Design and implementation of an advanced transport management system in the Port of Valencia
Port of Valencia:

First Port in the MED area
4.7M TEU annual throughput
73M Tons
Port Hub: 50% I/E and 50% Transshipment
412,328 passengers traffic (regular lines and cruises)
More than 5,000 Trucks calling daily at the Port Gates
Rail share 7%

Privileged location:
- WEST MED: Suez-Gibraltar axis
- Geostrategic position on the Iberian Peninsula
The context and the need

Future Expansion: +5M TEU

Railway
- Inland rail terminal
- 35 trains/week
- Trains up to 750m
- 24h Mon-Sat Rail operations
- **171,250** TEUs/year
- **FFCC: 7% of Modal Split**

Road Transport
- Automatic gates
- **5,000 trucks** per day
- One single road access
- Closing Time
Current situation

BENEFITS

• Standardized procedure for transport
• Integration with the ‘Closing Time’ of the Port of Valencia
• Automatic compilation of cargo acceptance and delivery orders
• Ability to provide tracking and tracing information to all parties involved
• Increased control of the information, documents and processes
• Availability of historical data in real-time on companies’ loadings

¿HOW IT WORKS?

1. The forwarder / shipper sends its transport instructions to the shipping agent and the truck company.
2. The shipping agent issue the delivery and admittance orders to carrying out the transport.
3. The terminals and depots receive updated information of the delivery and admittance orders and then confirm the operations.
**Solution:**

**Integrated with:**
- Port Community System
- Port & Terminal Gates
- Real-time traffic information

**TAS Extended functionalities:**
- Dynamic capacity management by CT
- Regular appointment management
- Live virtual queue
- Re-scheduling (real-time info)
- Real-time monitoring

**Other systems:**
- Transport collaborative planning platform

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Schematic of the advanced transport management system in the Port of Valencia:
Solution:

Simple Truck Appointment System (TAS)

Step 1: Capacity management by container terminals
Container terminals define the capacity for each time slot based on their preferences. Besides, they assign the capacity for the virtual queue (operations without booking)
- Step 1.1 Time Slot Capacity
- Step 1.2 Virtual Queue Capacity

Step 2: Transport Order Confirmation
Shipping agents / Logistics Operators send the transport order including the delivery/acceptance order to the Terminals.

Step 3: Booking
Transport Operators confirm the booking and provide the data needed (e.g. plate number, driver, container number).
Container terminals receive the booking confirmation and plan their operations.

Step 4: Gate In/Out info
Transport operators perform the delivery/pick-up of the container. Automatic gates at the port and at the container terminal check that the information of the transport order corresponds with the truck plate, container number and driver.
Step 3: System Intelligence
The System suggests an optimal time slot for delivery/pick-up the container to the terminal and Shipping agents / Logistics Operators based on historical data and machine learning.

Step 4: Pre-Booking
Shipping agents / Logistics Operators book the optimum time slot for deliver/pick-up the container in the terminal. Pre-Booking does not ensure a slot in the selected window.

Step 5: Interaction with external sources
The TAS provides information to external information sources about the expected traffic in the main port access thanks to the pre-bookings.

Step 7: Truck Positioning & Alarms & Re-Scheduling
The TAS knows the truck location and alerts the driver about the truck appointment. If the TAS detects that the truck will not comply with the appointment suggests a re-schedule and informs the terminal and the LO. The driver confirms/rejects the re-schedule.
Thank you for your attention! Ευχαριστώ για την προσοχή σας!

Any Questions? / Ερωτήσεις;

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