



# LDB ANALYTICS : June Report for JNPT 2018



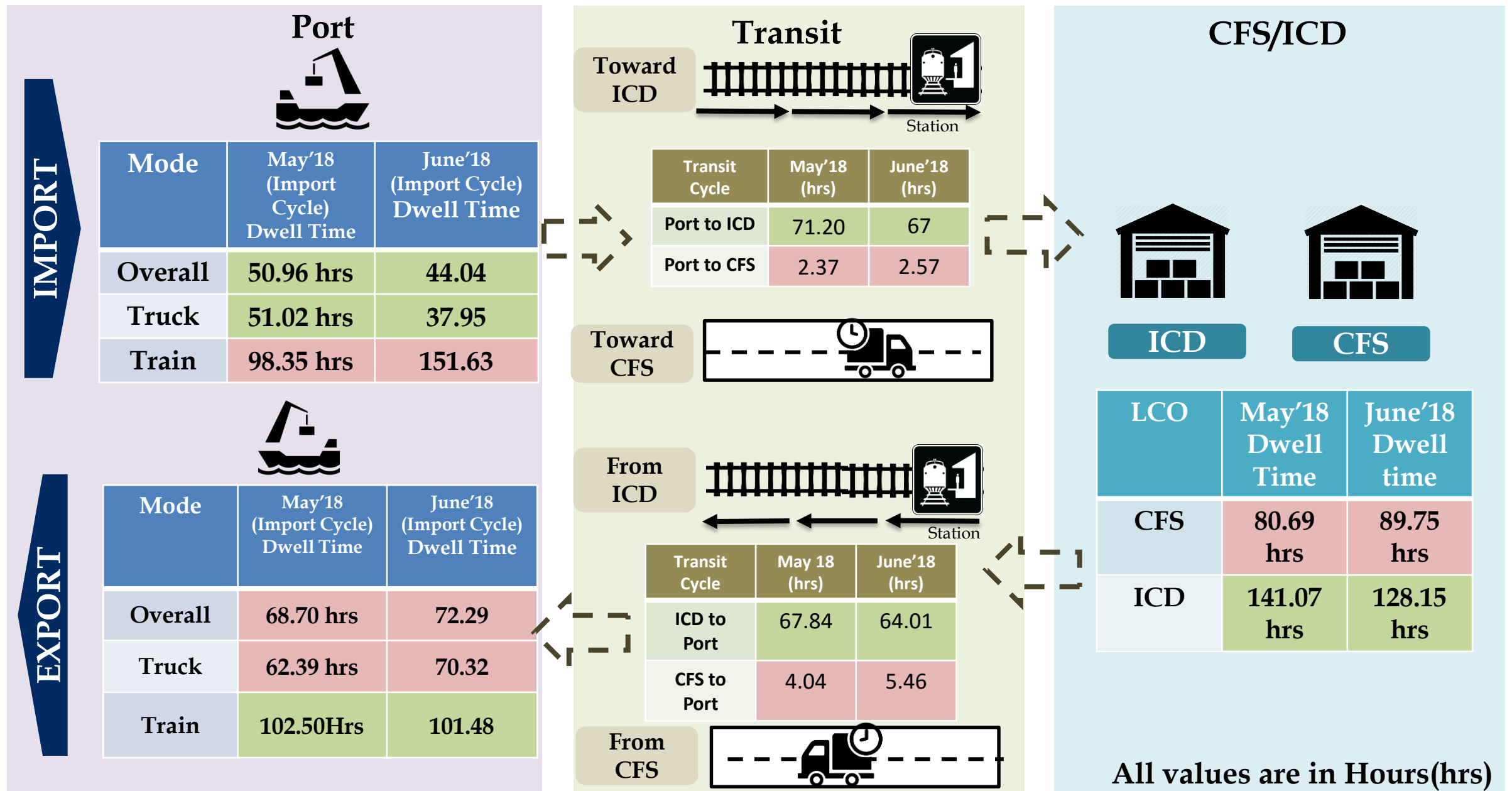
- Tariff Authority at Major Ports (TAMP), has authorized the Mandatory User Charge on all the EXIM Containers for extending the LDB services across all the Major port terminals of India.
- Site Survey & Implementation and Port operator agreement discussions have been initiated across all the Major port terminals to implement the LDB project across Pan India.
- LDB completed more than one year of operations at Mundra and Hazira Ports. The operational efficiencies have been highlighted in this month report.
- Overall Import cycle dwell time of JNPT showcased an improvement of 15% for the month of June'18 in comparison to the previous month. Dwell time of Truck bound containers which improved by **34% in Jun 18** contributed to the same.
- More than 50% of **Train bound Import containers** at JNPT are taking greater than 5 days for clearance resulting in higher Dwell Time.
- Export dwell time of JNPT region saw a dip of 5% in June'18 in comparison to the earlier month.
- Gate Terminals of India in JNPT continued its Dwell Time performance and is ranked as the top performing terminal across Western corridor.



# Container Movement around JNPT region

The below figure depicts the container supply chain along with the time taken at various points in the month of June'18

Container Lifecycle (Import Cycle)



Container Lifecycle (Export Cycle)

- The marked entries showcase the increase in performance as compare to previous month
- The marked entries showcase the decrease in performance as compare to previous month



# Export/Import Cycle Container Movement around JNPT region

## IMPORT CYCLE DWELL TIME (June'18)

Compared to previous month

PORT DWELL TIME	<i>Overall Dwell Time of Truck and Train Bound Containers</i>	44.04 hrs	14%	↑
	<i>Port Dwell Time for Train Bound Containers</i>	151.63 hrs	54%	↓
	<i>Port Dwell time for Truck Bound Containers</i>	37.95 hrs	26%	↑
	<i>Port Dwell time Direct Port Delivery containers</i>	56.5 hrs	10%	↓
	<i>Port Dwell time Containers bounds for CFS</i>	35.5 hrs	15%	↑
	<i>Port Dwell time Containers bounds for ICD</i>	104.8 hrs		
TRANSIT TIME	<i>Port to ICD</i>	67.00 hrs	6%	↑
	<i>Port to CFS</i>	2.57 hrs	8%	↓
LCO DWELL TIME	<i>CFS Dwell Time</i>	79.84 hrs	1%	↑
	<i>ICD Dwell Time</i>	128.15 hrs	9%	↑

## EXPORT CYCLE DWELL TIME (June'18)

Compared to previous month

PORT DWELL TIME	<i>Overall Dwell Time of Truck and Train Bound Containers</i>	72.29 hrs	4%	↓
	<i>Port Dwell Time for Train Bound Containers</i>	101.48 hrs	2%	↑
	<i>Port Dwell time for Truck Bound Containers</i>	70.32 hrs	6%	↓
	<i>Port Dwell time Direct Port Export containers</i>	72 hrs	12%	↑
	<i>Port Dwell time Containers bounds for CFS</i>	67.5 hrs	3%	↓
	<i>Port Dwell time Containers bounds for ICD</i>	106.9 hrs		
TRANSIT TIME	<i>ICD To Port</i>	64.01 hrs	6%	↑
	<i>CFS To Port</i>	5.46 hrs	35%	↓
LCO DWELL TIME	<i>CFS Dwell Time</i>	79.84 hrs	1%	↑
	<i>ICD Dwell Time</i>	128.15 hrs	9%	↑

↓ Depicts increase in performance of the LCO compared to previous month

↑ Depicts decrease in performance of the LCO compared to previous month



# JNPT region Port Performance

The below tables depicts the detailed JNPT region port performance in the month of June'18

## IMPORT

### Port Dwell time based on transit type

June'18	Direct Port Delivery containers	Containers bounds for CFS	Containers bounds for ICD
Volume	15 %	80%	5%
Dwell time	56.5 hrs	35.5 hrs	104.8 hrs

### Port Dwell time based on container type

June'18	Laden Containers		Empty Containers	
Volume	76%		24%	
Dwell time	42.8 hrs	17% ↓	57.8 hrs	4% ↓

## EXPORT

### Port Dwell time based on transit type

June'18	Direct Port Export Containers	Containers bounds for CFS	Containers bounds for ICD
Volume	83%	16%	1%
Dwell time	<b>72 hrs</b>	67.5 hrs	106.9 hrs

### Port Dwell time based on container type

June'18	Laden Containers		Empty Containers	
Volume	80%		20%	
Dwell time	72.2 hrs	7% ↑	72.6 hrs	2% ↓

↓ Depicts increase in performance of the LCO compared to previous month

↑ Depicts decrease in performance of the LCO compared to previous month







## Performance Benchmarking based on Dwell time - Port Terminals



Performance benchmarking for Western Corridor for June'18

### Top Performing Terminal

GTI ↓

Dwell Time : 53.34 hrs.

### Low Performing Terminal

AICT ↓

Dwell Time : 89 hrs.

↑ depicts Increase in performance of the LCO compared to previous month

↓ Depicts decrease in performance of the LCO compared to previous month

## 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 Port terminals covered under LDB for May'18. The Quadrant II represents the high performing ports with high frequency Index i.e. high container volume at lower dwell time

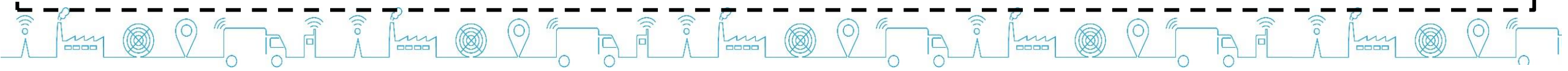
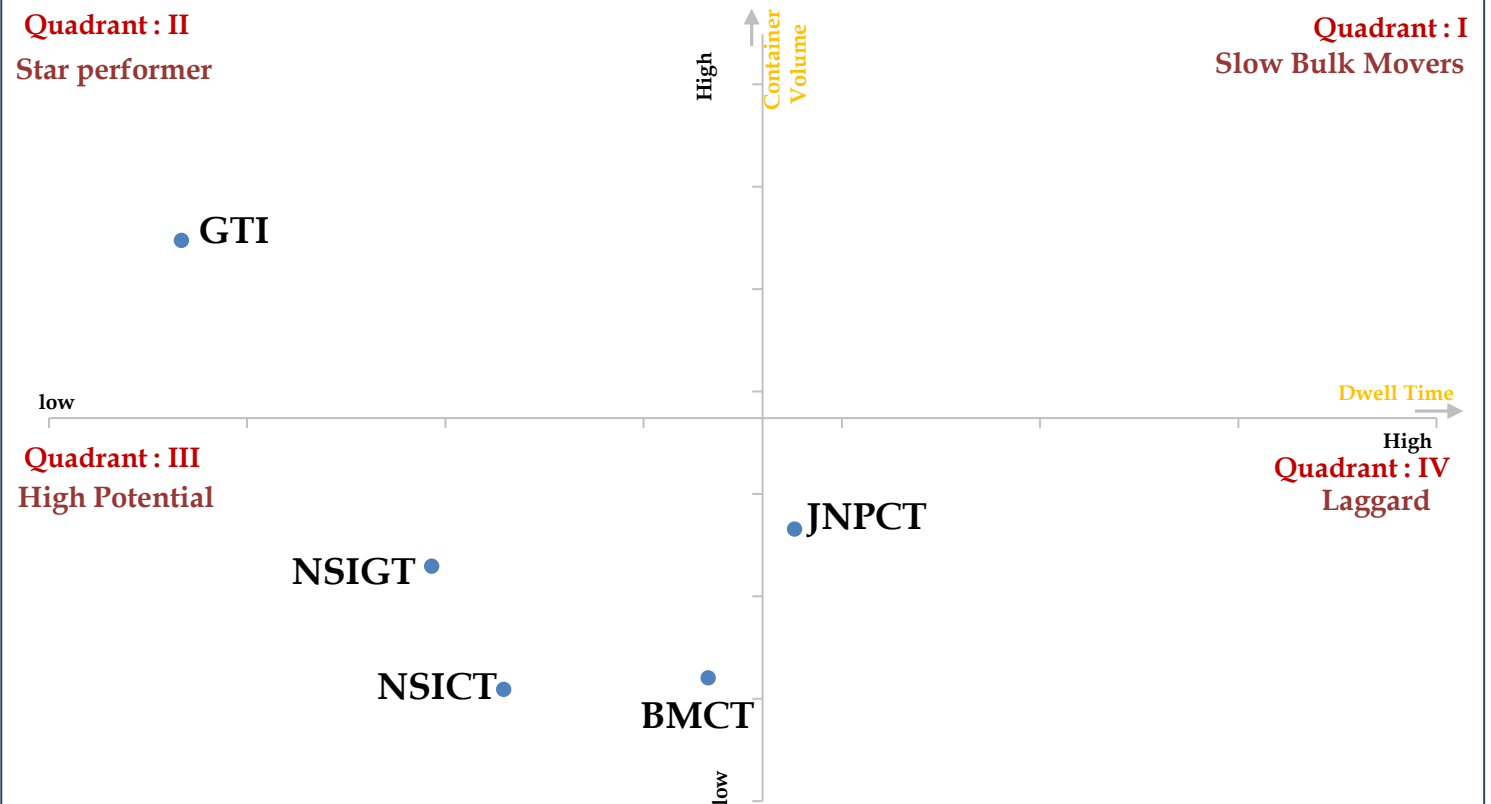
Slow Bulk Movers : consist of Ports which have catered higher container volume at higher dwell time

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

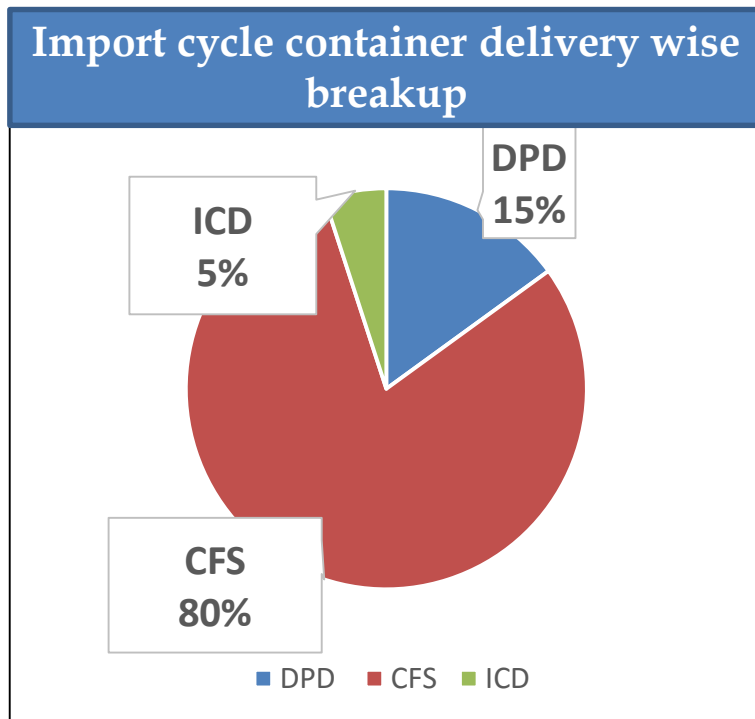
Laggard : consist of Ports which have catered relatively lower container volume at higher dwell time

### Port Terminal Performance Index : June'18



# Import Cycle lead time around JNPT region

The below slide depicts the analysis on the import cycle lead time for container



## Majority containers at JNPT are delivered to CFS


Lead time is the time taken by container from Port till CFS Out which is inclusive of custom clearance

Component	June'18 (Import Cycle in hrs)
Port dwell time of CFS bound containers	35.20
Port to CFS	2.39
CFS average dwell time	89.75
Lead time	127.34 (5.3 days)



For majority of CFS bound containers in JNPT, it takes approximately 5.3 days to complete the import cycle

**DPD bound Containers**



56.5 hrs



DPD bound containers take around 56.5 hrs which is half the time taken by containers bounded for CFS

Through increase in DPD container volume the extra time (i.e. 2.9 days) can be saved in Container import cycle



# SECTION II: LDB ANALYTICS





# Import Cycle Analysis



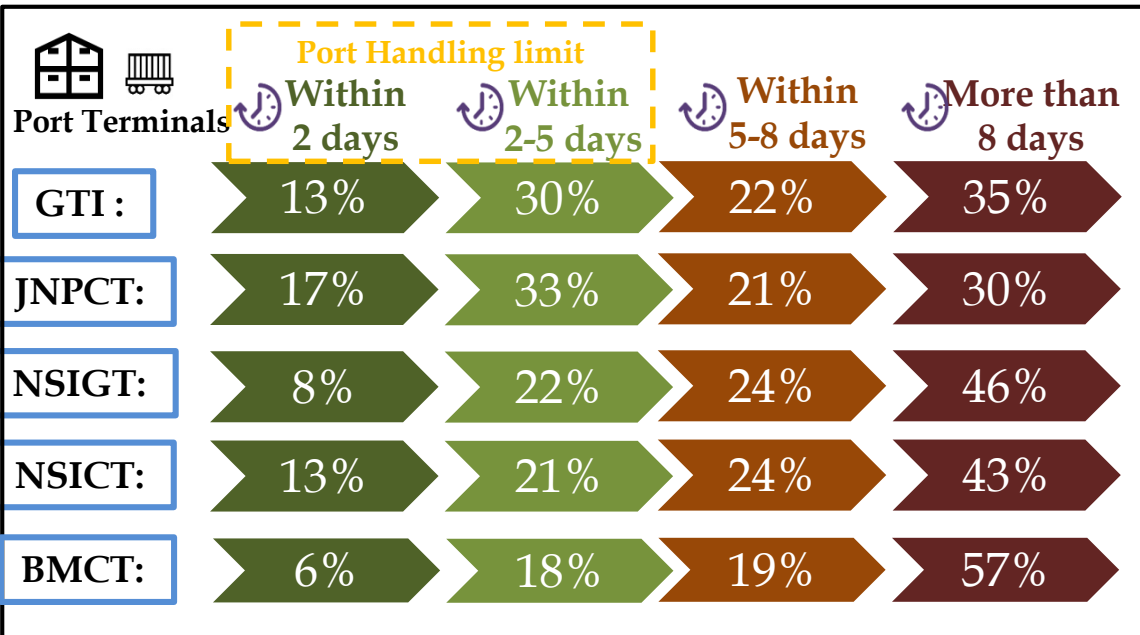
## Port performance Import Cycle : JNPT region

### PORT IMPORT via TRAIN

The Port Dwell time data for train movement in import cycle is depicted below. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

Port	May'18	June'18
GTI	82.91	135.1
JNPCT	77.98	120.8
NSIGT	114.91	182.5
NSICT	113.78	176.8
BMCT	-	211.9

### PORT IMPORT via TRAIN

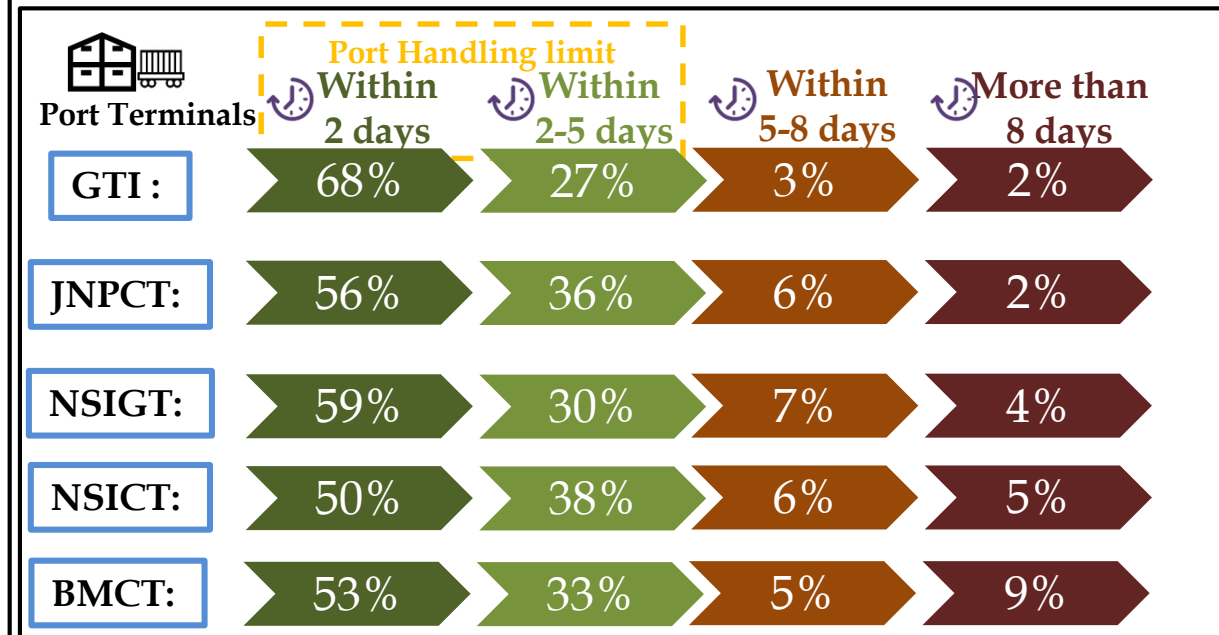


### PORT IMPORT via TRUCK

The Port Dwell time data for Truck movement in import cycle is depicted below. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

Port--	May'18	June'18
GTI	40.18	32.6
JNPCT	50.80	42.4
NSICT	51.23	39.0
NSIGT	53.83	47.8
BMCT	61.13	45.7

### PORT IMPORT via TRUCK



# JNPT region Port Performance Import Cycle

The below tables depicts the detailed JNPT region port performance in the month of June'18

JNPCT			
Port Dwell time based on transit type			
June'18	Direct Port Delivery containers	Containers bounds for CFS	Containers bounds for ICD
Volume	1161	11314	928
Dwell time (in hrs)	40.2	40.1	82.6

Port Dwell time based on container type		
June18	Laden Containers	Empty Containers
Volume	25445	3702
Dwell time	45.60	54.76

GTI			
Port Dwell time based on transit type			
June'18	Direct Port Delivery containers	Containers bounds for CFS	Containers bounds for ICD
Volume	3278	18454	1546
Dwell time	53.6	31.6	105

Port Dwell time based on container type		
June'18	Laden Containers	Empty Containers
Volume	55851	3537
Dwell time	38.42	42.02



# JNPT region Port Performance Import Cycle

The below tables depicts the detailed JNPT region port performance in the month of June'18

## NSICT

### Port Dwell time based on transit type

June'18	Direct Port Delivery containers	Containers bounds for CFS	Containers bounds for ICD
Volume	692	2981	152
Dwell time	71.5	43.4	98.8

### Port Dwell time based on container type

June'18	Laden Containers	Empty Containers
Volume	8027	552
Dwell time	53.89	65.58

## NSIGT

### Port Dwell time based on transit type

June'18	Direct Port Delivery containers	Containers bounds for CFS	Containers bounds for ICD
Volume	6246	8899	380
Dwell time	71.7	33.7	173.3

### Port Dwell time based on container type

June'18	Laden Containers	Empty Containers
Volume	23539	2524
Dwell time	45.03	81.04

## BMCT

### Port Dwell time based on transit type

June'18	Direct Port Delivery containers	Containers bounds for CFS	Containers bounds for ICD
Volume	655	4318	-
Dwell time	57.7	40.6	-

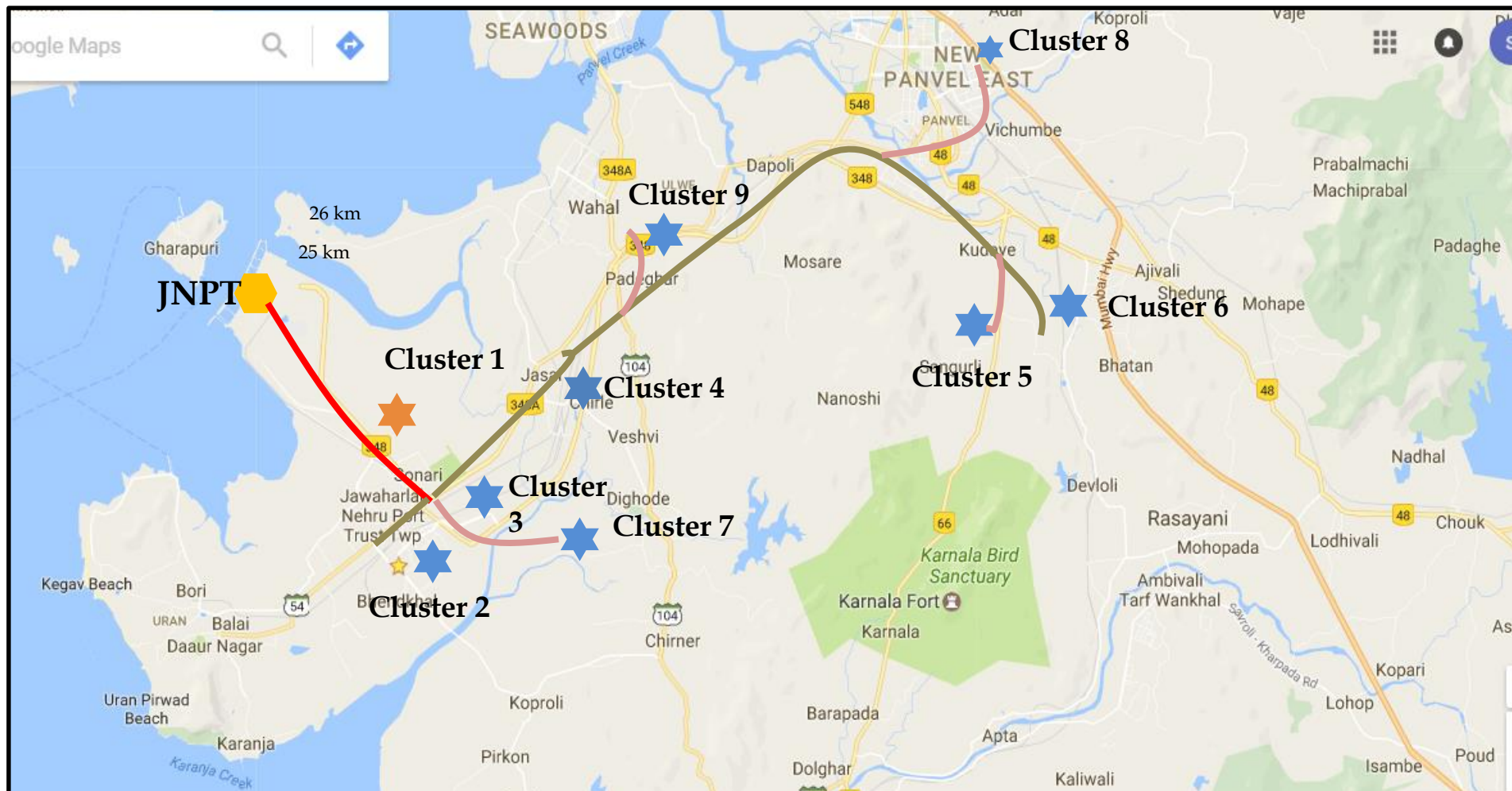
### Port Dwell time based on container type

June'18	Laden Containers	Empty Containers
Volume	9916	946
Dwell time	45.81	252.72







## JNPT TRANSIT TIME: CONGESTION ANALYSIS

The below figure shows the congestion around JNPT port in Import cycle for the month of June '18



<b>Cluster 1</b>	<b>Cluster 2</b>
JNPT Area	Bhendkhal area, Khopate road
<b>Cluster 3</b>	<b>Cluster 4</b>
Sonari area, JNPT road	Chirle area, JNPT road
<b>Cluster 5</b>	<b>Cluster 6</b>
Plaspa area, Coachi kanyakumari Highway	Salva apta rd area, Bangalore highway
<b>Cluster 7</b>	<b>Cluster 8</b>
Patilpada area, Khopate JNPT road	Taloja, Navi Mumbai
<b>Cluster 9</b>	
Padhegar area	

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

<p><b>GTI Terminal</b></p>  <p><b>Congestion Level</b> Import Cycle :- <span style="color:red">■</span></p>	<p><b>JNPCT Terminal</b></p>  <p><b>Congestion Level</b> Import Cycle :- <span style="color:lightcoral">■</span></p>	<p><b>NSICT Terminal</b></p>  <p><b>Congestion Level</b> Import Cycle :- <span style="color:olive">■</span></p>	<p><b>NSIGT Terminal</b></p>  <p><b>Congestion Level</b> Import Cycle :- <span style="color:olive">■</span></p>
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Legends	
<span style="color:red">■</span>	High Congestion
<span style="color:olive">■</span>	Medium Congestion
<span style="color:lightcoral">■</span>	Low Congestion
<span style="color:orange">★</span>	Cluster with bottleneck
<span style="color:blue">★</span>	Cluster without bottleneck

Note : Congestion is measured w.r.t actual time taken to cover the respective distance between clusters and terminals





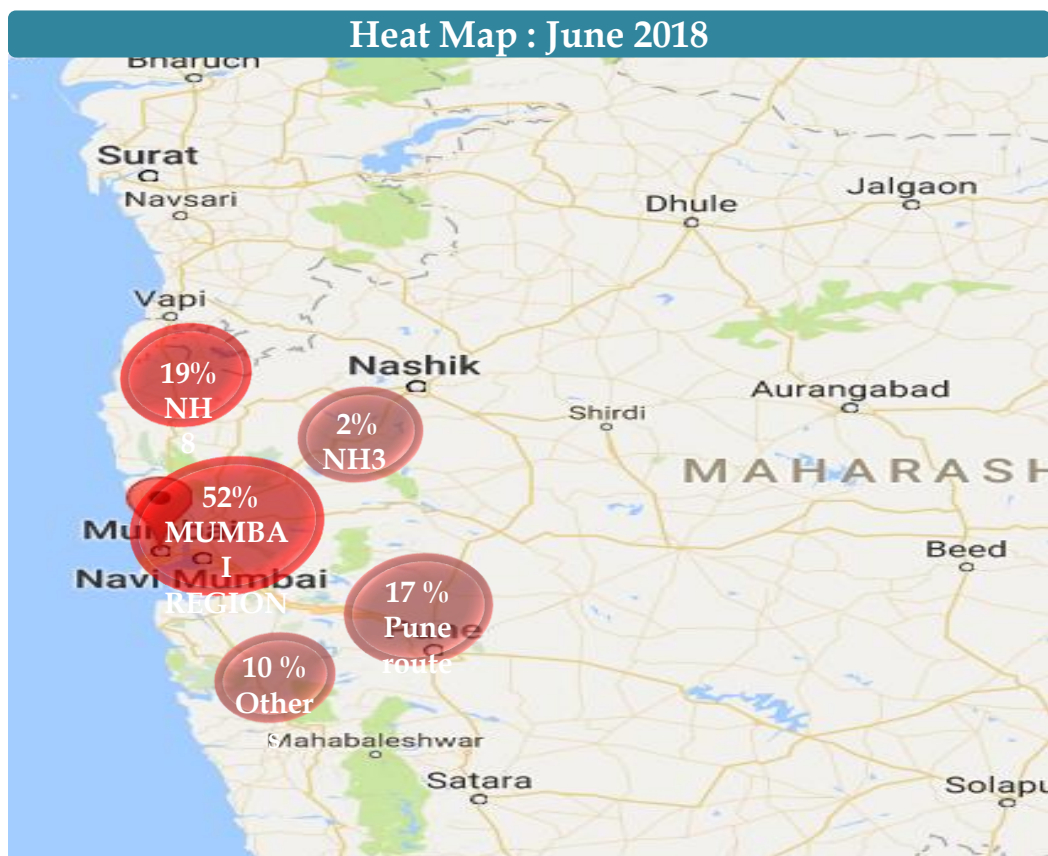
## JNPT TRANSIT TIME: Container Movement

### Truck

#### HEAT MAP : OVERALL MUMBAI REGION

Region	Transit Time- June'18
Mumbai Region	52%
NH1	2%
NH3	17%
Pune Route	19%
Others	10%

The figure depicts the movement of containers via truck in and around Mumbai region.

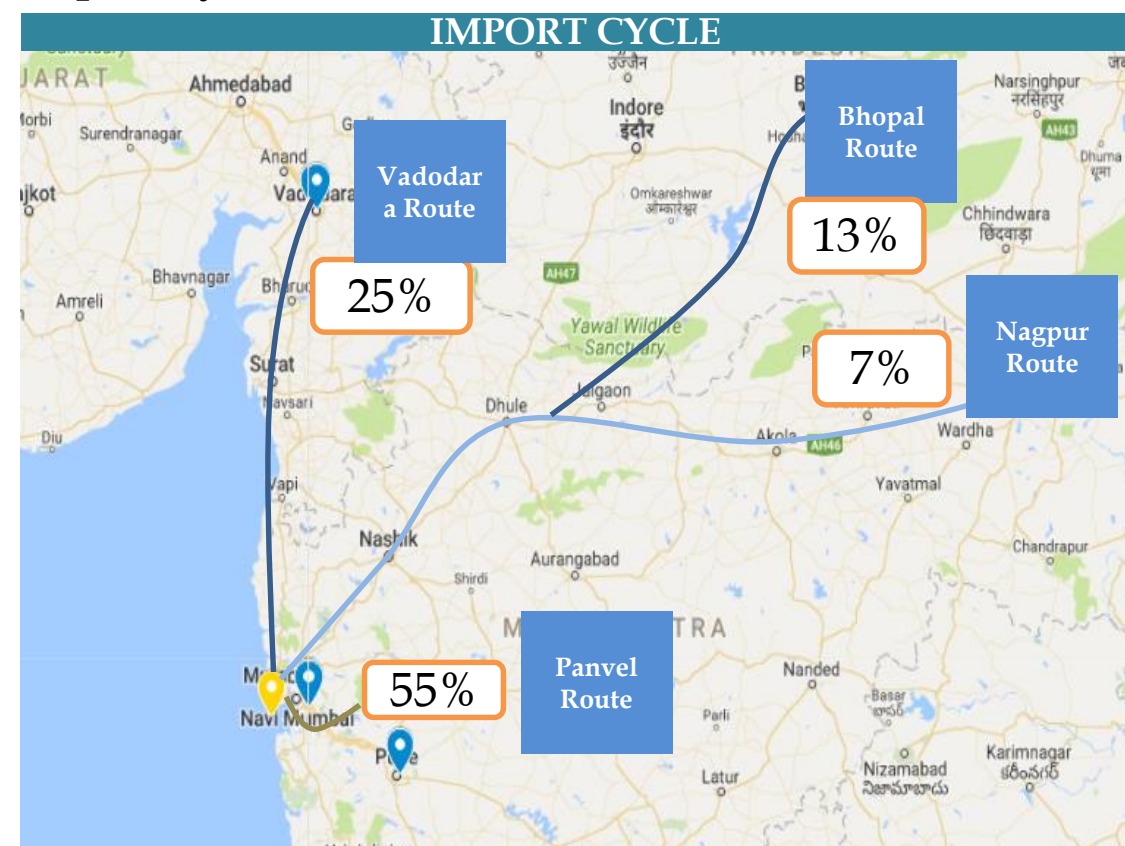


### via Train

#### VOLUME WISE CONTAINER MOVEMENT

Region	Transit Time- June'18
Vadadora Route	25%
Bhopal Route	13%
Nagpur Route	7%
Panvel Route	55%

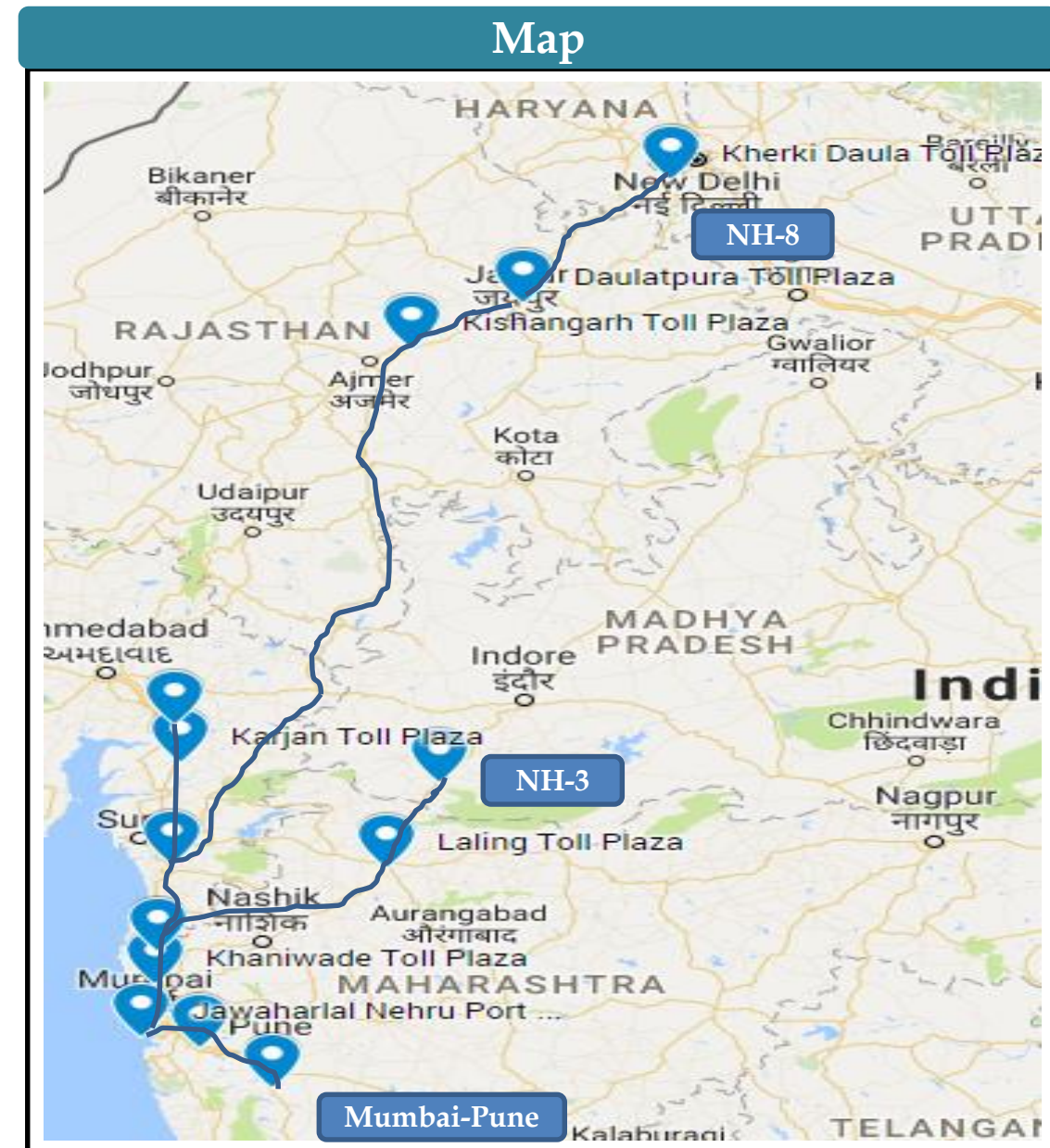
The map shows the volume wise container movement through different railway routes in import cycle for June'18



## JNPT TRANSIT TIME: Toll Plaza Congestion Analysis

The below table shows all the toll plazas covered under DLDS connected with JNPT

Avg. Travel Time & Speed between Toll Plazas (June'18)					
Source	Destination Toll Plaza	Inter Distance (Km)	Avg. Travel Time (Hr)	June'18 Avg. Speed (Km/Hr.)	May'18 Avg. Speed (Km/Hr.)
JNPT	Khaniwade	94	7.3	11.9	13.3
JNPT	Khalapur	60	4.1	14.4	18.5
Khaniwade	Charoti	50	1.30	31.6	24.9
Charoti	Boriach	126	4.60	14.4	20.3
Boriach	Bharthan	142	4.30	18.7	31.6
Bharthan	Vasad	60	1.53	33.1	38.4
Kishangarh	Daulatpura	128	3.10	36.7	36.7
Khalapur	Khedshivpur	105	3.7	17.2	28.6
Daulatpura	Kherki	199	8.8	19.3	24.0



# Export Cycle Analysis





## JNPT PORT DWELL TIME ANALYSIS : EXPORT CYCLE

### PORT EXPORT via TRAIN

The Port Dwell time data for train movement in Export cycle is depicted below. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

Port	May'18	June'18
GTI	95.84	94.29
JNPCT	127.77	107.49
NSIGT	101.31	107.44
NSICT	103.69	118.61
BMCT*	-	-

### PORT EXPORT via TRAIN



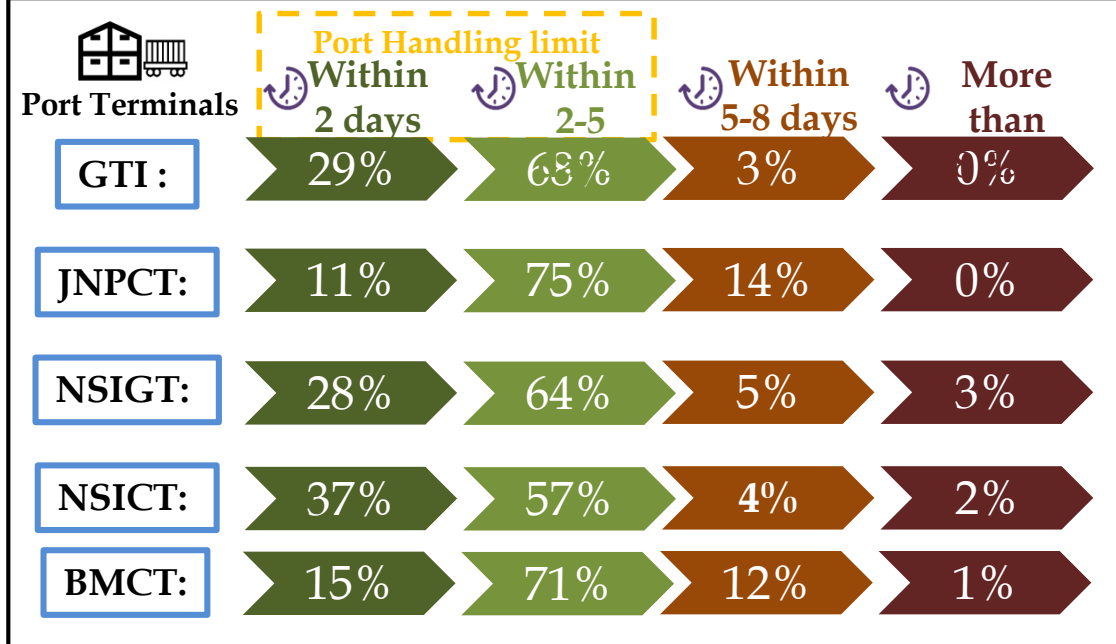
\*Note: Rail bound container volume in BMCT is 12 containers (which is 0.05% of total BMCT volume) therefore its not reported here

### PORT EXPORT via TRUCK

The Port Dwell time data for Truck movement in Export cycle is depicted below. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

Port	May'18	June'18
GTI	56.25	64.37
JNPCT	82.81	85.39
NSIGT	62.81	67.06
NSICT	61.96	61.47
BMCT	-	78.33

### PORT EXPORT via TRUCK



# JNPT region Port Performance Export Cycle

The below tables depicts the detailed JNPT region port performance in the month of June'18

## JNPCT

### Port Dwell time based on transit type

June'18	Direct Port Export containers	Containers bounds for CFS	Containers bounds for ICD
Volume	6411	109	21
Dwell time (in hrs)	83.6	82.3	127.8

### Port Dwell time based on container type

June'18	Laden Containers	Empty Containers
Volume	14764	9341
Dwell time (in hrs)	84.6	98.6

## GTI

### Port Dwell time based on transit type

June'18	Direct Port Export containers	Containers bounds for CFS	Containers bounds for ICD
Volume	16327	1632	114
Dwell time (in hrs)	68.7	61.5	111

### Port Dwell time based on container type

June'18	Laden Containers	Empty Containers
Volume	39438	10867
Dwell time (in hrs)	68.9	59.6





# JNPT region Port Performance Export Cycle

The below tables depicts the detailed JNPT region port performance in the month of June'18

## NSICT

### Port Dwell time based on transit type

June'18	Direct Port Export containers	Containers bounds for CFS	Containers bounds for ICD
Volume	1888	544	15
Dwell time	70.5	52.5	96.1

### Port Dwell time based on container type

June'18	Laden Containers	Empty Containers
Volume	13420	4851
Dwell time	65.6	70

## NSIGT

### Port Dwell time based on transit type

June'18	Direct Port Export containers	Containers bounds for CFS	Containers bounds for ICD
Volume	425	977	18
Dwell time (in hrs)	51.6	61.8	67.2

### Port Dwell time based on container type

June'18	Laden Containers	Empty Containers
Volume	19974	1542
Dwell time (in hrs)	70	52

## BMCT

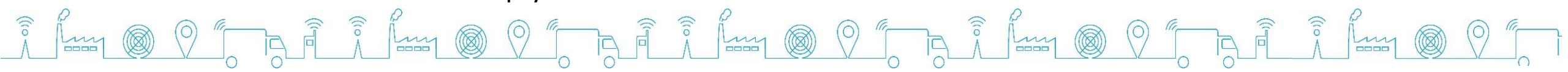
### Port Dwell time based on transit type

June'18	Direct Port Export containers	Containers bounds for CFS	Containers bounds for ICD
Volume	-	527	-
Dwell time (in hrs)	-	83.6	-

### Port Dwell time based on container type

June'18	Laden Containers	Empty Containers
Volume	881	3949
Dwell time (in hrs)	78.8	75.8

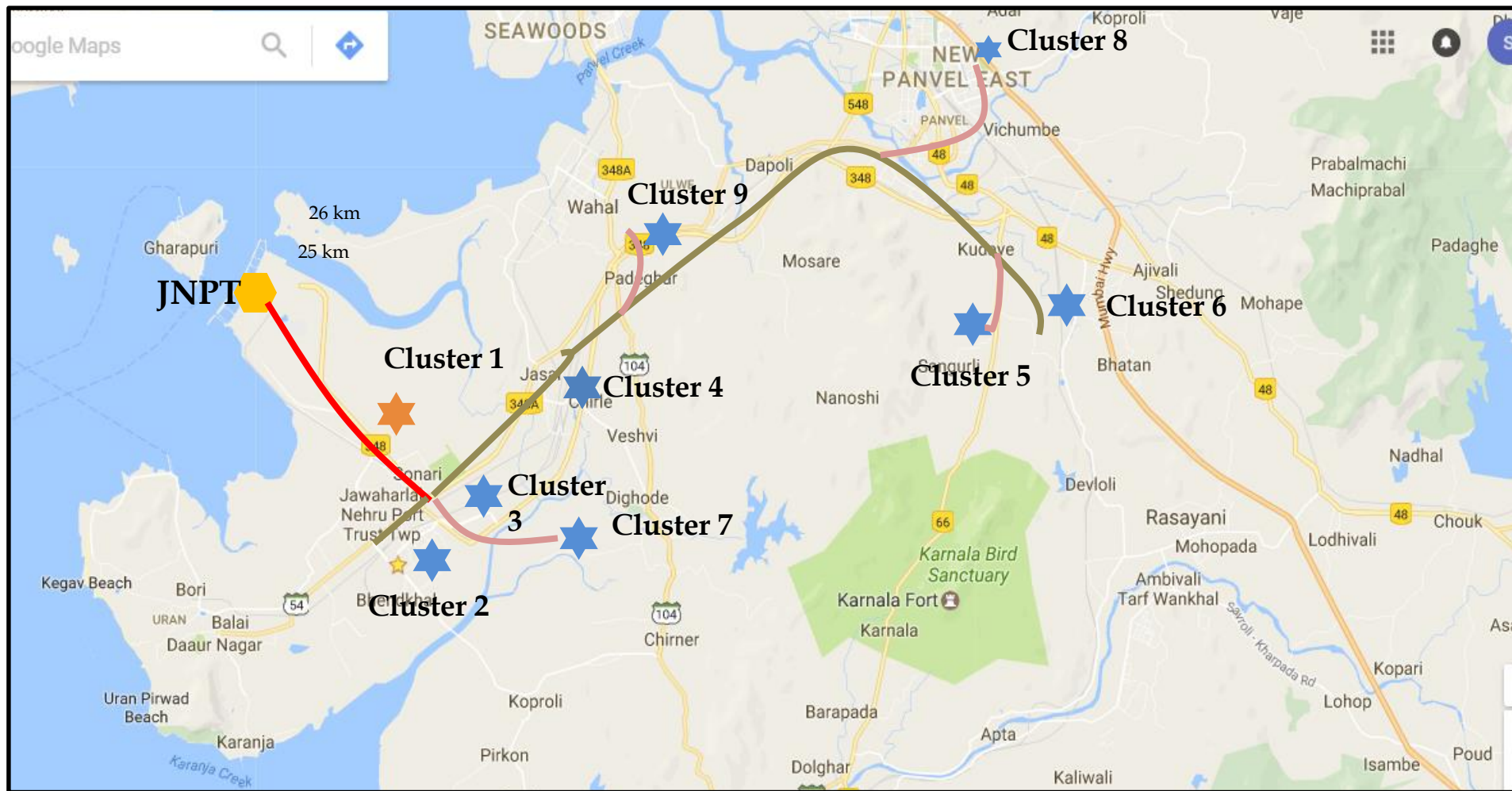
NSICT and NSIGT has not carter to empty containers



# JNPT REGION : CONGESTION ANALYSIS





## Congestion Analysis around Mumbai Region

The below figure shows the congestion around JNPT port in Export cycle for month of June'18



<b>Cluster 1</b>	<b>Cluster 2</b>
JNPT Area	Bhendkhal area, Khopate road
<b>Cluster 3</b>	<b>Cluster 4</b>
Sonari area, JNPT road	Chirle area, JNPT road
<b>Cluster 5</b>	<b>Cluster 6</b>
Plaspa area, Coachi kanyakumari Highway	Salva apta rd area, Bangalore highway
<b>Cluster 7</b>	<b>Cluster 8</b>
Patilpada area, Khopate JNPT road	Taloja, Navi Mumbai
<b>Cluster 9</b>	
Padhegar area	

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

 <b>GTI Terminal</b> <b>Congestion Level</b> Export Cycle :- <span style="color: red;">■</span>	 <b>JNPCT Terminal</b> <b>Congestion Level</b> Export Cycle :- <span style="color: red;">■</span>	 <b>NSICT Terminal</b> <b>Congestion Level</b> Export Cycle :- <span style="color: red;">■</span>	 <b>NSIGT Terminal</b> <b>Congestion Level</b> Export Cycle :- <span style="color: red;">■</span>
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### Legends

- High Congestion
- Medium Congestion
- Low Congestion
- ★ Cluster with bottleneck
- ★ Cluster without bottleneck

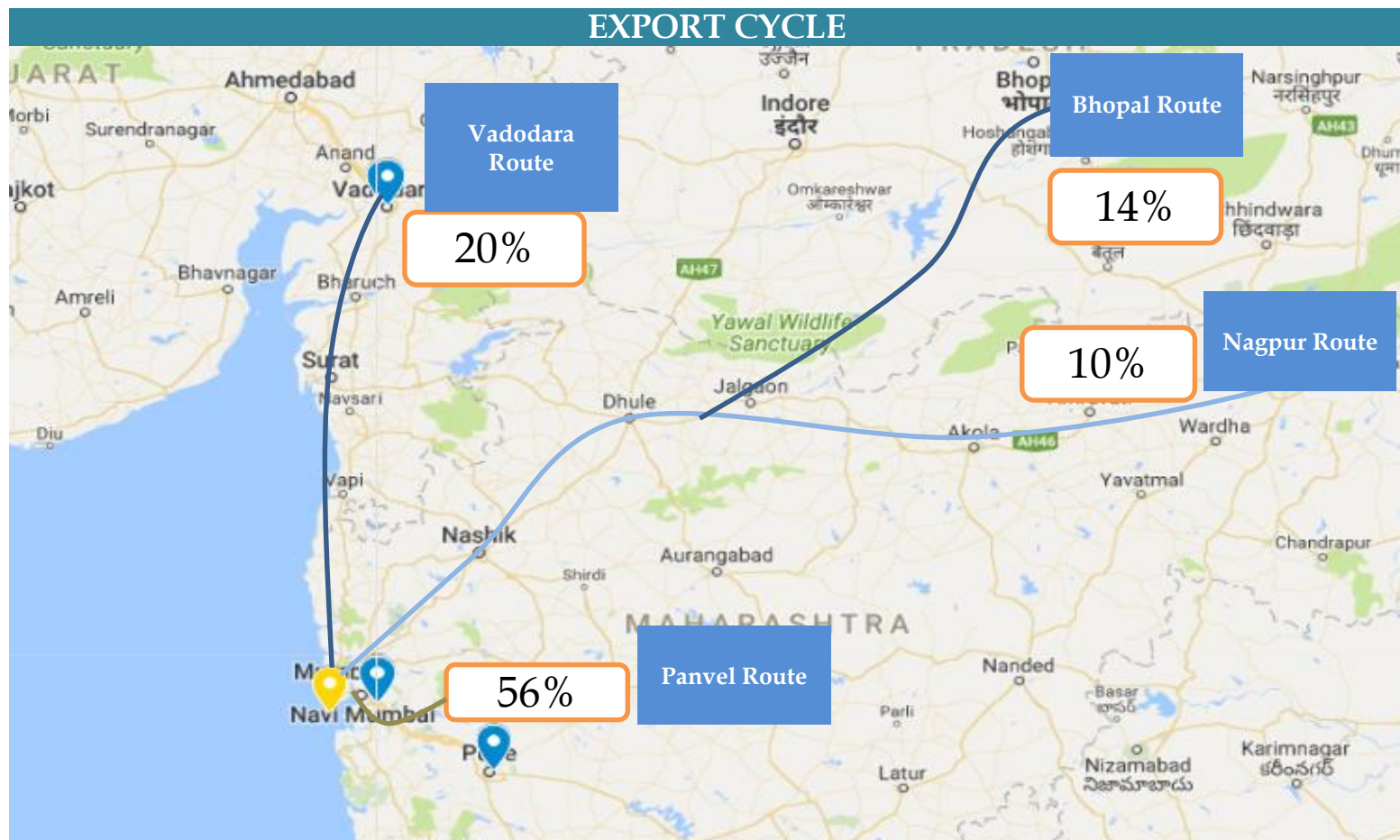
Note : Congestion is measured w.r.t actual time taken to cover the respective distance between clusters and terminals



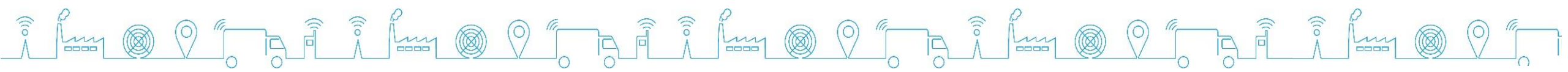
## Container movement around JNPT Port terminal region via Train

To JNPT Port From	
Route	Percentage of Container Movement
From Wardha Jn. To JNPT Port (Nagpur Route)	10%
From Varodhra Jn To JNPT Port (Varodara Route)	20%
From Panwel Jn To JNPT Port (Panwel Route)	56%
From Jalgaon Jn To JNPT Port (Bhopal Route)	14%

The map shows the volume wise container movement through different railway routes in export and import cycle for June'18



# CFS and ICD Performance



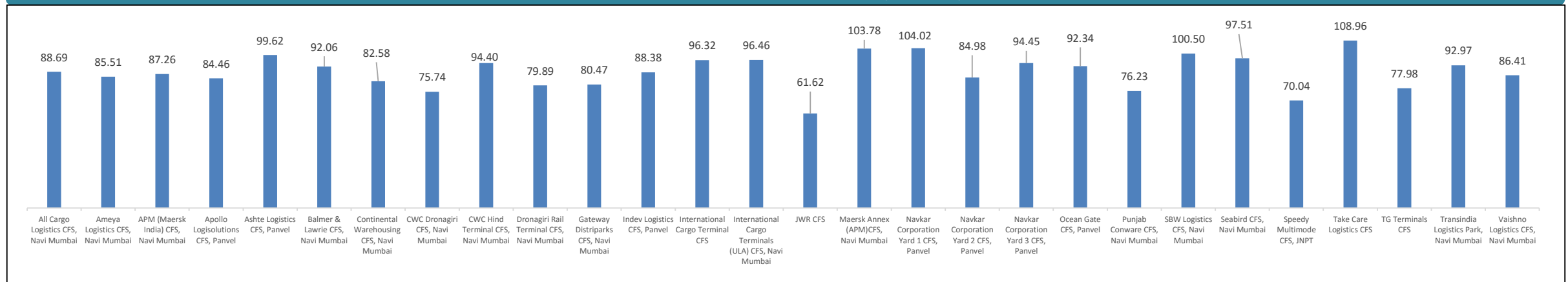


## JNPT region CFS : CFS DWELL TIME ANALYSIS

Below table shows the dwell time for the respective CFS's .

CFS Dwell Time (in hrs)					
CFS	May'18	June'18	CFS	May'18	June'18
All Cargo Logistics CFS, Navi Mumbai	70.85	88.69	JWR CFS	56.15	61.62
Ameya Logistics CFS, Navi Mumbai	73.82	85.51	Maersk Annex (APM)CFS, Navi Mumbai	99.00	103.78
APM (Maersk India) CFS, Navi Mumbai	93.22	87.26	Navkar Corporation Yard 1 CFS, Panvel	-	104.02
Apollo Logisolutions CFS, Panvel	79.08	84.46	Navkar Corporation Yard 2 CFS, Panvel	63.97	84.98
Ashte Logistics CFS, Panvel	-	99.62	Navkar Corporation Yard 3 CFS, Panvel	89.24	94.45
Balmer & Lawrie CFS, Navi Mumbai	76.88	92.06	Ocean Gate CFS, Panvel	75.78	92.34
Continental Warehousing CFS, Navi Mumbai	73.47	82.58	Punjab Conware CFS, Navi Mumbai	75.78	76.23
CWC Dronagiri CFS, Navi Mumbai	-	75.74	SBW Logistics CFS, Navi Mumbai	-	100.50
CWC Hind Terminal CFS, Navi Mumbai	76.59	94.40	Seabird CFS, Navi Mumbai	94.94	97.51
Dronagiri Rail Terminal CFS, Navi Mumbai	-	79.89	Speedy Multimode CFS, JNPT	-	70.04
Gateway Distriparks CFS, Navi Mumbai	63.65	80.47	Take Care Logistics CFS	134.65	108.96
Indev Logistics CFS, Panvel	87.79	88.38	TG Terminals CFS	64.60	77.98
International Cargo Terminal CFS	-	96.32	Transindia Logistics Park, Navi Mumbai	80.69	92.97
International Cargo Terminals (ULA) CFS, Navi Mumbai	-	96.46	Vaishno Logistics CFS, Navi Mumbai	85.67	86.41

### CFS - DWELL OVERVIEW ( IN HRS )



### Top Performing CFS

JWR CFS

**Dwell Time : 40.66 Hrs**

### Low Performing CFS

**Take Care Logistics CFS**

**Dwell Time : 108.96 Hrs**

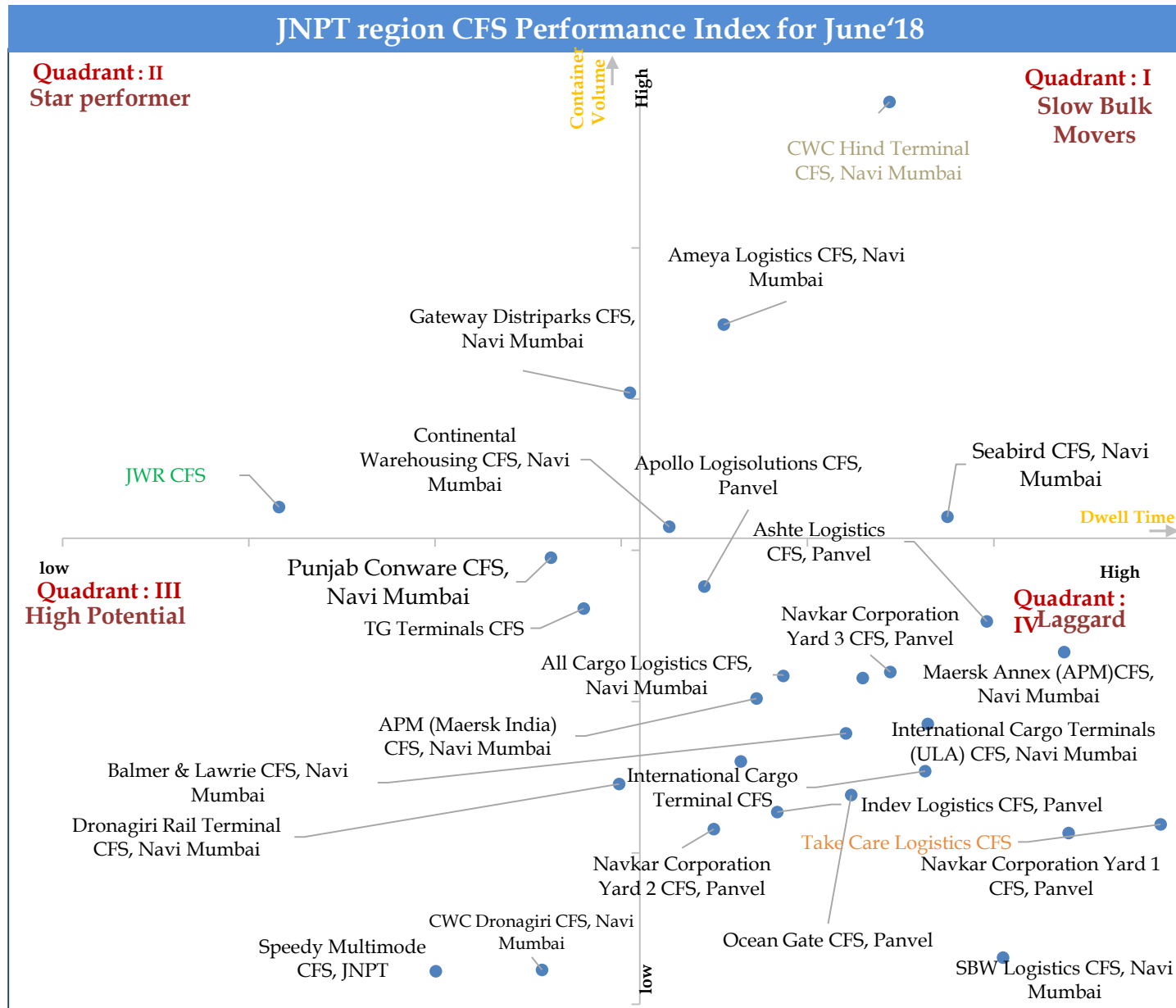
\*Note CFS - JWC Logistics Park CFS has been removed from the report as the volume for June'18 was very less





## JNPT region CFS : Performance Index

The below graph depicts the Performance Index for all CFS for June'18 month. The Quadrant II represent the best CFS with high frequency Index i.e. high container volume at lower dwell time



**Legends**

- Top in category
- Star performer
- Slow bulk mover
- High potential
- Laggard



## ICD DWELL TIME ANALYSIS

The table below depicts the dwell of all ICDs for month May'18 and June'18.

Dwell Time (in Hrs)		
ICD	May'18	June'18
ACTL ICD, Faridabad	128	122.41
Adani Logistics Park ICD, Gurgaon	131	109.58
Albatross Inland Ports ICD, Dadri	129	128.53
Allcargo Logistics Park ICD, Dadri	136	127.14
APM Terminals ICD, Dadri	140	121.65
CMA CGM Agencies ICD, Dadri	136	132.71
CWC ICD, Loni	-	117.96
CWC ICD, Patparganj	-	166.04
Gateway Rail Freight ICD, Gurgaon	122	127.05
CONCOR ICD, Aurangabad	177	197.32
CONCOR ICD, Dadri	126	109.87
CONCOR Kanakpura ICD, Jaipur	192	164.57
CONCOR Mulund ICD, Mumbai	182	124.17
CONCOR Tughlakabad ICD, New Delhi	146	116.54

**Top Performing ICD**

Adani Logistics Park ICD, Gurgaon	109.58 hrs.
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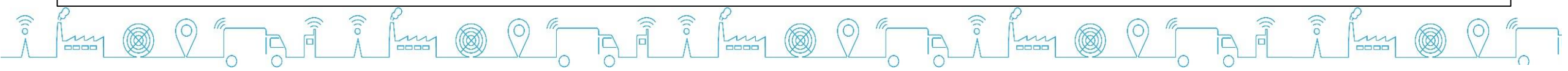
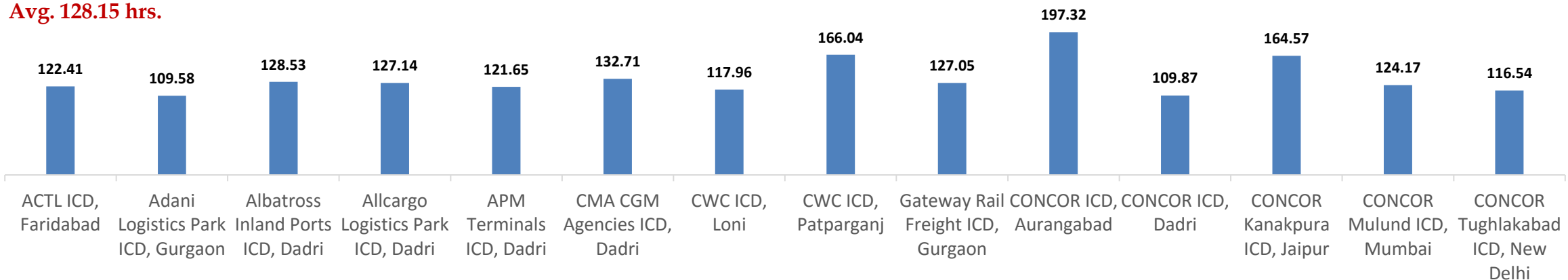
**Low Performing ICD**

CWC ICD, Patparganj	166.04 hrs
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\*Based on Dwell time for June'18

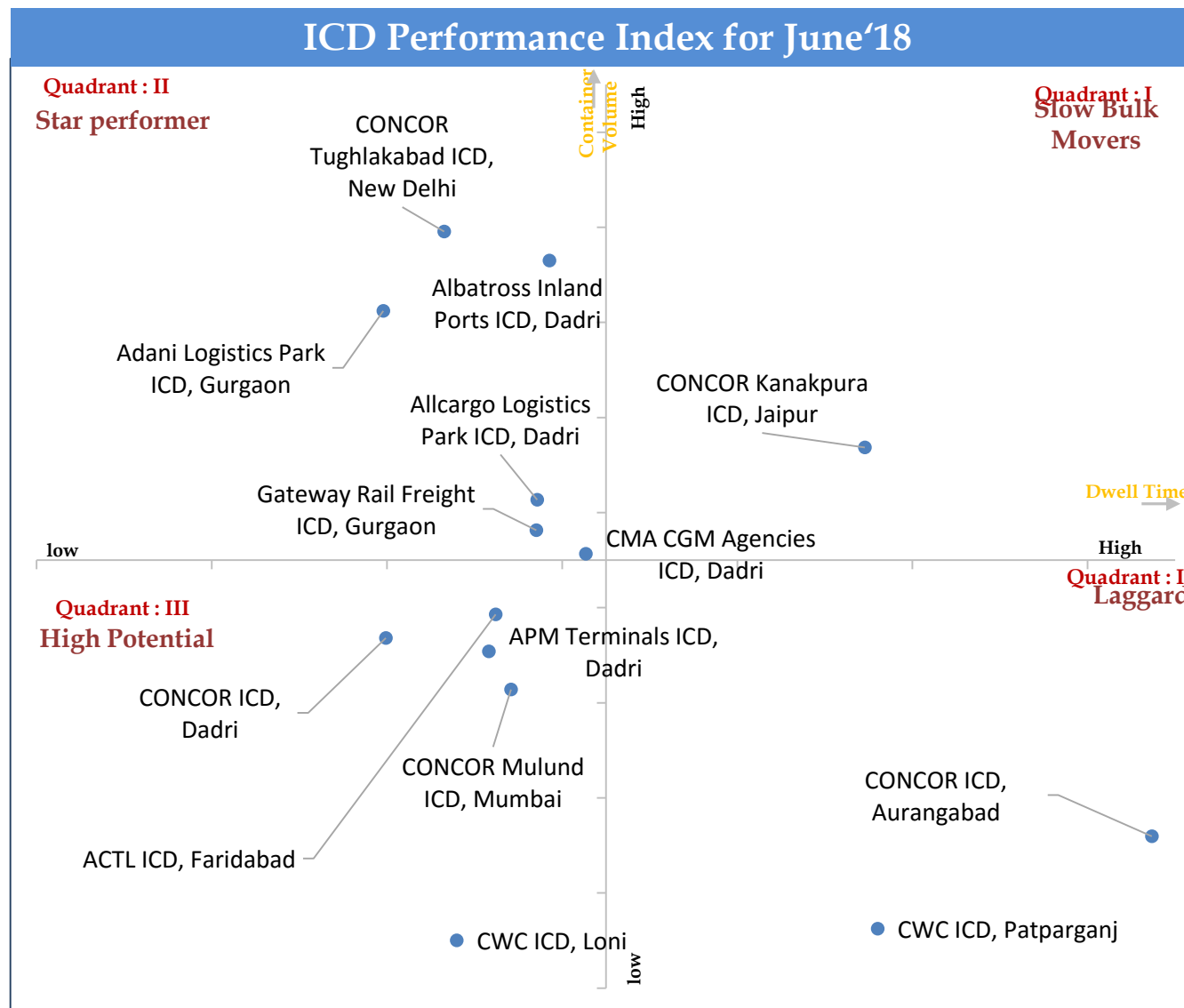
### ICD - DWELL OVERVIEW (JUNE'18) (IN HRS)

**Avg. 128.15 hrs.**



## ICD : Performance Index

The below graph depicts the Performance Index for all ICDs for June'18. The Quadrant II represent the best ICD with high frequency Index i.e. high container volume at lower dwell time



**Legends**

**Top in category**

- Star performer
- Slow bulk mover
- High potential
- Laggard



# Trend Analysis

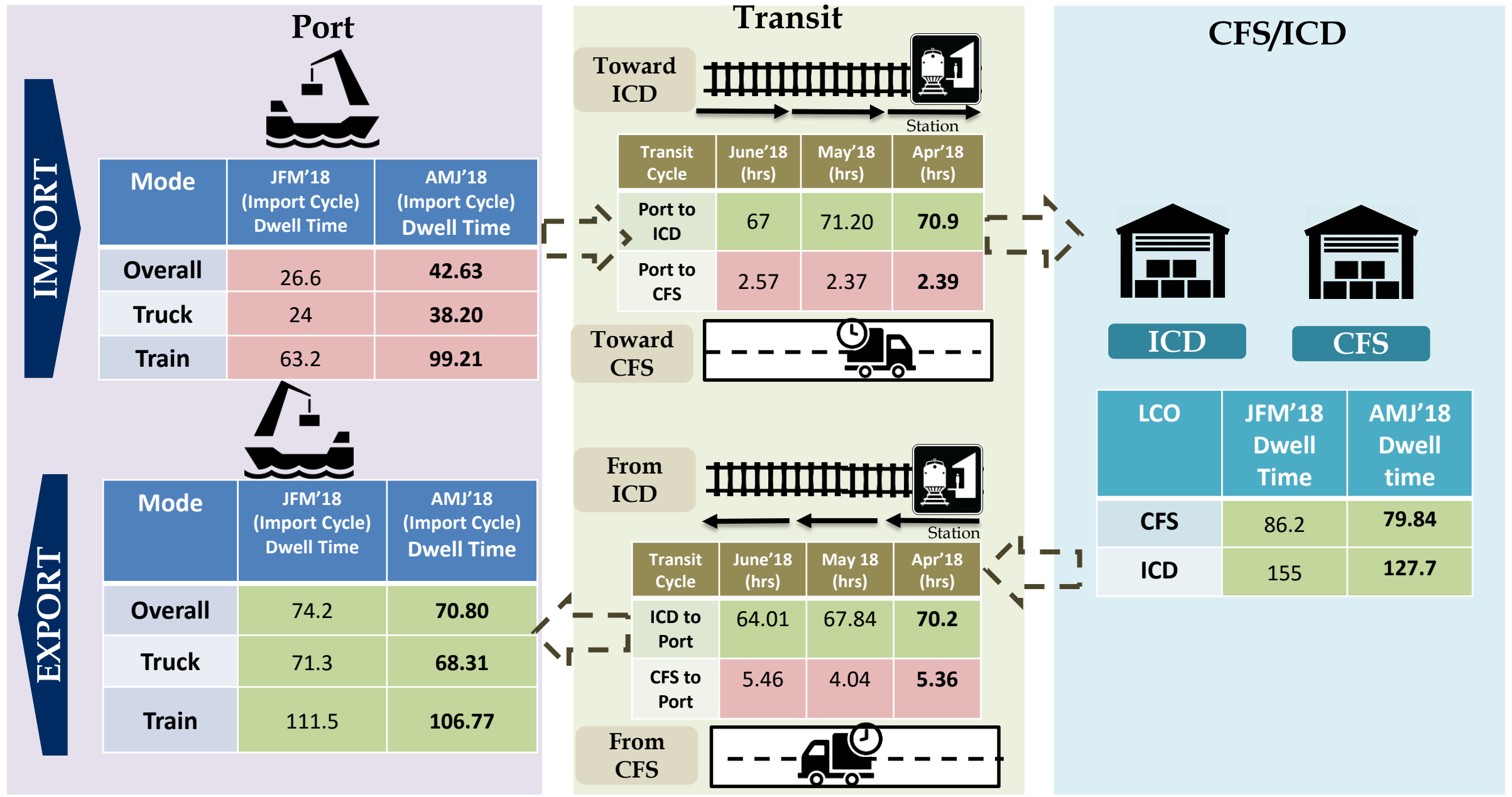




# Container Movement around JNPT region : Quarter on Quarter

The below figure depicts the container supply chain along with the time taken at various points in the quarter AMJ'18

## Container Lifecycle (Import Cycle)



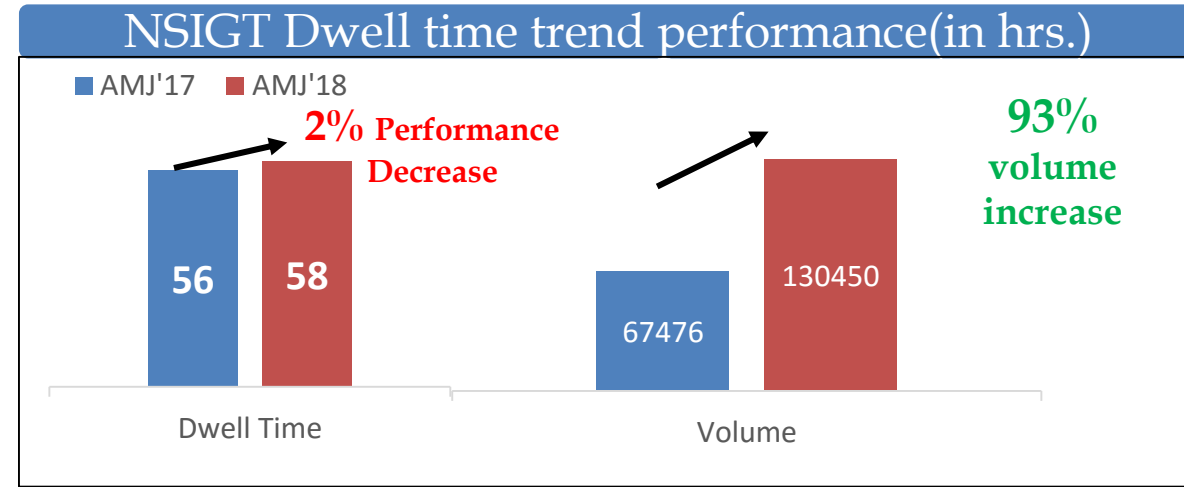
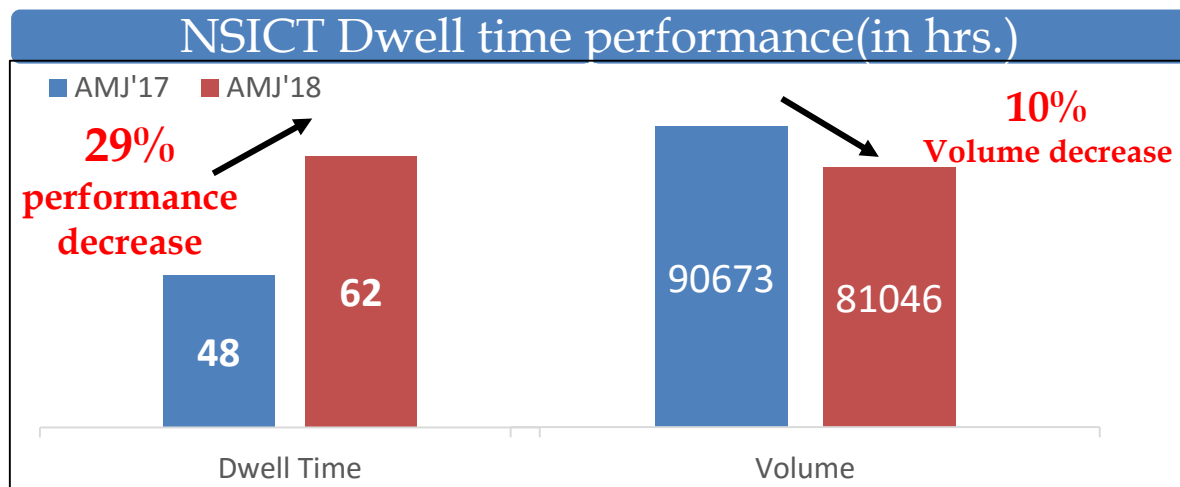
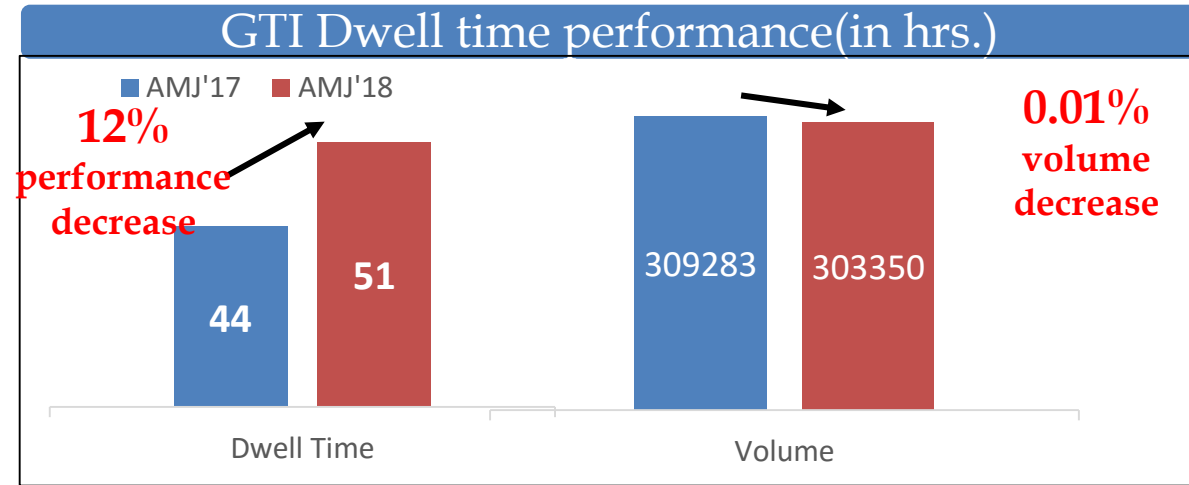
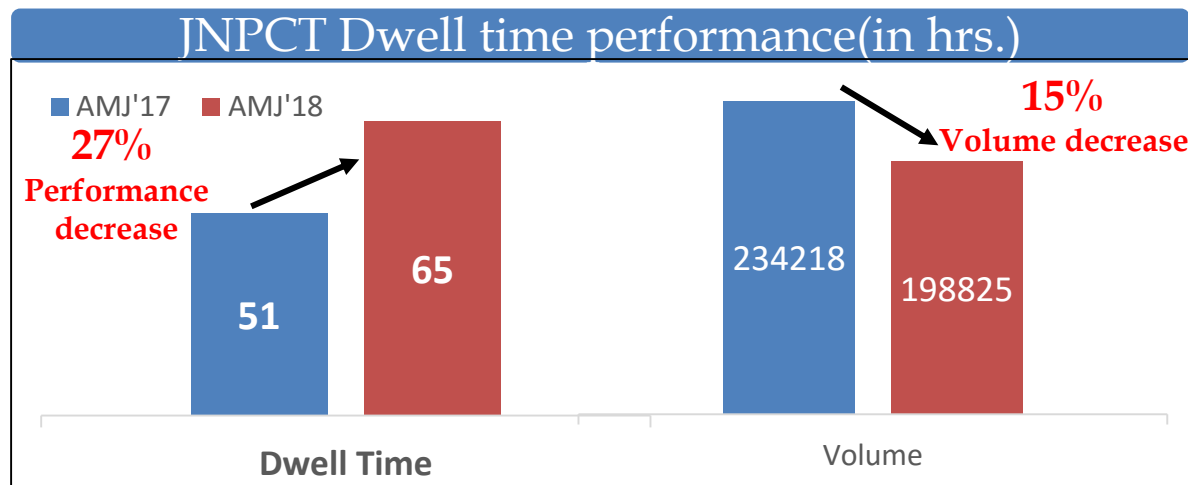
## Container Lifecycle (Export Cycle)

- The marked entries showcase the increase in performance as compare to previous month
- The marked entries showcase the decrease in performance as compare to previous month



# JNPT Port terminals performance (Year-on-Year)- Quarter AMJ

The below graphs display the Year-on-Year overall dwell time performance and volume across the JNPT Port terminals for AMJ'18 and AMJ'17 quarter

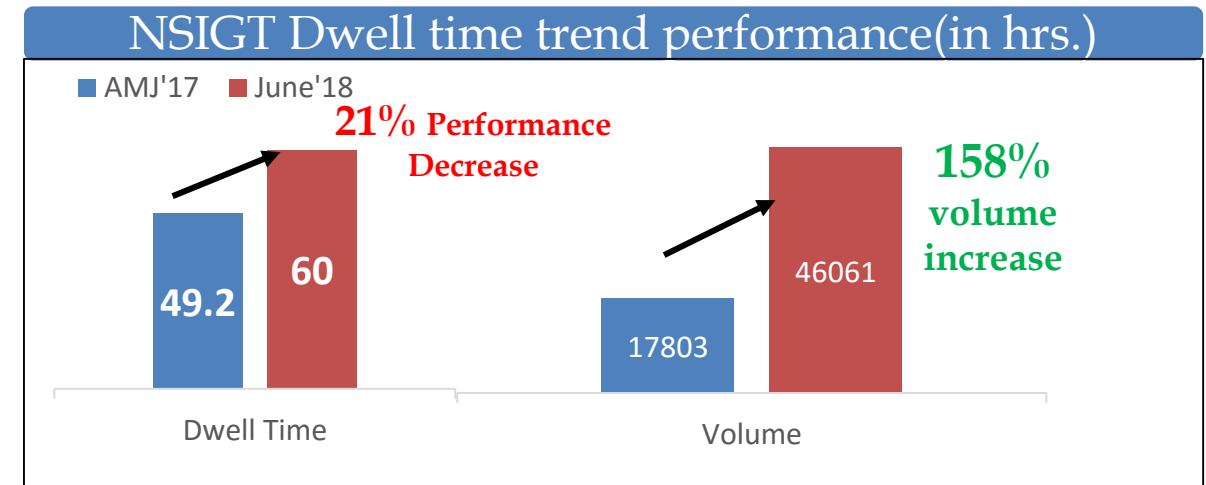
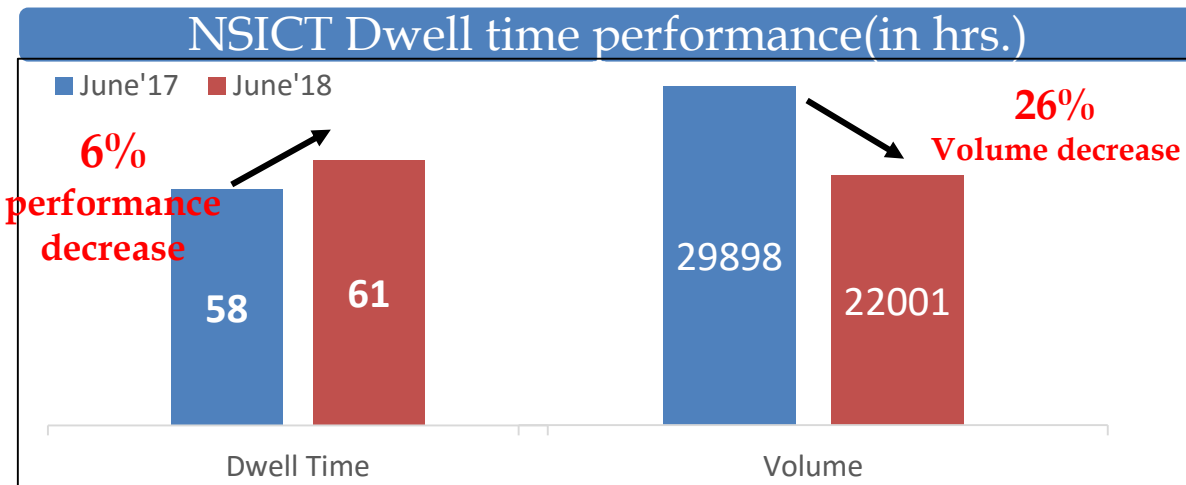
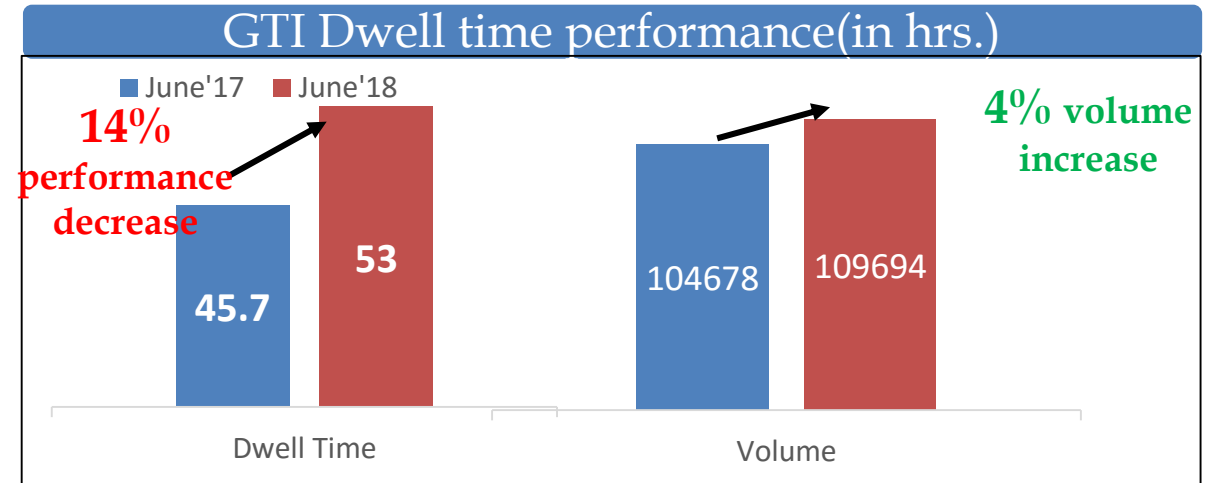
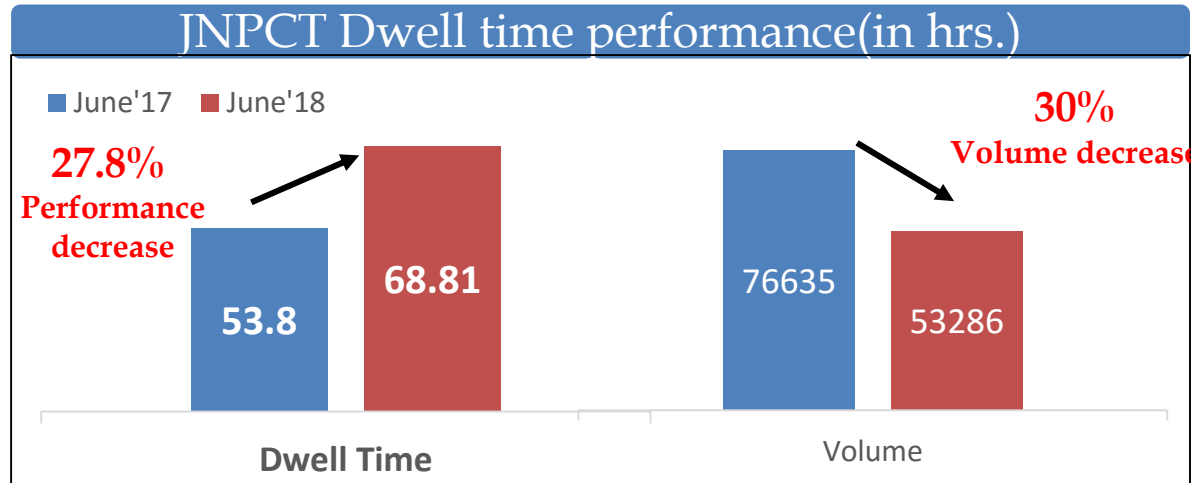


Dwell time for all terminal has been increased from previous year (AMJ'17) although the volume handled by all terminals except NSIGT is lesser than the previous year



# JNPT Port terminals performance(Year-on-Year) – Month of June

The below graphs display the Year-on-Year overall dwell time performance and volume across the JNPT Port terminals for June'18 and June'17

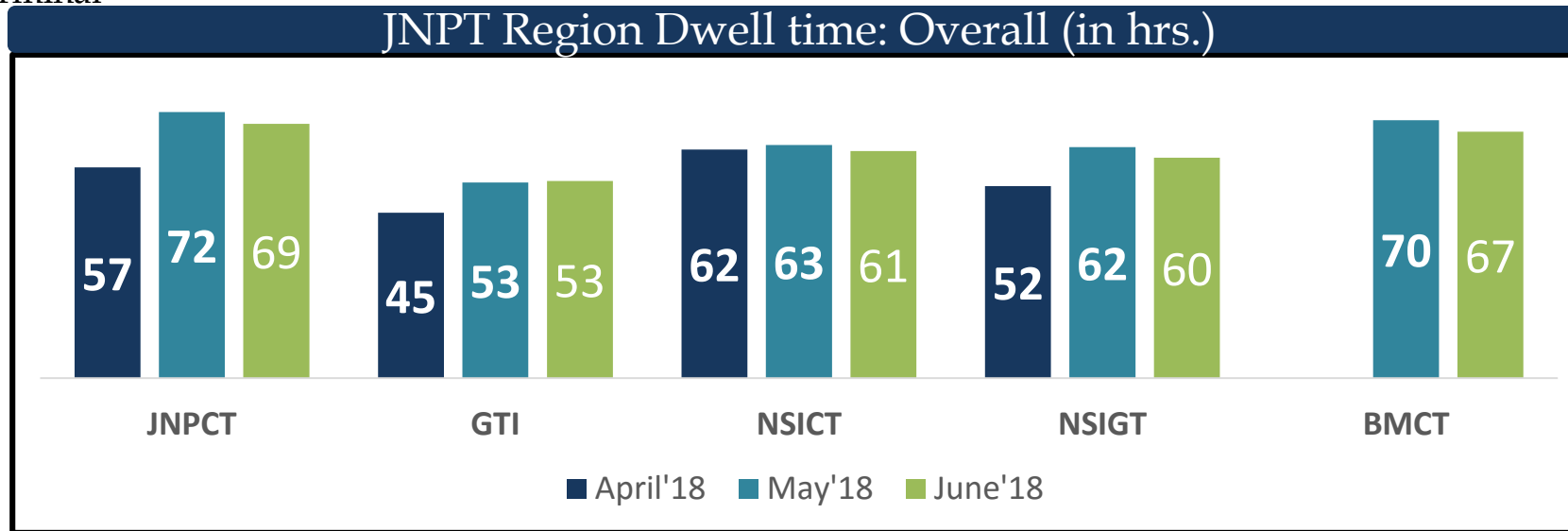


Dwell time for all terminal has been increased from previous year(June'17) although the volume handled by all terminals



## JNPT port dwell time trend :

The below table shows the overall port dwell time (i.e. import and export cycle combine) trend of all the JNPT Port terminals for April'18, May'18, June'18. Port dwell time is the time duration between the entry of the container in Port terminal to the time it moves out of the Port terminal

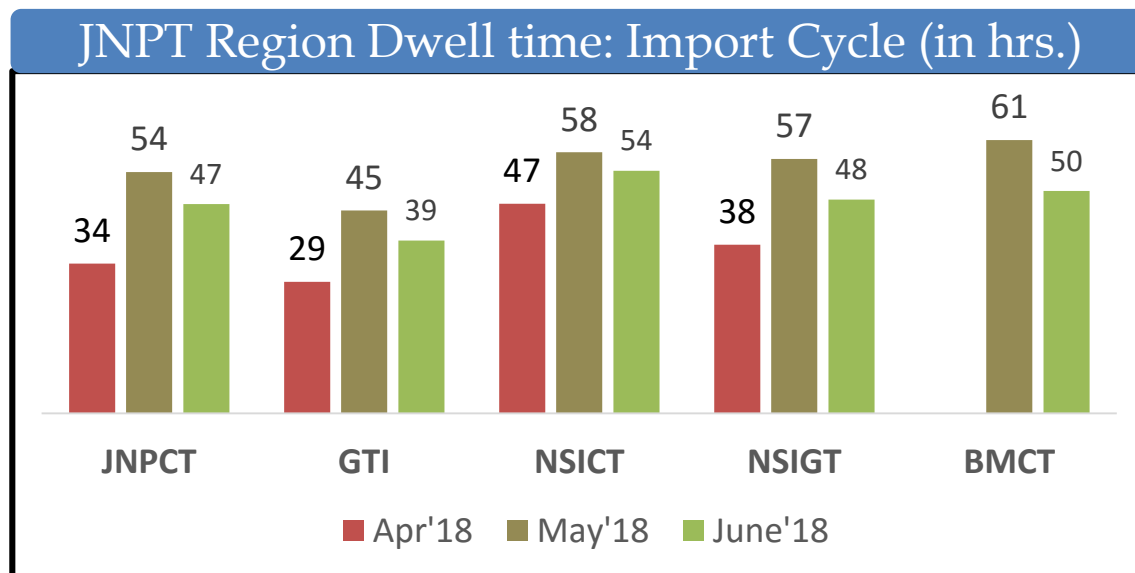


The overall JNPT region average dwell time for June'18 is 60hrs as compared to 61.46hrs in May'18 and 52 hrs. in April'18

The below tables showcase the Import and Export cycle dwell time for both rail and truck bound containers for month of May'18

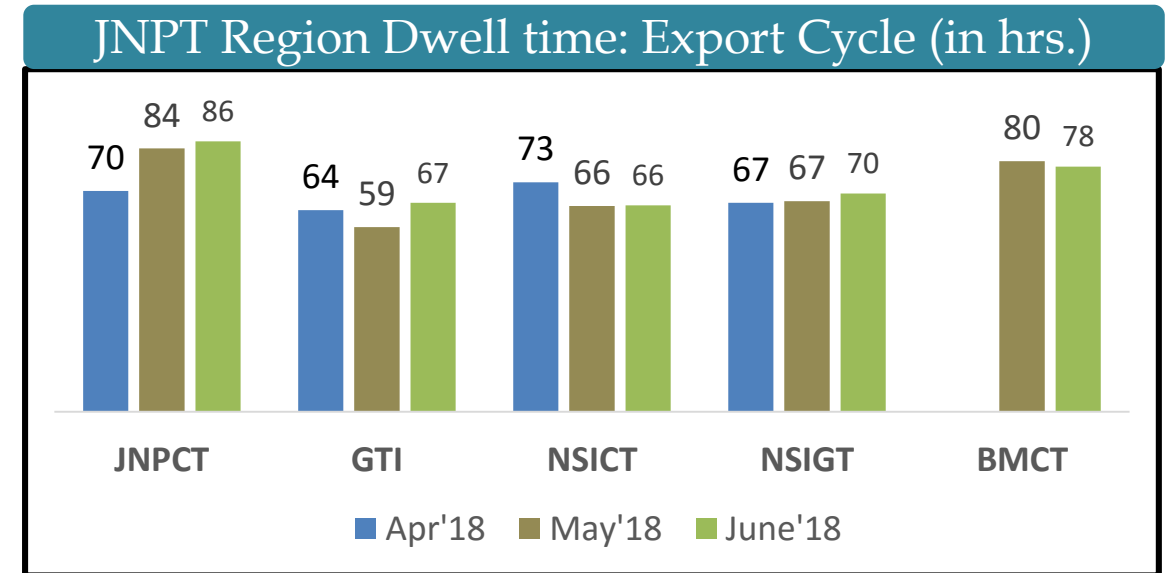
## JNPT Import cycle Trend

The average import cycle dwell time of JNPT region port terminals for June'18 is 44 hrs.



## JNPT Export cycle Trend

The average export cycle dwell time of JNPT region port terminals for June'18 is 72 hrs.





For the 4 terminals of JNPT i.e. JNPCT, GTI, NSIGT & NSICT prediction analysis has been done on Dwell Time

Dwell time dependence on terminal volume has been evaluated i.e. intercept coefficient, this helped in predicting the dwell time of the terminal based on the forecasted volume for the month June'18 and July'18

Logic for predicting Dwell Time = Intercept Coefficient + (x variable \* forecasted volume)

Terminal	Intercept Coefficient
JNPCT	60.23
GTI	40.62
NSIGT	61.59
NISCT	48.43

**Note: The prediction has been done with the error rate of 35%**

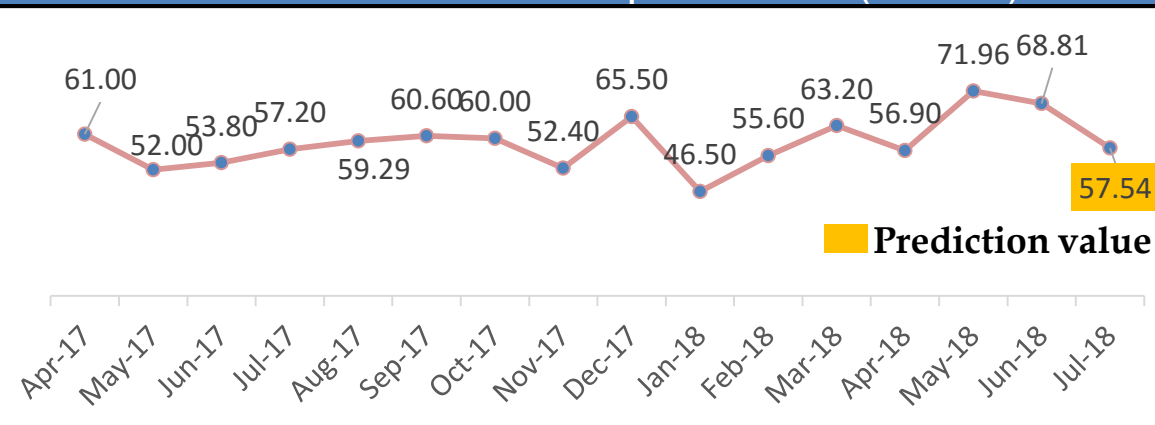


# JNPT Port terminals Dwell time Trend and Forecast

The below graphs display the dwell time and volume trend across the year of JNPT Port terminals from April'17 to May'18. The highlighted data points are the projections for the month of June'18 and July'18

## JNPT

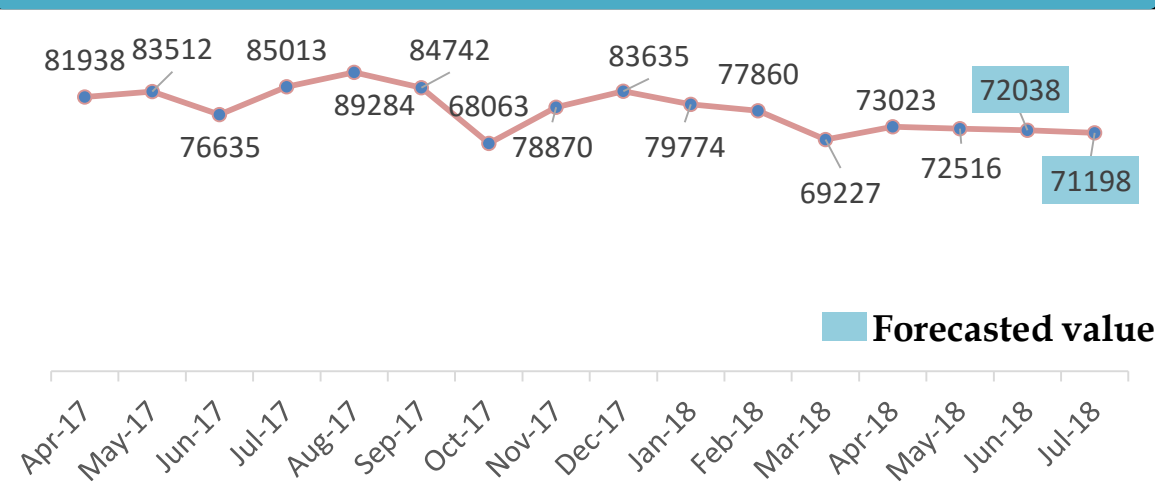
### Dwell Time Trend and prediction (in hrs.)



**Year on Year Dwell Time Change: 28% Increase**

NSICT	Predicated dwell time (June'18)	Actual Dwell time (june'18)	Error Rate
Dwell time	68.81	57.51	+ 20%

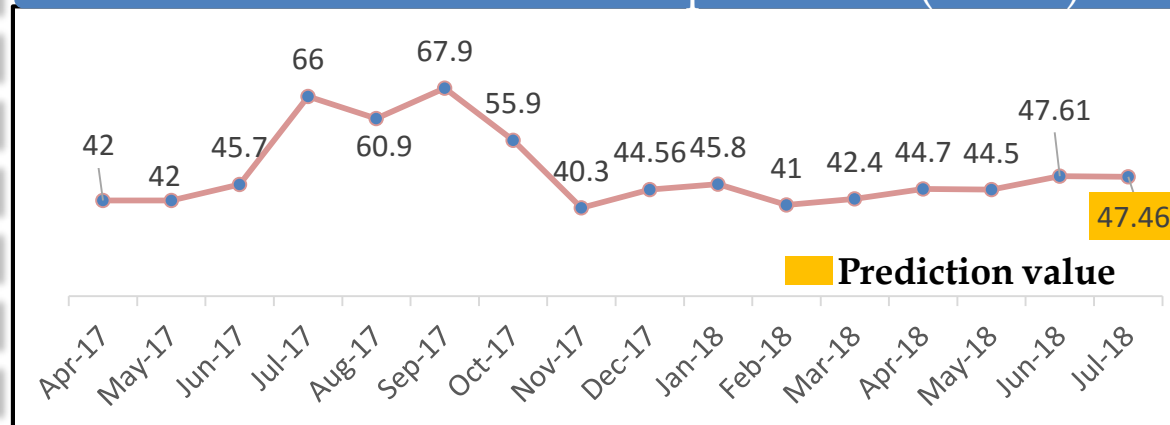
### Container Volume Trend and forecast



**CAGR: -1.07%**

## GTI

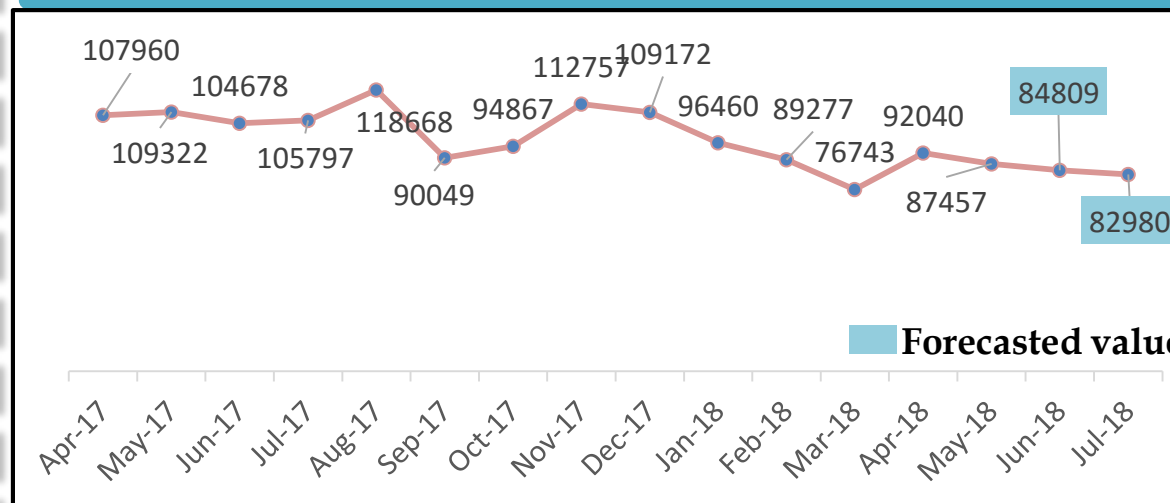
### GTI Dwell time trend and prediction (in hrs.)



**Year on Year Dwell Time Change: 4.1% Increase**

NSICT	Predicated dwell time (June'18)	Actual Dwell time (june'18)	Error Rate
Dwell time	53.34	47.61	+ 12%

### GTI Container volume trend and forecast



**CAGR: 2%**

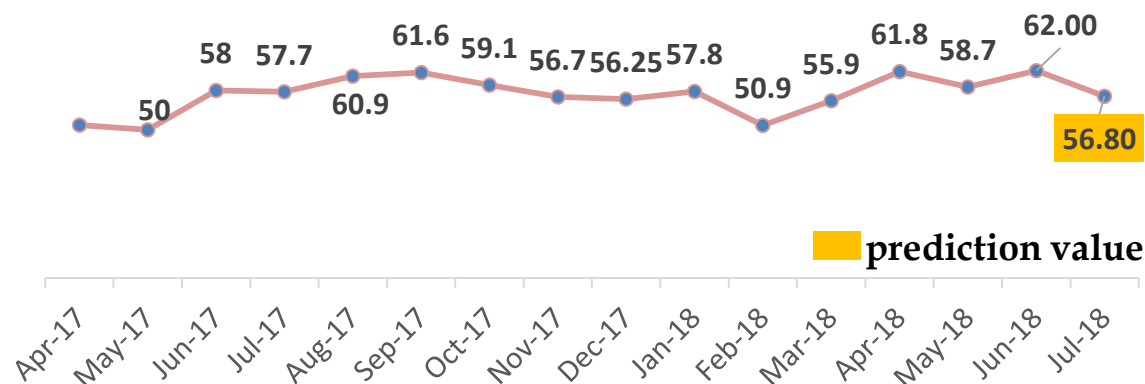


# JNPT Port terminals Dwell time Trend and Forecast

The below graphs display the dwell time and volume trend across the year of JNPT Port terminals from April'17 to May'18. The highlighted data points are the projections for the month of June'18 and July'18

## NSICT

Dwell Time Trend and prediction (hrs.)

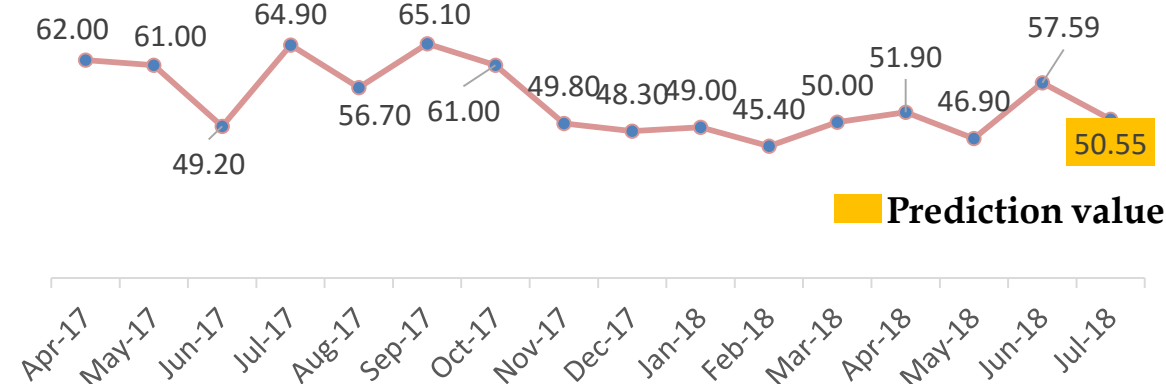


**Year on Year Dwell Time Change: 6.8% Increase**

NSICT	Predicated dwell time (June'18)	Actual Dwell time (june'18)	Error Rate
Dwell time	56.81	62	+ 10%

## NSIGT

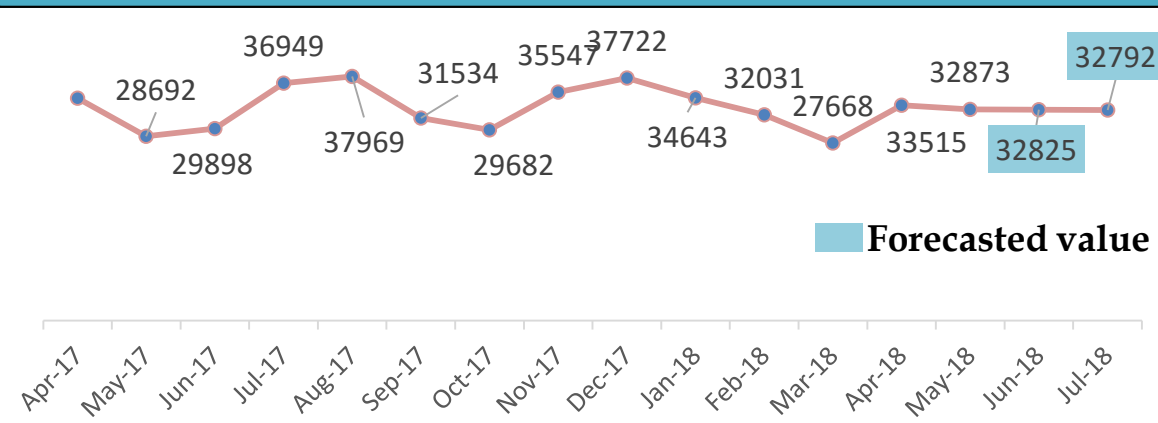
Dwell Time Trend and prediction (in hrs.)



**Year on Year Dwell Time Change: 17% Increase**

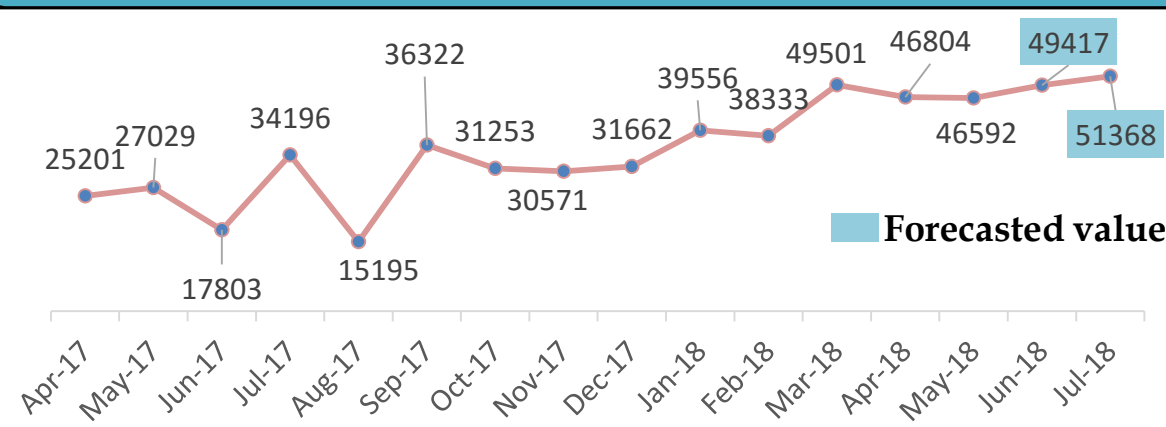
NSICT	Predicated dwell time (June'18)	Actual Dwell time (june'18)	Error Rate
Dwell time	50.97	57.59	+ 13%

Container Volume Trend and forecast



**CAGR: 1.03%**

Container Volume Trend and forecast



**CAGR: 5.63%**



# SECTION III: ANNEXURE



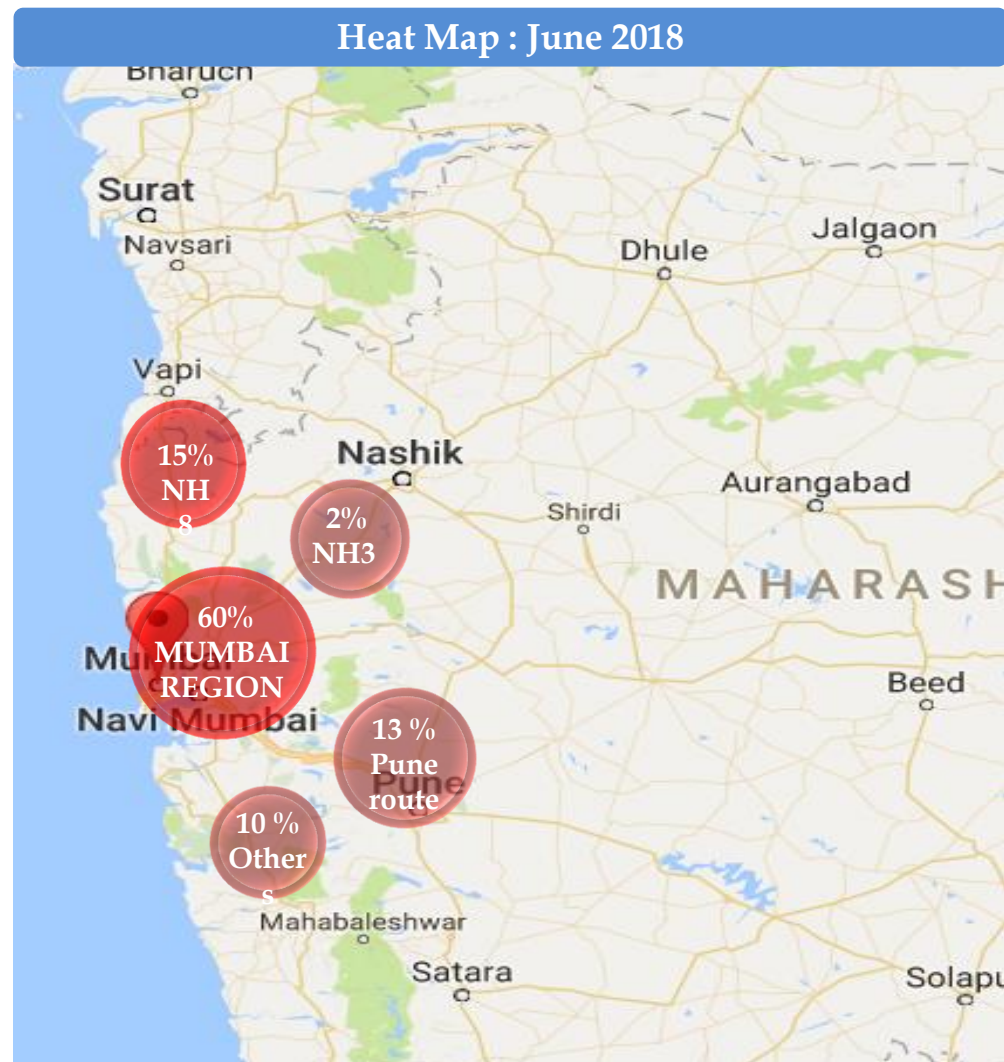
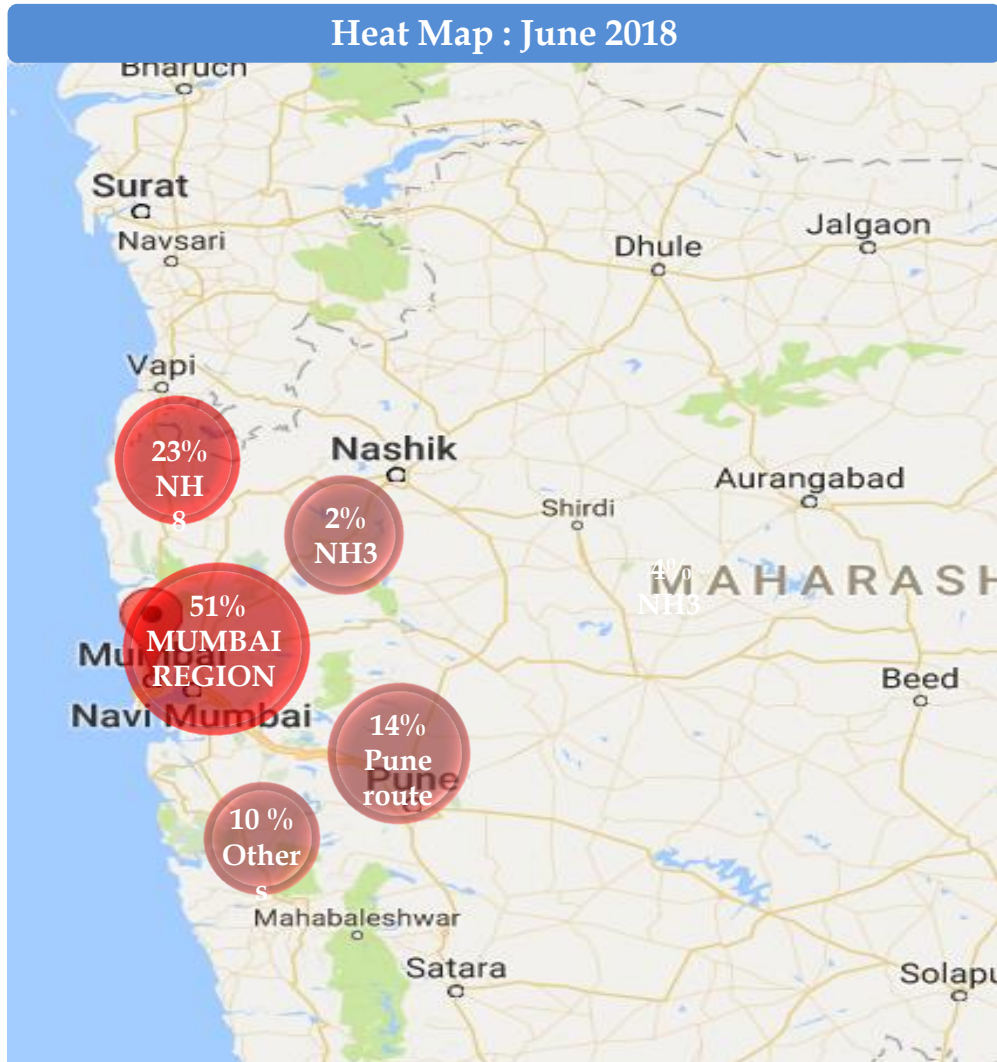
# JNPT Region





## HEAT MAP : JNPCT Port Terminal

## HEAT MAP : GTI Port Terminal



Region	May'18	June'18
Mumbai region	54%	51%
NH3	2%	2%
Pune	15%	14%
NH8	19%	23%
others	10%	10%

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

Region	May'18	June'18
Mumbai region	60%	60%
NH3	1%	2%
Pune	14%	13%
NH8	15%	15%
others	10%	10%

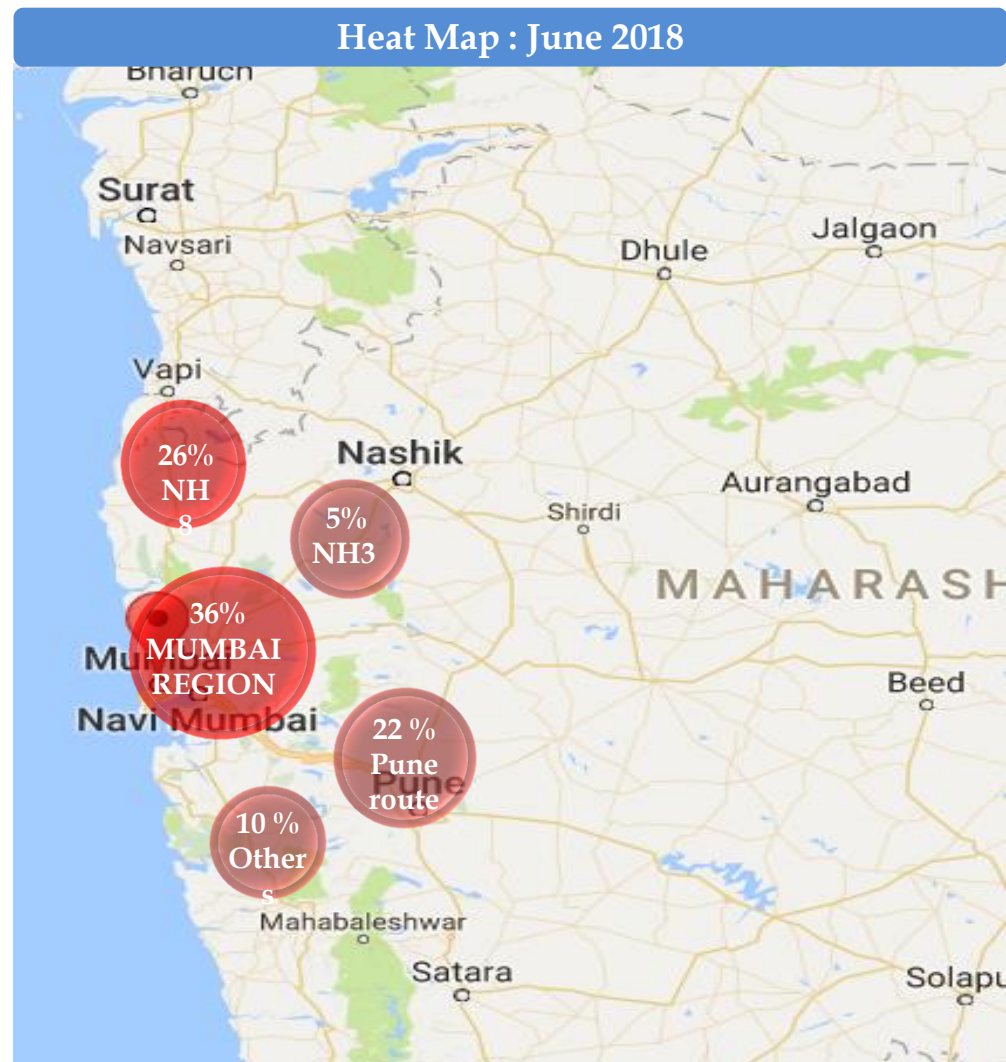
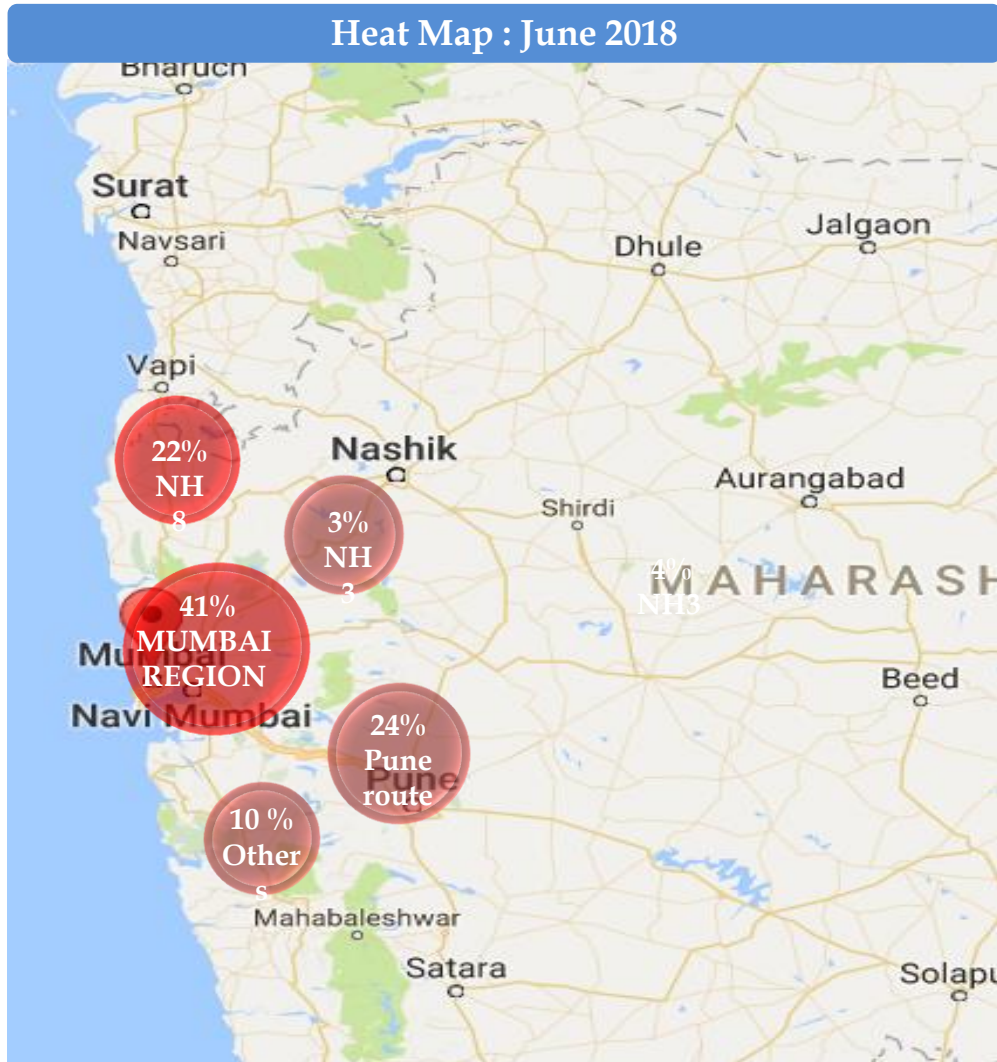
The heat map above depicts the movement of containers in and around the Mumbai region.





## HEAT MAP : NSIGT Port Terminal

## HEAT MAP : NSICT Port Terminal



Region	June'18	June'18
Mumbai region	33%	41%
NH3	4%	3%
Pune	31%	24%
NH8	22%	22%
others	10%	10%

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

Region	May18	June'18
Mumbai region	45%	36%
NH3	3%	5%
Pune	19%	22%
NH8	23%	26%
others	10%	10%

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



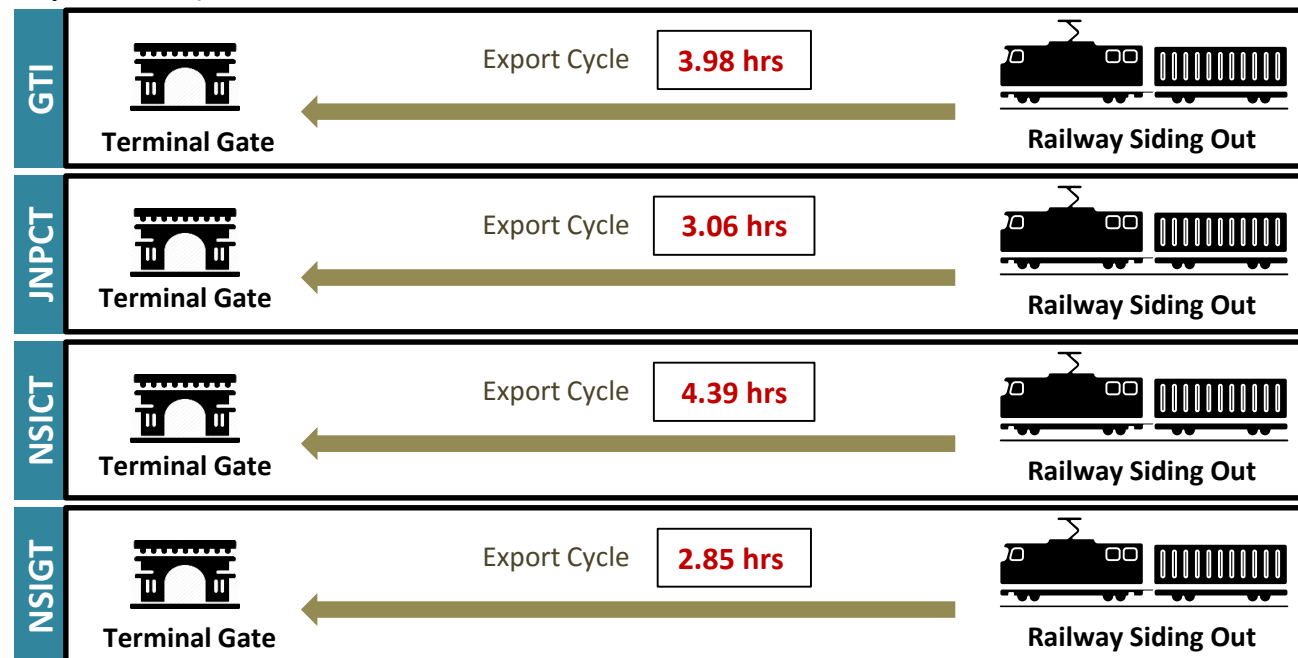
## Container Handling time : Import Cycle

Container handling time in import cycle refers to the time taken by container to reach 1<sup>st</sup> railway station (i.e. JNPT railway station) from the moment they have been cleared from Port (i.e. Port Out). The below data is for month of June'18



## Container Handling time : Export Cycle

Container handling time in export cycle refers to the time taken by container to reach Port terminal (i.e. Port In) from last railway station (i.e. JNPT railway station). The below data is for month of June'18



# CFS - AVERAGE DELIVERY TIME - all CFS in Mumbai TO

Below table shows the delivery time in export cycle from the CFS's to PORT terminals

For June'18

CFS Out Port in (Export Cycle in Hrs)

CFS	JNPCT	GTI	NSICT	NSIGT
CWC LOGISTIC PARK - Opr.Hind Trmnl.	2.6	5.8	5.2	5.0
CWC Dronagiri CFS	3.1	5.4	9.8	7.3
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	1.9	4.2	3.5	2.5
Indev Logistics Pvt. Ltd.CFS	3.1	6.1		6.5
PUNJAB CONWARE (PW)	1.7	4.4	5.1	5.2
Transindia Logistics Park Pvt, Ltd CFS	2.3	3.9	9.3	7.9
Apollo Logisolutions Ltd.	3.9	9.7	8.9	9.4
JWR CFS	2.9	5.7	5.6	4.3
NAVKAR CORPORATION LTD.YARD-III CFS	5.2	6.4	2.9	13.2
Ameya Logistics Pvt. Ltd.	2.2	6.3	8.2	7.8
Ashte Logistics Pvt. Ltd.	3.6	9.6	10.3	4.6
DRONAGIRI RAIL TERMINAL	2.2	4.7	4.8	5.4
TG Terminals CFS	2.2	6.3	5.7	7.0
Vaishno Logistics Yard CFS	2.8	6.0		4.1
NAVKAR CORPORATION LTD.,YARD-II CFS	5.3	8.5	10.9	8.0
Gateway Distriparks Ltd	2.3	6.1	5.9	6.3
All Cargo Logistics Ltd., CFS	3.8	27.4	4.7	8.2
International Cargo Terminal CFS	2.9	6.2	9.3	
Balmer & Lawrie & Co. Ltd.,CFS	2.2	7.9	8.6	19.9
Continental Warehousing (Nhava Sheva) Ltd.	1.9	4.4	4.6	5.2
Seabird Marine Services Pvt Ltd.	4.5	9.6	3.6	8.4
Ocean Gate Container Terminals Pvt. Ltd.CFS	2.3	5.9	5.0	6.8
MAHARASHTRA STATE WARE. CORP. CFS	2.5	6.6	5.8	3.8
International Cargo Terminals & Infrastructure Private Limited-CFS	3.2	4.9	5.9	4.1
APM (Maersk India Pvt. Ltd)CFS	1.7	3.5	3.0	6.5





# CFS DELIVERY TIME ANALYSIS

## CFS - AVERAGE DELIVERY TIME - GTI TO ALL CFS's IN MUMBAI

Below table shows the average delivery time in import cycle from GTI to all the CFS's

AVERAGE DELIVERY TIME ( In Hrs )- GTI TO ALL CFS IN MUMBAI	
CFS	June'18
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	1.9
Balmer & Lawrie & Co. Ltd.,CFS	2.0
Gateway Distriparks Ltd	2.8
APM (Maersk India Pvt. Ltd)CFS	2.0
Continental Warehousing (Nhava Sheva) Ltd.	1.8
Seabird Marine Services Pvt Ltd.	2.1
JWC Logistics Park Ltd CFS	3.5
Ameya Logistics Pvt. Ltd.	2.6
Ashte Logistics Pvt. Ltd.	3.9
NAVAKAR CORPORATION LTD.,YARD-1 CFS	3.5
Apollo Logisolutions Ltd.	5.7
Ocean Gate Container Terminals Pvt. Ltd.CFS	3.1
Indev Logistics Pvt. Ltd.CFS	4.3
Transindia Logistics Park Pvt, Ltd CFS	2.2
All Cargo Logistics Ltd., CFS	2.1
Vaishno Logistics Yard CFS	2.6
NAVAKAR CORPORATION LTD.,YARD-II CFS	6.0
PUNJAB CONWARE (PW)	2.3
DRONAGIRI RAIL TERMINAL	1.7
CWC LOGISTIC PARK - Opr.Hind Trmnl.	2.1
NAVAKAR CORPORATION LTD.YARD-III CFS	4.2
International Cargo Terminals & Infrastructure Private Limited-CFS	2.5
Maersk Annex (APM)CFS	2.8
International Cargo Terminal CFS	2.3
SBW Logistics CFS , Navi Mumbai	4.0
JWR CFS	2.4

## CFS - AVERAGE DELIVERY TIME - JNPCT TO ALL CFS's IN MUMBAI

Below table shows the average delivery time in import cycle from JNPCT to all the CFS's

AVERAGE DELIVERY TIME ( In Hrs )- JNPCT TO ALL CFS IN MUMBAI	
CFS	June'18
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	1.5
Balmer & Lawrie & Co. Ltd.,CFS	1.9
Gateway Distriparks Ltd	2.4
APM (Maersk India Pvt. Ltd)CFS	1.8
Continental Warehousing (Nhava Sheva) Ltd.	1.5
Seabird Marine Services Pvt Ltd.	2.0
JWC Logistics Park Ltd CFS	3.4
Ameya Logistics Pvt. Ltd.	2.4
Ashte Logistics Pvt. Ltd.	3.1
NAVAKAR CORPORATION LTD.,YARD-1 CFS	3.3
Apollo Logisolutions Ltd.	5.9
Ocean Gate Container Terminals Pvt. Ltd.CFS	3.2
Indev Logistics Pvt. Ltd.CFS	3.6
Transindia Logistics Park Pvt, Ltd CFS	2.2
All Cargo Logistics Ltd., CFS	1.8
Vaishno Logistics Yard CFS	1.7
NAVAKAR CORPORATION LTD.,YARD-II CFS	2.9
PUNJAB CONWARE (PW)	2.0
MAHARASHTRA STATE WARE. CORP. CFS	1.6
CWC LOGISTIC PARK - Opr.Hind Trmnl.	1.8
NAVAKAR CORPORATION LTD.YARD-III CFS	3.7
International Cargo Terminals & Infrastructure Private Limited-CFS	2.1
Maersk Annex (APM)CFS	2.7
International Cargo Terminal CFS	2.3
SBW Logistics CFS , Navi Mumbai	3.6
JWR CFS	2.0





# CFS DELIVERY TIME ANALYSIS

## CFS - AVERAGE DELIVERY TIME - NSICT TO ALL CFS's IN MUMBAI

Below table shows the average delivery time in import cycle from NSICT to all the CFS's

AVERAGE DELIVERY TIME ( In Hrs )- NSICT TO ALL CFS IN MUMBAI	
CFS	June'18
Balmer & Lawrie & Co. Ltd.,CFS	1.9
Gateway Distriparks Ltd	2.2
APM (Maersk India Pvt. Ltd)CFS	2.2
Continental Warehousing (Nhava Sheva) Ltd.	1.4
Seabird Marine Services Pvt Ltd.	1.8
JWC Logistics Park Ltd CFS	2.9
Ameya Logistics Pvt. Ltd.	2.1
Ashte Logistics Pvt. Ltd.	3.6
NAVAKAR CORPORATION LTD.,YARD-1 CFS	2.5
Apollo Logisolutions Ltd.	4.9
Ocean Gate Container Terminals Pvt. Ltd.CFS	2.5
Indev Logistics Pvt. Ltd.CFS	5.7
Transindia Logistics Park Pvt, Ltd CFS	2.5
All Cargo Logistics Ltd., CFS	1.6
NAVKAR CORPORATION LTD.,YARD-II CFS	3.5
PUNJAB CONWARE (PW)	2.0
DRONAGIRI RAIL TERMINAL	1.6
CWC LOGISTIC PARK - Opr.Hind Trmnl.	1.8
NAVKAR CORPORATION LTD.YARD-III CFS	2.5
International Cargo Terminals & Infrastructure Private Limited-CFS	1.9
Maersk Annex (APM)CFS	2.5
International Cargo Terminal CFS	2.1
SBW Logistics CFS , Navi Mumbai	3.1
JWR CFS	3.5

## CFS - AVERAGE DELIVERY TIME - NSIGT TO ALL CFS's IN MUMBAI

Below table shows the average delivery time in import cycle from NSIGT to all the CFS's

AVERAGE DELIVERY TIME ( In Hrs )- NSIGT TO ALL CFS IN MUMBAI	
CFS	June'18
Jawaharlal Nehru Port CFS (Speedy Multimode Ltd CFS)	1.9
Balmer & Lawrie & Co. Ltd.,CFS	1.8
Gateway Distriparks Ltd	2.6
APM (Maersk India Pvt. Ltd)CFS	1.9
Continental Warehousing (Nhava Sheva) Ltd.	1.7
Seabird Marine Services Pvt Ltd.	1.8
JWC Logistics Park Ltd CFS	3.1
Ameya Logistics Pvt. Ltd.	2.4
Ashte Logistics Pvt. Ltd.	3.7
NAVAKAR CORPORATION LTD.,YARD-1 CFS	2.9
Apollo Logisolutions Ltd.	5.3
Ocean Gate Container Terminals Pvt. Ltd.CFS	3.6
Indev Logistics Pvt. Ltd.CFS	3.6
Transindia Logistics Park Pvt, Ltd CFS	2.8
All Cargo Logistics Ltd., CFS	2.2
Vaishno Logistics Yard CFS	1.7
NAVKAR CORPORATION LTD.,YARD-II CFS	3.0
PUNJAB CONWARE (PW)	2.2
DRONAGIRI RAIL TERMINAL	2.0
MAHARASHTRA STATE WARE. CORP. CFS	1.3
CWC LOGISTIC PARK - Opr.Hind Trmnl.	1.7
NAVKAR CORPORATION LTD.YARD-III CFS	3.3
International Cargo Terminals & Infrastructure Private Limited-CFS	2.3
Maersk Annex (APM)CFS	2.9
International Cargo Terminal CFS	2.5
SBW Logistics CFS , Navi Mumbai	4.4
JWR CFS	13.2



Base on container movement from port to CFS in Mumbai region, 29 CFS's have been grouped into 9 Clusters on the basis of their vicinity. Below table shows all the clusters and the relevant data for NSICT and NSIGT terminal

## CFS Cluster : NSICT Terminal

- In export cycle the NSICT terminal is having congestion for traffic from cluster 3 and cluster 6
- In import cycle the movement of traffic towards cluster 9 is facing congestion

NSICT terminal for month of June'18				
Clusters	No. of CFS's in Cluster	Distance from Port (Km)	Import cycle time (in Hrs)	Export cycle time (in Hrs)
Cluster 1	1	8	-	3.5
Cluster 2	6	13	2.1	5.9
Cluster 3	6	11	0.8	5.1
Cluster 4	1	13	0.0	5.7
Cluster 5	2	25	2.7	2.5
Cluster 6	6	25	3.6	8.9
Cluster 7	4	12	1.8	6.4
Cluster 8	1	34	3.1	0.0
Cluster 9	1	20	3.5	5.6

## CFS Cluster : NSIGT Terminal

- In export cycle the NSIGT terminal is having traffic congestion from cluster 1 and Cluster 7
- In import cycle the NSIGT terminal is having traffic congestion from cluster 9

NSIGT terminal for month of June'18				
Clusters	No. of CFS's in Cluster	Distance from Port (Km)	Import cycle time (in Hrs)	Export cycle time (in Hrs)
Cluster 1	1	8	1.9	2.5
Cluster 2	6	13	2.3	5.7
Cluster 3	6	11	1.8	5.4
Cluster 4	1	13	1.7	4.1
Cluster 5	2	25	3.3	3.4
Cluster 6	6	25	3.5	7.2
Cluster 7	4	12	2.3	7.9
Cluster 8	1	34	4.4	0.0
Cluster 9	1	20	13.2	4.3

Export container usually aren't allowed in the port before the arrival of their respective vessel so this unplanned transportation of the export containers from the CFS's to Port can cause **bottlenecks**



Base on container movement from port to CFS in Mumbai region, 31 CFS's have been grouped into 9 Clusters on the basis of their vicinity. Below table shows all the clusters and the relevant data for GTI and JNPCT terminal

## CFS Cluster : GTI Terminal

GTI terminal for month of June18				
Clusters	No. of CFS's in Cluster	Distance from Port (Km)	Import cycle time (in Hrs)	Export cycle time (in Hrs)
Cluster 1	1	8	1.9	4.2
Cluster 2	6	13	2.3	5.8
Cluster 3	6	11	1.7	5.4
Cluster 4	1	13	2.6	6.0
Cluster 5	2	25	3.3	2.9
Cluster 6	6	25	4.3	7.5
Cluster 7	4	12	2.1	5.4
Cluster 8	1	34	4.0	11.9
Cluster 9	1	20	2.4	5.7

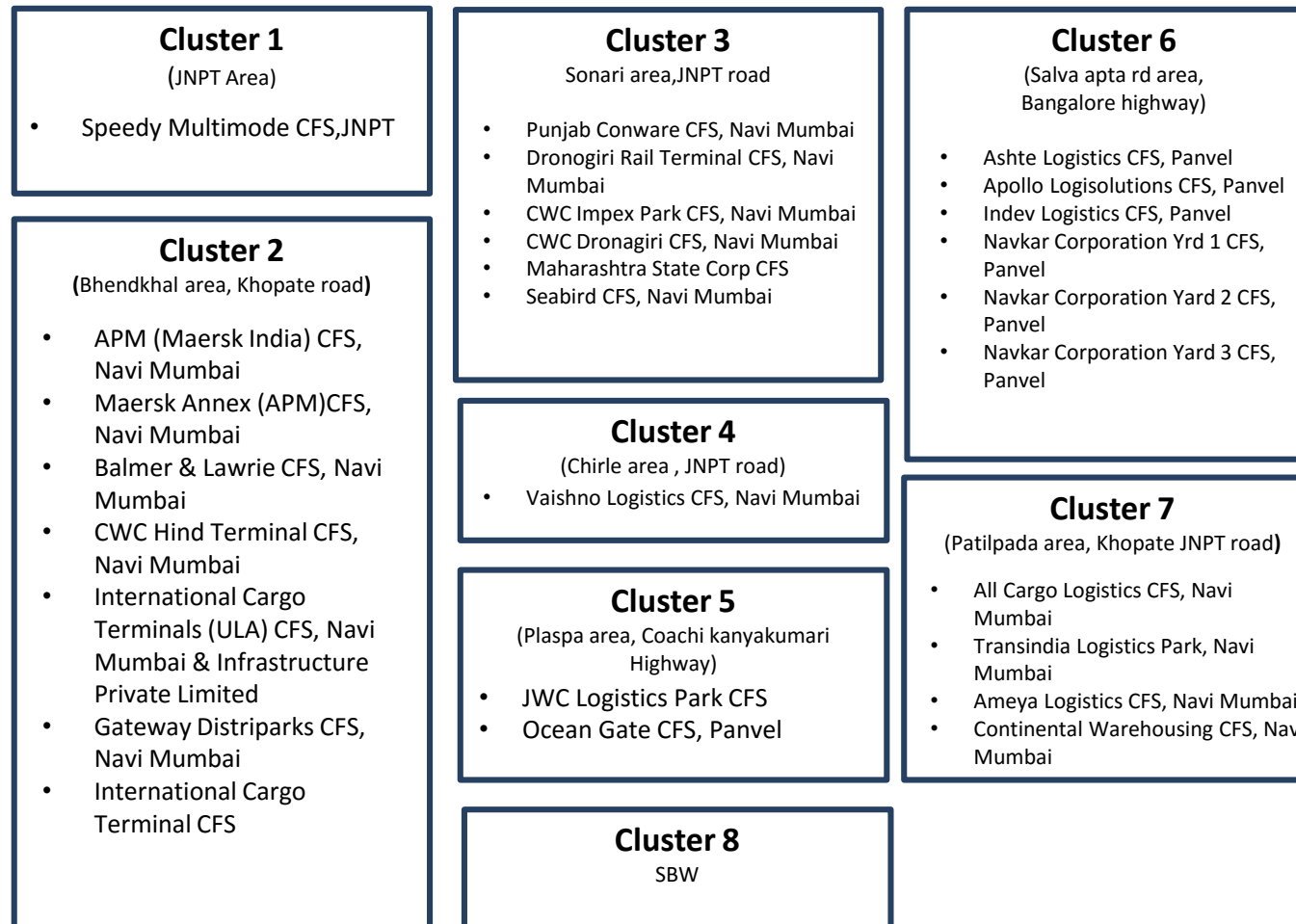
## CFS Cluster : JNPCT Terminal

JNPCT terminal for month of June'18				
Clusters	No. of CFS's in Cluster	Distance from Port (Km)	Import cycle time (in Hrs)	Export cycle time (in Hrs)
Cluster 1	1	8	1.5	1.9
Cluster 2	6	13	2.1	2.3
Cluster 3	6	11	1.8	2.5
Cluster 4	1	13	1.7	2.8
Cluster 5	2	25	3.3	1.2
Cluster 6	6	25	3.4	3.9
Cluster 7	4	12	2.0	2.3
Cluster 8	1	34	3.6	6.7
Cluster 9	1	20	2.0	2.9

Export container usually aren't allowed in the port before the arrival of their respective vessel so this unplanned transportation of the export containers from the CFS's to Port can cause **bottlenecks**



Below mentioned are all the CFS in the respective Clusters :





**Thank You !!**