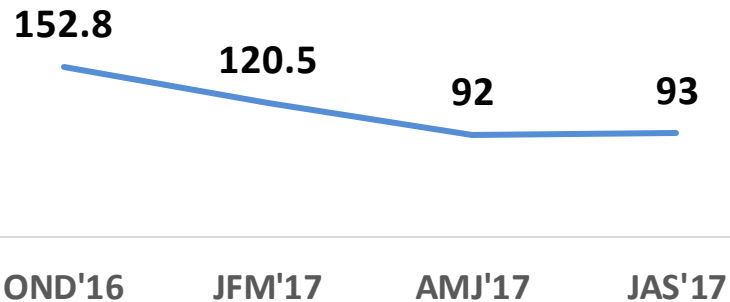


2. Maersk Annex (APM) CFS, Mumbai



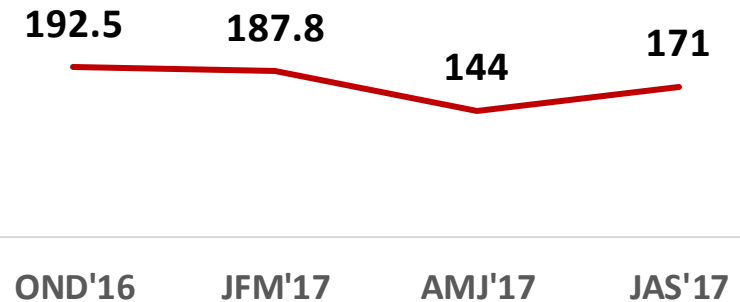
Top Performing Inland Container Depot (ICD)

1. CMA CGM Agencies ICD, Dadri



Low Performing Inland Container Depot (ICD)

CWC Patparganj ICD

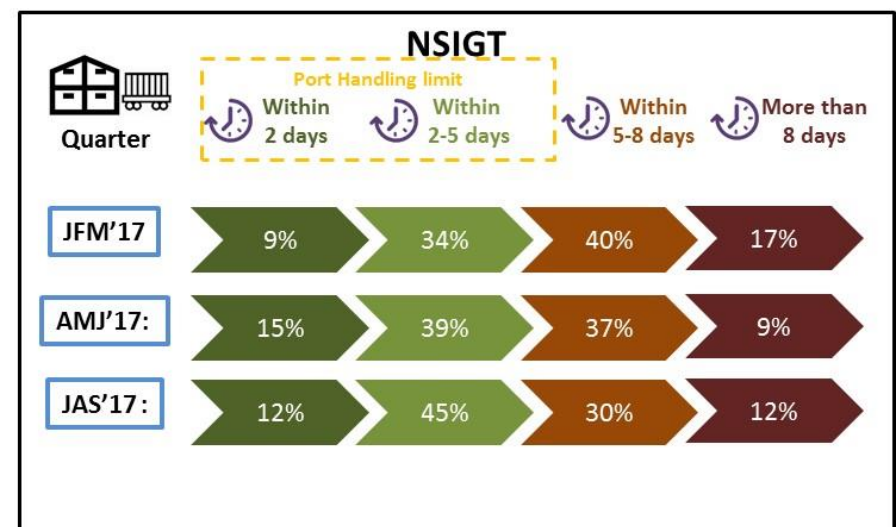
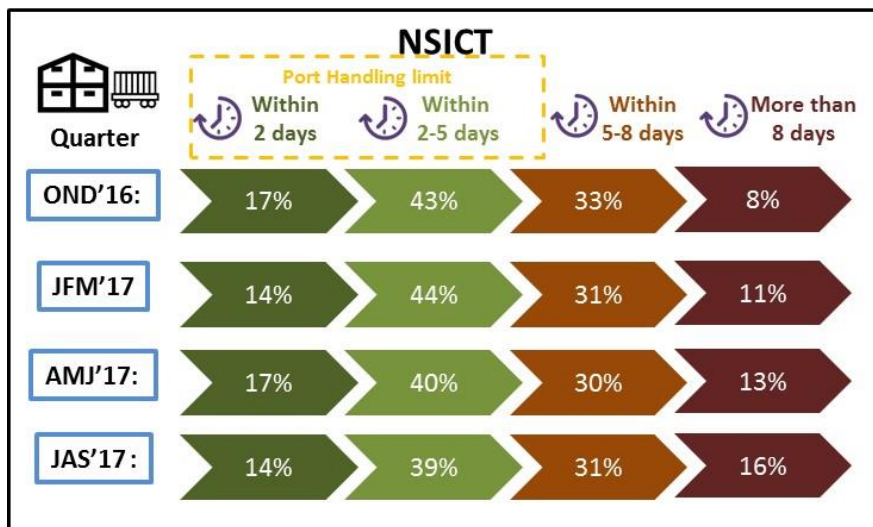
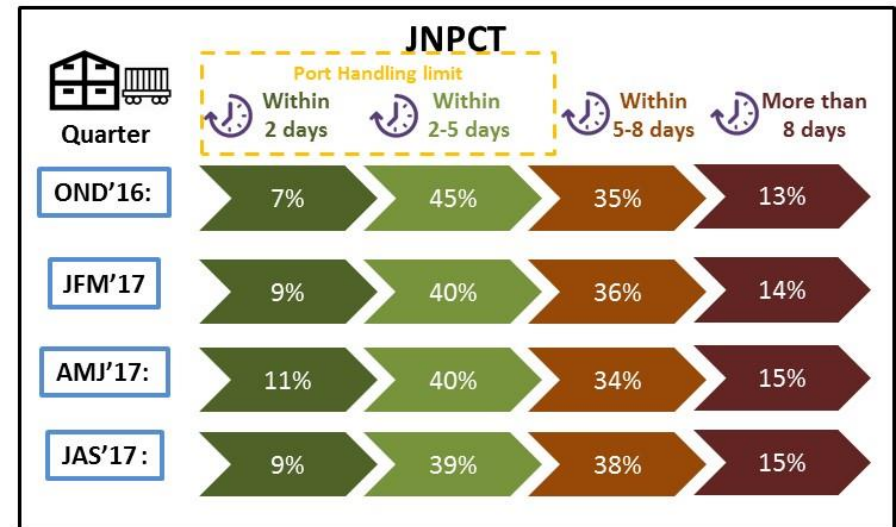
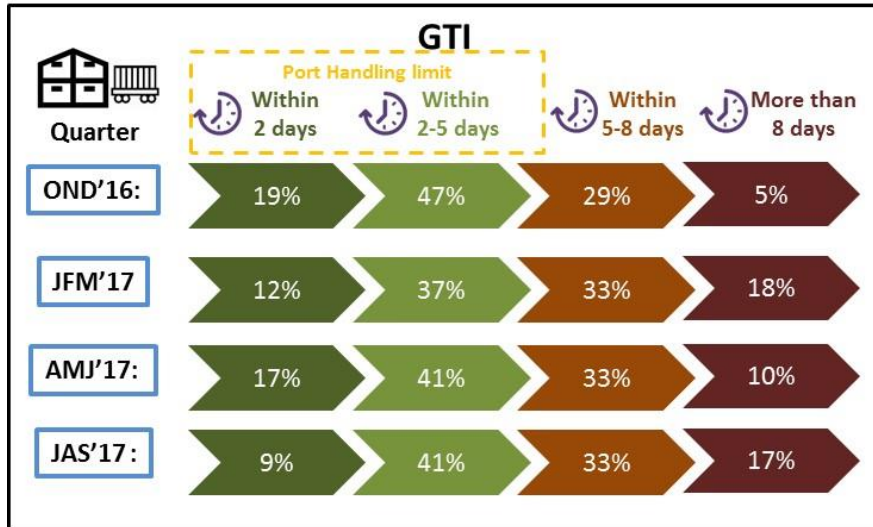




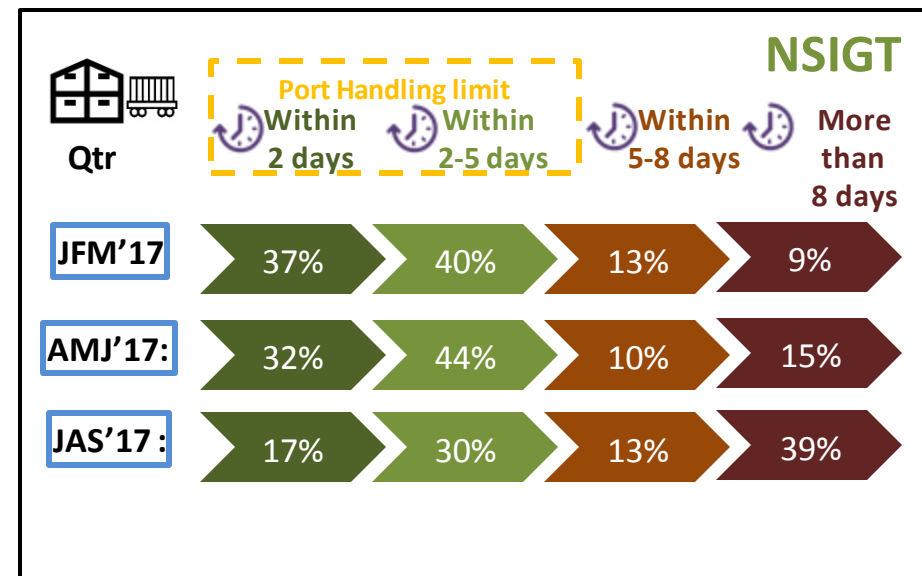
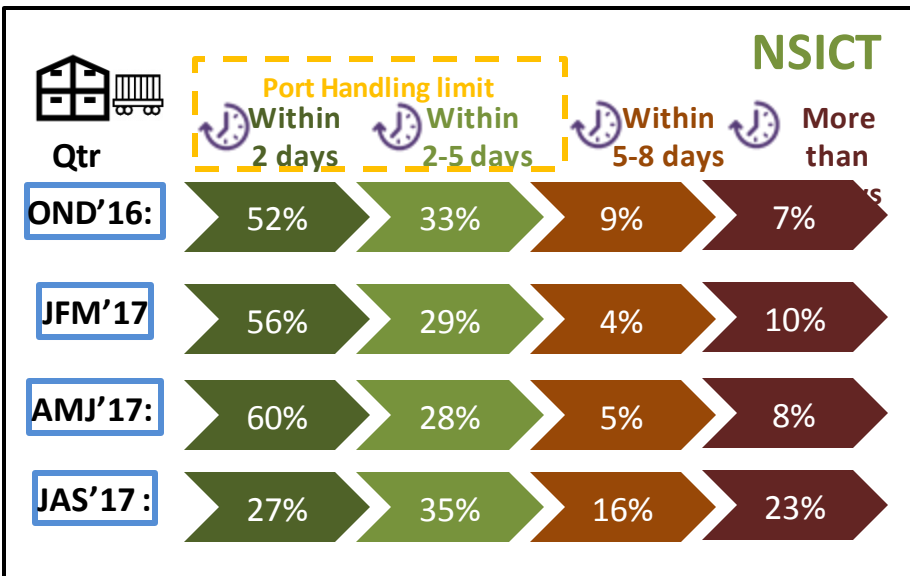
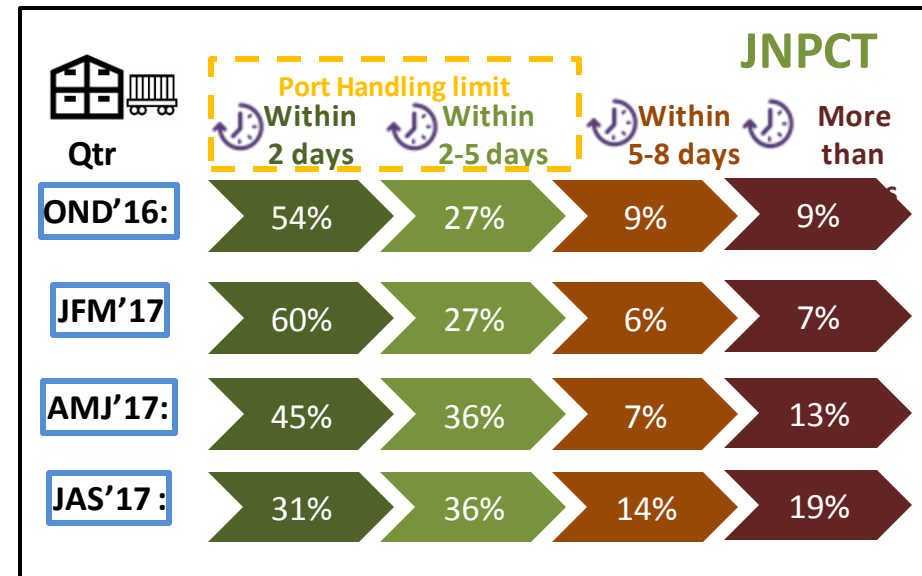
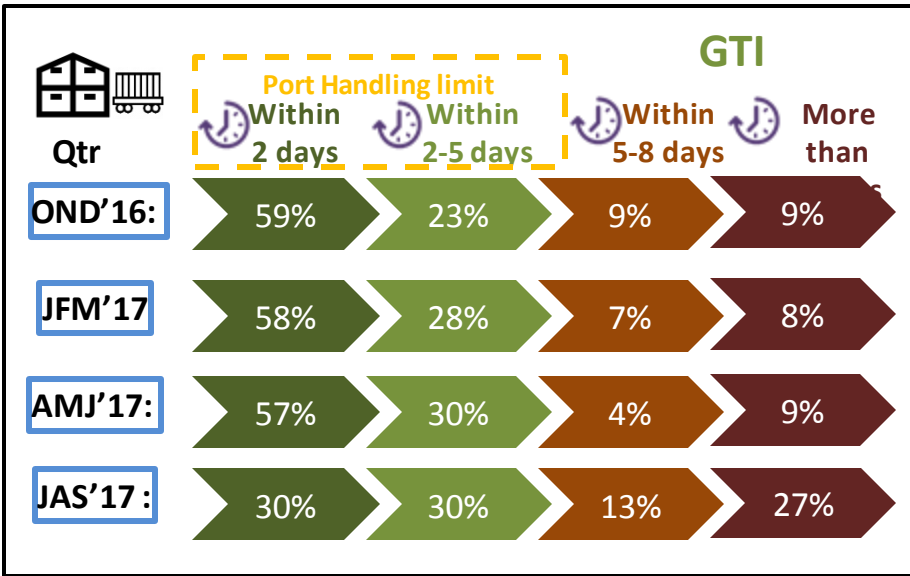
Key Challenges-Railways

Key Challenges-Railway bound Containers (Export)

Even though JNPT is working towards gate time for train bound Containers to be between 4-5 days, the below image depicts the scenario wherein the early arrival of the containers via Train within the Port Premises leading to higher Dwell Time.

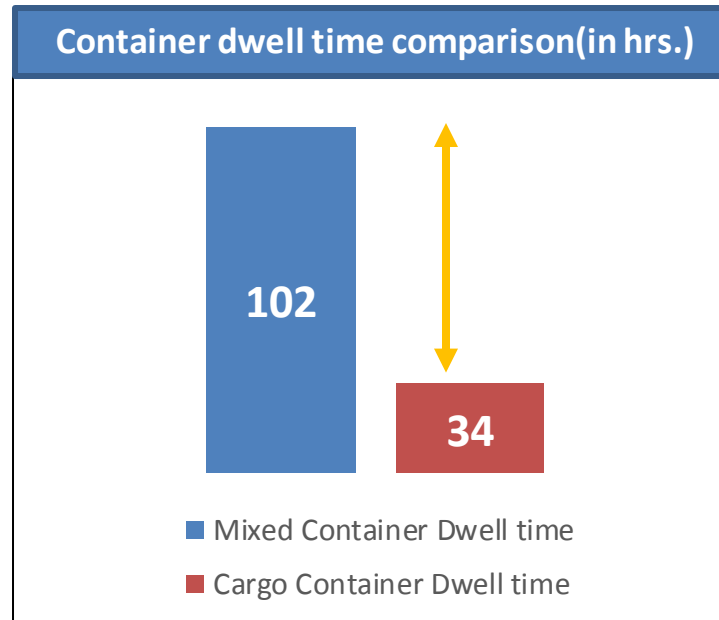


Key Challenges-Railway bound Containers (Import)



Percentage of containers taking more than 5 days time for moving out showcases the delay in Rail bound containers movement within the Port Premises leading to higher Dwell Time

Rail bound Containers arriving at railway siding of a different port terminal within the JNPT premise and then moving to its destination terminal . (For ex: JNPCT to APM, APM to NSICT etc)



- In terms of Dwell Time, time taken by Mixed containers for clearance at the port terminals is much higher in comparison to the regular movement of Containers.
- Mixed containers stacking at Yard of different terminal leads to challenges in retrieving the same and at times leads to the possibility of containers missing the vessel leading to loss of revenue for shipping lines.

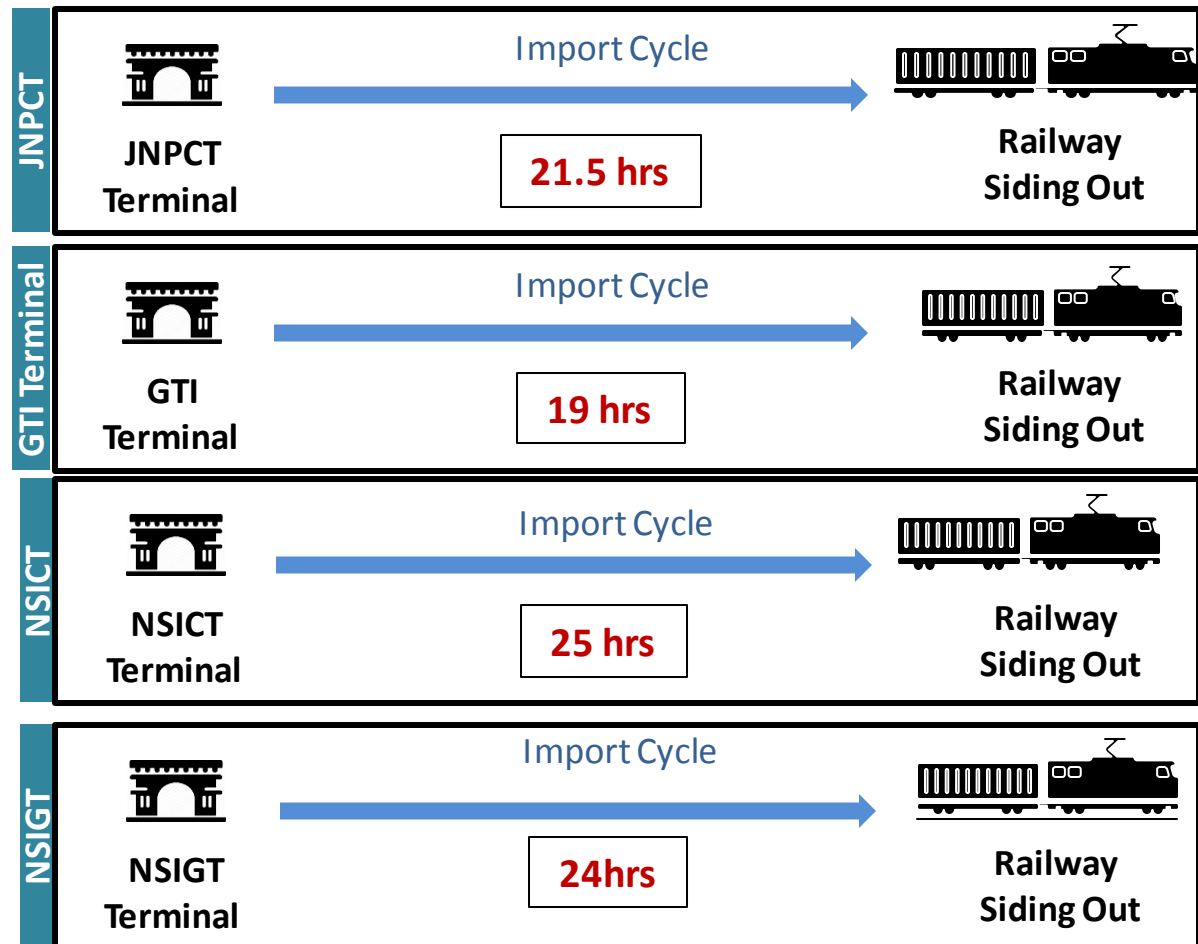
Higher container handling time across rail siding of Port terminals

Import Cycle :

Container handling time for rail bound containers for import cycle for JAS'17

As seen in the figure the average time taken by a container to reach railway siding (JNPT railway station) from the moment it is cleared by Port terminal is very high.

A similar trend exists for Export bound Containers as well



Key Challenges-Roadways

Key Challenges-Congestion around JNPT Region

To identify the congestion areas the Container movement from Port Terminal to the CFS regions based on their Route and location were categorized into eight clusters and accordingly Congestion Analysis was done for the same.

Congestion analysis : AMJ'17 & JAS'17



Clusters with High congestion during the last two quarters i.e. AMJ'17 and JAS'17

- Cluster 1 : Sonari village, JNPT Area
- Cluster 2 : Bhendkhal area, Khopate road
- Cluster 3 : Sonari area, JNPT road

Transit time Analysis between Port Terminal and CFS regions during export and import cycle have helped in identification of congestion areas around JNPT region.

- ★ Cluster with bottleneck
- ★ Cluster
- High Congestion
- Medium Congestion
- Low Congestion

LDB Analytics

LDB User Testimonials

Logistics Databank has helped us in **identifying the challenges across Rail container movement and congestions around the Port area.**

Shri Alok Mishra, Head Operations- APM Port Terminal

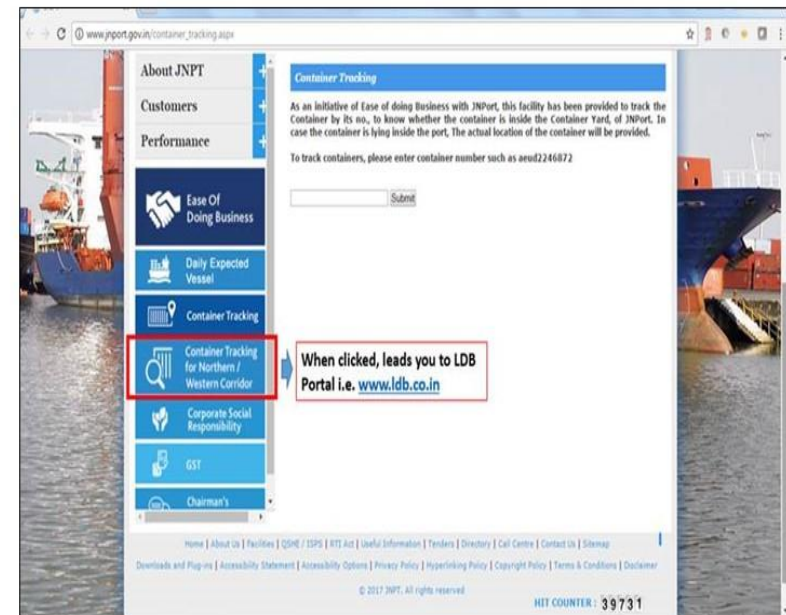
LDB's Performance benchmarking reports with respect to the competition is helping us focus on streamlining our processes to be the best in the industry"

Shri DS Bharara, VP Operations ACTL ICD

Helped us to track the route and the movement of an container which had met with an accident. This real time tracking was of immense help to all the stakeholders.

Capt Vinod Nair- VP Operations K-Line Shipping Line

LDB Link published in JNPT Website



LDB Link published in K-Line Website



Vessel Turn Around Time & Avg Vessel berthing Volume		
Port	Turn Around Time	Avg. no. of vessel Calling per month
JNPT , Mumbai	2-2.5 days	160
APSEZ ,Mundra	0-1 day	190
Shanghai , China	0-1 day	1500
Singapore	1-2 days	1500
Rotterdam , Netherland	1-2 days	600
Port Klang, Malaysia	0-1 day	1000
Hamburg , Germany	1-2 days	400

Source: Indian Ports Association, Merko Analytics.

Source: LDB Data, Logistics Performance Index, World Bank.

Average Port Dwell Time	
Ports	Dwell Time(in Hrs)
JNPT, India*	48
APSEZ , Mundra*	53
Singapore	31
Jabel Ali, Dubai	29
Hong Kong	17
Port Klang , Malaysia	17
Hamburg , Germany	37
Shanghai , China	20

Global Ranking of Top Container Ports (FY 16)		Indian Container Volume in India (FY 17)	
Countries	Container Handled (IN Million TEU's)	Port	Container Handled (IN Million TEU's)
Shanghai , China	37	JNPT , Mumbai	4.5
Singapore	30.9		
Shenzhen , China	23.9	Adani Port SEZ , Mundra	3.9
Rotterdam , Netherland	12.23		
Port Klang , Malaysia	11.89		
Hamburg , Germany	8.8		

Source: Indian Ports Association, Logistics Performance Index

Port	Average Lead Time (In Days)
Shanghai , China	6.5
JNPT , Mumbai*	14
APSEZ , Mundra*	14

Source: LDB Data, Logistics Performance Index

Container Ports of India vis-à-vis Asia for the year 2016	
Port Custom Clearance Time (2016)	
Port	Port Custom Clearance Time
Singapore	10 minutes
Indonesia(Tanjung Priok)	0.6 days
JNPT	4 days

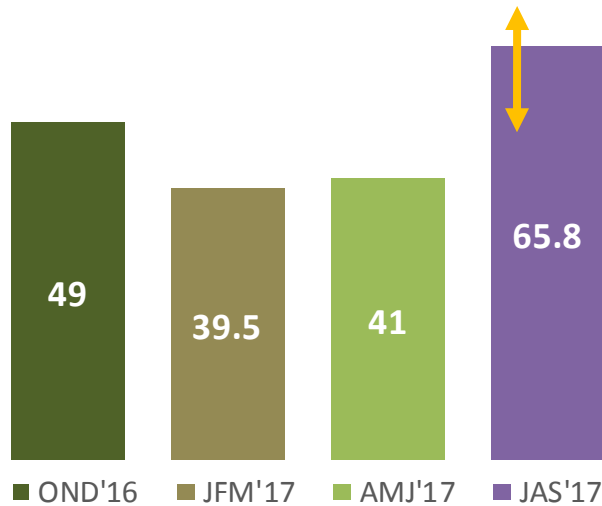
Source : Marine and port authority of Singapore , Central Board of Exercise and Custom, The Jakarta Post

Arrival v/s Departure handling time for rail bound containers (Port/ICD rail bottleneck in Hrs.)			
Port Terminal	Arrival handling duration	Departure handling duration	Difference
ICDs, Dadri	3.0	5.9	2.9
JNPT, Mumbai	3.1	7.7	4.6
APSEZ, Mundra	6.5	8.0	1.5

Source: LDB Data

Increase in Port terminals' Import Cycle dwell time for JAS'17 quarter as the majority of containers are cleared after 2 days

JNPT region overall Import Cycle Dwell time (in Hrs)



Container Clearance volume

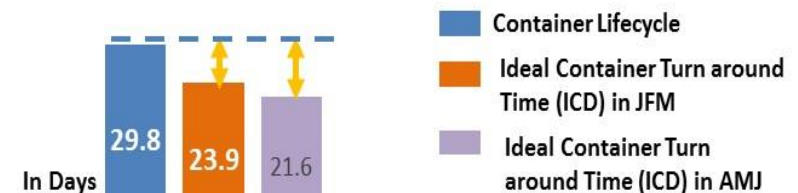
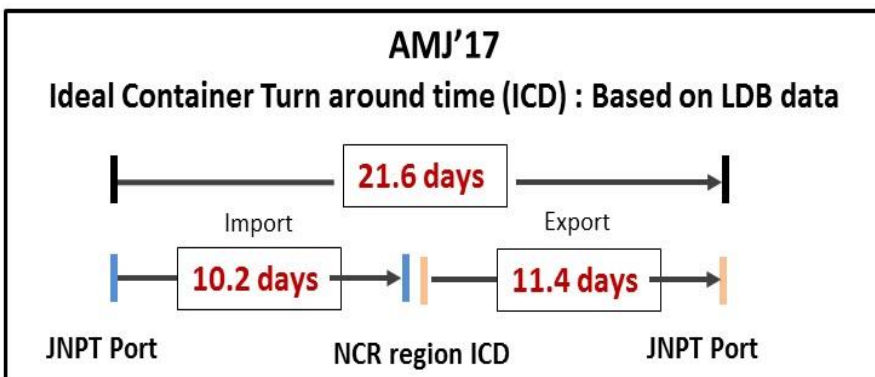
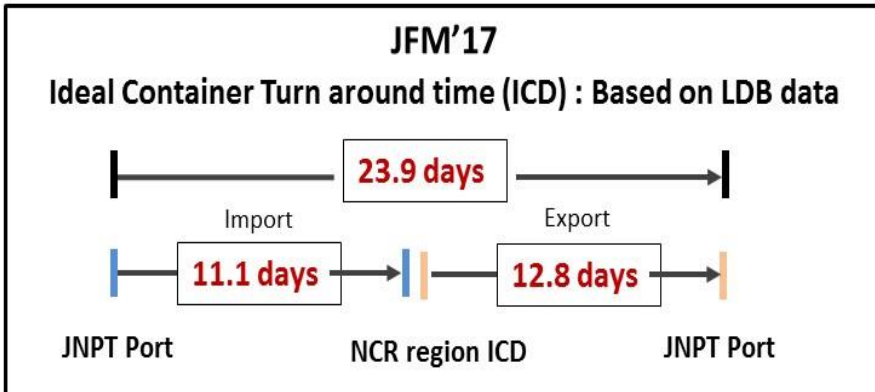
Terminal with mode	AMJ'17	JAS'17
GTI Train	57%	30%
NSICT Train	60%	27%
NSIGT Train	15%	12%
JNPCT Train	11%	9%
GTI Truck	82%	62%
NSICT Truck	82%	62%
NSIGT Truck	70%	63%
JNPCT Truck	78%	69%

Key Findings-JAS Quarter

Container waiting time is defined as the duration for which the container is not utilised for import or export cycle. By analysing the container turn around time at JNPT port and the ideal transit time between ICDs (NCR region) and JNPT port, we evaluated the container waiting time for JFM and AMJ quarter. The table on right showcase the turn around time and the ideal transit time between port and ICDs

Container Movement	JFM	AMJ
Average Container Lifecycle (i.e. import via JNPT and export via JNPT) *	29.8 days	
Time taken to complete import cycle (JNPT In to ICD out)	11.1 days	10.2 days
Time taken to complete Export cycle (ICD out to JNPT In)	12.8 days	11.4 days

As the graph below showcase, lifecycle of container through JNPT is about 29.8 days which is much greater than ideal container turn around time which 23.9 days for JFM and 21.6 days for AMJ quarter



5.9 Days
Container waiting time in JFM'17

8.2 Days
Container waiting time in AMJ'17

Shanghai Port China
Container Lifecycle
13 days

Import Cycle via TRUCK

JNPCT- Import via Truck



GTI Terminal-Import via Truck



NSIGT- Import via Truck



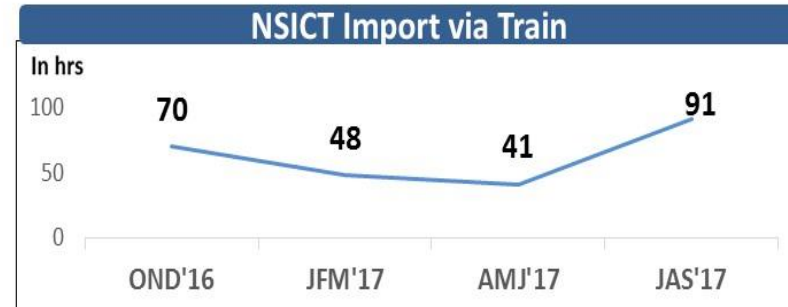
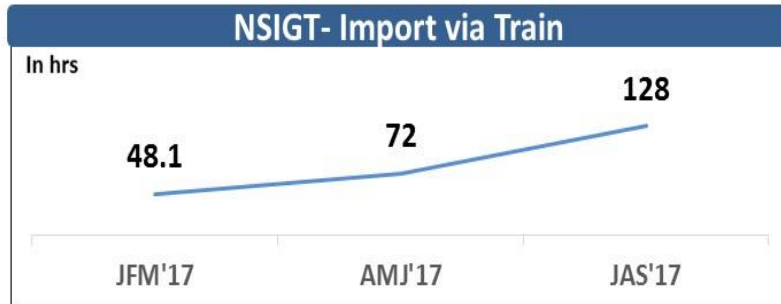
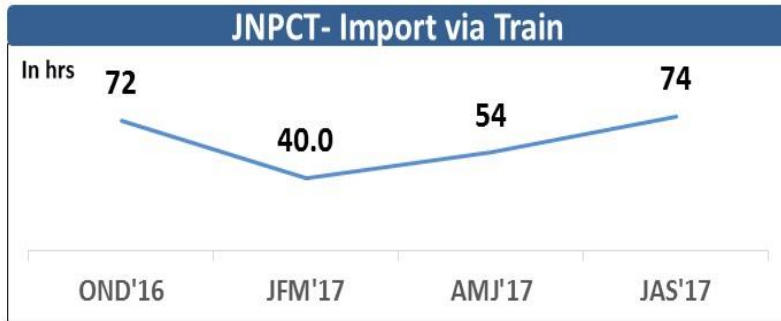
NSICT Import via Truck



Note: NSIGT Port began operations in November'16



Import Cycle via TRAIN



Note: NSIGT Port began operations in November'16

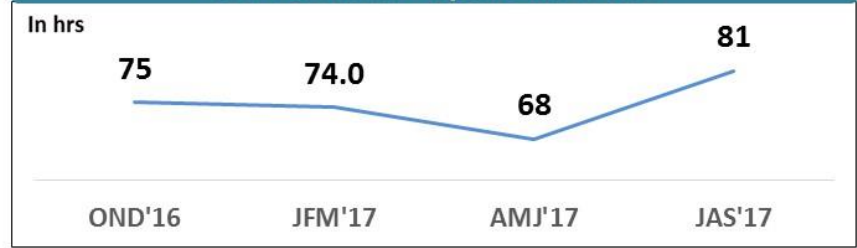
Note : GTI terminal was hit by Ransomware virus in month of July'17, also JAS quarter has seen the increase in port dwell time in import cycle due to monsoon season

JNPT Region- Dwell Time Export Truck

JNPCT- Export via Truck



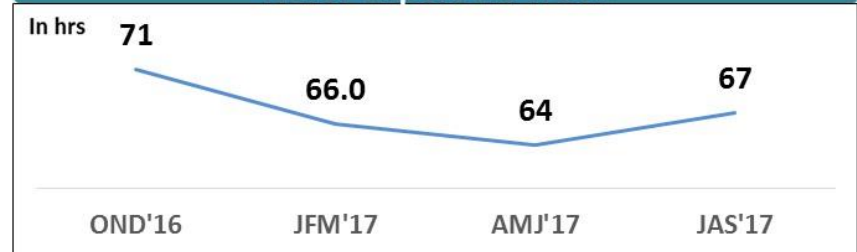
GTI Terminal-Export via Truck



NSIGT- Export via Truck



NSICT Export via Truck



Note: NSIGT Port began operations in November'16

JNPT Region- Dwell Time Export Train

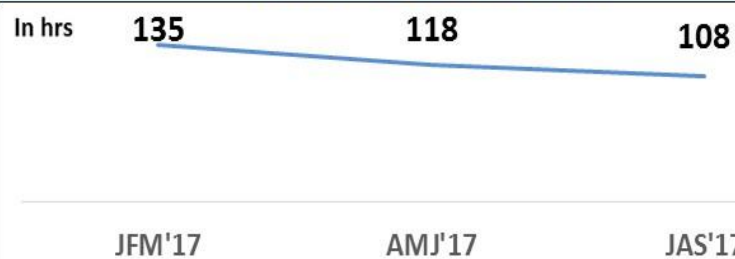
JNPCT- Export via Train



GTI Terminal-Export via Train



NSIGT- Export via Train



NSICT Export via Train



Note: NSIGT Port began operations in November '16

Performance Index- Port Terminals

In order to assess the relative performance Port, Container Freight Station and Inland Container Depot ,the relative dwell time as well as the volume of containers handled by them are depicted graphically in the form of an index to portray the performance of a particular organisation on the basis of these two combined factors.

The figure depicts the Frequency Index i.e. volume by dwell time performance for JNPT Port terminals from OND’16 to JAS’17. The Quadrant II represents the high performing ports with high frequency Index i.e. high container volume at lower dwell time

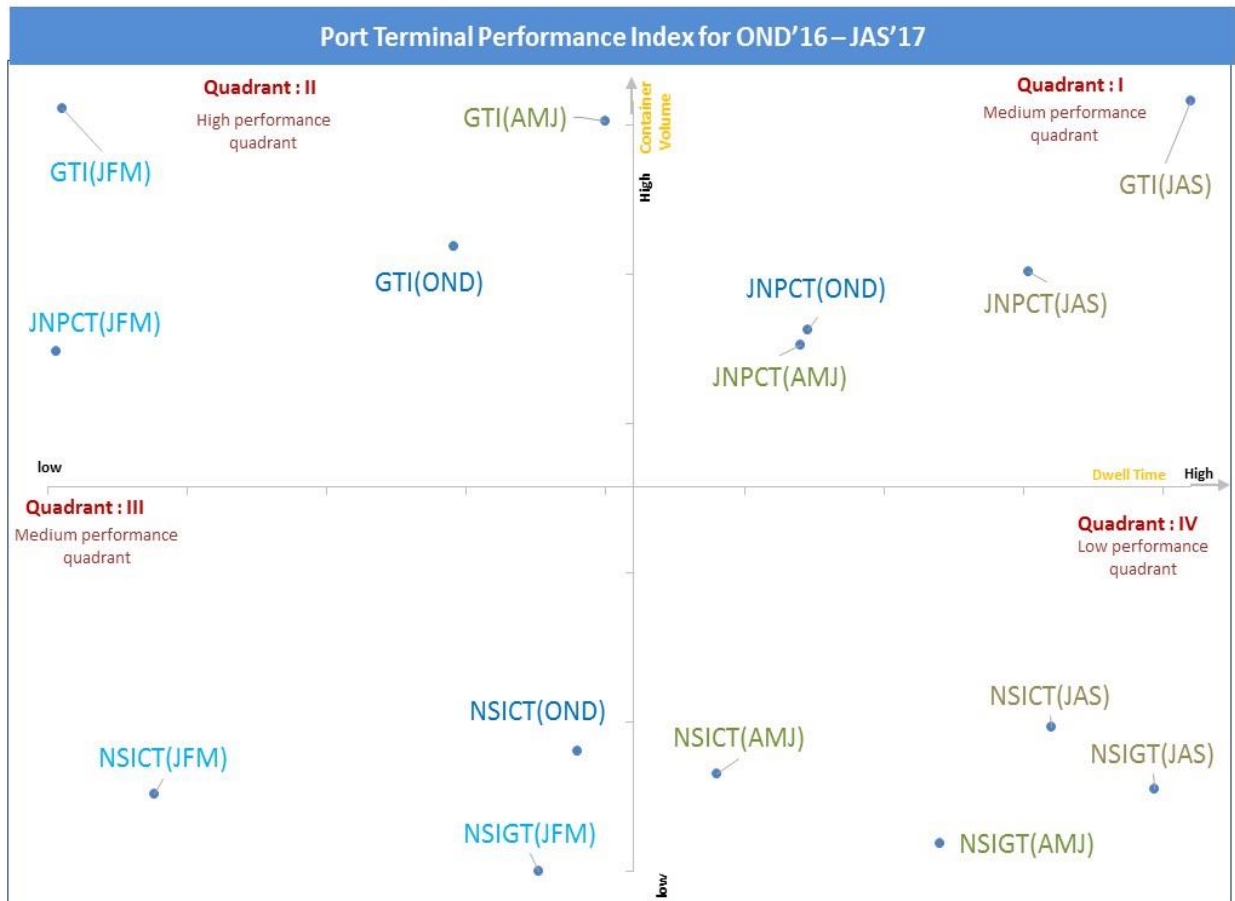
Quadrant I : consist of Ports which have catered higher container volume at higher dwell time

Quadrant II : consist of Ports which have catered relatively lower container volume in minimum dwell time

Quadrant III : consist of Ports which have catered relatively lower container volume in minimum dwell time

Quadrant IV : consist of Ports which have catered relatively lower container volume at higher dwell time

Growth Trend				
Terminal	OND’16	JFM’17	AMJ’17	JAS’17
JNPCT	Q1	Q2	Q1	Q1
NSICT	Q3	Q3	Q4	Q4
NSIGT	NA	Q3	Q4	Q4
GTI	Q2	Q2	Q2	Q1



Legend:

OND’16 Quarter	AMJ’17 Quarter
JFM’17 Quarter	JAS’17 Quarter

Note: NSIGT Port began operations in November’16

Performance Index- Container Freight Stations

In order to assess the relative performance Port, Container Freight Station and Inland Container Depot, the relative dwell time as well as the volume of containers handled by them are depicted graphically in the form of an index to portray the performance of a particular organisation on the basis of these two combined factors.

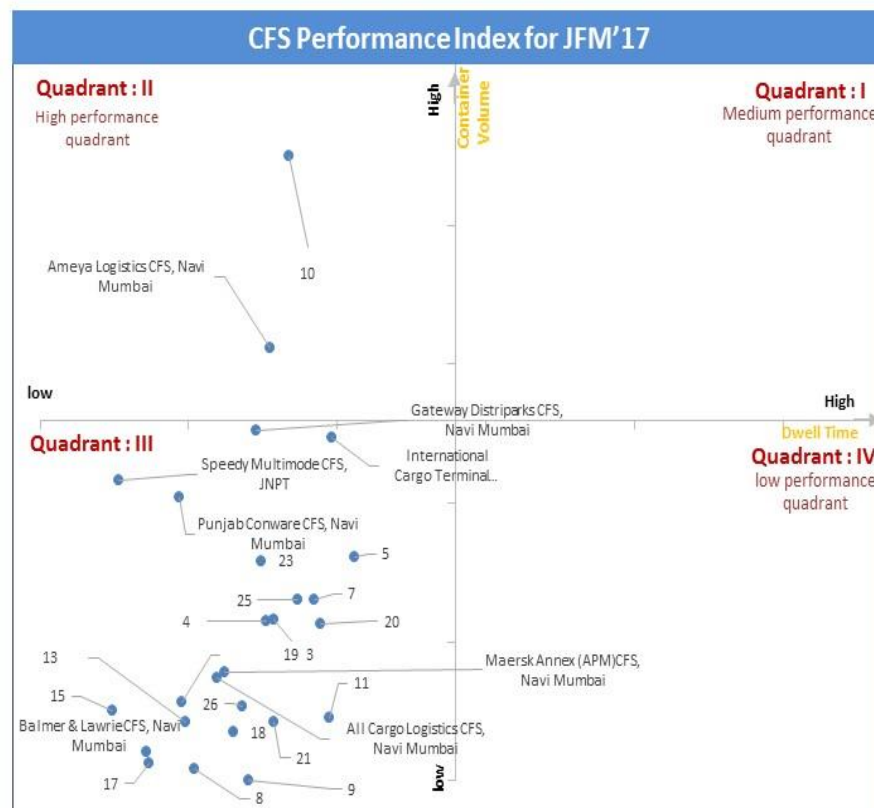
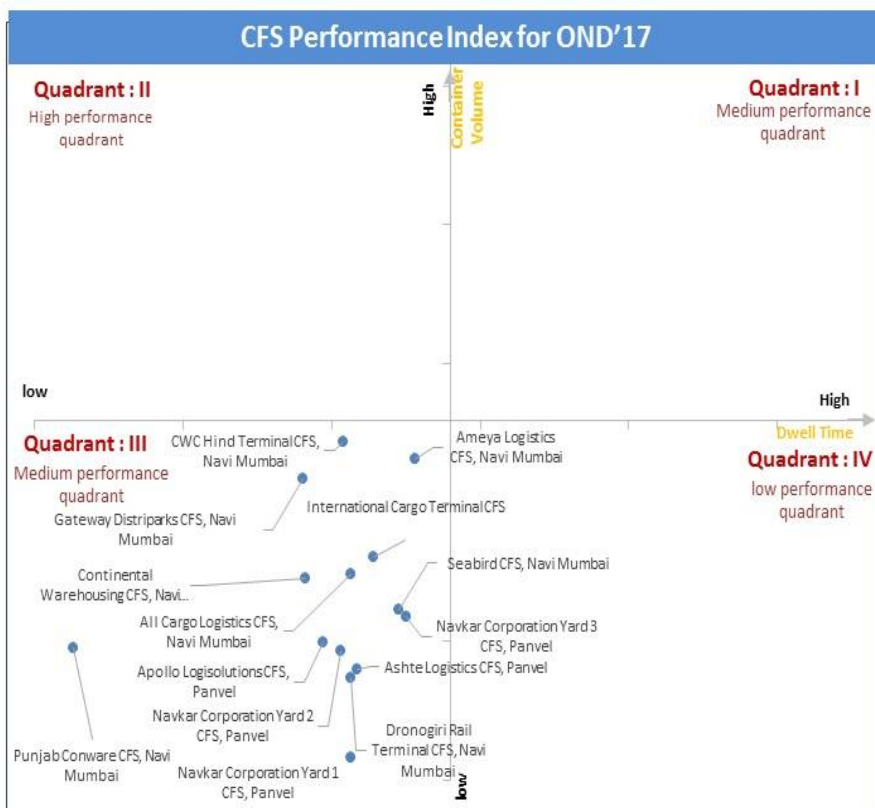
The figures depict the Frequency Index i.e. volume by dwell time performance for Container Freight Stations for OND'16 and JFM'17. The Quadrant II represents the high performing CFSs with high frequency Index i.e. high container volume at lower dwell time

Quadrant I : consist of ICDs which have catered higher container volume at higher dwell time

Quadrant II : consist of ICDs which have catered relatively lower container volume in minimum dwell time

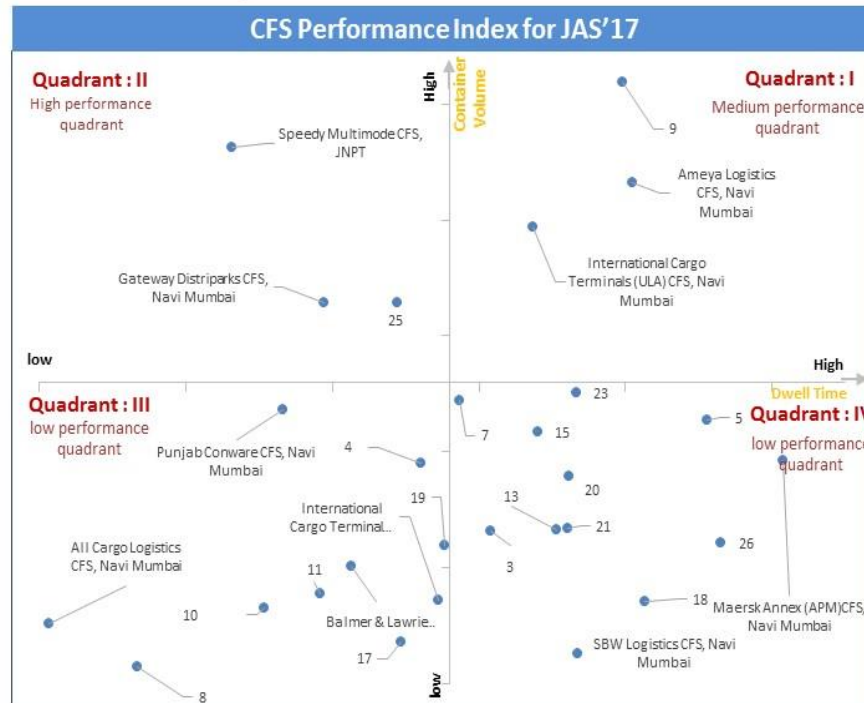
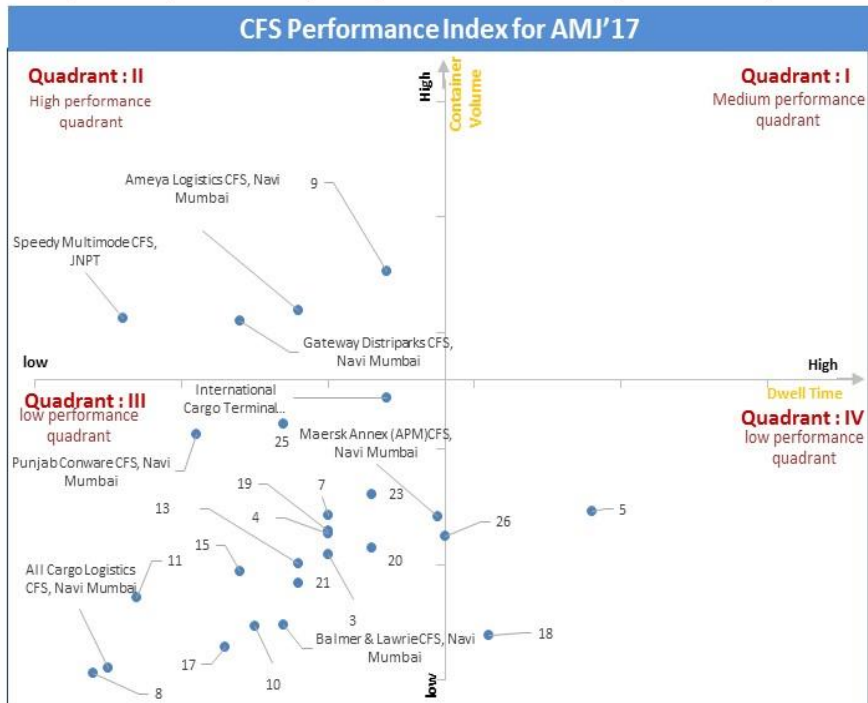
Quadrant III : consist of ICDs which have catered relatively lower container volume in minimum dwell time

Quadrant IV : consist of ICDs which have catered relatively lower container volume at higher dwell time



Performance Index- Container Freight Stations

The figures depict the Frequency Index i.e. volume by dwell time performance for Container Freight Stations for AMJ'17 and JAS'17.



No.	CFS Name
1	All Cargo Logistics CFS, Navi Mumbai
2	Ameya Logistics CFS, Navi Mumbai
3	APM (Maersk India) CFS, Navi Mumbai
4	Apollo Logisolutions CFS, Panvel
5	Ashte Logistics CFS, Panvel
6	Balmer & Lawrie CFS, Navi Mumbai
7	Continental Warehousing CFS, Navi Mumbai

No.	CFS Name
8	CWC Dronagiri CFS, Navi Mumbai
9	CWC Hind Terminal CFS, Navi Mumbai
10	CWC Impex Park CFS, Navi Mumbai
11	Dronogiri Rail Terminal CFS, Navi Mumbai
12	Gateway Distriparks CFS, Navi Mumbai
13	Indev Logistics CFS, Panvel
14	International Cargo Terminal CFS

No.	CFS Name
15	JWC Logistics Park CFS
16	Maersk Annex (APM) CFS, Navi Mumbai
17	Maharashtra State Corp CFS
18	Navkar Corporation Yard 1 CFS, Panvel
19	Navkar Corporation Yard 2 CFS, Panvel
20	Navkar Corporation Yard 3 CFS, Panvel
21	Ocean Gate CFS, Panvel

No.	CFS Name
22	Punjab Conware CFS, Navi Mumbai
23	Seabird CFS, Navi Mumbai
24	Speedy Multimode CFS, JNPT
25	Transindia Logistics Park, Navi Mumbai
26	Vaishno Logistics CFS, Navi Mumbai
27	International Cargo Terminals (ULA) CFS, Navi Mumbai
28	SBW Logistics CFS, Navi Mumbai

Performance Index- Inland Container Depots

In order to assess the relative performance Port, Container Freight Station and Inland Container Depot, the relative dwell time as well as the volume of containers handled by them are depicted graphically in the form of an index to portray the performance of a particular organisation on the basis of these two combined factors.

The figure depicts the Frequency Index i.e. volume by dwell time performance for Inland Container Depots from OND'16 to JAS'17. The Quadrant II represents the high performing ICDs with high frequency Index i.e. high container volume at lower dwell time

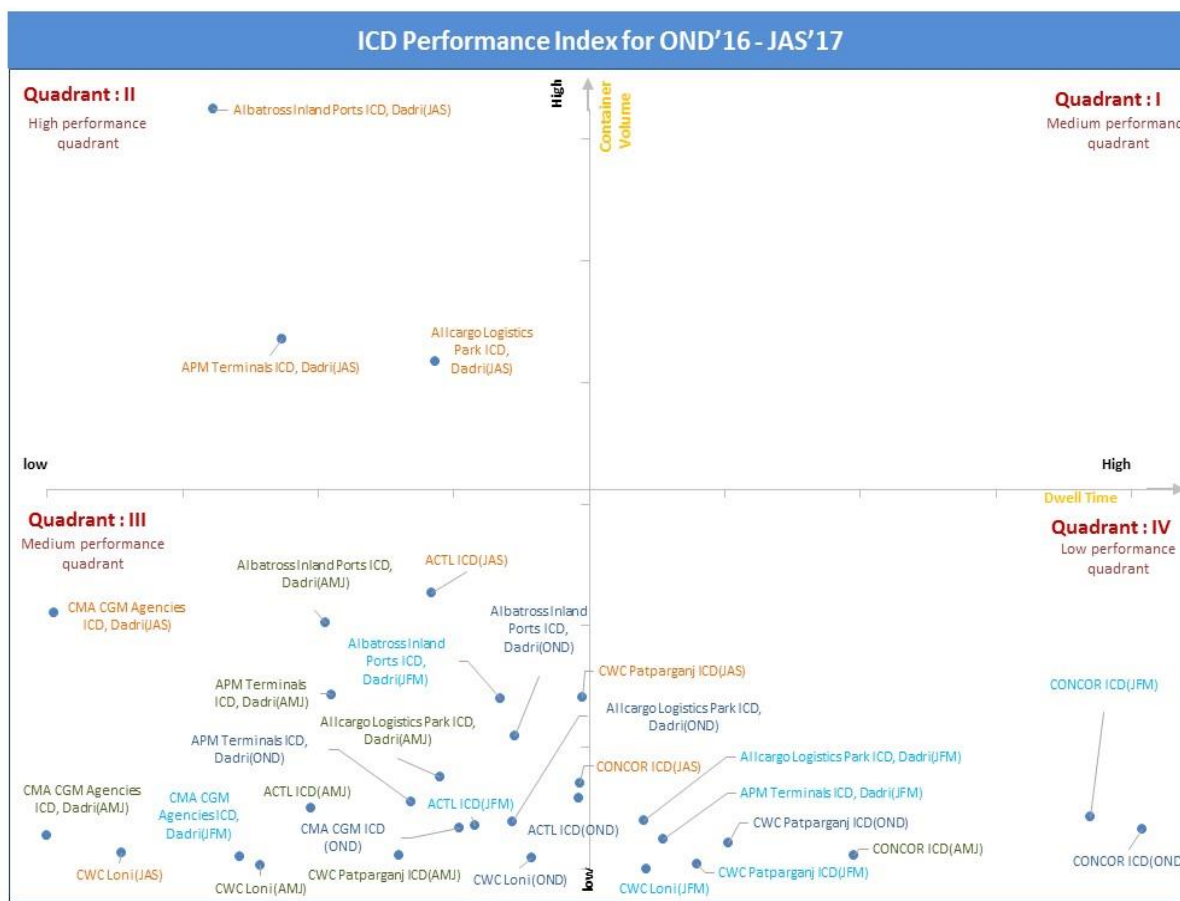
Quadrant I : consist of ICDs which have catered higher container volume at higher dwell time

Quadrant II : consist of ICDs which have catered relatively lower container volume in minimum dwell time

Quadrant III : consist of ICDs which have catered relatively lower container volume in minimum dwell time

Quadrant IV : consist of ICDs which have catered relatively lower container volume at higher dwell time

Growth trend				
ICDs	OND'16	JFM'17	AMJ'17	JAS'17
APM terminal dadri	Q3	Q4	Q3	Q2
Albatross ICD	Q3	Q3	Q3	Q2
Allcargo logistic park	Q3	Q4	Q3	Q2
CMA CGM ICD	Q3	Q3	Q3	Q3
CWC loni	Q3	Q4	Q3	Q3
ACTL ICD	Q3	Q3	Q3	Q3
CWC PATPARGANJ	Q4	Q4	Q3	Q3
CONCOR ICD	Q4	Q4	Q4	Q3



Legend:

- OND'16 Quarter
- JFM'17 Quarter
- AMJ'17 Quarter
- JAS'17 Quarter

JNPT Container Handling Time

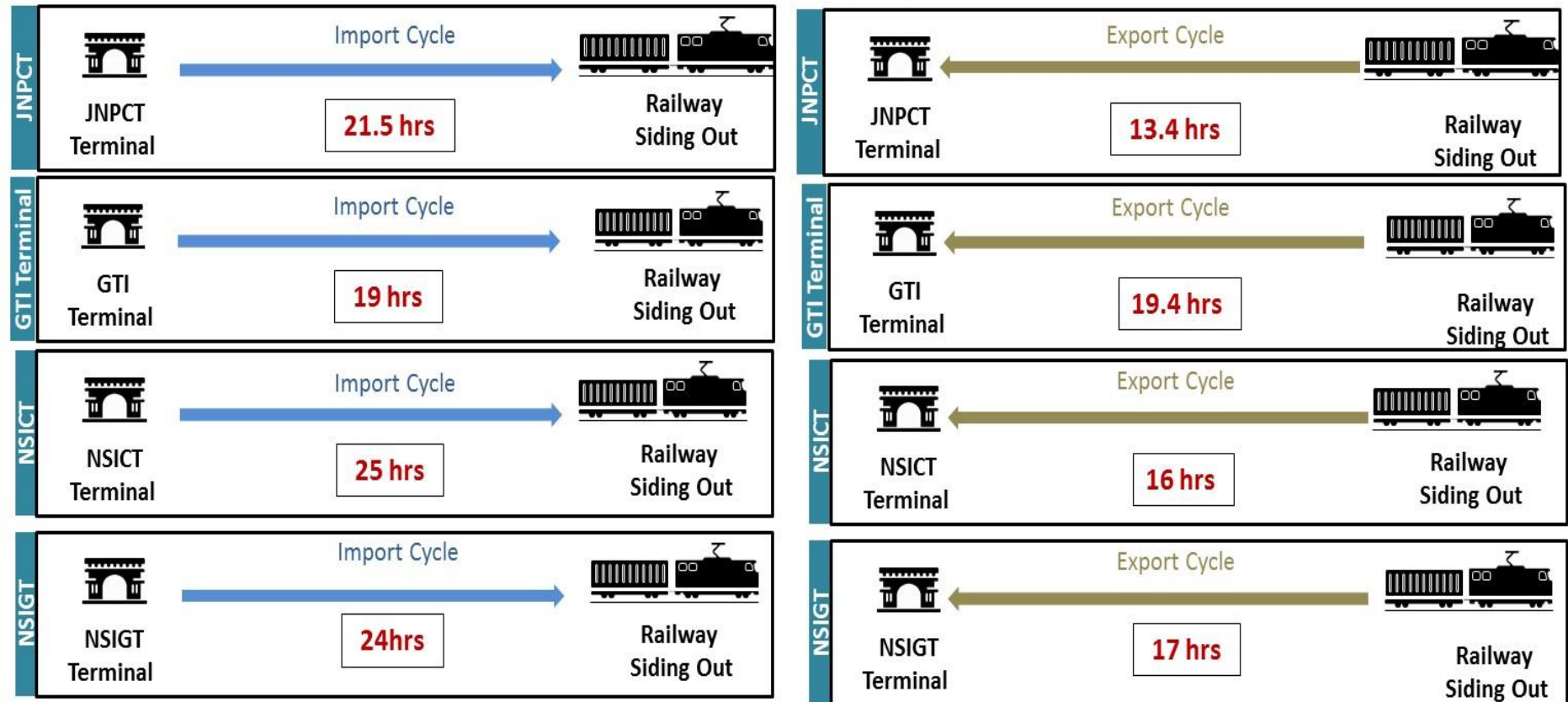
The following figure shows the container movement via train around JNPT region in both Import and export cycle. It shows the time duration between the Port out and JNPT station crossed (which is in the JNPT premises) for Import cycle while the time elapsed between the JNPT station crossed and Port in for export cycle, this timespan is referred here as container handling time for rail bound containers

Import Cycle :

Below showcase is the container handling time for rail bound containers for import cycle for JAS'17

Export Cycle :

Below showcase is the container handling time for rail bound containers for export cycle for JAS'17



Note: Distance between the Port terminals to rail siding (JNPT railway station) is 8 km

Congestion Analysis: Toll Plaza

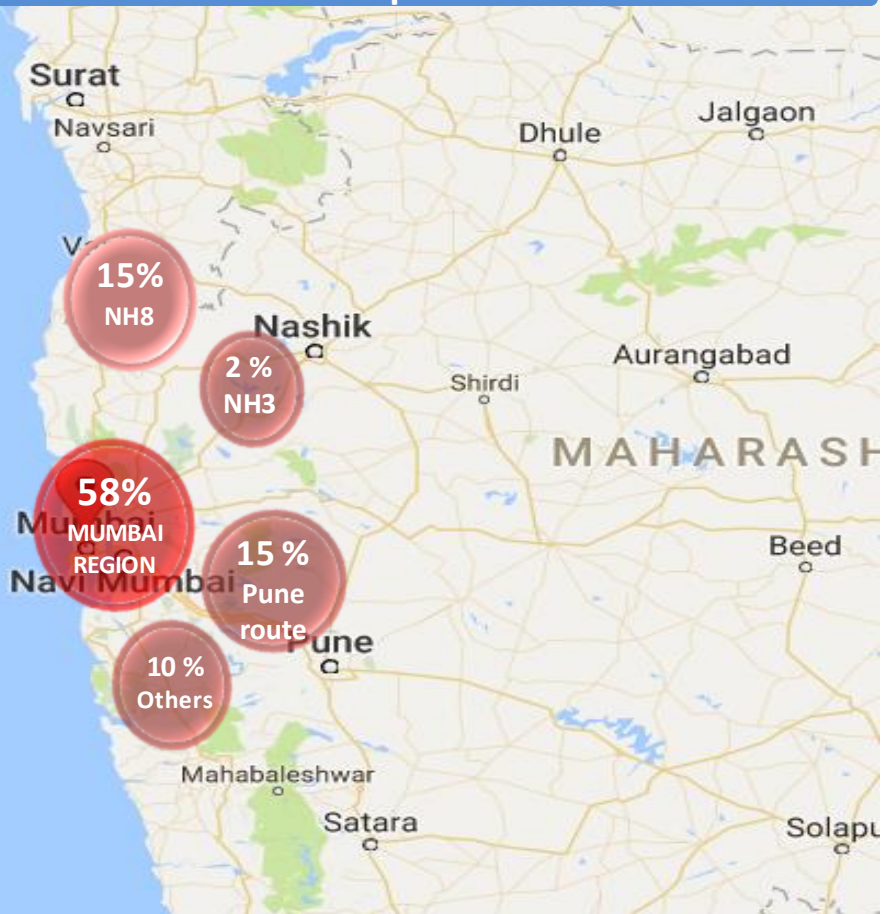
Avg. Travel Time & Speed between Toll Plazas (JAS'17)

Source	Destination Toll Plaza	Inter Distance (Km)	Avg. Travel Time (Hr)	September'17 Avg. Speed (Km/Hr)	August'17 Avg. Speed (Km/Hr)	July'17 Avg. speed (km/hr)
JNPT	Khaniwade	94	7.3	13	16	13
JNPT	Khalapur	60	4	15	20	21
Khaniwade	Charoti	50	1.4	36	36	31
Charoti	Boriach	126	4.7	27	28	29
Boriach	Bharthan	142	4.4	32	34	34
Bharthan	Kishangarh	686	34	20	23	22
Bharthan	Vasad	60	1.6	38	36	36
Kishangarh	Daulatpura	128	3.4	38	35	36
Dhule	Khalghat	186	8	23	26	27

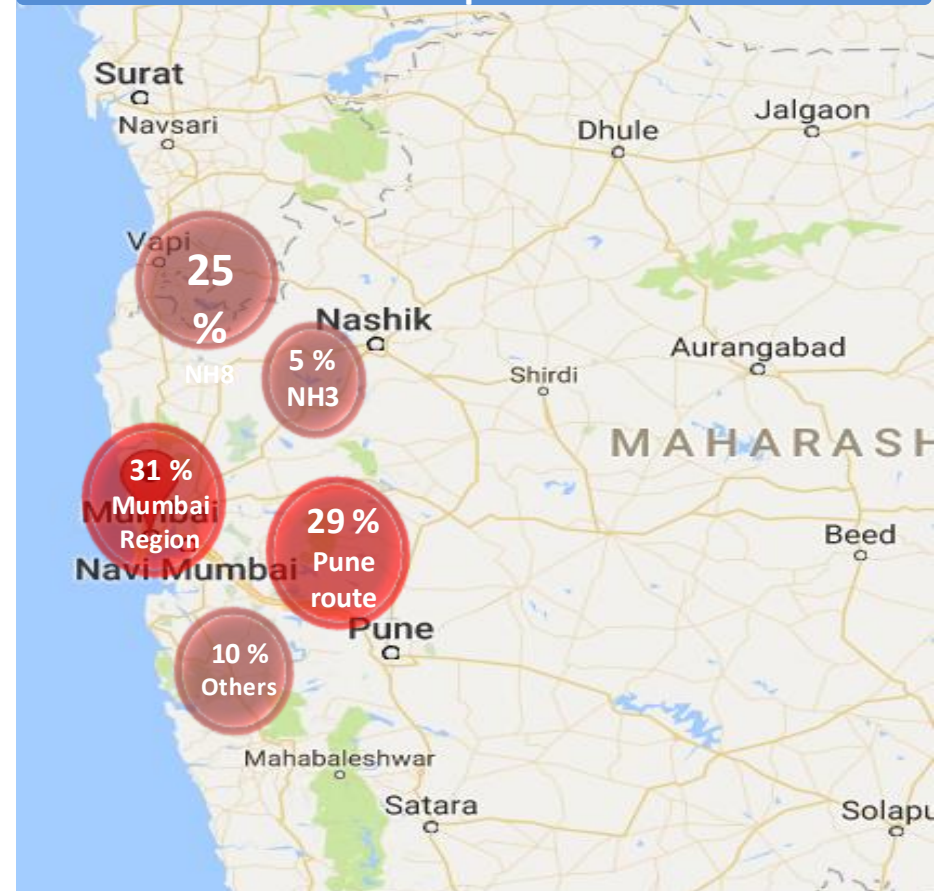


Container Heatmap- JNPT Truck

Heat Map : AMJ'17

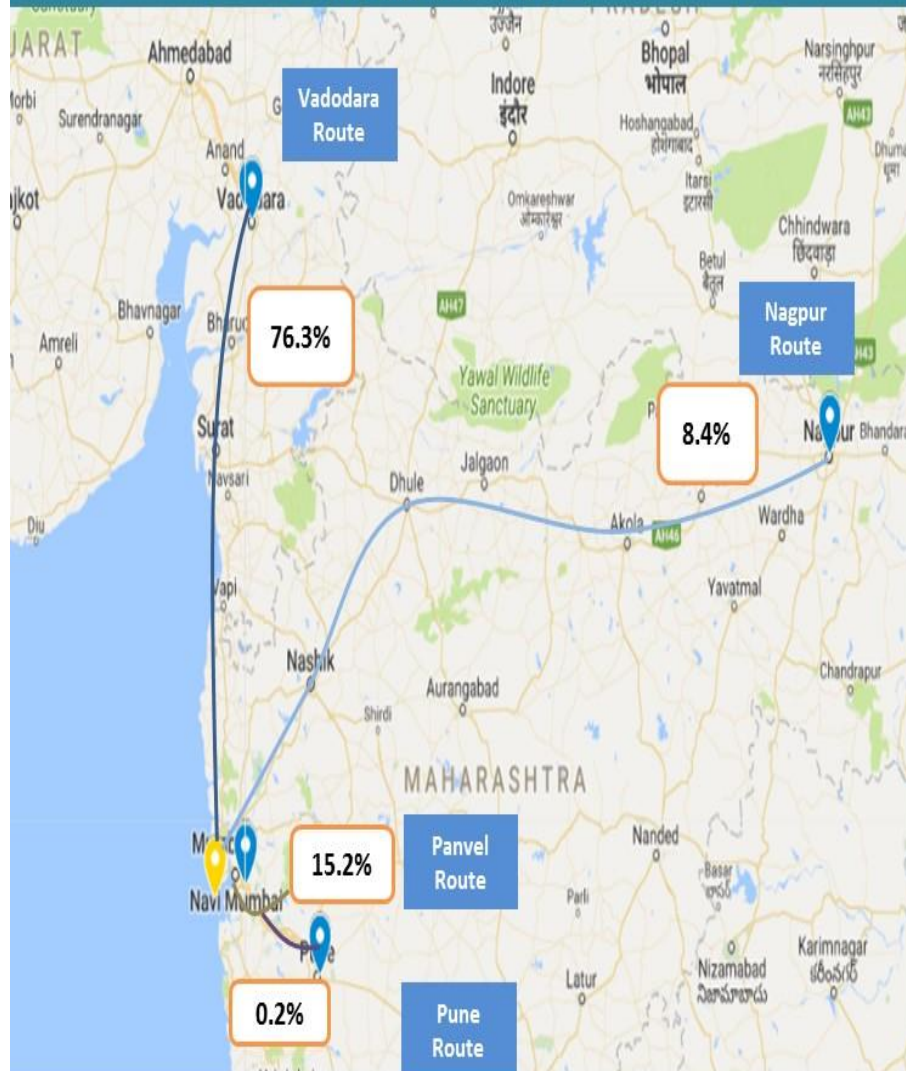


Heat Map : JAS'17

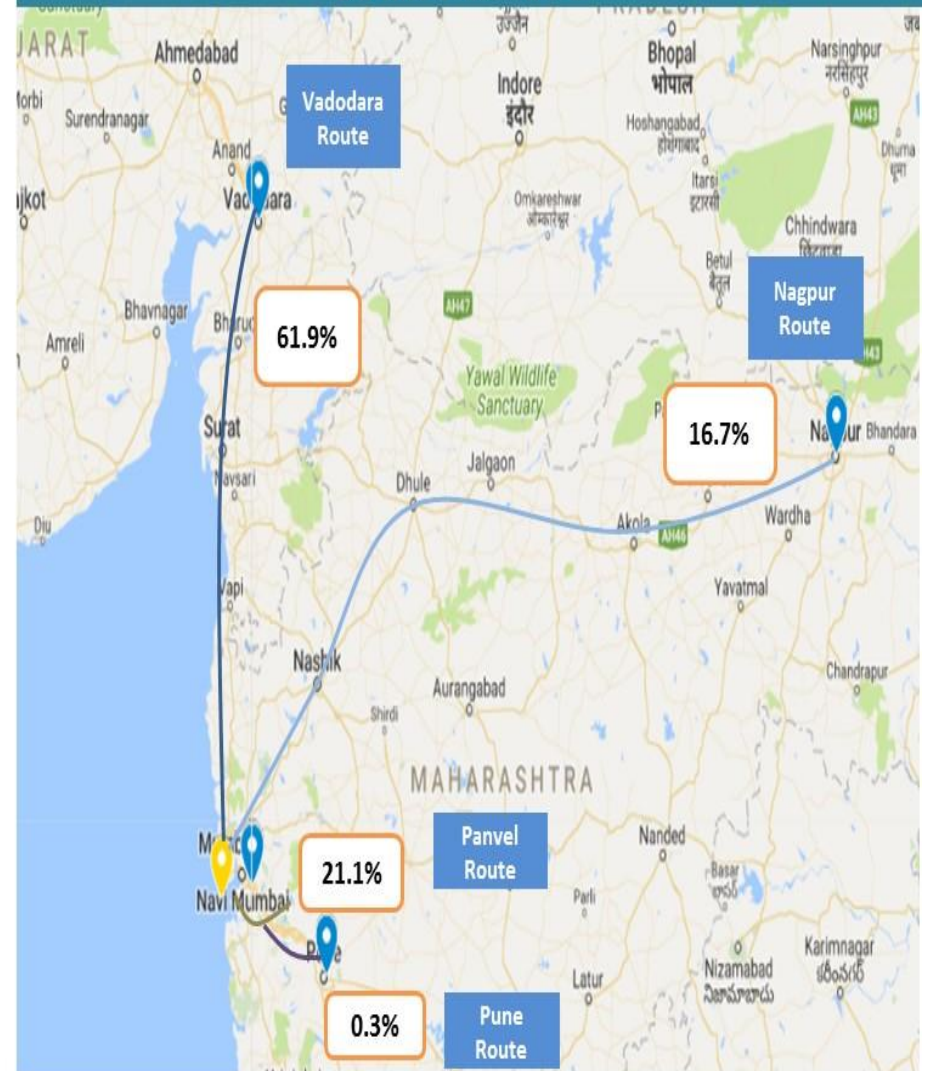


Container Heatmap- JNPT Train

IMPORT CYCLE : JAS'17





EXPORT CYCLE : JAS'17



LDB Operations

LDB Coverage

 Ports where LDB service is Operational

 Ports to be covered in next phase

 Ports to be covered in the Final Phase

APSEZ, Mundra	
Terminal Name	AICTPL (CT3)
	AICTPL (CT4)
	MICTPL
	AMCT (CT2)

Mundra International Container Terminal

APM Terminals Pipavav

DMIC Region
(Western Corridor)

Adani Hazira Port

Eastern Corridor

Haldi-Kolkata Port Trust

Port terminals covered under DLDS

JNPT, Mumbai	
Terminal Name	GTI
	JNPCT
	NSICT
	NSIGT

Southern Corridor

 Krishnapatnam Port

 Kattupalli International container terminal

 Chennai Port

 Chidambaranar Port

Visibility service provided for more than 5 million EXIM containers till date

Implementation

- 4 Port Operators at JNPT
- 4 Port Operators at Mundra
- 1 Port Operator at Hazira
- 44 ICD / CFS
- 12 Toll Plazas
- 280 Operators at Ports

All Implementations are as per plan and ahead of schedule
(~400 RFID Readers)

Integration

- Integrated with 9 Port Systems
- Integrated with FOIS (Railways)

Providing Truck and Train based end to end Container Visibility Services.

Services

- Basic Search through a single window for end to end tracking
- Basic Analytics (Dwell Time, Transit Time, Efficiency, Average Delivery Time, SMS / Email Alerts, etc.)
- Detailed Analytics (Container Heat Map, Average Speed, Congestion Analysis, etc.)

- Visibility Services for 70% of India's Container Volume
- Performance Benchmarking
- Visibility provided for more than 5 Mn containers handled

THANK YOU