

Fremantle Port

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Principal Logistics Analyst

**Evolving toward an efficient landside supply chain –
Truck Control System, Truck Productivity Strategy,
Westport and Port Trade Ecosystem**



**FREMANTLE
PORTS**



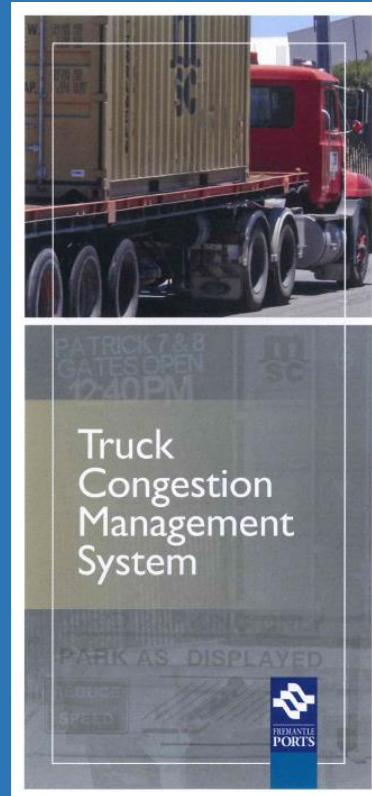
Victoria Quay

Rous Head

North Quay

Fremantle Inner Harbour

Truck Control System



What we've been doing

- Getting better co-ordination of heavy vehicles into and out of a sensitive precinct
- Looking at better ways of doing it – Innovation
- Go beyond Australia ... to be world standard
- Actually making a difference – not just co-ordinate but take action

Congestion Management

Truck Marshalling

Vehicle Detection System – instant monitoring of delays

Messaging

In Cab Telematics Driver Information

Queuing Control

Key Performance Indicators

Automated Precinct Status

The Future!

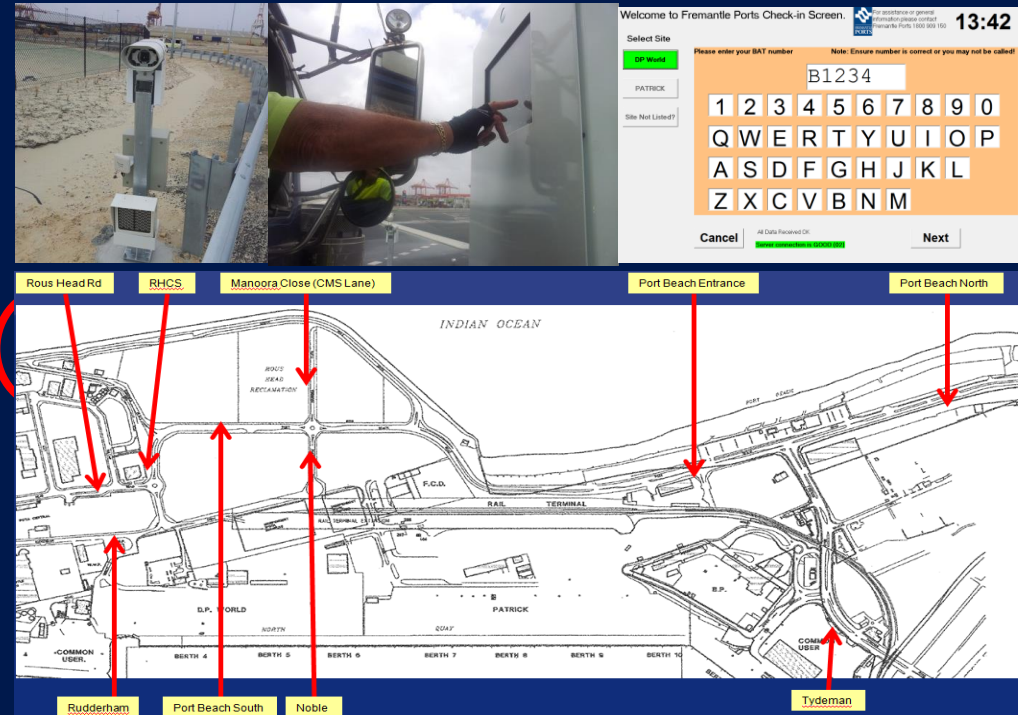
Truck
Congestion
Management
System



Why is it important?

- Lengthens the useful life of vital infrastructure
- Improves the relationship with our community partners
- Increases efficiency and makes Western Australia more competitive
- Increases the value and importance of the Port in everyone's eyes
- Shows that we are at the forefront of innovation

Congestion Management System is a core example



That



sustainability

*celebrating sustainability
triumphs wherever they
originate*





FREMANTLE
PORTS

Tenant Operating Performance System

TOPS



HOME

DATA

RESULTS

UNFORESEEN EVENTS

OBJECTIONS

KPI ACTION PLANS

TENANTS

REPORTS

ADMIN

History Tenant

Change Password

Logout

Site Key Performance Indicators

- Newly created land areas have given the Port the opportunity to guide key land-side efficiencies.
- KPIs linked to results we wish them to achieve
- KPIs included in all new leases – Incentive for good performance
- Tenant Operating Performance System (TOPS)
- Requirement to audit results
- Verification through Intelligent Transport Systems



Truck Control System - The Developments

Queuing Control

- Impractical to monitor manually
- Eliminates Queuing – environmentally friendly and driver amenity focussed
- Focuses attention on this neglected area of logistics (“what do I care about queues?”)

Vehicle Detection (including Truck Turn Time - TTT)

- Measurement of duration at port – CO2 implications
- Increase throughput

In Cab Telematics (IVU) – Driver Information System

- Take information from Congestion Management System and send direct to driver
- Driver able to act on issue prior to arriving at port, avoid unnecessary journeys (Virtual TMA?)



Queuing detection At ICL

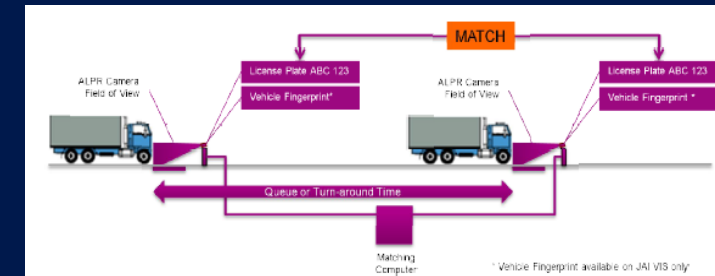
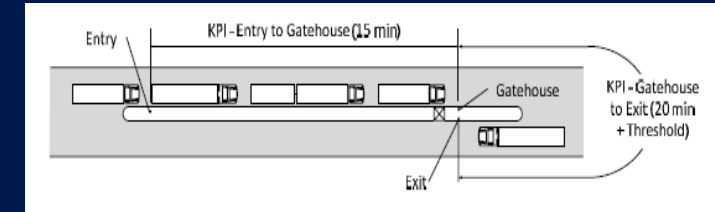
Attention,
There is queuing happening at 2016/07/08 15:29:13 at site ICL.
Please click here for live view ([link](#)) or playback view. ([link](#))

Regards,
Fremantle Port













Fremantle Ports Queuing Control System

Search Criteria: Camera: QCP, KOOR, SULW, ICL, PAT2, PAT1

Time	Camera	Image
21/02/2018 1:51:11 PM	SULW	
21/02/2018 1:28:53 PM	ICL	



Time Slot:	13:00-14:00	<input type="checkbox"/>
Turnaround Average Achieved:	52	
Allowed Average Time:	25	
Time Slot:	14:00-15:00	<input type="checkbox"/>
Turnaround Average Achieved:	51	
Allowed Average Time:	25	
Time Slot:	15:00-16:00	<input type="checkbox"/>
Turnaround Average Achieved:	65	
Allowed Average Time:	25	

21/02/18 14:09:41	21/02/18 14:08:42	1EOZ678		21/02/18 15:05:52	21/02/18 15:05:52	1EOZ673		00:56
21/02/18 14:10:57	21/02/18 14:10:58	1DUK336		21/02/18 15:08:26	21/02/18 15:08:26	1DUK336		00:57
21/02/18 14:14:34	21/02/18 14:14:35	1DKP850		21/02/18 15:36:22	21/02/18 15:36:22	1DKP850		01:21
21/02/18 14:14:44	21/02/18 14:14:45	1DBU827		21/02/18 15:34:41	21/02/18 15:34:41	1DBU827		01:19
21/02/18 14:15:10	21/02/18 14:15:11	1GCX377		21/02/18 15:39:27	21/02/18 15:39:27	1GCX377		01:24
21/02/18 14:19:38	21/02/18 14:19:39	1DWM786		21/02/18 15:33:44	21/02/18 15:33:44	1DWM786		01:14

Innovation and Supply Chain Excellence Awards

The screenshot shows the Fremantle Ports website with a blue header and navigation menu. The main content area features a 'NEWS' section on the left and a video player on the right. The video player shows a man holding a large award trophy.

FREMANTLE PORTS
Western Australia

Home

About Fremantle Ports | Port Business & Operations | Planning & Projects | Community & Education | Visiting the Port | News & Publications

NEWS

11/06/18 - Fremantle Business Awards 2018 announced
Congratulations to all winners at the Fremantle Business Awards 2018
[Read more](#)

01/06/18 - Two awards for Fremantle Ports' truck management system
Innovations in managing road operations at the port have garnered two awards.
[Read more](#)

11/05/18 - North Quay Container Terminals EOI
Fremantle Ports invites expressions of interest to develop and operate the intern...
[Read more](#)

[News Archive](#)

SHIPPING MOVEMENTS | HISTORY & HERITAGE | CRUISING | FREMANTLE WATERFRONT

Our Truck Control System won two awards at the 2018 WA Transport, Supply Chain and Logistics Awards held recently. - [Find out more.](#)

Truck Productivity Strategy



Key issues impacting productivity

Business Environment Factors

- Reduction in transport cartage rates
- Decrease in customer loyalty / changing transport provider frequently
- Customer focus toward 'just-in-time'
- Change in trade volumes
- Increase in carrier numbers due to economic decline in other sectors creating excess capacity in container transport

Supply Chain Factors

- Degree of flexibility in ECP notification system to respond to changing transport conditions
- Break times interfering with terminal R&D
- Difficulty coordinating bookings and risk of no-shows between Container Terminals and ECPs
- Less slots being released at ECPs due to yard consolidations
- ECP service time variability and delays

High Level Strategies – Container Terminals

- Further investigate modification of the Vehicle Booking System (VBS) to facilitate advanced booking capability and reduce reliance on 'slot-drop' processes
- Investigate operational and commercial levers to reward efficient carrier operations and high productivity movements
- Investigate mechanisms to further encourage and reward operators which use off-peak times at Container Terminals
- Pursue operational changes to provide continuous operation of R&D through shift breaks and change-overs

High Level Strategies – Empty Container Parks (Depots)

- Improve service time reliability at ECPs through promoting positive driver booking and arrival behaviour, and internal ECP operational improvements
- Modify Containerchain system to reduce futile trips (exports) and enable greater flexibility for imports (i.e. ability to edit Container ID in notification)

High Level Strategies – Supply Chain Co-ordination

- Improved network accessibility (road infrastructure upgrades)
- Improved rail access to the port to reduce slot competition during peak periods, making distribution from intermodal terminals more efficient for carriers and shippers
- Improve coordination of bookings across Container Terminals and ECPs
- Improve alignment of importer (shipper) operations with other supply chain participants

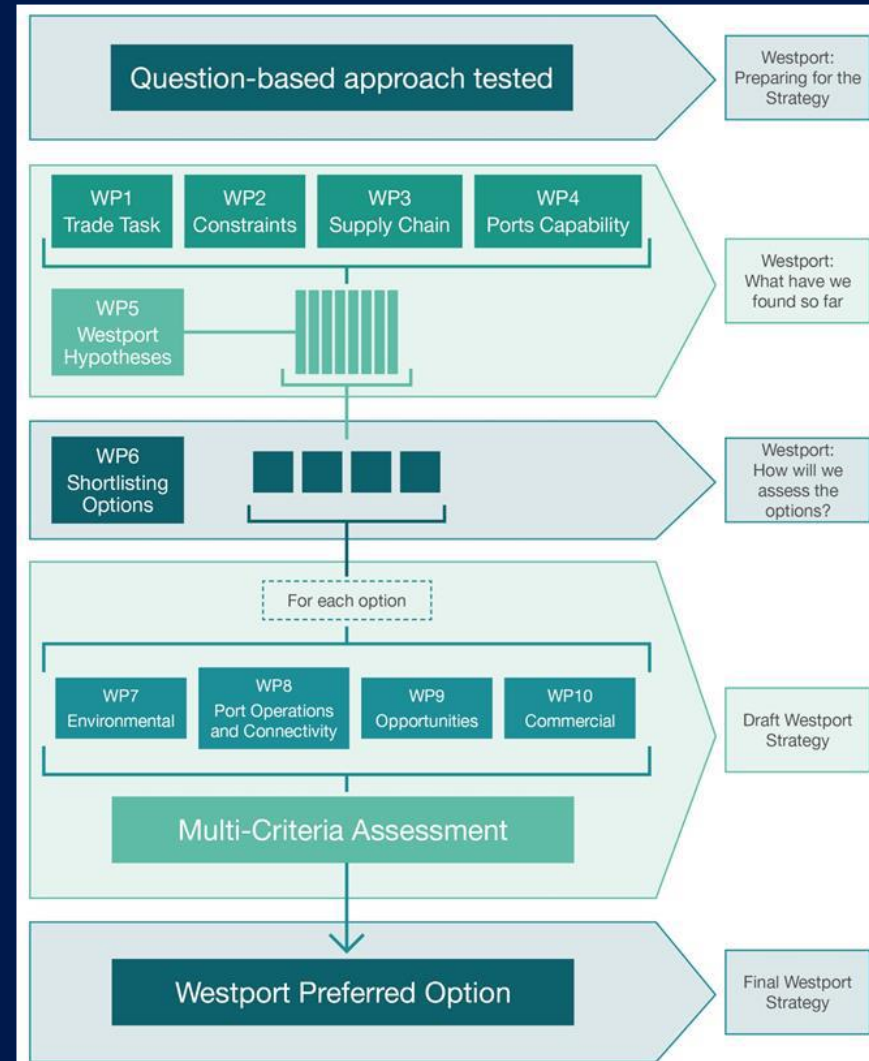
High Level Strategies – Transport Operations

- More inland facilities (IMTs/ transport hubs) and under-bond inland depots, particularly to resolve the northern corridor issues
- Consider role of high productivity vehicles (HPVs) for future chain development
- Examine vehicle standards and commercial incentives necessary to promote more night operations while managing community impacts
- Investigate issues and strategies to reduce empty (un-laden) truck movements.
- Examine impact of higher operator numbers on industry efficiency
- Promote industry sustainability through improving business acumen amongst carriers and understanding by customers
- Investigate case for higher standards for operators and trucks to address safety, community, and environmental issues
- Investigate case for trialling new technologies in the port precinct, e.g. vehicle platooning, autonomous vehicles

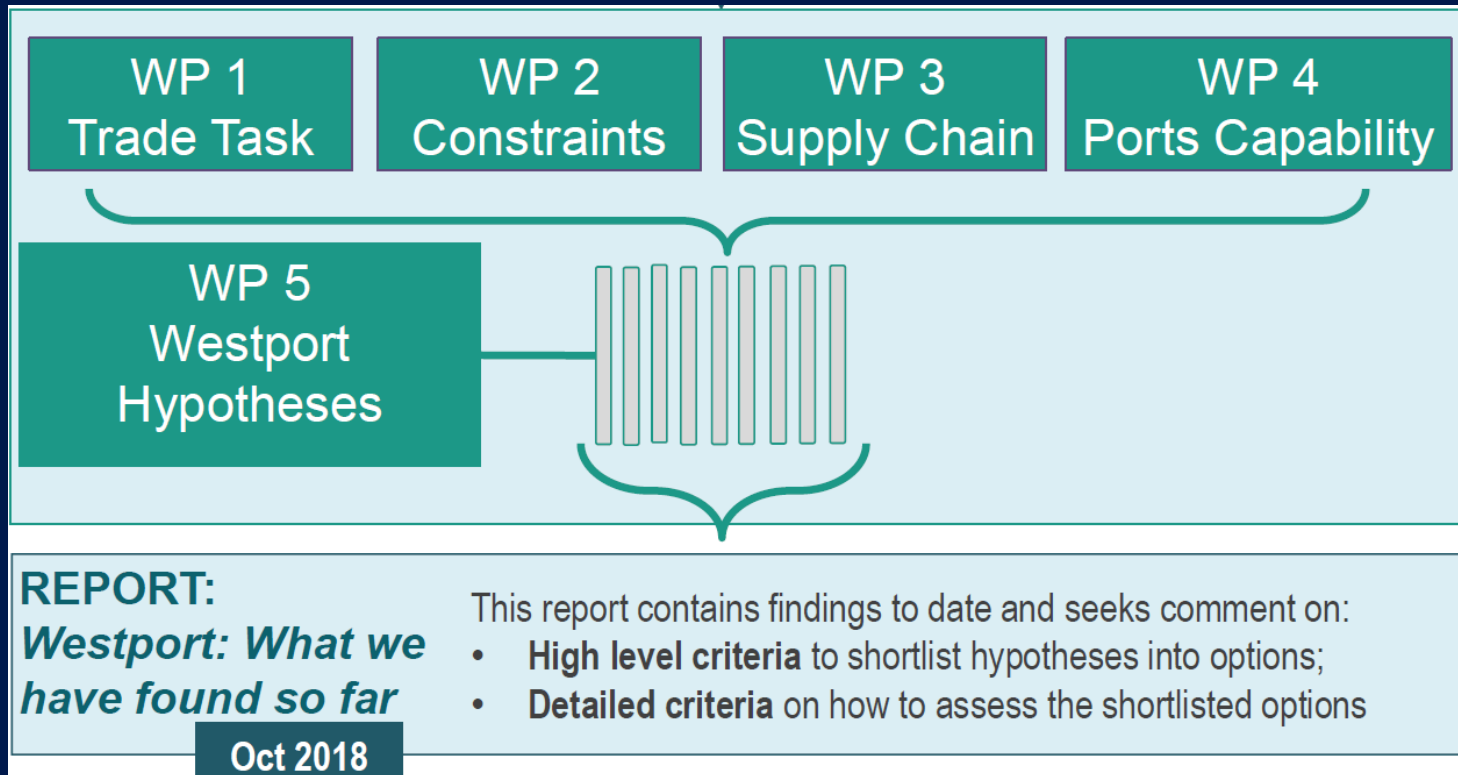
Westport Process



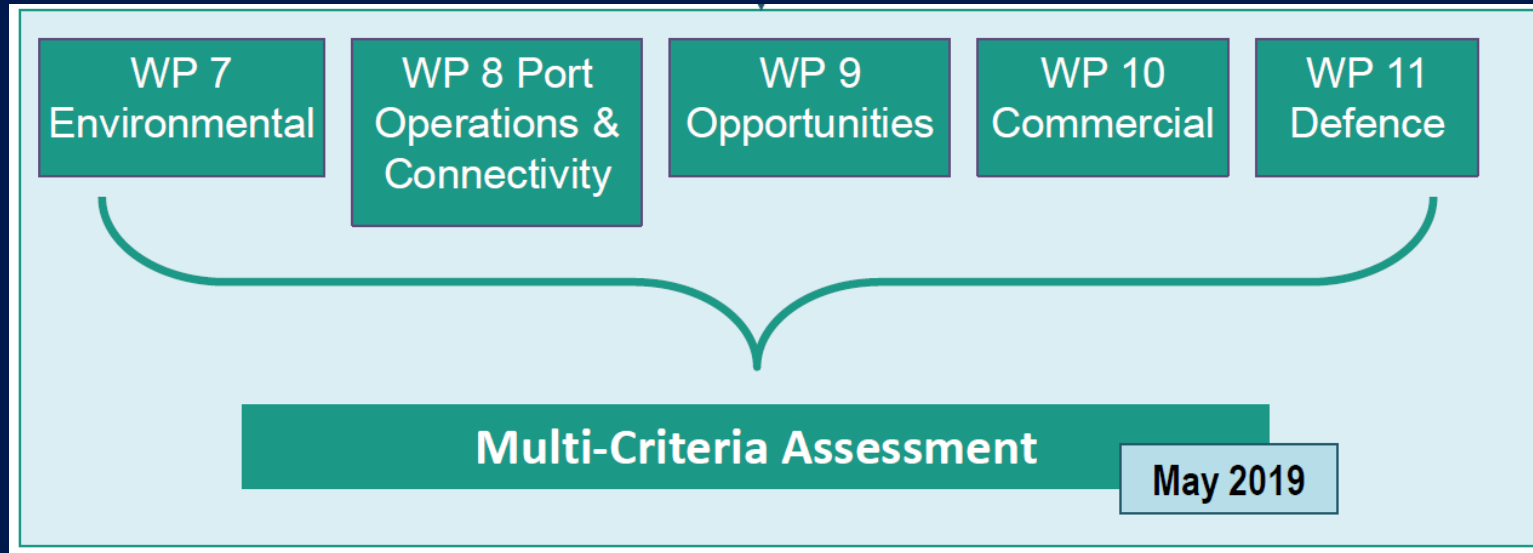
Westport Process



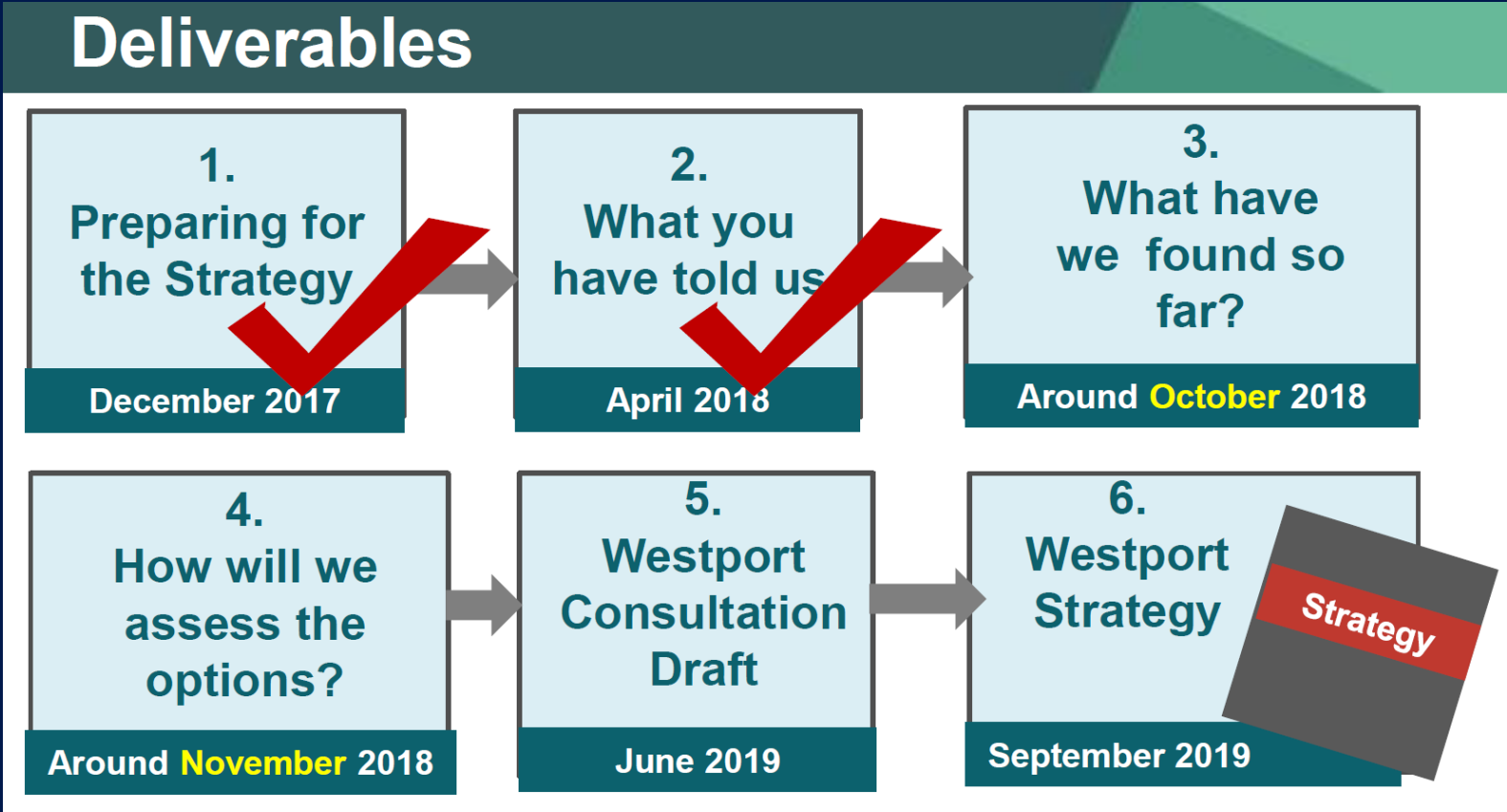
Westport Process



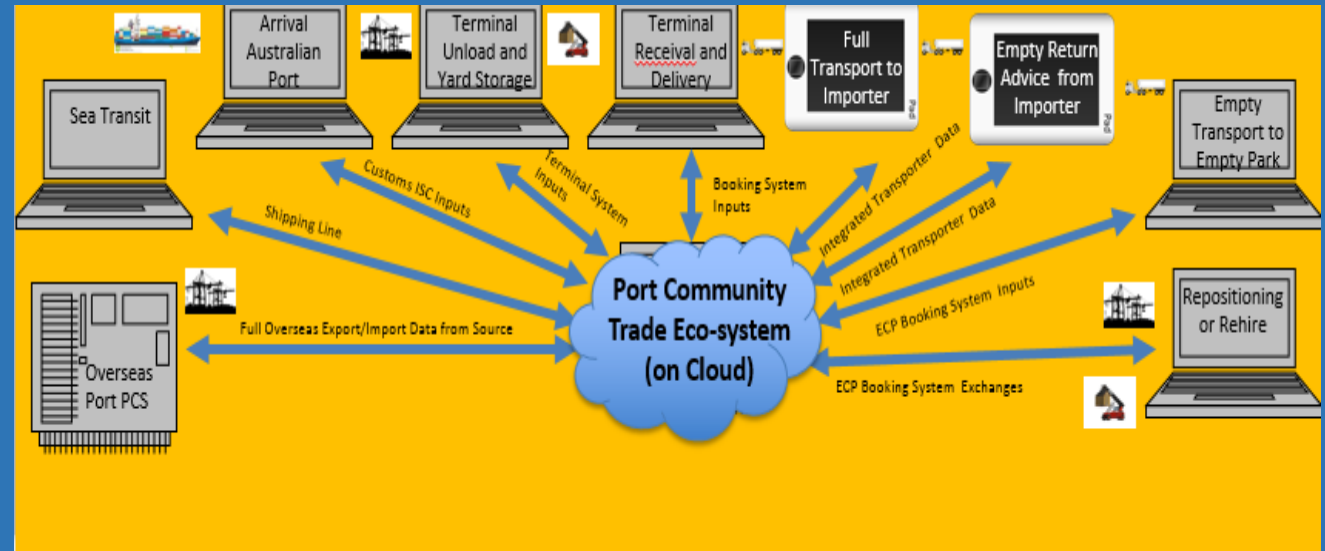
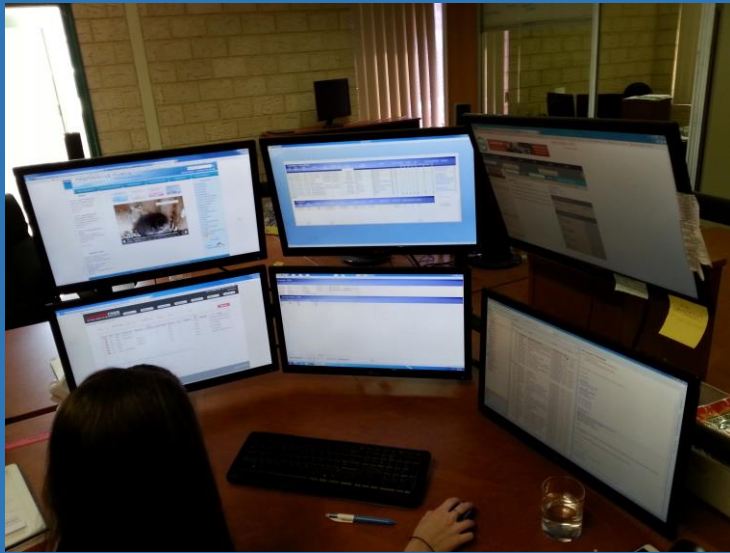
Westport Process



Westport Process



Port Community Trade Eco-system (or Port Community System – PCS)



What's required?

The key requirements for a Port Community Trading Ecosystem (PCS) are:

- Enables trading partners to have trust in the authenticity and integrity of the trading data
- Provides strong security of the data
- Execution via Smart Contracts
- A distributed hyper ledger that is synchronised near real time.
- A clearly defined roadmap on features and functionality to support on going operations and management of the Trading Ecosystem:
 - The party that operates and manages the trading ecosystem has this as its core business.
- Strong and effective governance processes

Some of the Key Players

These are some of the key initiatives Fremantle Ports has reviewed

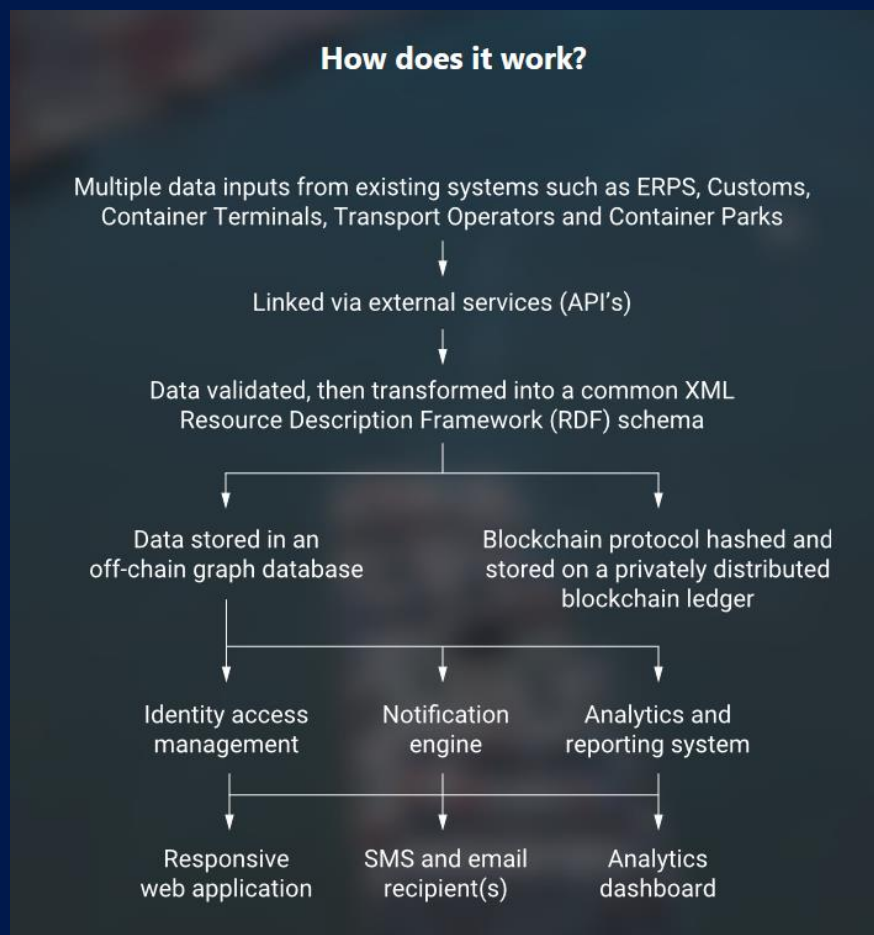
- Maersk/IBM blockchain solution joint venture (Tradelens);
- TBSx3/Hamburg Sud/DB Schenker/IUS/1Stop/GS1 blockchain alliance;
- PwC/PoB (*i.e Port of Brisbane*) Trade Community System - the maturity of this PCS offering needs to be investigated as it is a very new solution;
- The Asia Pacific Model e-Port Network (APMeN) initiative through NSW Ports and a variety of Asia Pacific ports and
- SAP's Blockchain as a Service (BaaS) offering.

... and to focus on a particular Australian example

Supply Chain Visibility in Action

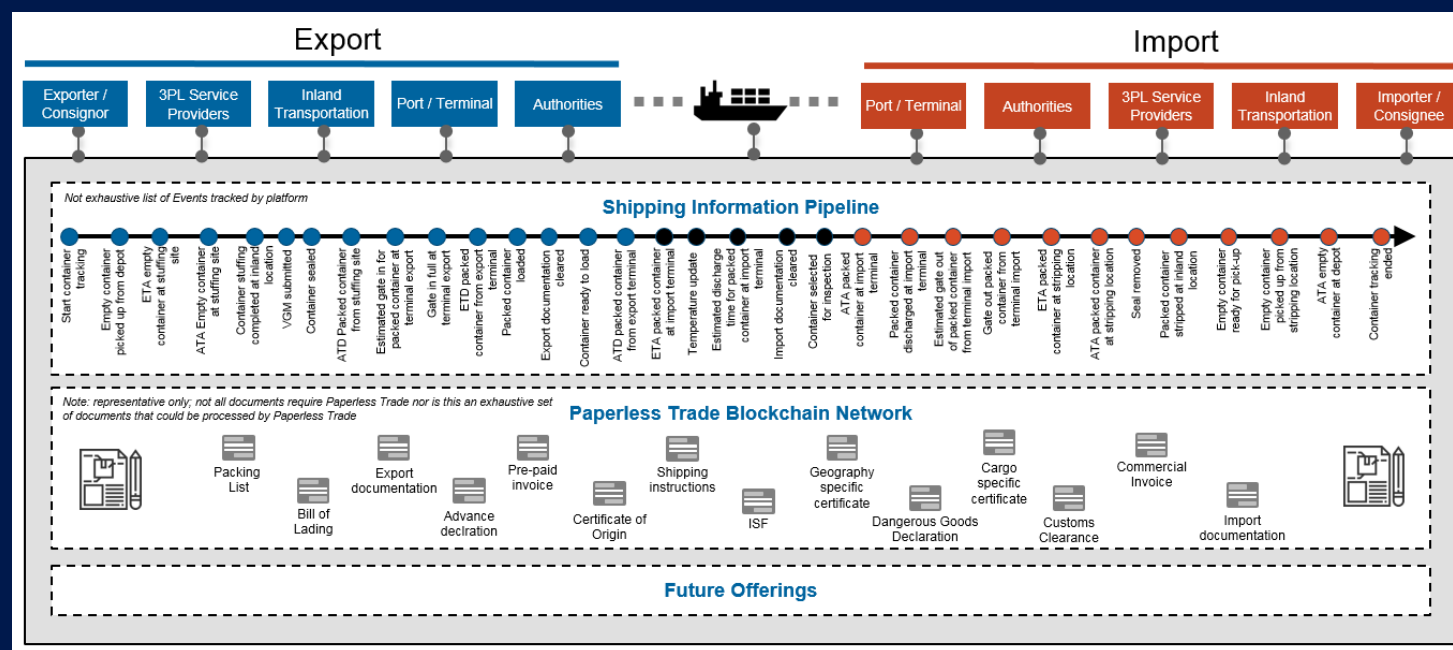
- Port of Brisbane (PoB)/PwC/CADF/ACCi consortium Blockchain based Trade Community System (TCS)

<https://www.tradecommunitysystem.com.au/#Home-product> (Two videos)



Supply Chain Visibility

- **Maersk/IBM** - following on from their blockchain based Global Trade Digitisation Network (GTDN) pilot to track and monitor a shipment of containerised Schneider Electric goods from Rotterdam to Newark (*Port Authority of New York and New Jersey*), Maersk and IBM launched their official NYC-based GTDN Joint Venture, TRADELENS (<https://www.tradelens.com/>)
- They have worked extensively with US Border Security (and Customs) as well as Dutch customs in undertaking the pilot project
- They are now seeking to enrol more ports, terminals and customs authorities in other jurisdictions, with LA and Hong Kong ports joining in as early adopters. Parties could join in as either additional Joint Venture partners or join the GTDN (Tradelens) on a subscription basis
- Maersk has also been in discussions with the Australian Department of Home Affairs and have conducted successful tests
- Tradelens announced last week



Many thanks

Further Queries

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