COREALIS Piraeus Demo/Training Webinar

Port of Piraeus Living Lab

Stavros Tsagalas- Piraeus Container Terminal

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Port of Piraeus Container Terminal

Piraeus Container Terminal

- The Port of Piraeus is the first port in the Mediterranean and the fourth port in Europe in terms of container throughput

- It is one of the fastest growing ports worldwide during the last decade

- PCT business plan includes further development that will allow Piraeus to directly compete with north European ports

Top 15 container ports in Europe in 2019

Total container throughput in 1000 TEU

Rank 2019	Rank 2018	Rank 2007	Port	2019	Growth 2019 vs. 2
1	1	1	Rotterdam (NL)	14,811	2.1%
2	2	3	Antwerp (BE)	11,860	6.8%
3	3	2	Hamburg (DE)	9,259	6.1%
4	6	17	Piraeus (EL)	5,650	15.1%
5	5	8	Valencia (ES)	5,441	5.0%
6	7	6	Algeciras (ES)	5,120	7.3%
7	4	4	Bremerhaven (DE) (*)	4,871	-10.6%
8	8	7	Felixstowe (UK)	3,778	-> Figure 2
9	9	10	Barcelona (ES)	3,324	-2.9%
10	11	9	Le Havre (FR)	2,786	-3.4%
11	10	12	Marsaxlokk (MT)	2,720	-17.8%
12	12	14	Genoa (IT) (*)	2,635	1.0%
13	13	5	Gioia Tauro (IT)	2,523	8.4%
14	14	15	St Petersburg (RU)	2,222	4.3%
15	16	63	Gdansk (PL)	2,073	6.4%
			TOP 15	79,071	2.8%
			TOP 3	35,929	4.6%

(*) Estimate based on growth of first ten months

PortEconomics

Theo Nottebaoom 19 February 2020

PCT Key Facts

1 — Ownership : 100% by COSCO Shipping Ports Limited

2 — Container Terminal Pier II and Pier III, under concession for 35 years to PCT

3 — PCT operates on a 24x7 basis a fleet of 170 internal trucks and 90 cranes

4 — It is located in an urban environment in the Attika region were more than 4 million people live and work within a 20Km radius

5 — Crane operation is electricity based making the port a heavy consumer of power

COREALIS Piraeus Living Lab

| 1 | Predictor – Asset Management |

| 2 | Green CookBook |

| 2 | Port of the Future Serious Game |

COREALIS Predictor

COREALIS Predictor is a **Preventive Maintenance tool** base on **machine learning algorithms**. Historical and real-time data are monitored and analyzed, trends identified and optimization algorithms developed and trained.

Expected COREALIS Predictor outputs:

➢ Data-driven preventive maintenance schedule

➢ Data-driven schedule of purchases of new spare parts

➢ Data-driven schedule yard equipment for just-in-time inventory

COREALIS Green Cookbook

Feasibility study for the power consumption patterns and the potential of introduction of renewable energy sources in the Port of Piraeus.

COREALIS Green Cookbook outputs:

➤ Energy Assessment Framework

➤ Feasibility study of replacing the existing diesel-fueled fleet of yard trucks with sustainable electric propulsion trucks

➤ Feasibility study of introducing renewable power sources to the grid

COREALIS PoF – Serious Game

Port of the Future serious game scope is to enhance social aspects and acceptance of the port and to monitor socio-economic adoption of the port in the surrounding urban environment.

➢ Embrace circular economy models in its port strategy and operations

➢ Reduce the port's total environmental footprint

➢ Improve operational efficiency without additional infrastructure investments

➢ Enable the port to take informed medium-term and long-term strategic decisions

➢ Raise awareness for the port-city challenges and support stakeholders to achieve development with a positive environmental impact

THANK YOU FOR YOUR ATTENTION

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