

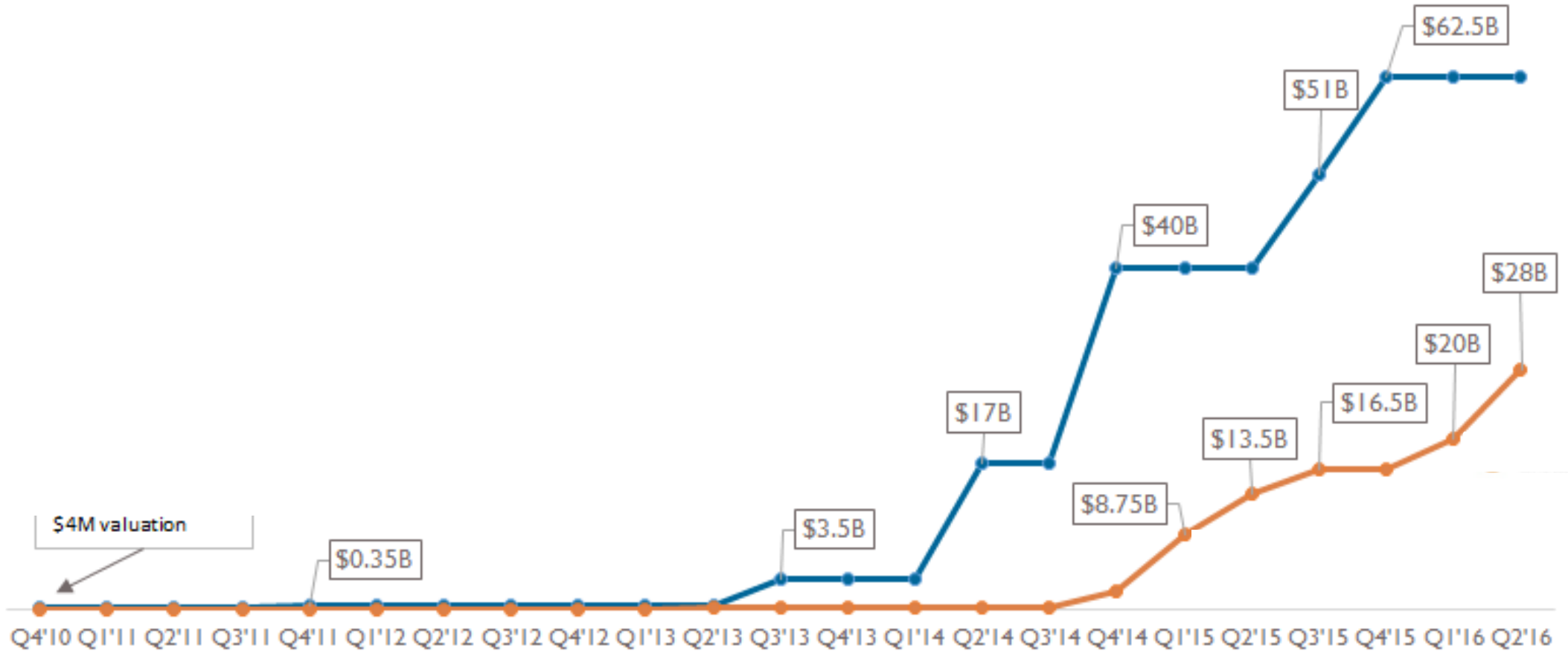


Increasing Operation Productivity with Advanced Scheduling and Analytics

July 15, 2016



A Quick Detour from Ports...



www.cbinsights.com

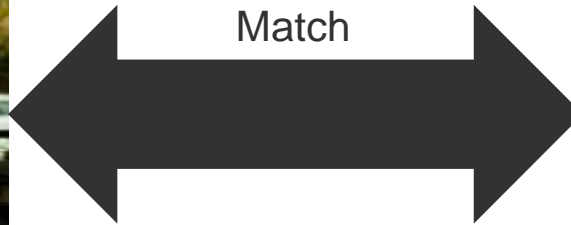
Vehicle Dispatching Systems



Drivers



Match



Riders



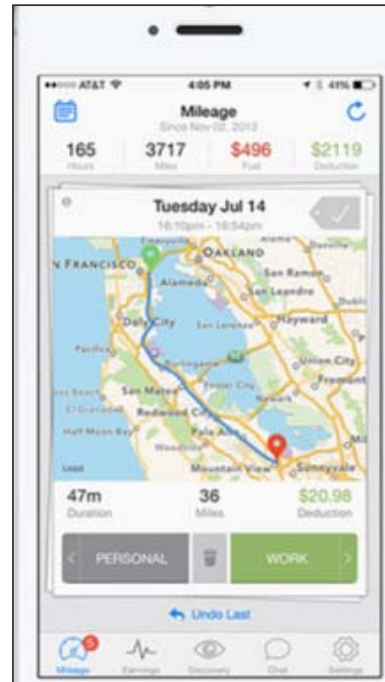
Some Technology Enablers



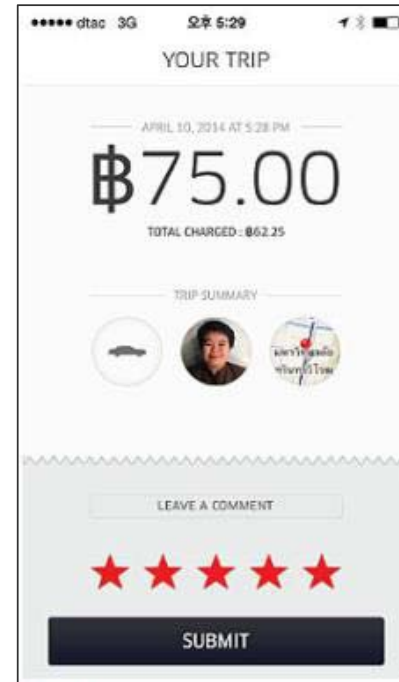
& Mobile Devices



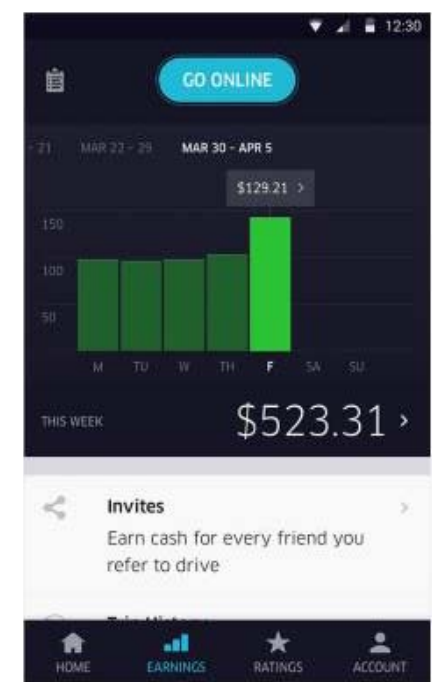
Mapping



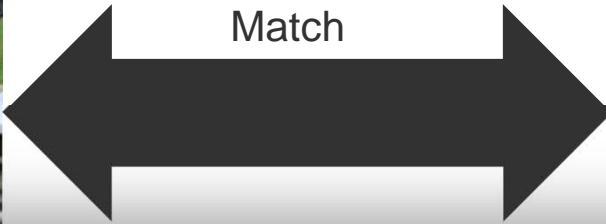
Billing & Accountability



Reporting



The Drive Toward Automation



 **travis kalanick** 
@travisk Follow

Drivers on @uber_nyc making \$90k/yr
Driverless car is a multi-decade transition. Let's
take a breath and I'll see you in the year 2035

RETWEETS 140 LIKES 127

2:13 PM - 28 May 2014

Toyota and Uber to Ridesharing Collabo

May 24, 2016
Toyota City, Japan, May 24, 2016 --
safer, more efficient and convenient
way the world moves, are announcin

Technology | Tue Apr 26
Google, driving cars

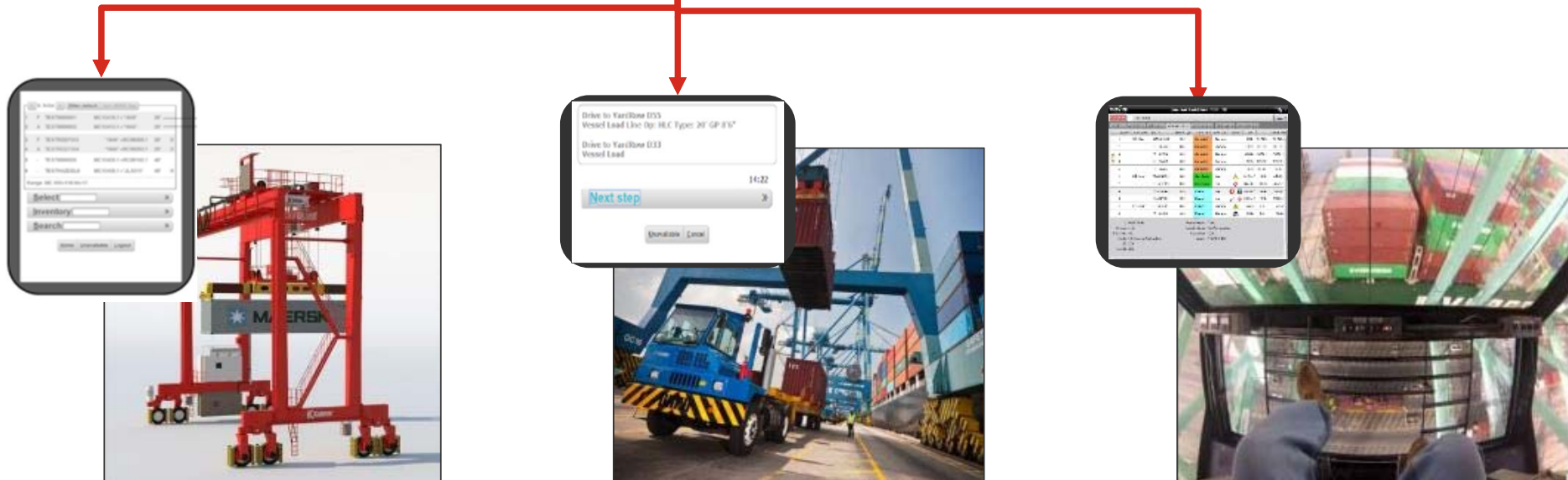
-like

Technology in (More) Controlled Environments

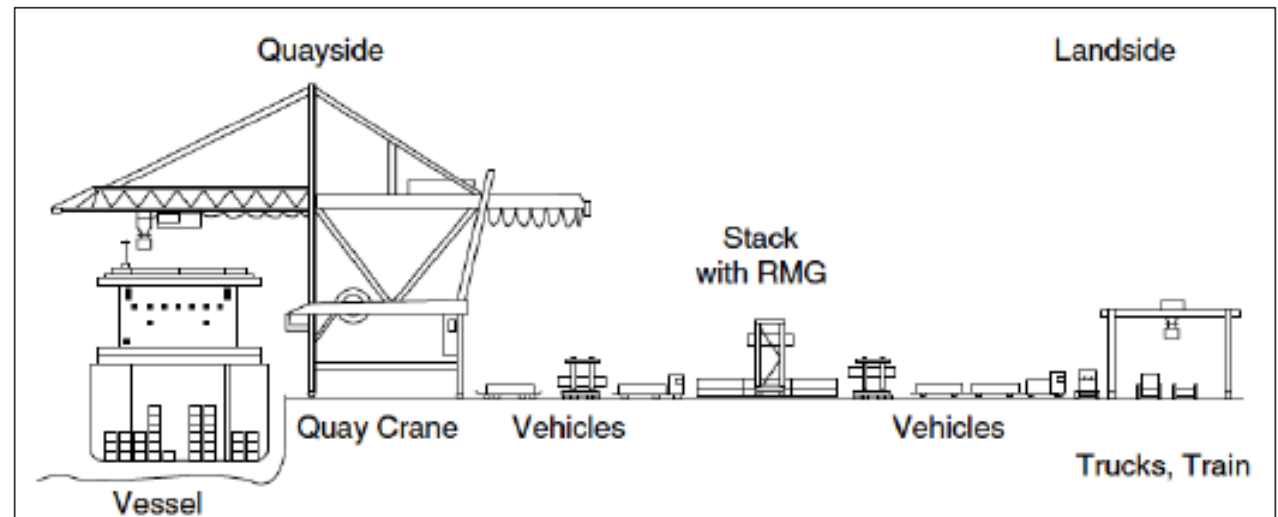
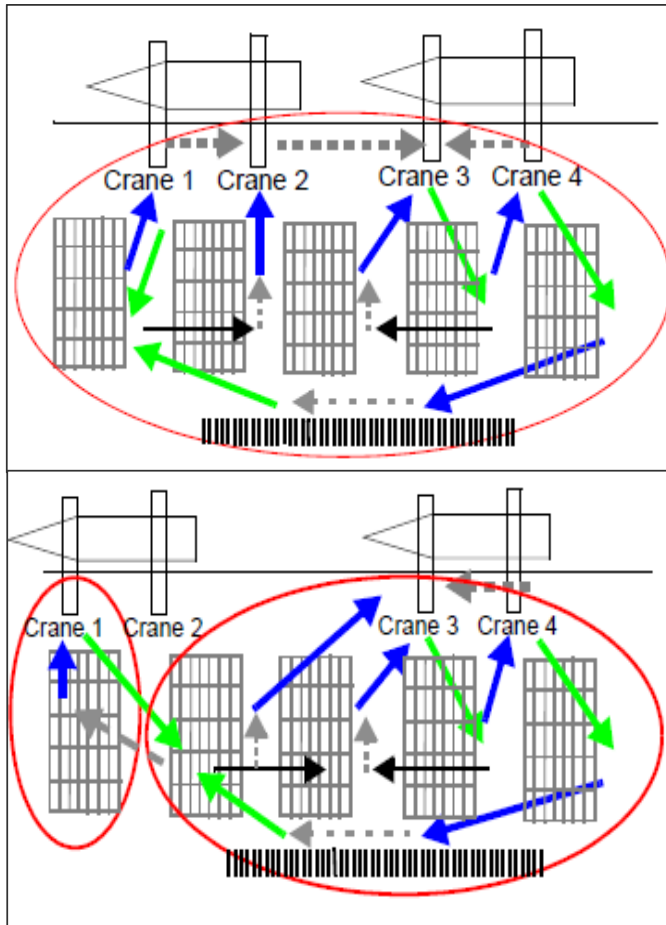
Technology at Ports Today



Dispatching Jobs to Manned Assets



Holistic Scheduling Achieves Terminal Objectives



Home > India > India-Others > Inland waterways policy: Dredging through the silt

Inland waterways polic

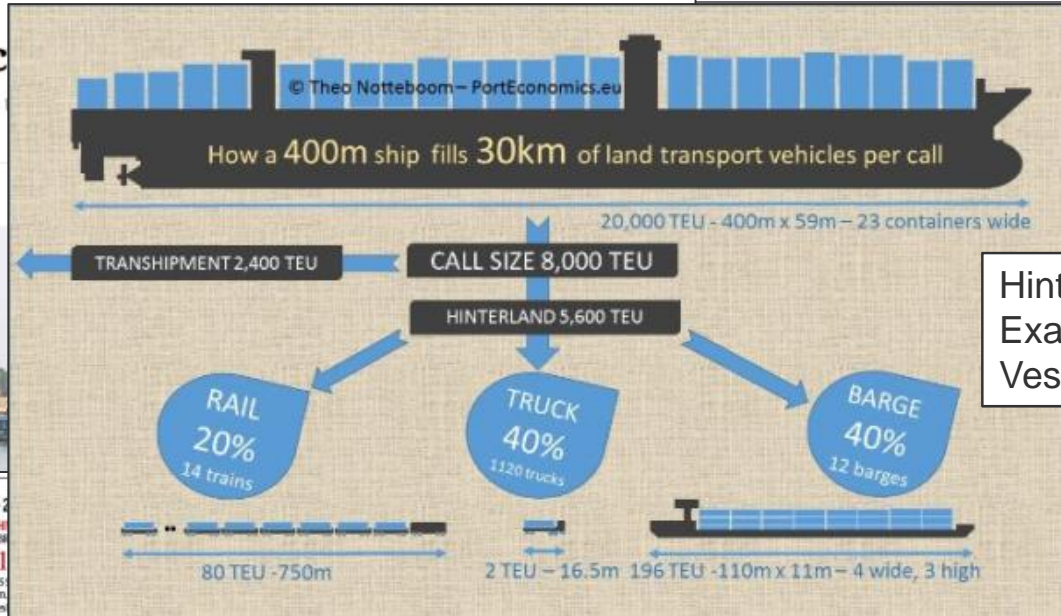
Inland waterways in India makes up a paltry 3% of the stands at 44%.

Written by **Anil Sasi**
Updated: Aug 19, 2015, 6:32

ABOUT AUTHOR



Anil Sasi
Anil Sasi is a Senior Editor with the Indian Express and writes on business and finance



Hinterland Flow
Example with Large
Vessel

National Waterways

TOTAL LENGTH
4,503 KM

TOTAL STATES SERVED
15



NW-1
GANGA
HALDWA TO ALLAHABAD
1,620 Km
STATES SERVED: UP, Bihar, Jharkhand and West Bengal

NW-2
BRAH
DHUB
891
STATES: Assam, Pradesh

NW-4
GODAVARI, KRISHNA & CANALS
KAKINADA TO PUDUCHERY
1,078 Km
STATES SERVED: AP, Tamil Nadu, UT of Puduchery

NW-5
BRAHMANI, DELTA CANALS, ECC
GOENKHALI TO TALCHER
588 Km
STATES SERVED: Odisha, West Bengal

NW-3
WEST COAST CANAL
KOLLAM TO KOTTAPURAM
205 Km
STATE SERVED: Kerala

On March 25... the Union Cabinet had taken the decision to approve... 101 additional Inland Waterways as National Waterways (NW) for navigation, something that Gadkari said **“would transform the inland waterways system in the country like never before”**.

Source: The Indian Express: Inland waterways policy: Dredging through the silt

their respective owners.

Scheduling the First Step Toward Automation



Equipment Control System (ECS)



Managing Performance with Business Intelligence



Management Dashboard Overall Terminal Operations Waterside Operations Gate Operations Yard Operations +

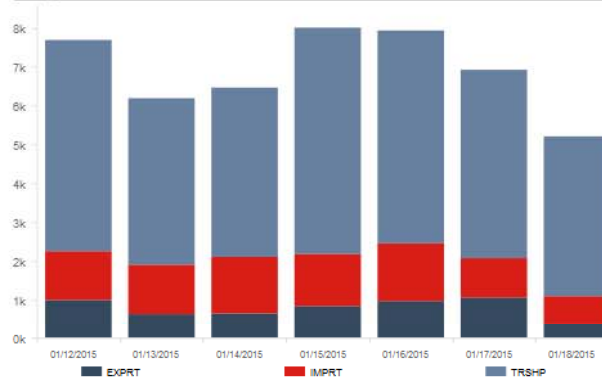
Management Dashboard +

Prompts - Complex Id = MTLHK; Facility Id = T9; Last Refresh Time = 18/01/2015 11:18 PM;

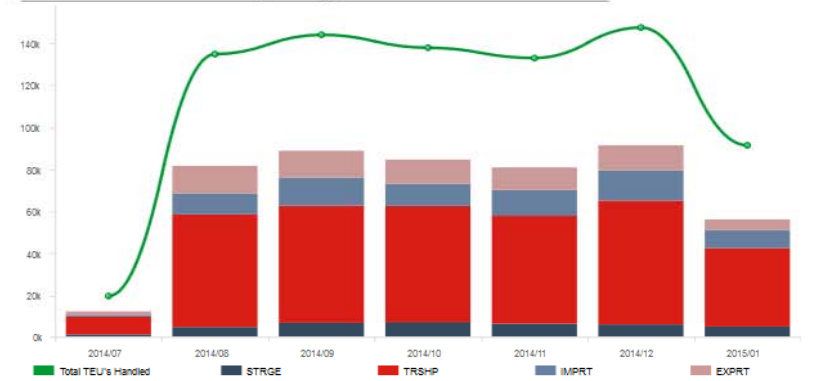
Productivity Stats

	Today	WTD	MTD	YTD
Throughput (Quay Side)	6,754	53,471	129,537	129,537
Throughput (Yard)	19,362	178,904	443,604	443,604
Throughput (Gate)	2,576	22,368	57,756	57,756
Avg. Crane Rate	41.86	33.98	54.6	54.6
Truck Visits	1,104	10,615	26,889	26,889
Avg. TTT (mins)	34.6	46	48.8	48.8
Avg. Dwell Time	0.3	2.4	3.2	3.2

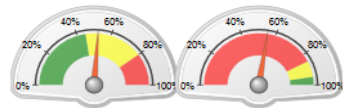
Daily Container Moves



Containers/TEU's Handled (Monthly)

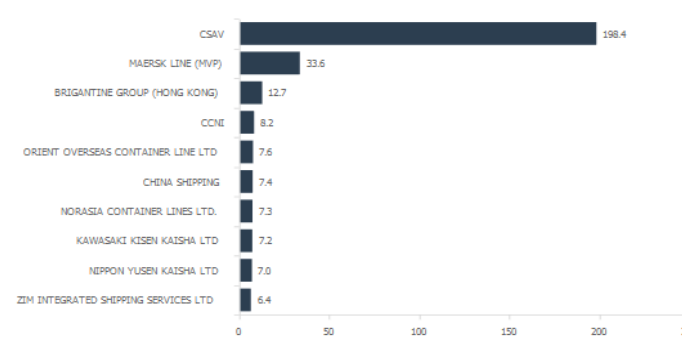


Asset Utilization (Today)

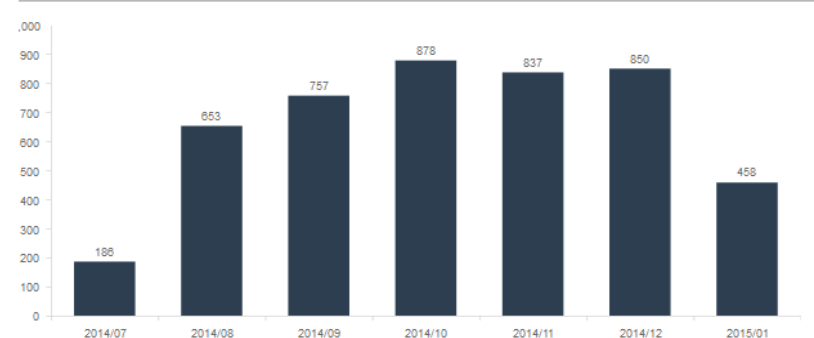


Yard Utilization (Overall) QC Utilization

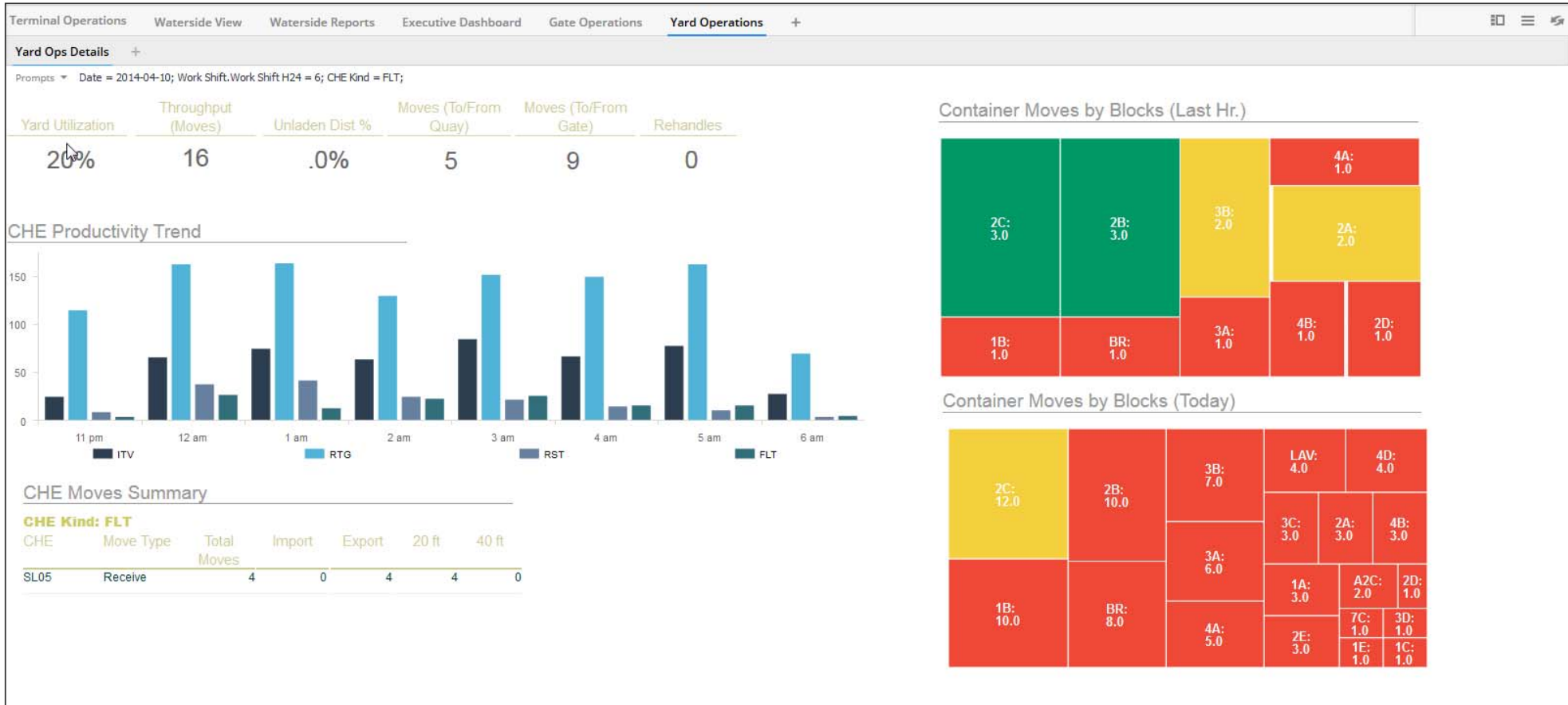
Dwell Time by Operator (YTD)



Monthly Port Calls



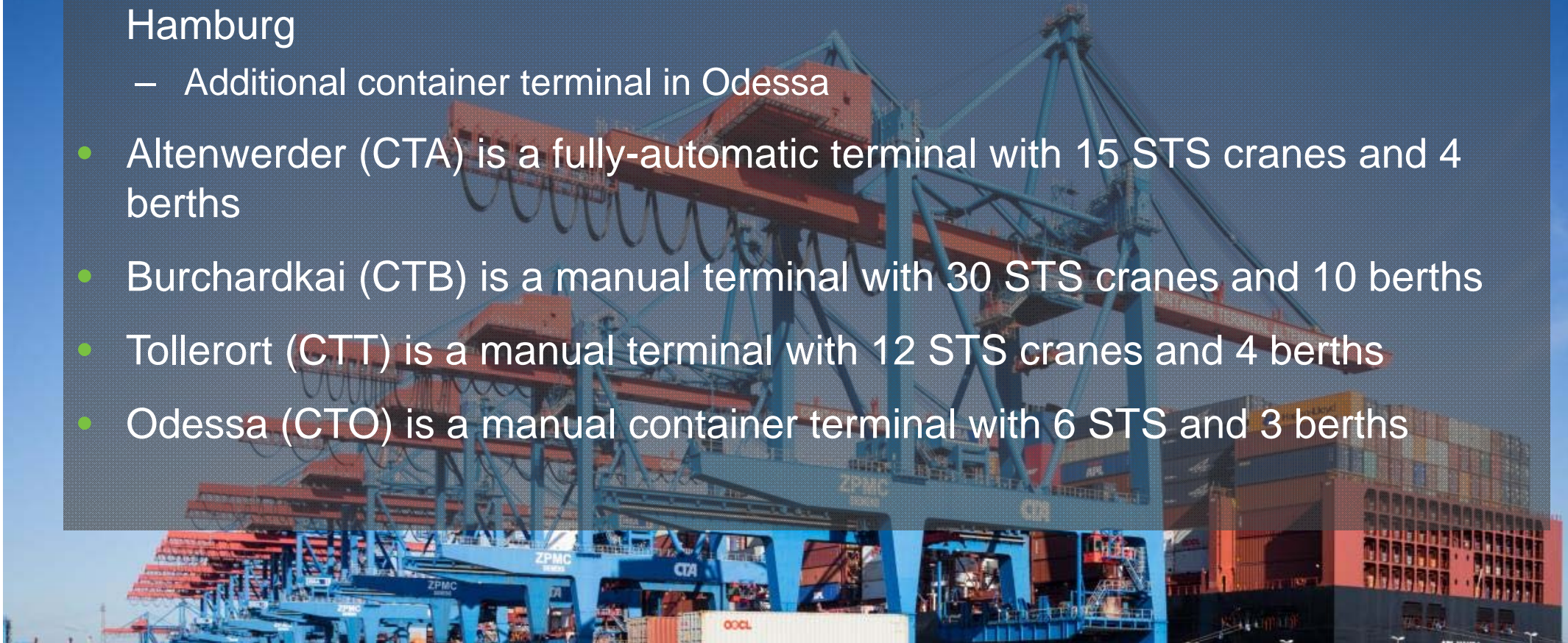
Evaluating Scheduling with Business Intelligence



HHLA

HHLA

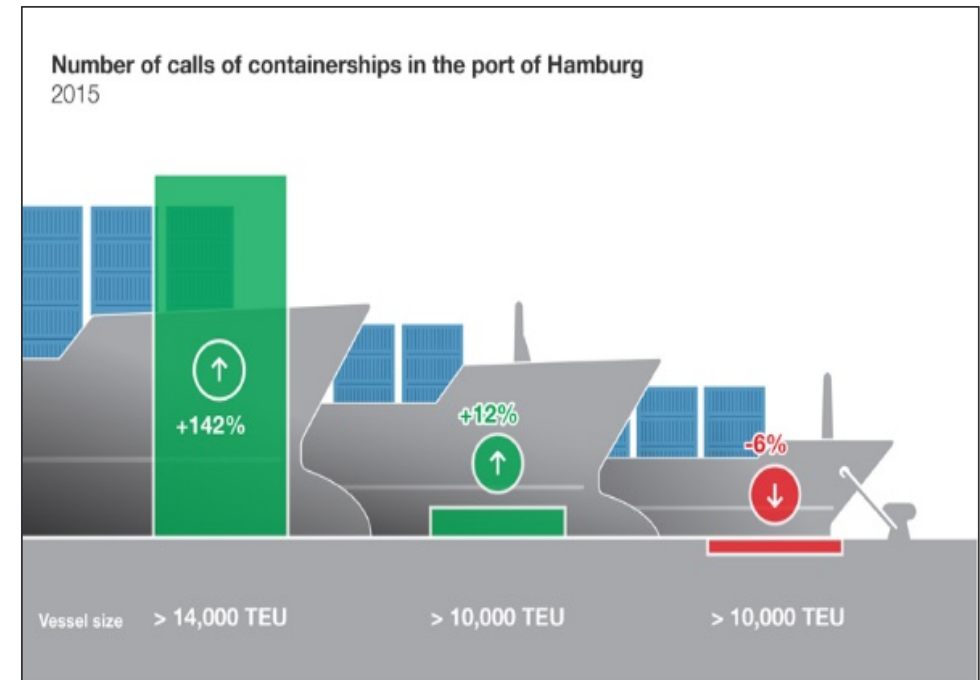
- Port group with terminals in Altenwerder, Burchardkai and Tollerort in Hamburg
 - Additional container terminal in Odessa
- Altenwerder (CTA) is a fully-automatic terminal with 15 STS cranes and 4 berths
- Burchardkai (CTB) is a manual terminal with 30 STS cranes and 10 berths
- Tollerort (CTT) is a manual terminal with 12 STS cranes and 4 berths
- Odessa (CTO) is a manual container terminal with 6 STS and 3 berths



HHLA Peak Congestion Challenges



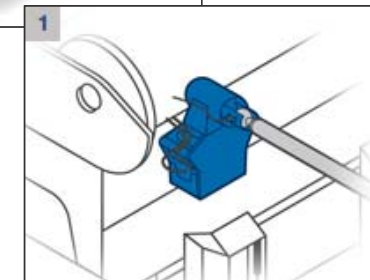
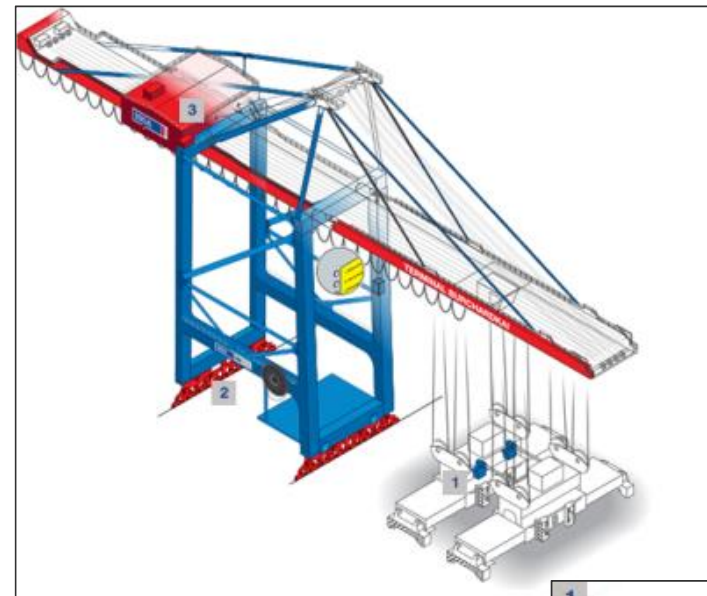
		TEU size	LOA m	Breadth m	Draft m	Containers rows across
OOCL XY 2016		21,100 TEU 200,000	400	58.8	16.0	23
Maersk McKinney Moller 2013		18,270 TEU 200,000	400	59.0	16.0	23
CMA CGM Marco Polo 2012		16,020 TEU 180,000	395	53.6	16.0	21
Emma Maersk 2008		15,550 TEU 175,000	397	56.4	16.0	22
Gudrun Maersk 2005		9,500 TEU 115,700	367	42.8	15.0	17
Sovereign Maersk 1997		8,160 TEU 105,000	347	42.8	14.5	17
Regina Maersk 1996		7,403 TEU 90,900	318	42.8	14.5	17
NYK Altair 1994		4,953 TEU 63,000	300	37.1	13.0	15



Terminal Objectives



- Terminal growth and expansion domestically and abroad
- Investment in equipment automation and process automation
- STS tandem project
- ‘Brownfield’ phased automation approach to existing manned terminals
- Continuous improvement in optimization algorithm techniques
- Need for updated technology stack



Navis Product Vision and Investments



Terminal Optimization

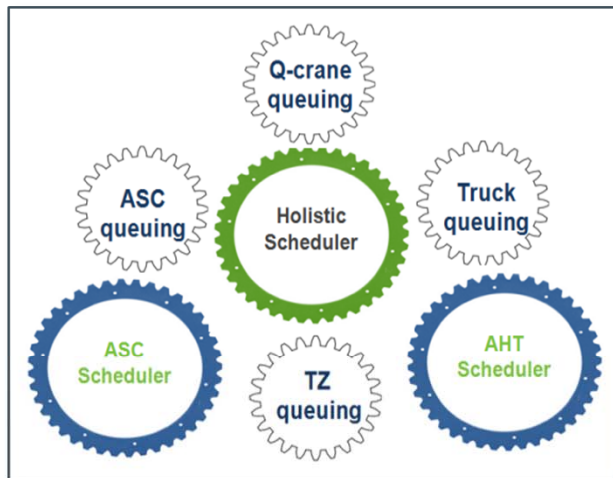
How to handle larger vessels / increased throughput

Business Intelligence

You can't manage what you can't measure

Terminal Automation

Delivering the tools for Equipment Automation



Committed to Port Industry



ICT FOCUS

WorldCargo

Navis's N4 boom

Navis is having significant success in Latin America with its flagship N4 TOS in the three months since June, eight months have gone by with N4, and 16 months are in the process of implementation, with go-live scheduled from 2015 to 2017.

Martin Busch, senior director of sales, Americas at Navis, said it now enjoys 100% of the Argentine market, but 13 months in Brazil and two new customers in Chile. These include Terminal Puerto San Valentin (TPSV), which is replacing the CTB TOS, developed by Hamburg Port Consulting, with N4. Other new business includes terminals in Ecuador, Paraguay and Venezuela, where Navis has won the

TOS contract at the Port of La Guaya.

Navis is achieving much more success in South and Latin America with N4 than it did with SWACCS, which a number of terminals considered too expensive. Nave VP and general manager Chuck Schneider said this was more so for smaller terminals, but Navis is now very competitive in the market. Nave did, at one point, introduce a scaled-down version of N4 for small terminals, called Ago, but has decided since to focus on N4, and adjust the price for smaller customers.

Navis has also benefited its appeal by leveraging N4 to reduce implementation costs. The product is much more



Terminal Puerto San Valentin is replacing CTB with Navis N4

configurable than SWACCS, and many of the installations are carried out by a local partner (Present in the Americas) and, in some instances, Navis has trained terminal operators to do their own installations.

Navis also has three partners that can perform Gateway extensions for customers. Locally Busch added that some customers are actually going further and using "local IT shops" to do their own

Gateway extensions and integration, all at local prices and independently of Navis.

extensions, and who are familiar with the customer requirements.

Another factor in Navis' recent success, added Schneider, is that the market has become more sophisticated and wants to do more with IT. TPSV has taken the journey from such factors to ETOs, and is now looking to implement N4 with Rapid Deploy, Navis' yard optimization tool. Another new customer is installing N4 with Business Intelligence tools and a PCS system.

Navis is now working on offering a



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- Most Dynamic New Builds
- Users from Major Port CEOs
- Training and Automation



GLOBAL ISSUES

The port of the future capturing the sense of wonder



Dr Oscar Pernia, Director of Product Strategy, Navis; and Manuel Perez, Director of Product Management (Engineering), Xvels; California, USA

For the port of the future, bigger vessels, broader carrier alliances, container capacity consolidation and larger hub and spoke port networks will be changing costs

eliminating or drastically reducing the estimated US\$17 billion waste in current port and carrier business processes.

More-hubs, connectivity and

The port of the future will be integrated into a maritime information network where relevant data is accessible and shared with shipping partners in a secure environment. Automatic processing of



FEATURED

- Navis World 2015
- New automation section
- Cold-chain containerisation
- Securing the supply-chain

www.porttechnology.org Navis World Edition 63





27 *Years*

305 *TOS Terminals*

80 *Countries*

142 *N4 Live*

225 *N4 Committed*

455 *Employees*

6 *Offices*



Thank You

