TRANSNET PRESENTATION

PORT COMMUNITY SYSTEM

Port of Cape Town Stakeholder Dialogue

13 FEBRUARY 2025



Agenda



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PCS & MSW Overview

Traffic Management

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PCS & MSW Overview

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PCS AND MSW OVERVIEW



Types of Single Windows & Actors



- The Maritime Single Window (MSW): An electronic platform that enables electronic exchange of information required on arrival, stay and departure of ships in ports and the electronic submission is done only once on the platform and redistributed to the respective state agencies.
- The Port Community System (PCS) focuses on the operations and commercial business aspects of port logistics. The PCS has a B2B (Business to Business) characteristic, and the MSW has a B2G (business to government) characteristic.
- ↔ The two interfaces, namely MSW and PCS, can be implemented as separate systems or a single central system covering all regulatory.

PORT COMMUNITY SYSTEM

Current Challenges



Operational Pain Points

Lack of real-time tracking of operation processes creates distrust and uncertainty in the Port valuechain system

Logistics and Customs Challenges

Customs bottlenecks due to manual declarations and lack of integration with ports result in poor tracking for international shipments.

Technology Gaps

Disconnected IPMS, Order to Cash (e-commerce) & SAP ERP create data silos in existing workflows.

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RAG STATUS: • New & In progress, • In place & requires Improvement • Planned



The transition from the operational application IPMS to a comprehensive platform for Port Community System (PCS) and e-commerce capabilities involves upgrading traditional port management systems into a unified, digital solution that integrates logistics, cargo tracking, booking, and payment functionalities. By merging PCS with e-commerce, the platform offers a streamlined, user-friendly experience that enhances customer satisfaction and improves logistics coordination. PCS acts as a digital hub, connecting all stakeholders in port operations, including shipping companies, customs, freight forwarders, and terminal operators. This digital transformation ultimately leads to cost savings, faster operations, a more efficient port ecosystem and better user experience



- Berth Management
- Vessel Slot Management
- Revenue Management
- Supplementary Service Requests
- Dry Dock
- Ship Repairs
- Dredging Services
- Fuel Consumption Management
- License Management

Marine Operations (Water side)



Traffic Management
Truck Slot Management
Cargo Validation
Cargo Tracking
Truck and Driver Permit Management

Visitors Access Management

e-Commerce

- User / Customer Account Management
- Incident Management
- Resource Management
- Waste Management
- Service Requests
- Inspections
- Safety, Health & Environment

Cargo Operations (Land side)



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LAND OPERATIONS: SMART TRAFFIC MANAGEMENT

Overview

Port traffic management is an **interlink between berth, yard and gate management**. Berth scheduling takes place as part of planning. However, its effectiveness depends on Vessel Arrival and optimized Cargo Working Time. Optimized cargo working time is also dependent on yard capacity and equipment availability. Both berthing and cargo operations are major factors in determining the maximum number of trucks allowed to enter the terminal/yard area.

One of the contributing factors to Truck **congestion is the randomness** of unscheduled truck arrivals during peak hours, which lead to longer truck turnaround time. A byproduct of gate congestion is a concentration of idling trucks releasing a greater amount of emissions compared to when they are moving, resulting in environmental, safety and health issues.

TNPA with all terminal operators and road stakeholders will collaborate to **establish a traffic management model** to determine the optimal slots and number of trucks that the port road network can cater for, to reduce congestion and not negatively affect Terminal Operators' operations.

TNPA's full implementation of the Smart Traffic Management Technology is a shared responsibility between Security, Infrastructure & ICT.



SMART TRAFFIC MANAGEMENT

The traffic management model will determine the optimal slots and number of trucks that the port road network can cater for taking into account: traffic, terminal & port operations, infrastructure & Booking models

1.	Traffic	2. Terminal & Port Operations	Truck
•	Time series of daily truck volume (pick up, delivery, dual) Traffic flow (weekday, weekends, on/off peak) Vessel traffic Traffic outside port limits	 Weather condition Terminal yard planning and average thruput Commodity and cargo types at the respective terminals Truck turnaround KPIs Port rules at the respective ports Incident & Deviation management 	Driver SAPS SAPS Staker SANRAL
3. • • •	Infrastructure Port entrances and exits Terminal entrances and exits Gate lanes Road capacity Terminal yard capacity Terminal traffic management system	 4. Booking Models First come first served Appointment/ pre-booking Dynamic per terminal operator Predictive Hybrid 	Metro/ Municipality TNPA Op Infra, CHI ICT & Security
	Truck/Driver Permit Applicatio nVessel Pre- advise advise [Vessel Agent]Car a a[Transporte r]Agent]Car a	rgo Pre- dvise Cargo Dwner] TO Capacity Pre-advise [Terminal Operator] Truck Books a Slot [Transporter] [Transporter]	ruck Fication Gates TNPA curity] Truck Staging Area [TNPA] Load/Off- Load Cargo [Terminal Operator]
		Deviation Management	
		[TNPA / Terminal / Transporters/ law enforcem	nents]

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E-COMMERCE

E-Commerce is also known as a digital commerce platform which is the core technology that enables customers to purchase goods and services through an interactive and usually self-service experience. The platform provides necessary information for customers to make buying decisions and uses rules and data to present fully priced orders for payment. Currently TNPA external customers use two (2) systems (Hybris for cargo dues and IPMS for marine dues) to execute e-commerce capabilities.

OVERALL SERVICES				
	Marine			
	Dredging			
	Cargo Dues			
	Dry Dock			
	License Permits			
	Security Permits			
	Light Houses			
	Real Estate			

Aviation

SAP HYBRIS

The SAP Hybris system was implemented in 2017/2018, which is a customer facing solution where cargo dues orders are captured, and general Business-to-Business (B2B) functionality is available for customers to interact on an e-Commerce platform. The orders are processed in the order management module of SAP Customer Relationship Management (CRM) and the posting of these orders is done in SAP Enterprise Resource Planning (ERP).

IPMS

The IPMS was implemented in 2015/2016, which is a 24-hour bespoke web-based integrated system that automates the core marine operations processes of TNPA's eight commercial ports. Marine orders are initiated in IPMS, orders are then processed in the order management module of SAP Customer Relationship Management (CRM) and the posting of these orders is done in SAP Enterprise Resource Planning (ERP).

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DATA MANAGEMENT

TO-BE ARCHITECTURE

NOTES:

IPMS

- Terminal oversight
- Single window
- Weighted Efficiency Gains from Operations (WEGO)
- Dredging Planning
- Dry Dock Planning

SAP DataSphere

- Tariff Automation
- Planning and Budgeting
- Corporate planning
- Maintenance and
 Planning
- Regular Asset Based
 (RAB)
- Workforce planning
- CAPEX, OPEX, Revenue models



