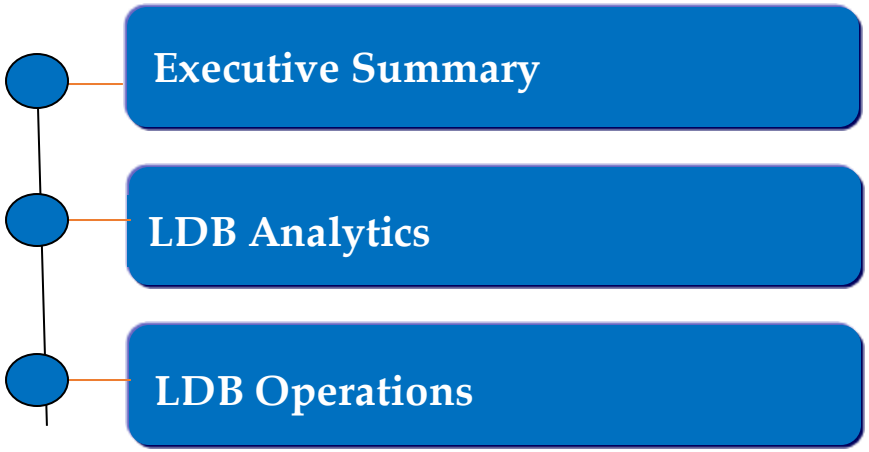
DLDS
LDB Analytics Report

Oct 2017


Executive Summary
LDB Analytics
LDB Operations

Executive Summary

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.

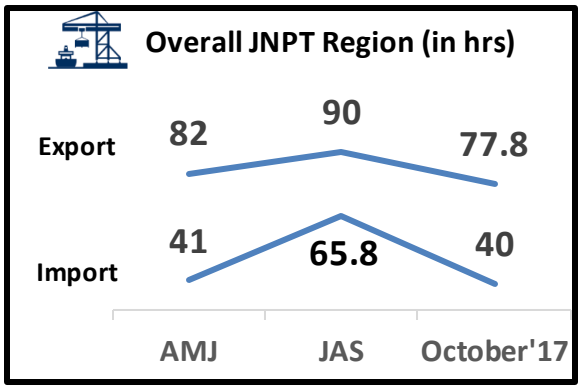
DLDS Analytics reports have been able to bring in Visibility to the Stakeholders enabling them in improvising the key performance Indicators as below:

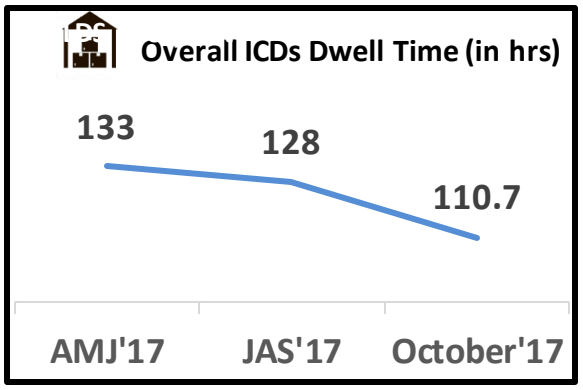
- The Export Dwell Time of Port terminals of JNPT region (JNPCT, APM, NSICT, NSIGT) which was around **91 hours during the July-Aug-Sep (JAS 2017) quarter** saw an **improvement of 14** % in October 2017.

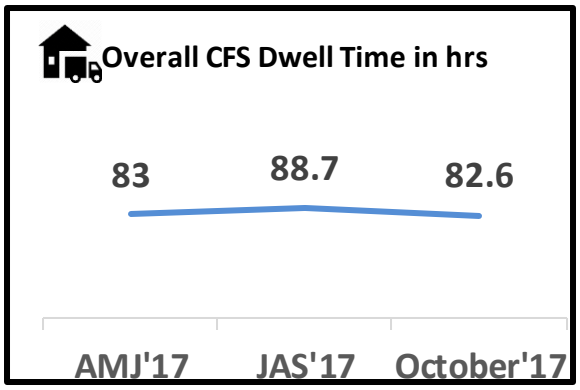
- The Import Dwell Time of Port terminals of JNPT region (JNPCT, APM, NSICT, NSIGT) which had increased to **65.8 hours during the July-Aug-Sep (JAS 2017) quarter due to monsoon and Ransomware attack on APM terminals** saw an **improvement of 40** % in Oct 2017.

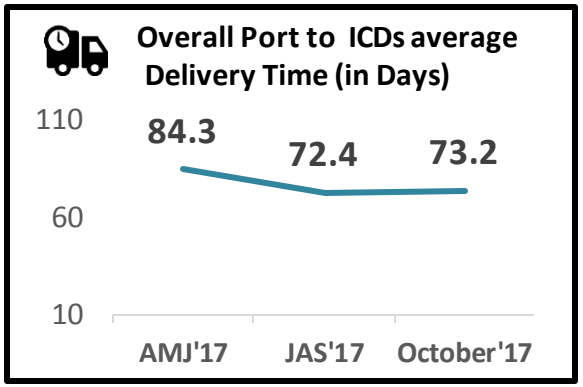
- Performance Benchmarking reports are helping inculcate competition among the stakeholders in providing better Logistics Services.

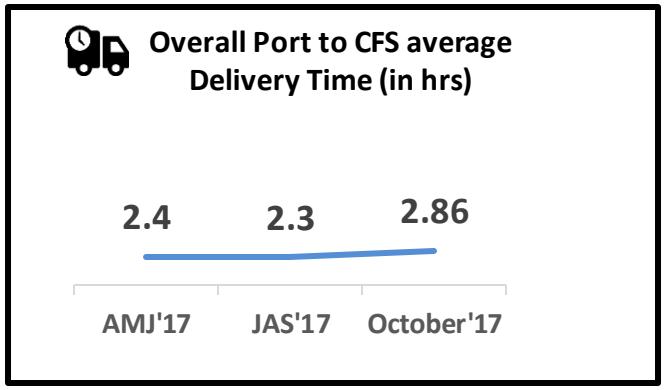
Executive Summary- JNPT Performance Trend











- Continued improvement in Dwell Time of Inland Container Depots(**13**% improvement in comparison to Jul-Aug-Sep 2017) & Container Freight Stations (**7** % Improvement in comparison to Jul-Aug-Sep 2017).

- Port to ICD delivery time has improved by 17% in comparison to Apr-May-Jun 2017 qtr, however the Port-CFS delivery time has seen a slight dip for the month of Oct 2017.

Executive Summary: Key Findings from a year of Analytics

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Railway Related Challenges

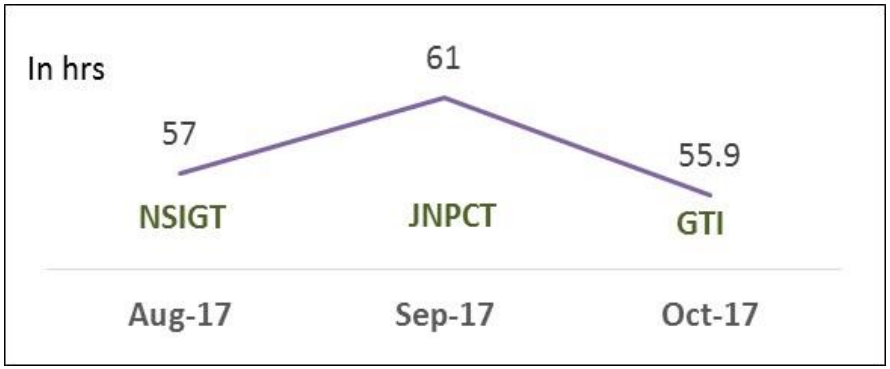
- Early arrival of Train bound Container movement (Export) at JNPT Port terminals leading to high Dwell Time for Port terminals.
- Post Port clearance or Containers , there is higher Container Handling time across railway siding (Import Containers).
- Mixed Container Movement across railway siding is a concern highlighted by various Shipping Lines leading to delays in container movement.
- Rail bound Import containers have a significantly higher Dwell time than Truck bound Import Containers.

Roadways related Challenges

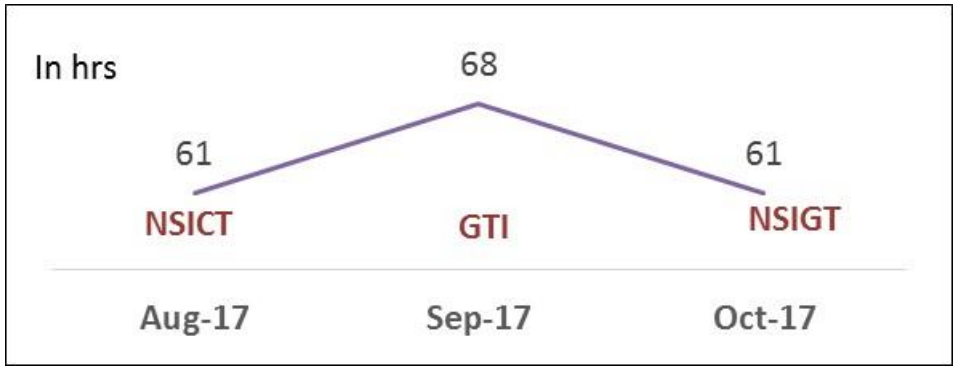
- DLDS has categorized various CFS around the JNPT region in smaller clusters (areas) to help in identifying the clusters with maximum congestions resulting in overall high delivery time and same is being published on a monthly basis to the relevant stakeholders.
- Regular Congestions around certain clusters around JNPT region
  - **Sonari village, JNPT Area**
  - **Bhendkhal area, Khopate road**
  - **Sonari area, JNPT road**

Executive Summary - Oct 2017 Performance Benchmarking

JNPT Region Best Performing Terminal w.r.t Dwell time
GTI Port Terminal

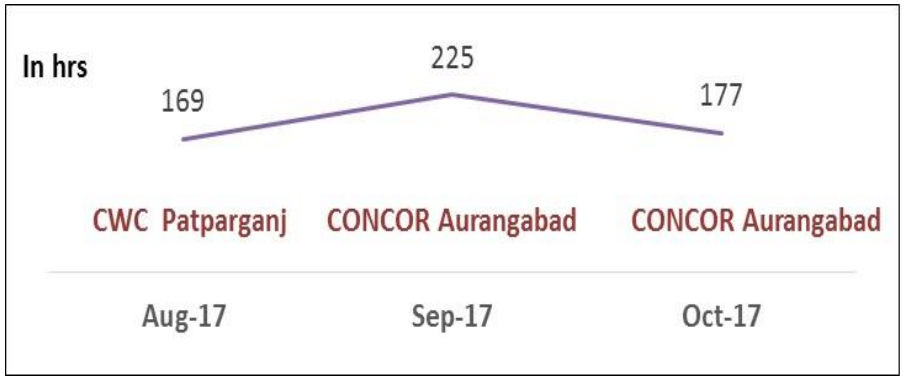


JNPT Region Low Performing Terminal w.r.t Dwell time :
NSIGT Port terminal



Best Performing ICD w.r.t Dwell time :
CWC Patparganj

Low Performing ICD w.r.t Dwell time :
CONCOR Aurangabad



Executive Summary - Oct 2017 Performance Benchmarking

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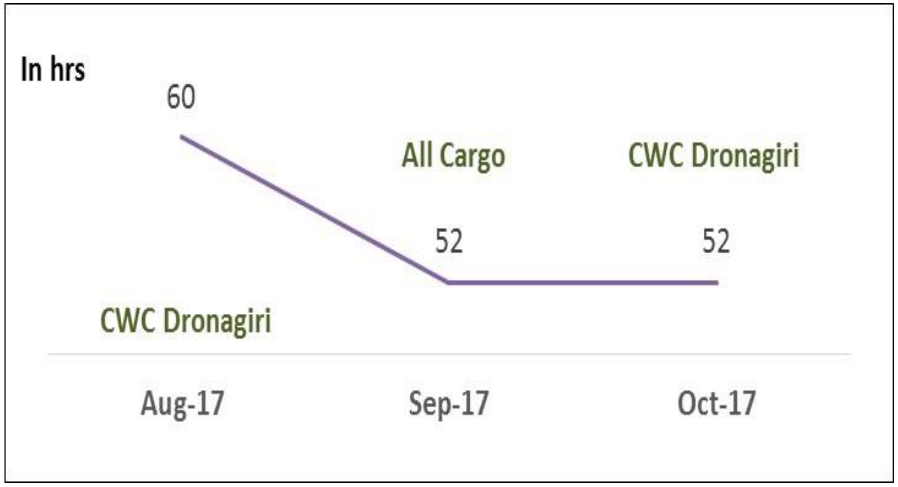
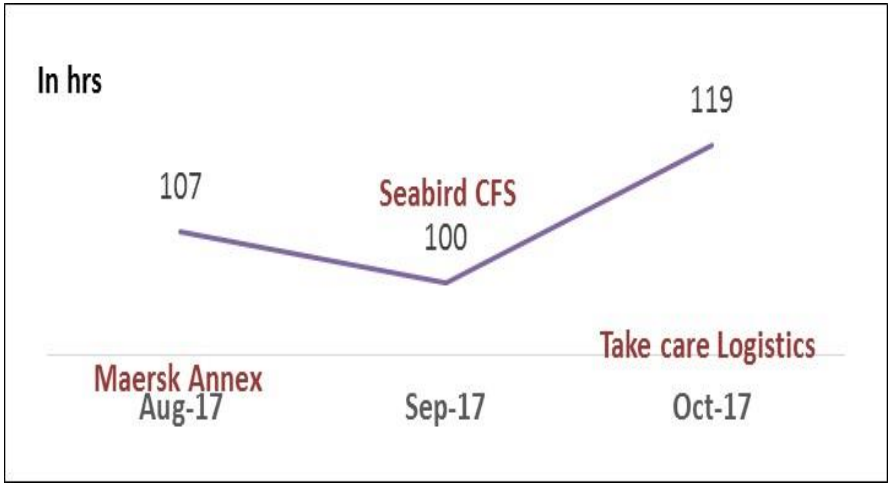
JNPT Region Best Performing CFS w.r.t Dwell time : CWC Dronagiri , Navi Mumbai

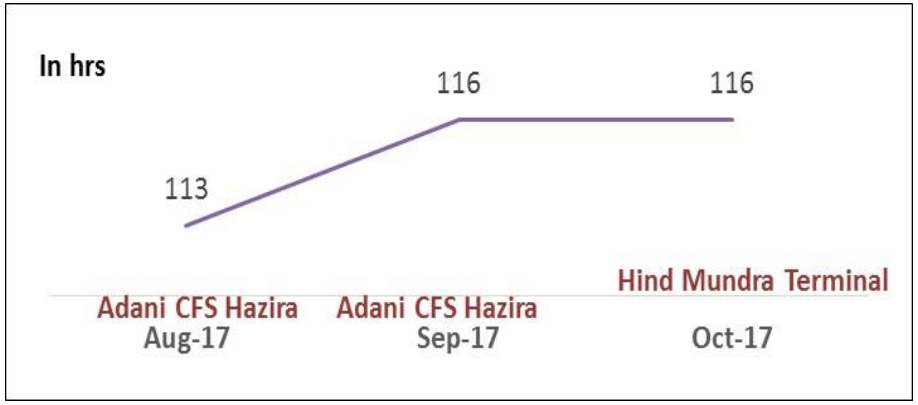


JNPT Region Low Performing CFS w.r.t Dwell time : Take Care Logistics

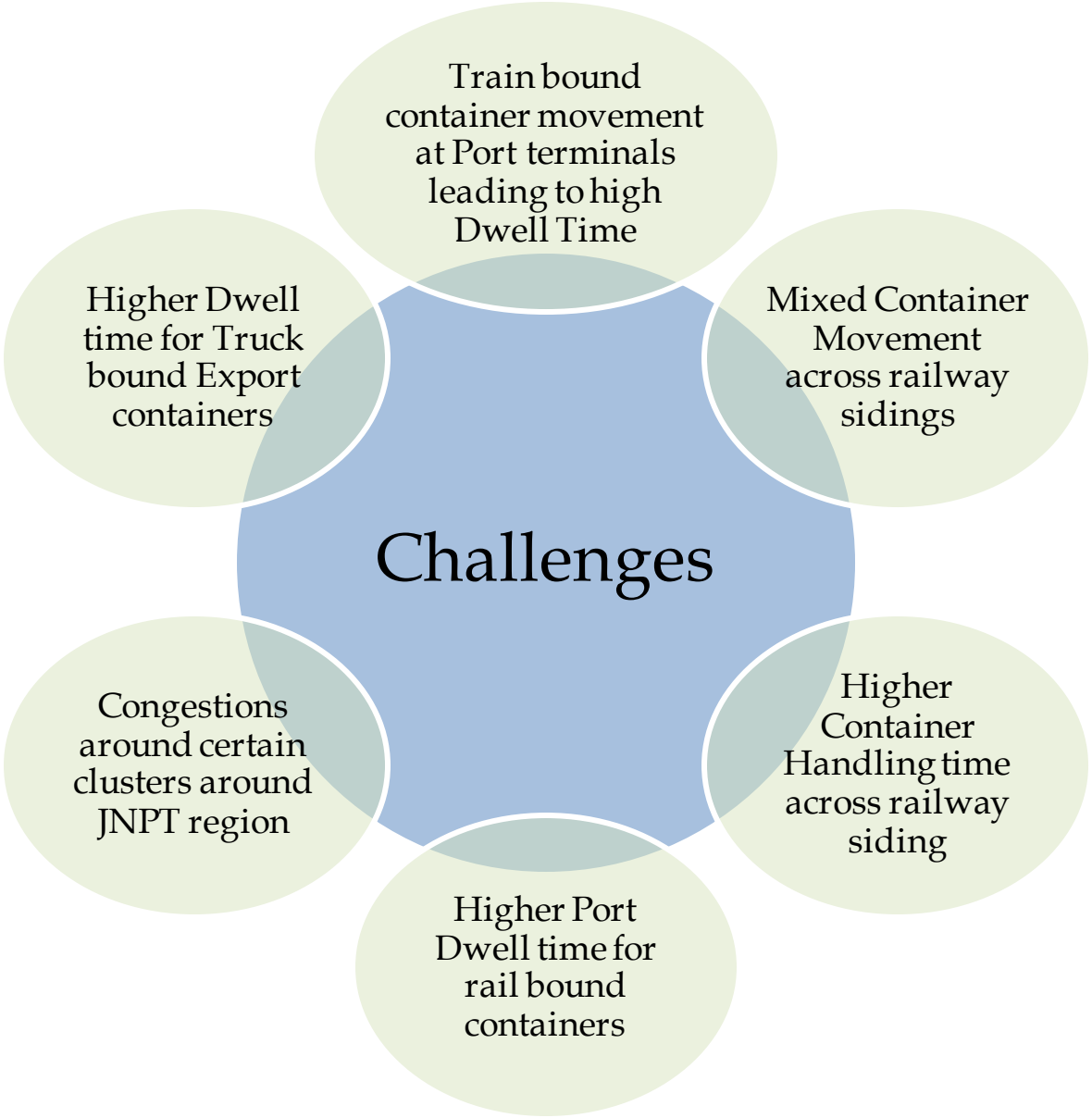


APSEZ Gujarat Region Best Performing CFS w.r.t Dwell time: CWC CFS Mundra

APSEZ Gujarat Region Low Performing CFS w.r.t Dwell time : Hind Mundra Terminal CFS



Key Challenges- JNPT Region



Key Challenges-Railways

Key Challenges-Railway bound Containers (Export)

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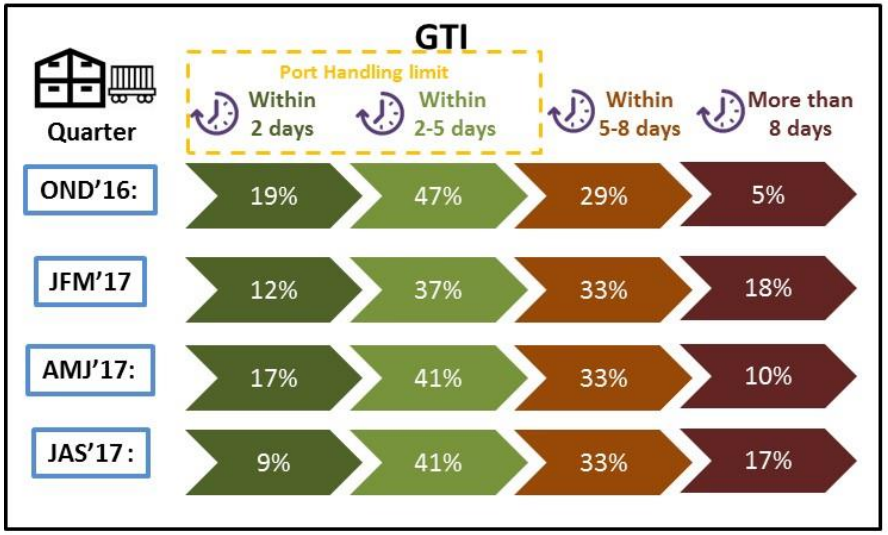
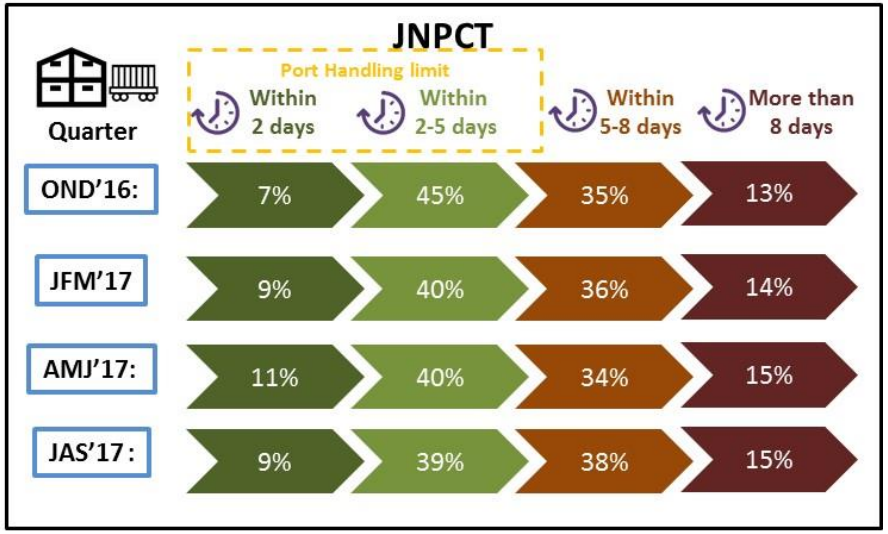
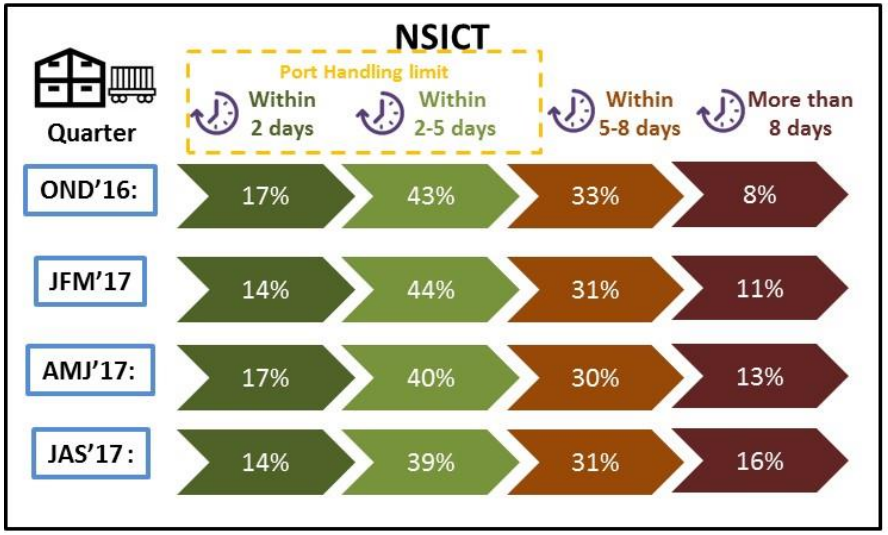
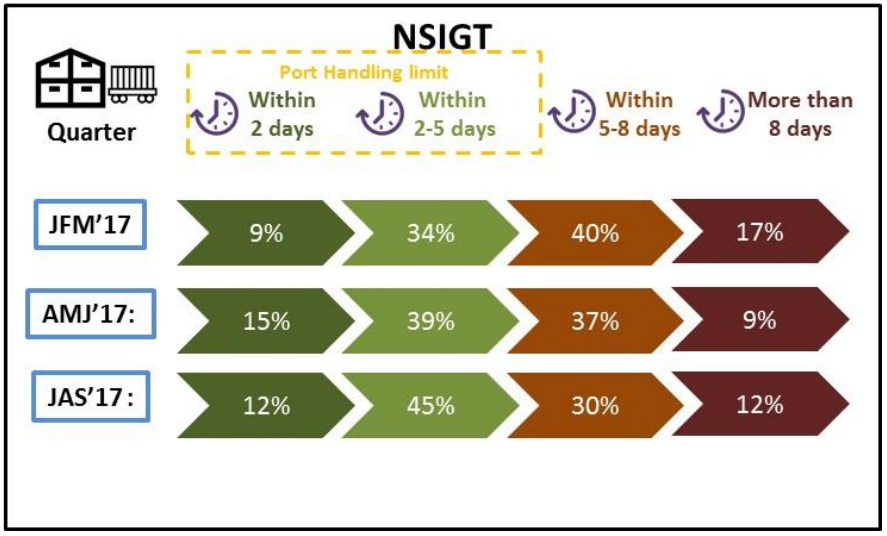
Even though JNPT is working towards gate time for train bound Containers to be between 4-5 days, the below image depicts the scenario wherein the early arrival of the containers via Train within the Port Premises leading to higher Dwell Time.









Key Challenges-Railway bound Containers (Import)

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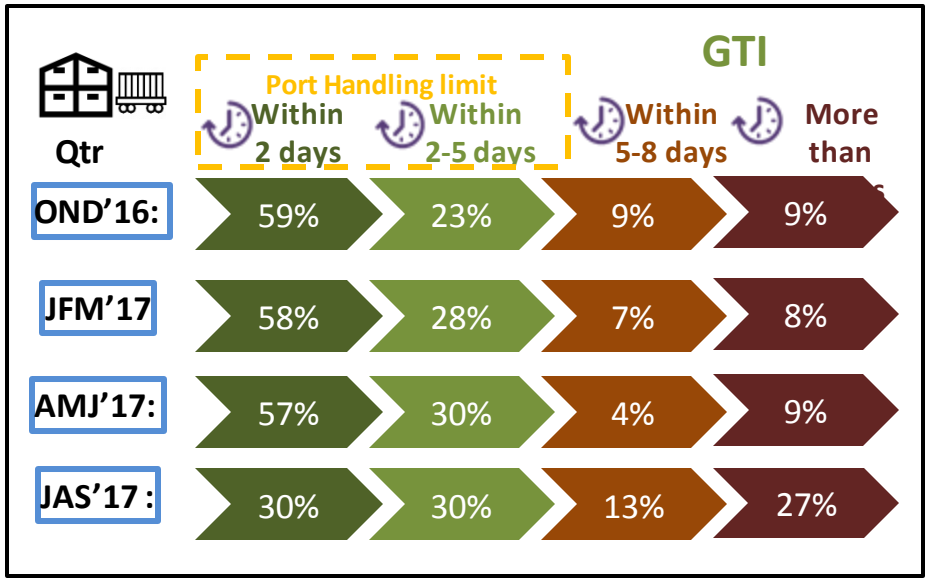
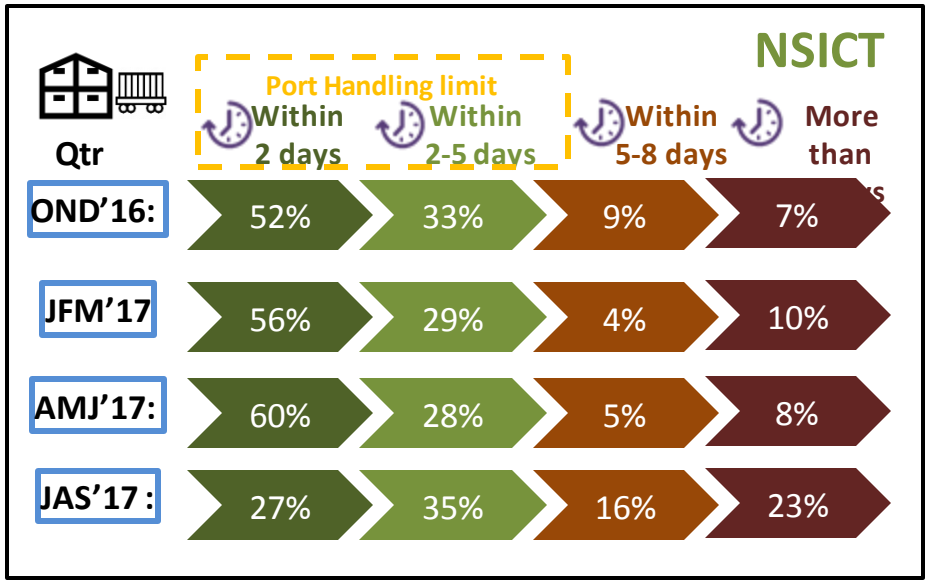
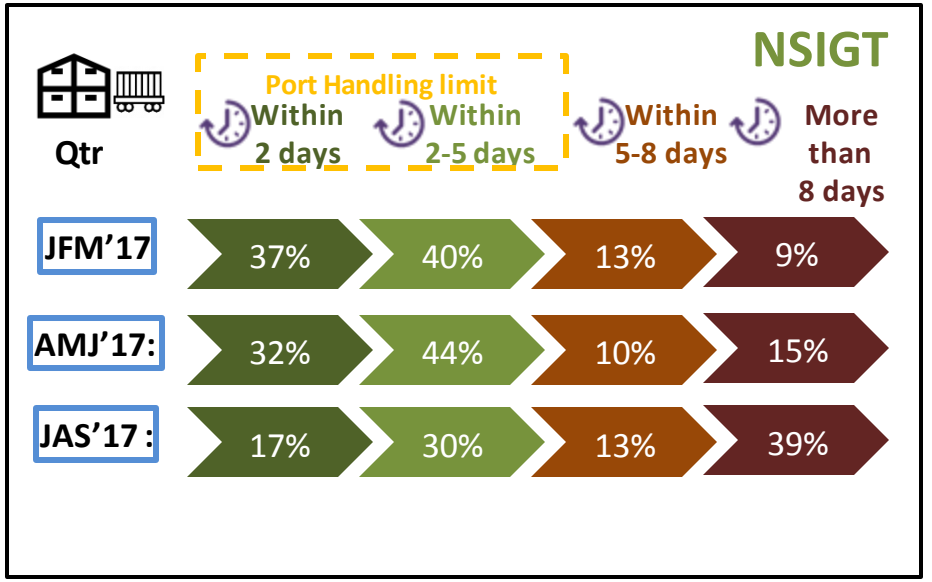


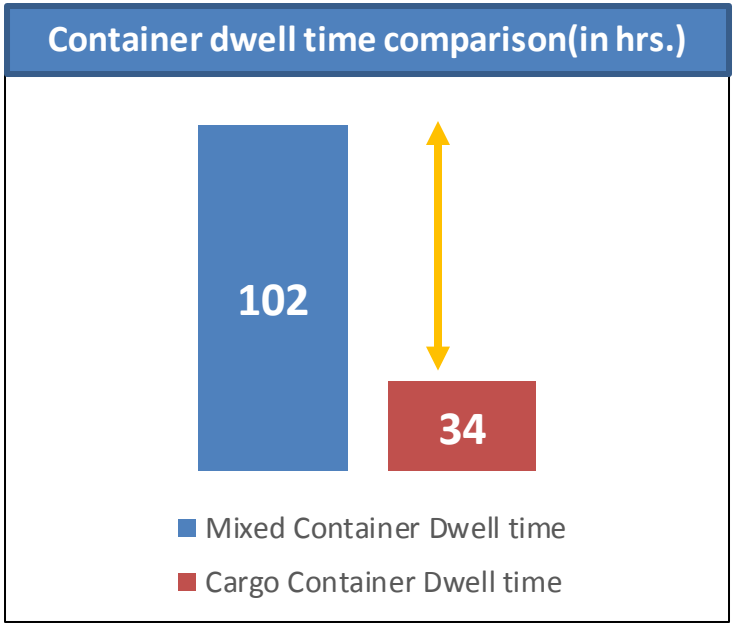




Percentage of containers taking more than 5 days time for moving out showcases the delay in Rail bound containers movement within the Port Premises leading to higher Dwell Time

Key Challenges-Mixed Railway Containers

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)



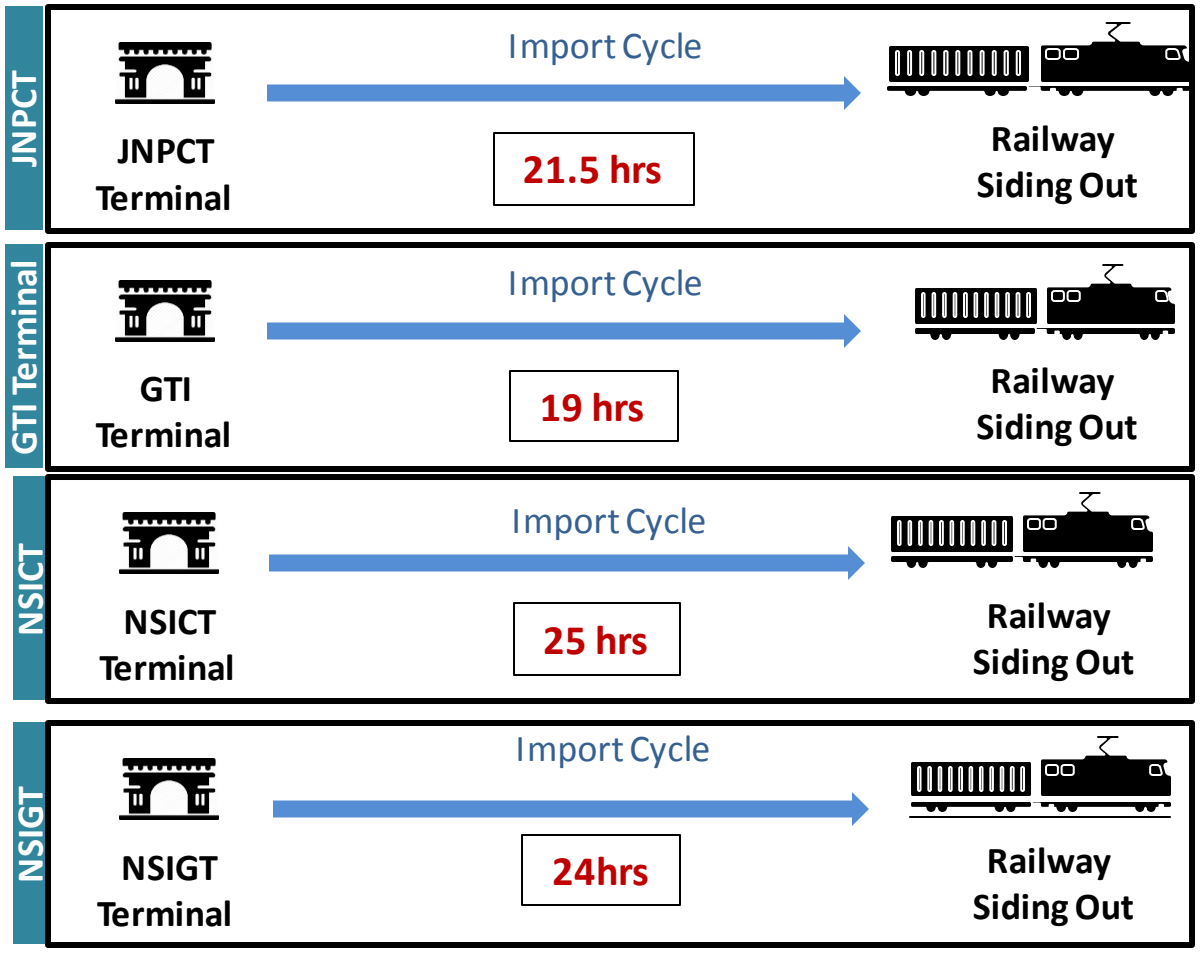
- In terms of Dwell Time, time taken by Mixed containers for clearance at the port terminals is much higher in comparison to the regular movement of Containers.
- Mixed containers stacking at Yard of different terminal leads to challenges in retrieving the same and at times leads to the possibility of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

Key Challenges-Higher Container Handling Time

Higher container handling time across rail siding of Port terminals

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.

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



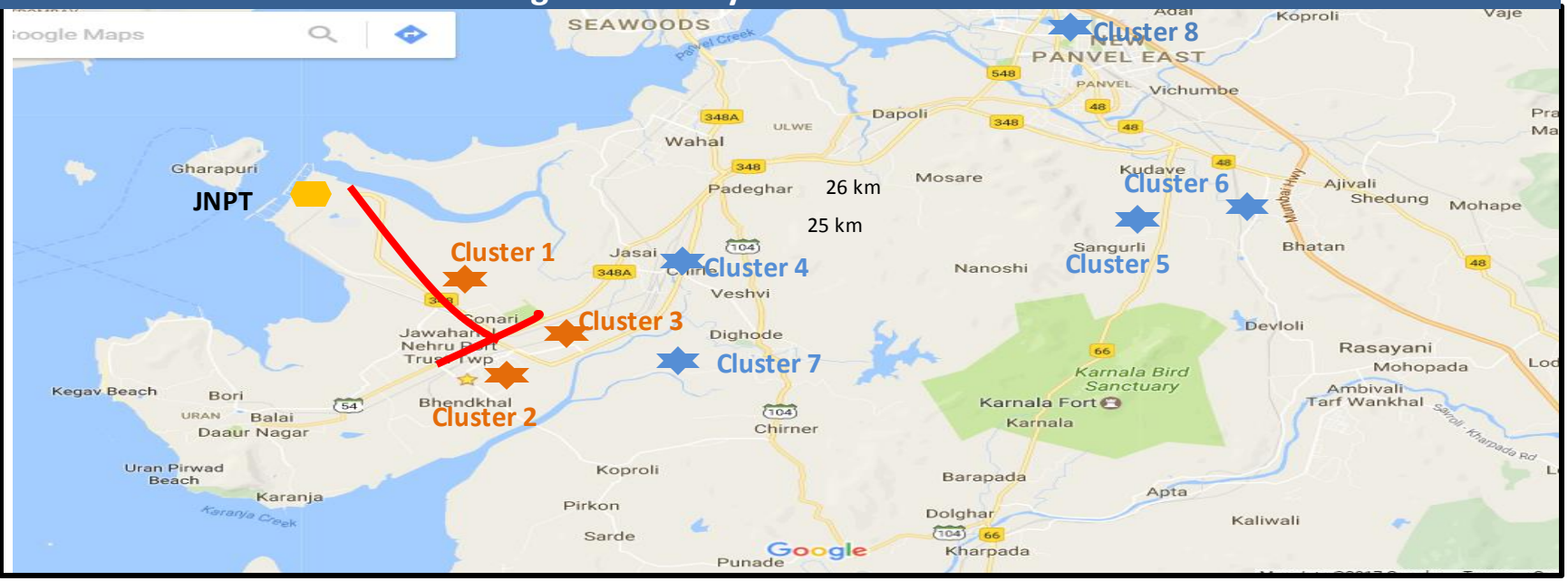
A similar trend exists for Export bound Containers as well

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

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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

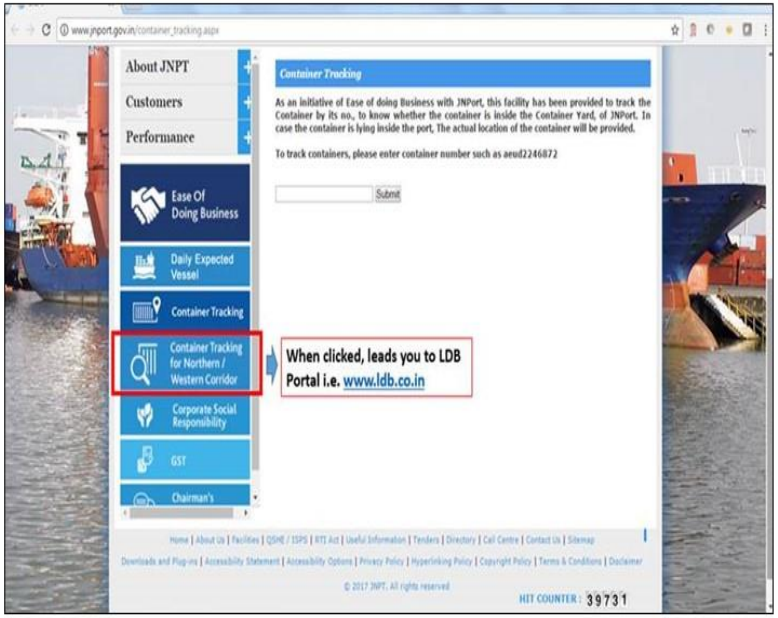
LDB's **Performance benchmarking reports with respect to the competition is helping us focus on streamlining our processes to be the best in the industry"**

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



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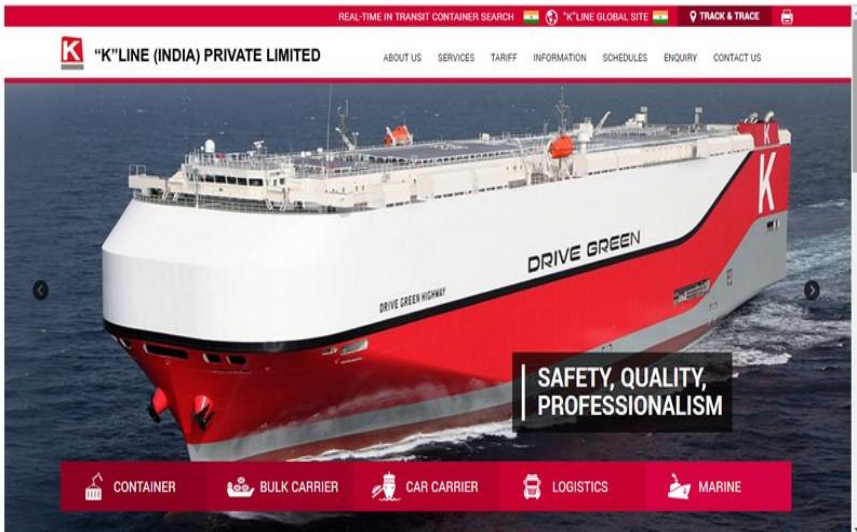


Global Benchmarking- Trade Performance

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, Merk-O 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)	
Countries	**Container Handled (IN Million TEU's)**
Shanghai , China	37
Singapore	30.9
Shenzhen , China	23.9
Rotterdam , Netherland	12.23
Port Klang , Malaysia	11.89
Hamburg , Germany	8.8

Indian Container Volume in India (FY 17)	
Port	**Container Handled (IN Million TEU's)**
JNPT , Mumbai	**4.5**
Adani Port SEZ , Mundra	**3.9**

Source: Indian Ports Association, Logistics Performance Index

Global Benchmarking

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

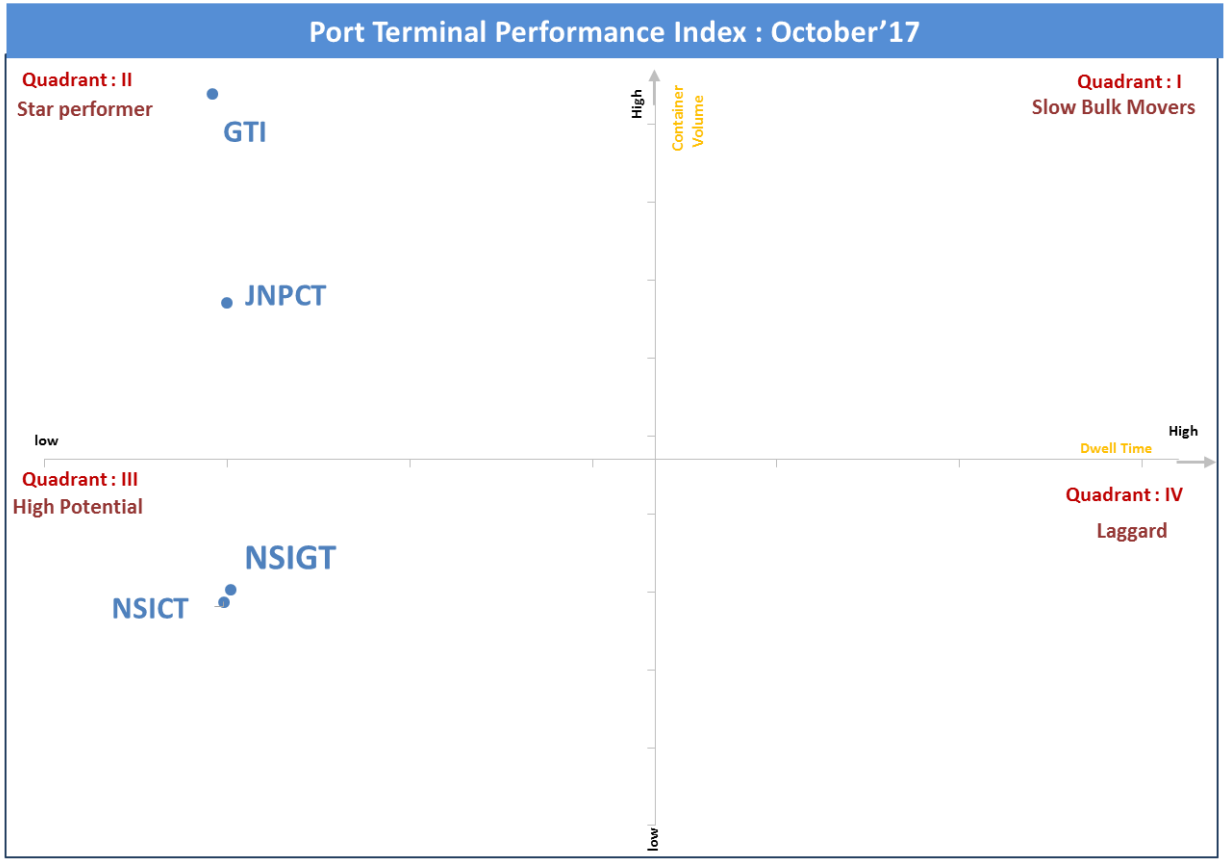
Performance Index- JNPT Port Terminals

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.

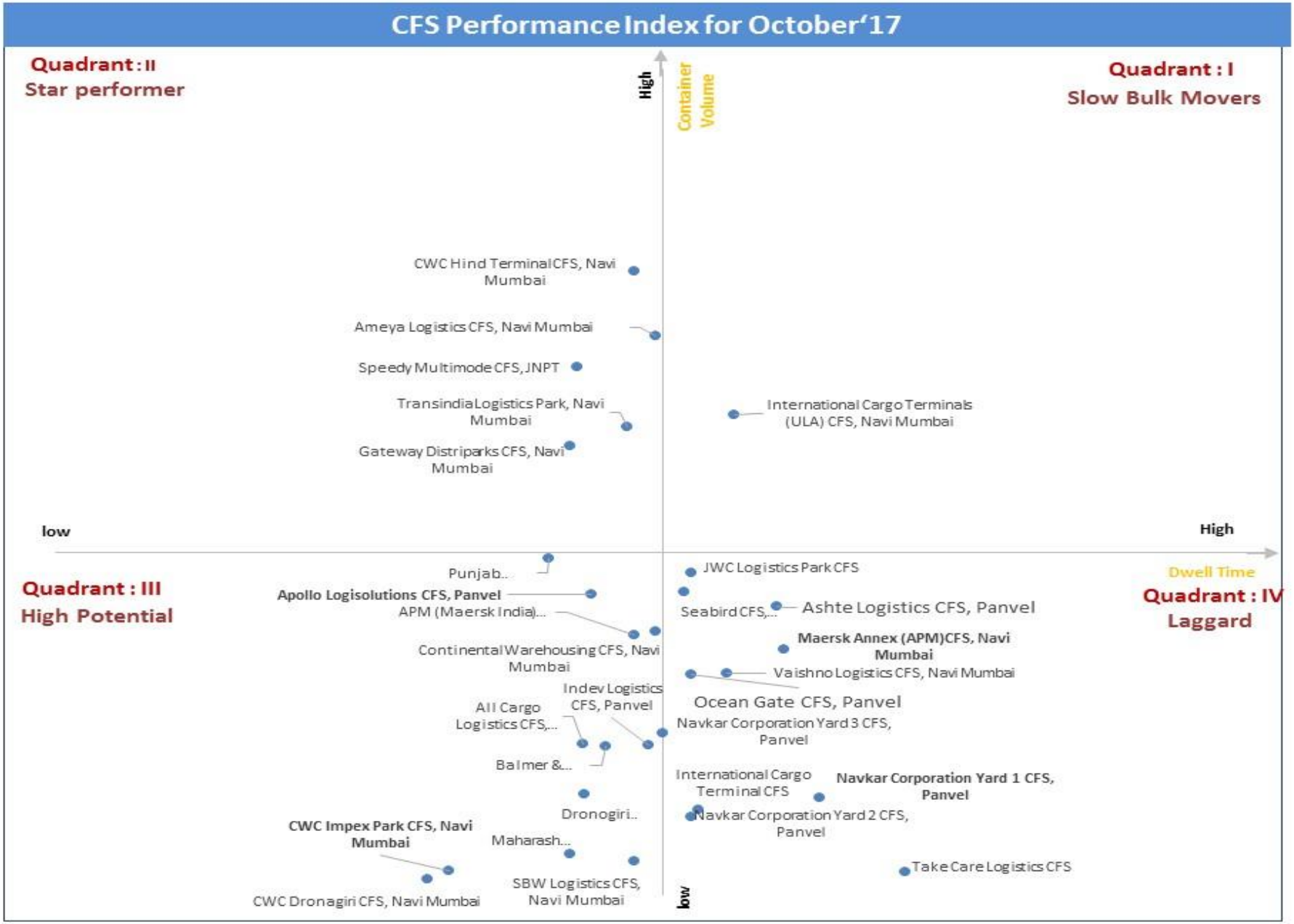
The figure depicts the Frequency Index i.e. volume by dwell time performance for JNPT Port terminals for October'17. The Quadrant II represents the high performing ports with high frequency Index i.e. high container volume at lower dwell time

Slow Bulk Movers : consist of Ports which have catered higher container volume at higher dwell time	Star Performer: consist of Ports which have catered relatively high container volume in lower dwell time	High Potential : consist of Ports which have catered relatively lower container volume in lower dwell time	Quadrant IV : consist of Ports which have catered relatively lower container volume at higher dwell time

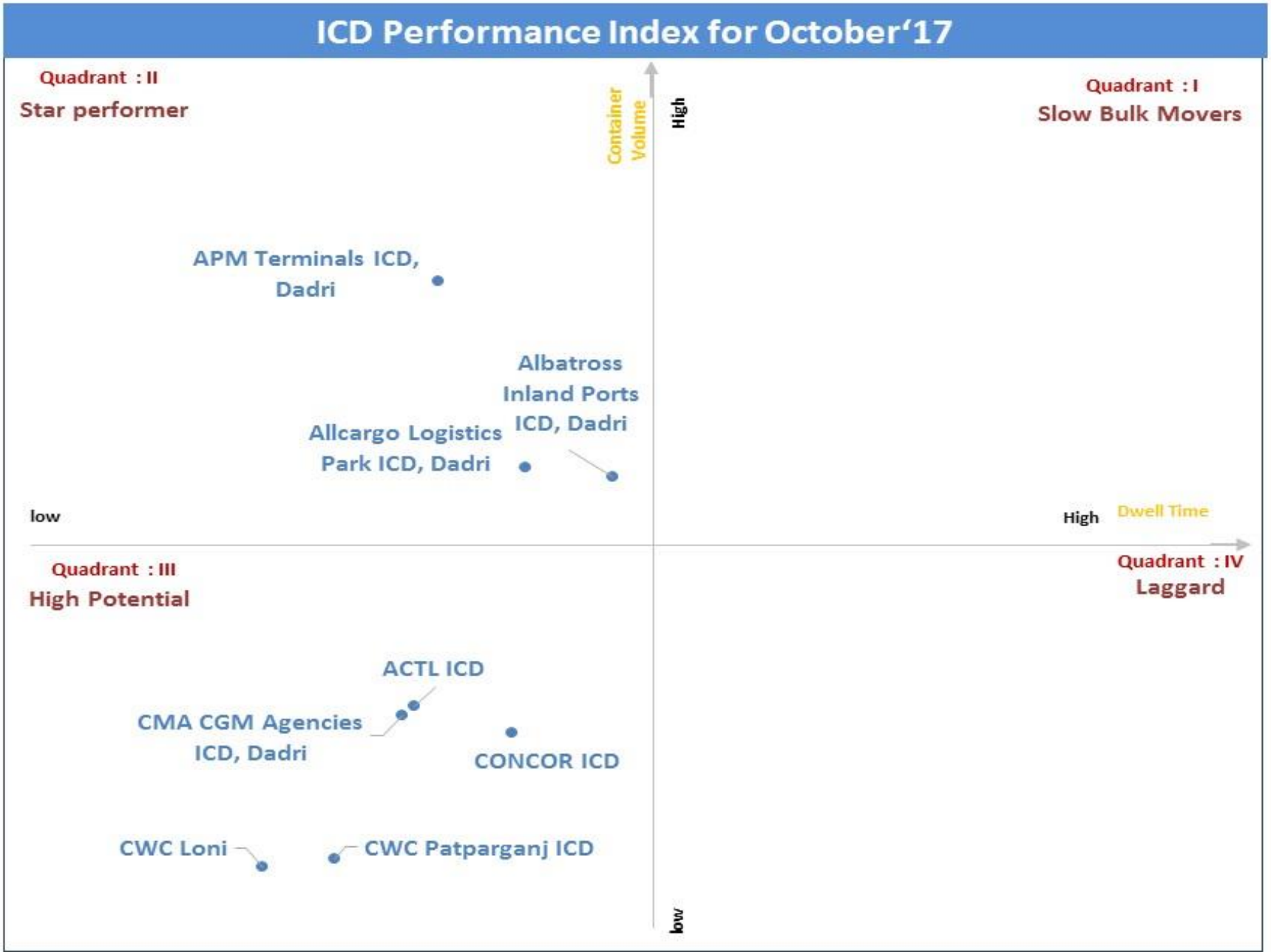
Growth Trend		
Terminal	Previous Trend	October'17
JNPCT	Q1	Q2
NSICT	Q4	Q3
NSIGT	Q4	Q3
GTI	Q1	Q2



Performance Index- JNPT Container Freight Stations



Performance Index- Inland Container Depots



Congestion Analysis-JNPT Region

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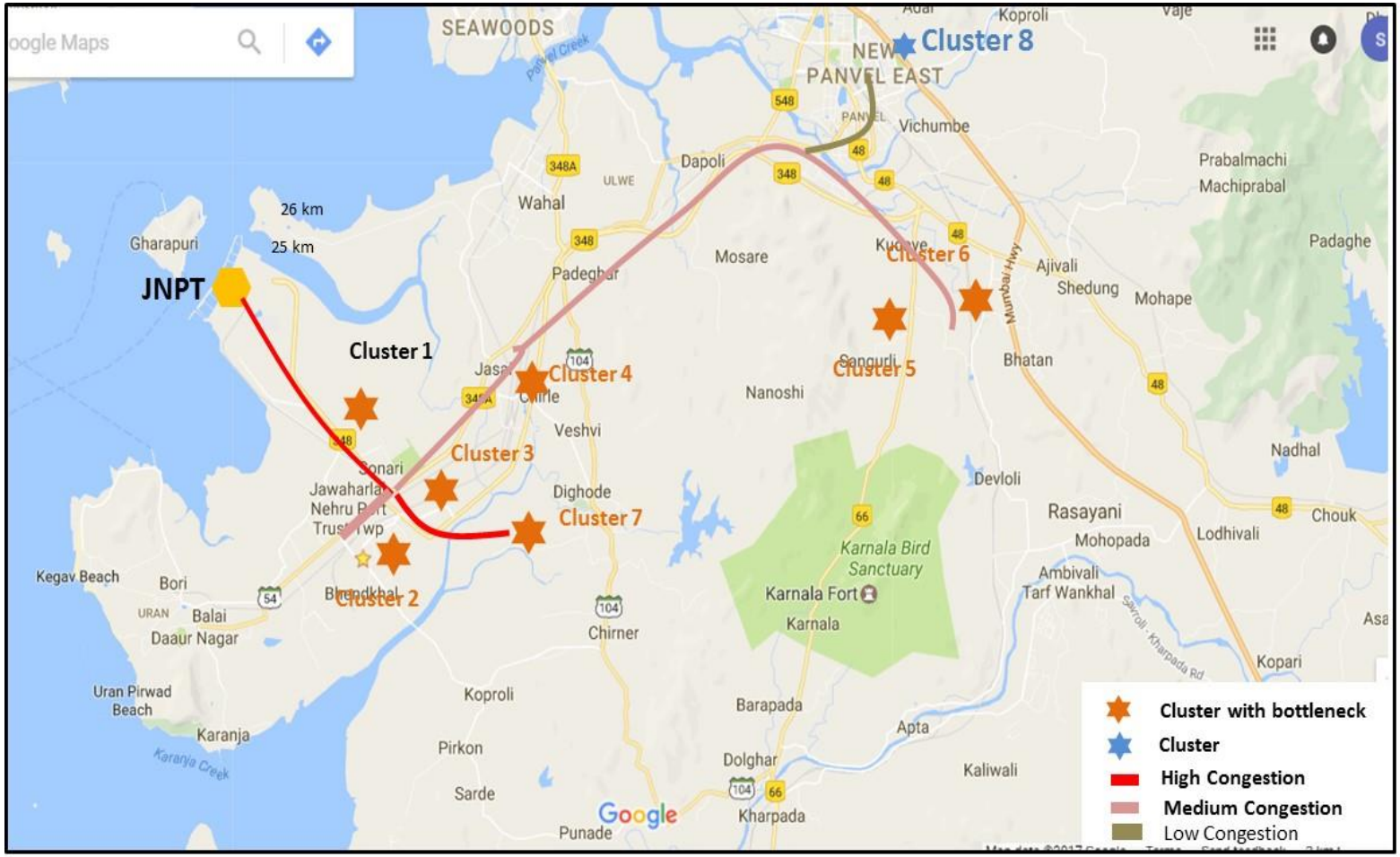
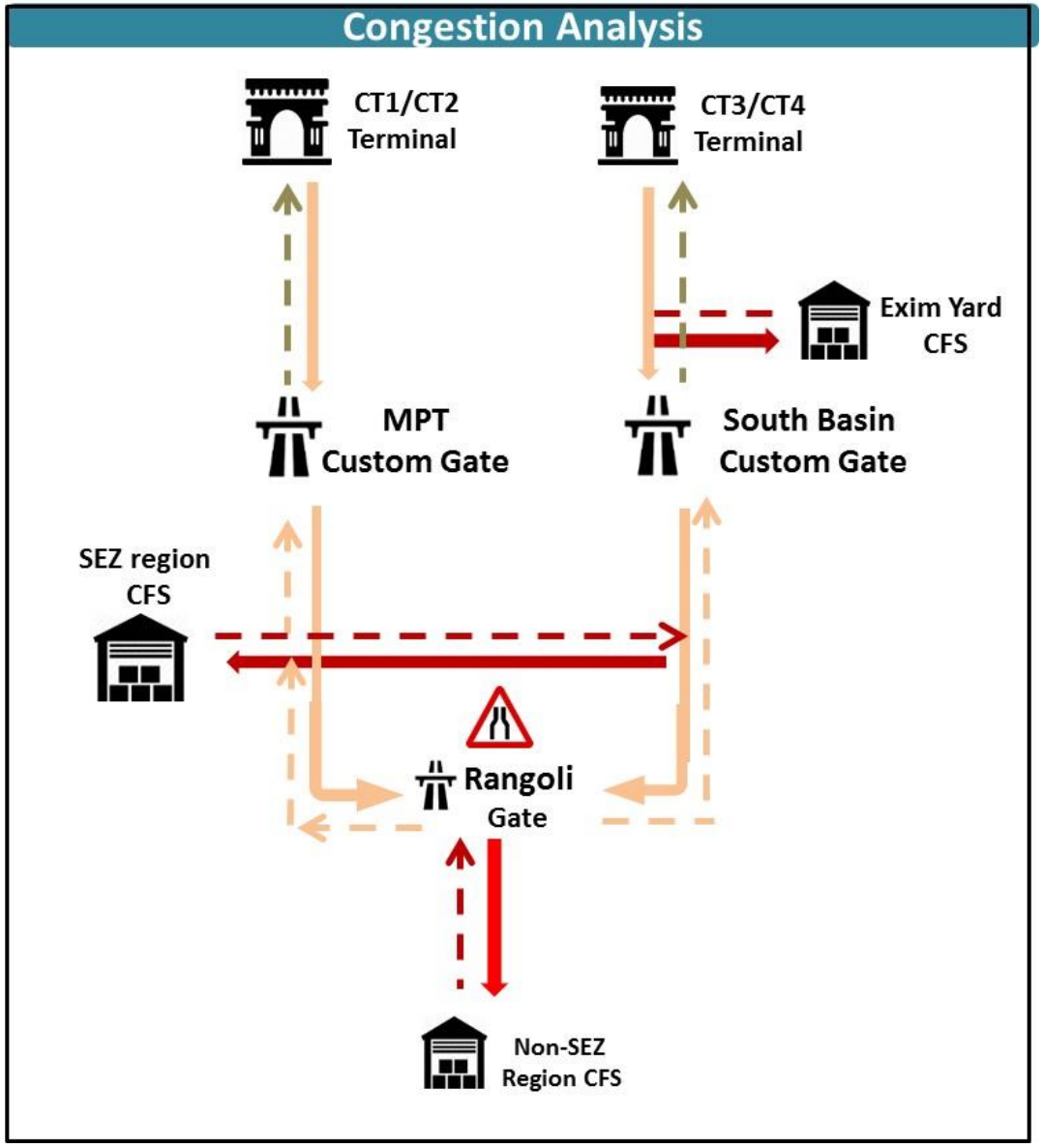


Cluster 1	Cluster 2
JNPT Area	Bhendkhal area, Khopate road
Cluster 3	**Cluster 4**
Sonari area,JNPT road	Chirle area , JNPT road
Cluster 5	**Cluster 6**
Plaspa area, Coachi kanyakumari Highway	Salva apta rd area, Bangalore highway
Cluster 7	**Cluster 8**
Patilpada area, Khopate JNPT road	Taloja, Navi Mumbai

Note : Please find the respective CFS in each cluster in annexure section

GTI Terminal	JNPCT Terminal	NSICT Terminal	NSIGT Terminal
Congestion Level	Congestion Level	Congestion Level	Congestion Level
Export Cycle :-	Export Cycle :-	Export Cycle :-	Export Cycle :-
Import Cycle :-	Import Cycle :-	Import Cycle :-	Import Cycle :-

Congestion Analysis-APSEZ Region



Import Cycle
Export Cycle
High Congestion
Medium Congestion
Low Congestion
Excessive bottleneck

Congestion Analysis-Toll Plaza

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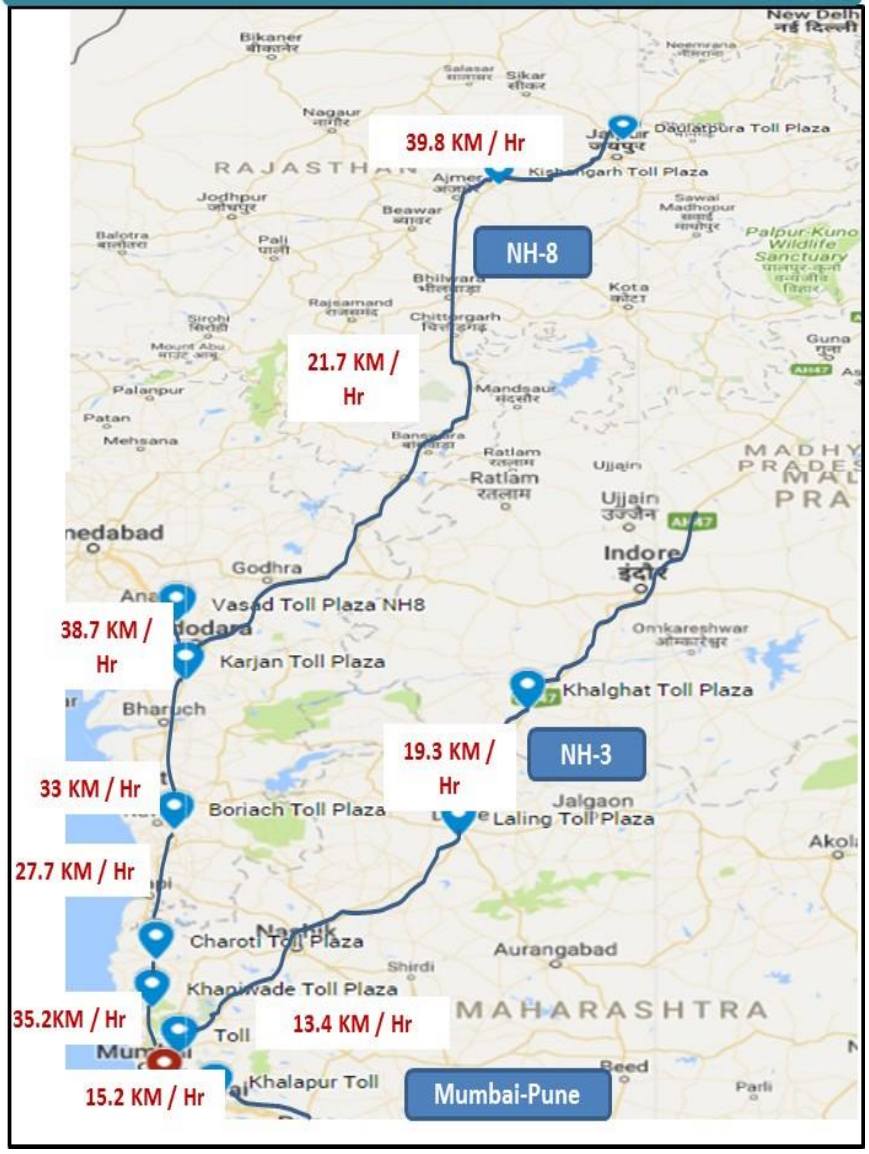
Avg. Travel Time & Speed between Toll Plazas (OCTOBER'17)

Source	Destination Toll Plaza	Inter Distance (Km)	Avg. Travel Time (Hr)	Avg. Speed (Km/Hr)	Previous month Avg. speed (km/hr)
JNPT	Khaniwade	94	7.0	**13.4**	13
JNPT	Khalapur	60	4.0	**15.2**	15
Khaniwade	Charoti	50	1.4	**35.2**	36
Charoti	Boriach	126	4.6	**27.7**	27
Boriach	Bharthan	142	4.3	**33.0**	32
Bharthan	Kishangarh	686	31.6	**21.7**	20
Bharthan	Vasad	60	1.6	**38.7**	38
Kishangarh	Daulatpura	128	3.2	**39.8**	38
Dhule	Khalghat	186	9.7	**19.3**	23

Map



Container Heatmap- JNPT Train

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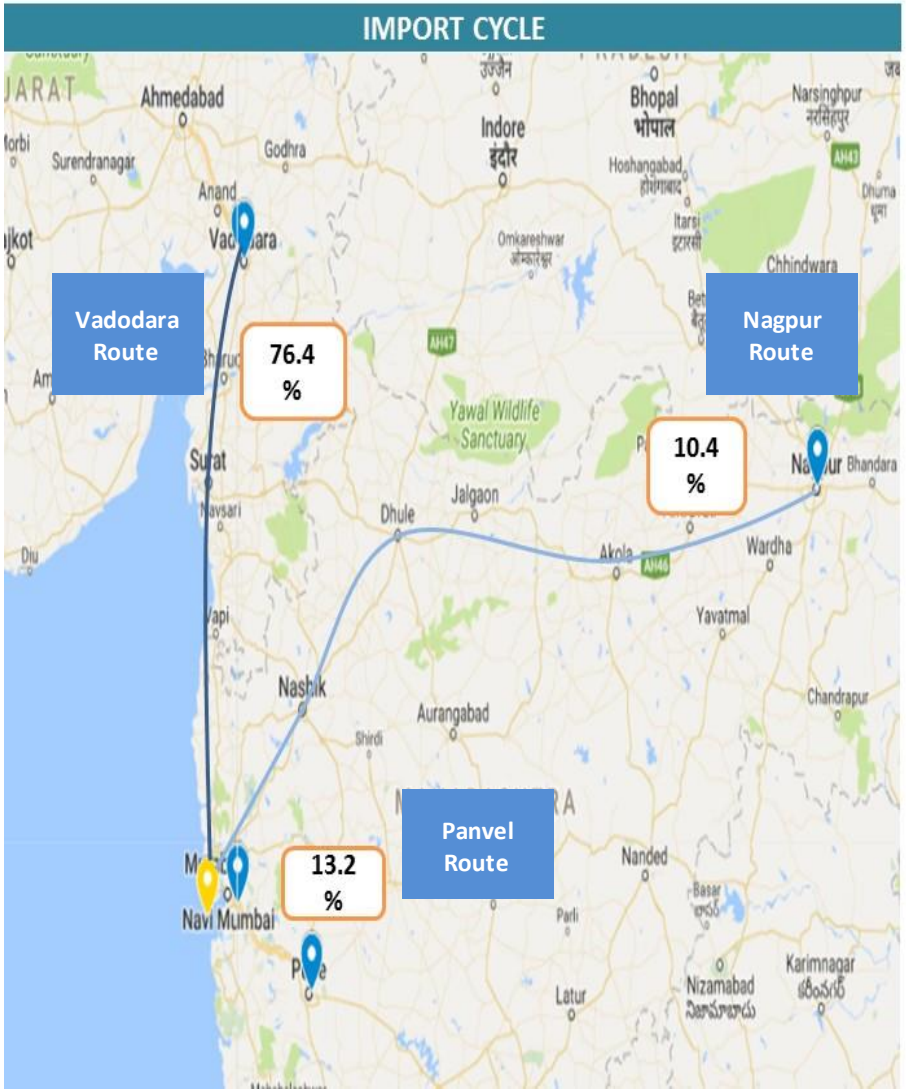
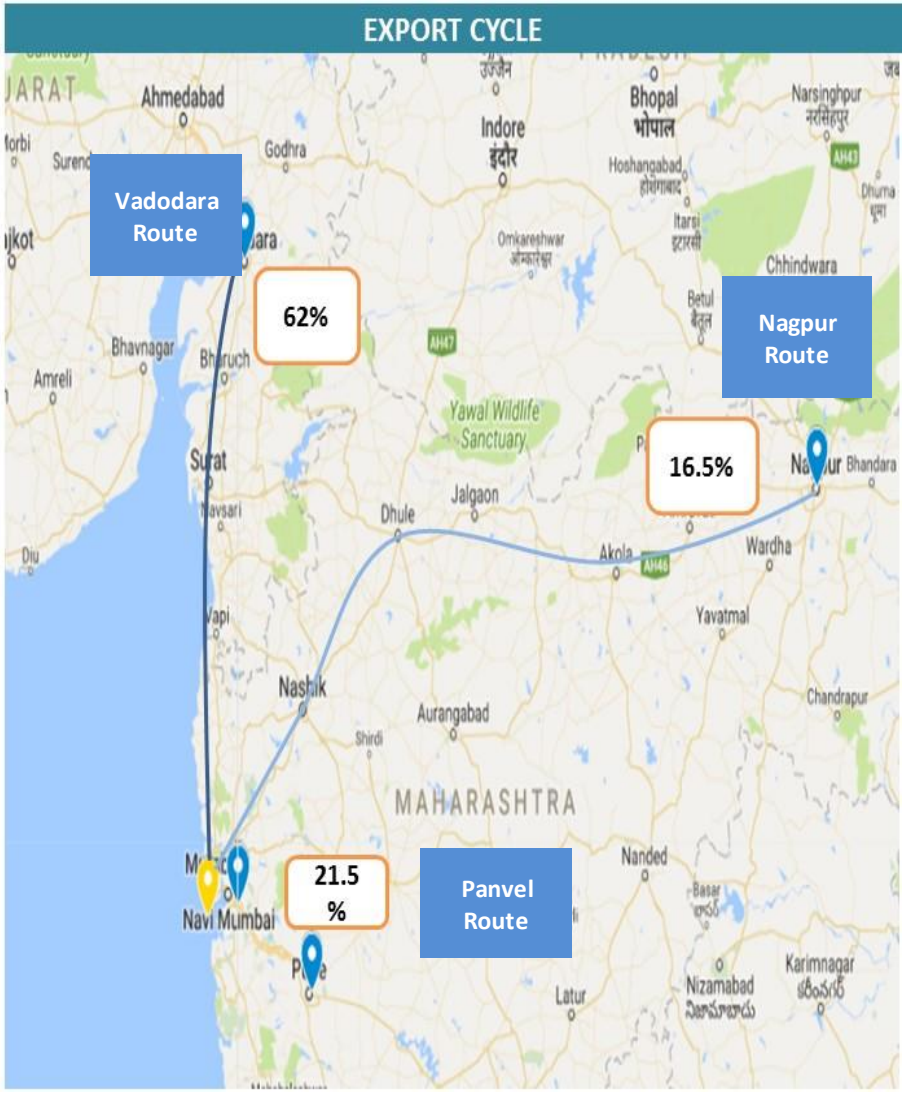
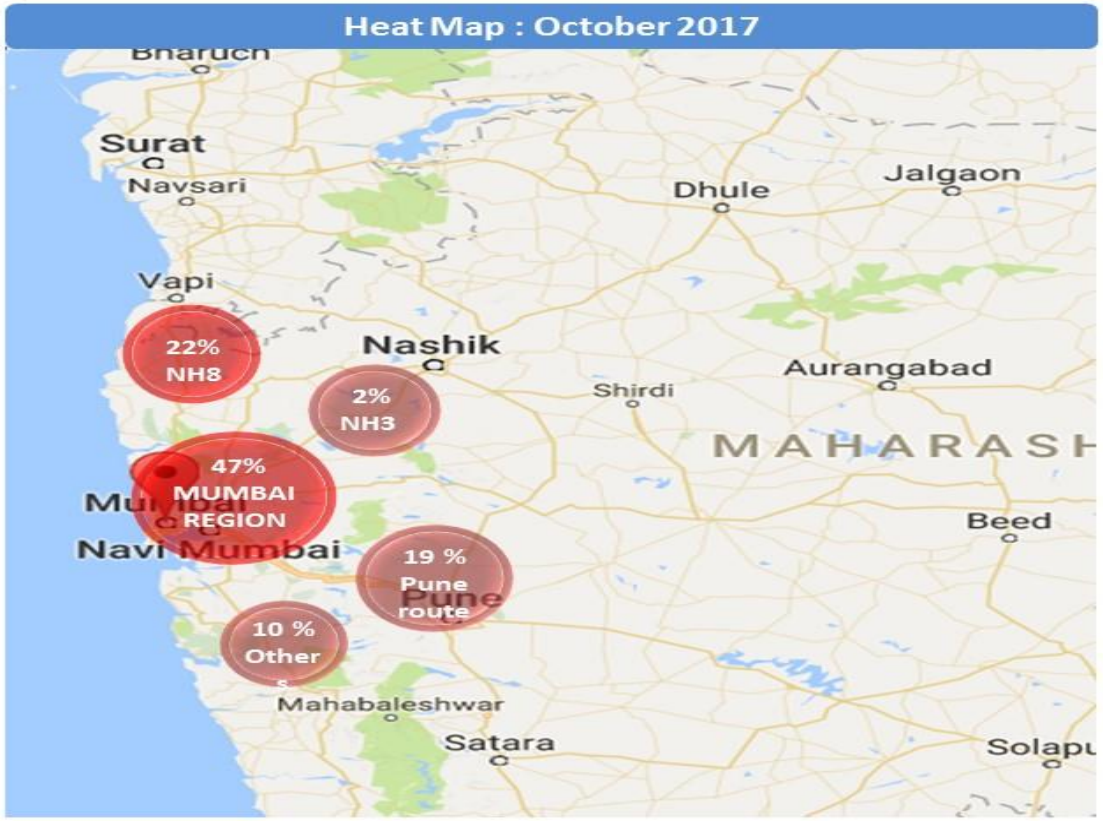




Container Heatmap- JNPT Truck

HEAT MAP : Overall Mumbai region



Region	October'17
Mumbai Region	47%
Pune	19%
NH8	22%
NH3	2%
Others	10%

The heat map above depicts the movement of containers in and around the Mumbai region.

Container Heatmap- APSEZ Train

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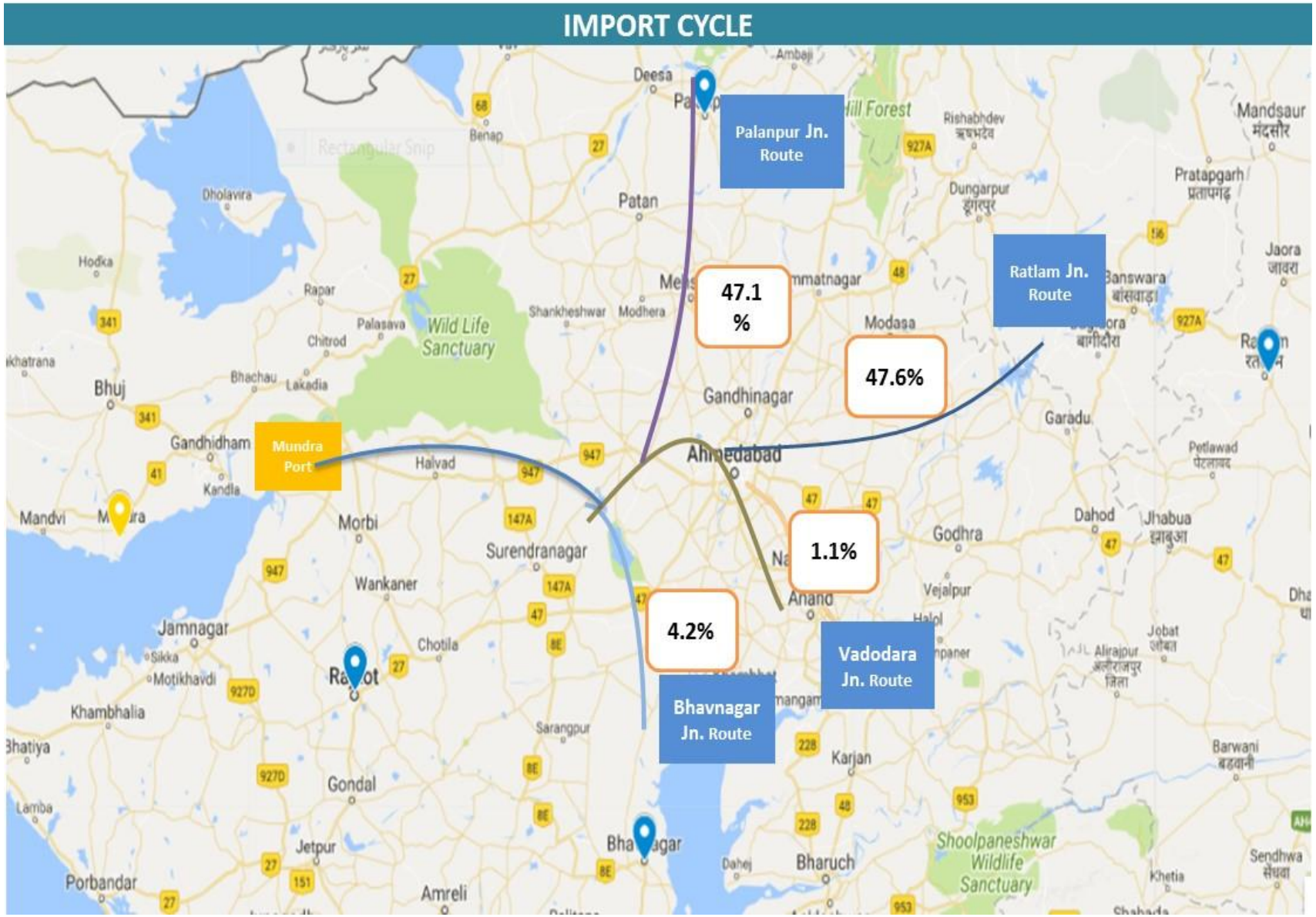
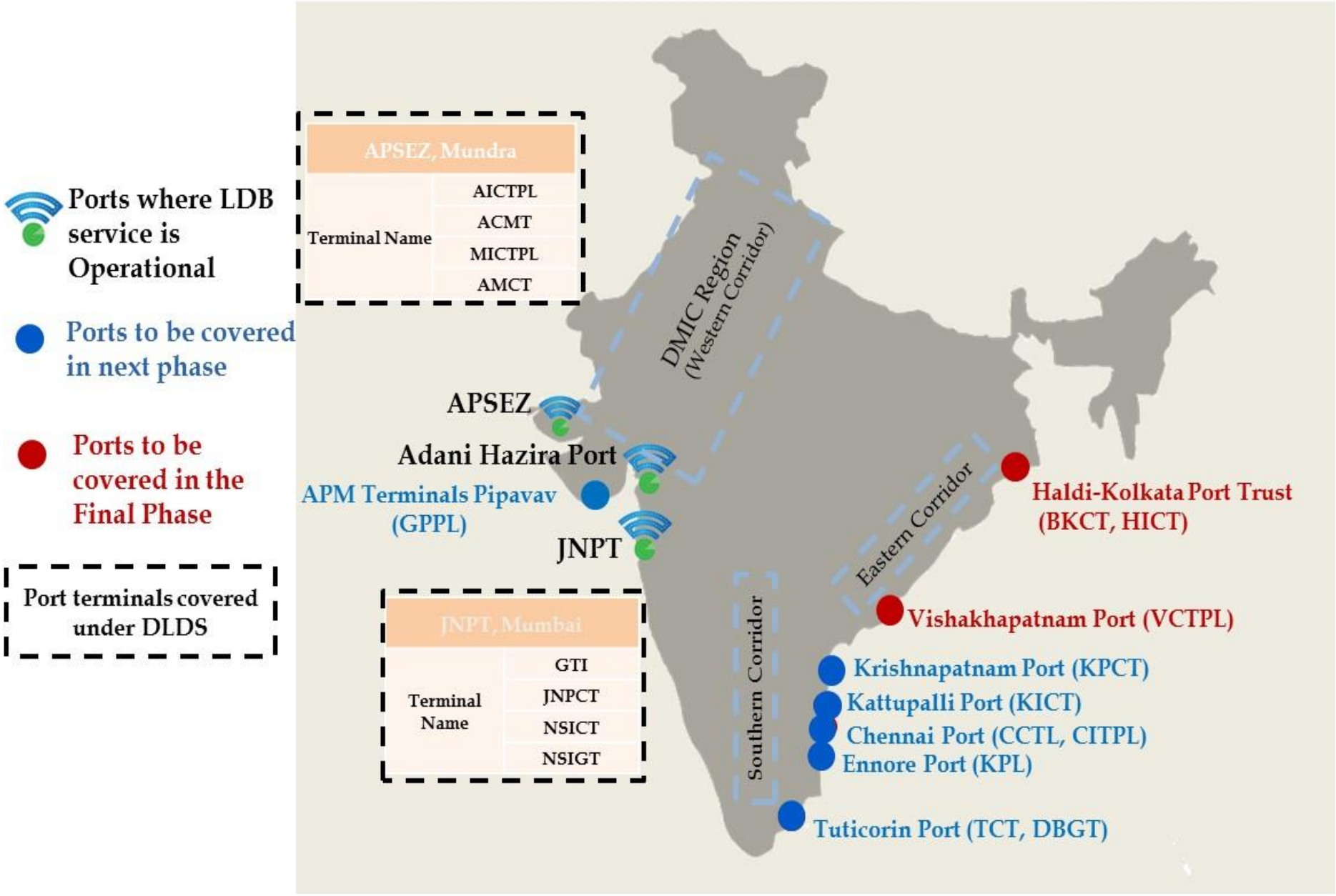


LDB Operations

LDB Coverage



LDB Coverage

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IMPLEMENTATION	▪ 4 Port Terminals at JNPT ▪ 4 Port Terminals at Mundra ▪ 1 Port Terminal at Hazira ▪ 29 CFSs at Mumbai Region, 12 CFSs at Mundra and 4 CFSs at Hazira ▪ 8 ICDs near NCR ▪ 13 Toll Plazas ▪ 280 Operator at Ports	All Implementation are as per plan and ahead of schedule ~400 RFID Readers)
INTEGRATION	▪ Integrated with 9 Port System ▪ 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, Google Map View etc.) ▪ Detailed Analytics (Container Heat Map, Average Speed , Congestion Analysis, etc.)	▪ Visibility services for 70% of India's Container Volume. ▪ Performance Benchmarking ▪ More than 5 Mn container handled (planned for more than 5.5 Mn this year)

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THANK YOU