STC INTERNATIONAL MARITIME & LOGISTICS EXPERTS

PORT MANAGEMENT PROGRAMME

DIGITALISATION PROMOTION

Organized by:	Port of Rotterdam Authority & STC International
Venue:	Online, streaming from the Netherlands
Lecture topics:	History of digitalisation, levels of digitalisation, digitalisation in practice.
Connectivity:	Interactive workshops and case studies

INTRODUCTION TO PORT DIGITALISATION

The Port of Rotterdam and STC International developed the Digitalisation spin-off programme to promote in-depth insight in this Port Management topic. The COVID-19 crisis has shown to which extent we are dependent on technology and digital solutions to keep our industries operational. This will undoubtedly give the digital transition new momentum in the years ahead.

The port of the future will be a digital port, where cargo flows are no longer delayed by the inefficient exchange of key data. Digital technologies allow users to share relevant data in real time — and share it with all parties involved in a process that is as safe as it is reliable. This includes partners further along the chain with whom we currently have almost no direct contact. The digital transition will enable us to predict arrival times, reduce the length of port stays and minimise waiting times.

Brief introduction Port Management Programme Partners

Port of Rotterdam Authority

The Port of Rotterdam Authority is responsible for managing, operating and developing Rotterdam's port and industrial complex and ensures that shipping can move smoothly and safely through the port area. The organisational structure of the Port of Rotterdam Authority reflects these roles. The shares in the Port of Rotterdam Authority are held by the Municipality of Rotterdam (approx. 70%) and the Dutch government (approx. 30%). The objective of the Port of Rotterdam Authority is to enhance the port's competitive position as a logistics hub and world-class industrial complex. Not only in terms of size, but also with regard to quality. The Port Authority is therefore leading the transition to sustainable energy and is firmly committed to digitalisation in its on-going effort to make the port and the supply chain safer and more efficient. The core tasks of the Port Authority are to develop, manage and exploit the port in a sustainable way and to render speedy and safe services for shipping. The port of Rotterdam is Europe's largest sea port.

The port owes its leading position to its outstanding accessibility for sea-going vessels. In addition, the port of Rotterdam creates direct and indirect employment for some 385,000 people, in businesses throughout the Netherlands. A place where unlimited ambitions can become reality.

www.portofrotterdam.com/en

STC International

STC International is the leading knowledge institute on human capital development world-wide. Education, training, technical assistance and research are provided to the maritime and transport (related) industries. All programmes are conducted by experts from the industries in combination with high-tech simulation wherever possible. Competency, rules and regulations, efficiency, environment, safety and security are key issues in the services provided. By doing so, people are offered the ability to create a sustainable family income. Organisations can benefit by having a motivated and skilled labour force. STC International provides its services to the clusters:

1. Maritime and Offshore;
2. Port and Terminals;
3. Transport and Logistics;
4. Process Industry and Energy.

The company currently operates centres of excellence in the Netherlands, Colombia, Oman, Vietnam, the Philippines, Mozambique, Kazakhstan and South Africa. STC International is an experienced partner that provides and migrates prime knowledge for the national and international transport and maritime cluster in a sustainable and innovative way, in order to bring people, institutions and companies to a higher level of education.

https://www.stc-international.nl

OUR INTERNATIONAL PARTNERSHIPS

Port of Rotterdam joint ventures, projects & offices
and Education Centers of STC International

THE NETHERLANDS
Rotterdam

Netherlands (14)

GERMANY
Nordrhein-Westfalen
Southern Germany
South west Germany
North Germany

RUSSIA
st.Petersburg

AUSTRIA

SWITZERLAND

Kazakhstan (1)

TURKEY
Cheyhan

INDIA
Ahmedabad

SOHAR
Oman

INDIA
Mumbai

CHINA
Shanghai

ETHIOPIA/DJIBOUTI
Flying Swans

Oman (1)

Vietnam (3)

Philippines (1)

INDONESIA
Kuala Tanjung

CURACAO

Colombia (1)

Colombia (1)

BRAZIL
Pécem

Brazil (1)

Indonesia (1)

INDONESIA
Jakarta

Mozambique (1)

South-Africa (1)

South-Africa (1)

LEGENDA

- ⊗ Current joint ventures Port of Rotterdam
- ● Port development/ Partnership projects
- ● Foreign Offices Port of Rotterdam
- ● Rotterdam Representatives Offices
- ● Education center (STC)

MODULES PORT MANAGEMENT
DIGITALISATION PROGRAMME

Our programme includes the following modules:

1. Introduction and Complexity module (Week 1)

Digitalisation from a historical perspective. In this module, **we will answer questions like:**
Why digitalisation? How did digitalisation develop over time? What is the current situation?
How best to deal with the complex challenges involved?
Answering these basic questions creates a foundation for clear communication and understanding:
to ensure candidates are all on the same page during the remainder of the programme.

2. Levels of digitalisation module (Week 2)

Our 5-step digitalisation model offers guidelines that can be used to detect the maturity within
a given port (and its environs). In addition, this module offers insight into the importance of
standardisation and the impact of international players like IMO. This week also includes a work-
shop that focuses on the digitalisation maturity level of the participating organisations.

3. Digitalisation in practice module (Weeks 3 and 4)

Based on the situation as presented by the participants, we will look into which options there are
to implement digitalisation in their organisation. We will develop an understanding of on how
the digital maturity assessment works and which groundwork is required within the organisation.
This module provides insight into how to successfully align digital products and create synergy.
It also goes into lessons learned during the implementation of digitalisation projects within the
Port of Rotterdam Authority and Rotterdam's port and industrial complex.
Key questions: *Which challenges lie ahead in terms of general barriers (legal, cultural, etc.)?*
How can we improve processes to create digital reliability?

4. Approach module (Week 5)

This module highlights which considerations a party may have to invest in digitalisation or develop
a business case for digitalisation. The historical development of the port of Rotterdam has created
a strong spirit of partnership, within which all stakeholders contribute to the growth of the
economic region as a whole. All parties serving local industry and Rotterdam's hinterland actually

benefit from this kind of collaboration — be it digital or otherwise. This on-going process will be
continued in a variety of fields, including the energy transition, sustainability, digitalisation
and innovation. By sharing best practices developed in Rotterdam, we can help you save time
and resources in your local implementation process.
In this week *we will also be dealing with the development of a plan of approach for your own
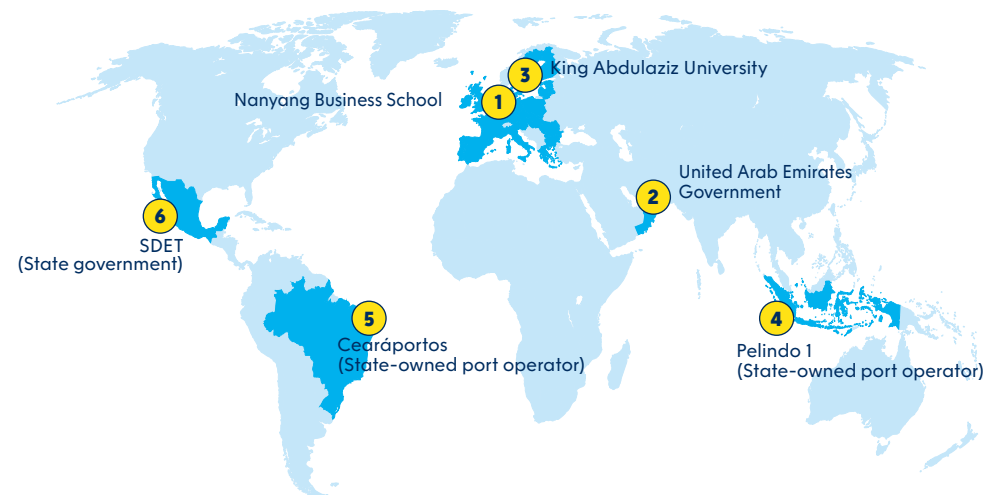port project.*

5. Innovation & Closure (Week 6)

As we can see in daily life, innovation in digital solutions never stops. Although these innovations
don't all directly lead to new solutions, they can serve as input for future developments. Investments
in start-ups and scale-ups have already gained momentum in digital port products. Awareness and
education play a key role in the acceptance of such solutions. This means that an effective plan
of approach will always take education and training into consideration. In this module, we will
evaluate the plans of approach drawn up by the participants and offer feedback and suggestions
for their possible improvement. This can help your organisation take an important step forward
on its route towards digital maturity.

Constantly evolving insights into port and hinterland operations are also reflected in our new
approach to work processes. Working in tandem, trends like the paperless office, autonomous
shipping, robotisation, 3D printing, etc. are effectively creating a new reality. Developments that
are particularly relevant to the port and its processes include digitalisation and blockchain
technology. Today's challenges call for truly innovative solutions. Join us and step into the future of
the port and its industrial cluster!

REFERENCES OF PORT MANAGEMENT PROGRAMMES CONDUCTED AROUND THE WORLD

LOCATION	NETHERLANDS 1 Rotterdam	UNITED ARAB EMIRATES 2 Abu Dhabi	NETHERLANDS 3 Rotterdam
CLIENT/ PROJECT	Nanyang Business School	Government	King Abdulaziz University
CONTEXT	Nanyang Business School wanted to have an Advanced Management Programme as an elective to an generic MBA programme	This course provided an understanding of the latest trends and developments, international regulations and commercial drivers in Shipping and Transport	King Abdulaziz University was looking for an port discovery programme in the Hamburg-Le Havre range (HLH-range)
MAIN TOPICS	• Port vision and planning • Port logistics and Supply Chain Management. • Tradeoffs between finance, construction and commercial • strategies	• Global value chains • Commodity markets • Port management • Port operations	• Intermodal transport • Cargo operation magement • Terminal management • Management skills • Port excursions
OBJEC-TIVE(S)	• Provide isights into port competition in the HLH-range • Give background to POR's approach to build and extend its transport network system (hinterland connectivity)	• Identify how global value chains impact ports • Differentiate commodity markets and the influence on ports • Provide an overview of various parties in the ports and how they cooperate together	• To provide students with practical experience of port operations within a structured programme of studies
NO. OF DAYS	6 days	4 days	26 days
TARGET GROUP	Professional MBA students	Middle management	Bachelor's students

Results

a.o. capacity building plans, long term vision statements, National port plans, masterplans port, insights in (strategic) port development and port management. Various examples of international digitalisation projects will be discussed during the programme.

LOCATION	INDONESIA 4 Medan	BRAZIL 5 Pecém	MÉXICO 6 Villahermosa
CLIENT/ PROJECT	Pelindo 1 (State-owned port	Cearáportos (State-owned port	SDET (State government)
CONTEXT	Pelindo 1 wanted POR's expertise in developing Kuala Tanjung	Cearáportos wanted to develop a long-term vison for Pecém Port to address market changes	Tabasco State Secretariat is developing Frontera Port and sought to learn from POR's development experiences
MAIN TOPICS	• Port vision and planning • Port governance • Business development • Sustainability	• Market positioning • Spatial planning • Stakeholder management • Port vision	• Port vision and planning • Offshore supply base development • Greenfield port development
OBJEC-TIVE(S)	• Provide international perspective on port development • Apply POR's expertise to Kuala Tanjung development • Capacity building (staff training)	• Develop a draft long-term vision statement for Pecém Port and industrial complex • Capacity building (staff training) • Stakeholder alignment	• Share lessons learned from POR's development experiences • Apply lessons to Frontera port development
NO. OF DAYS	8 days	5 days	3 days
TARGET GROUP	Port professionals	Port professionals	Government officials/ port professionals

PORT MANAGEMENT PROGRAMME
DIGITALISATION

LOCATION	**ONLINE**
CONTEXT	The Port Management Programme - Digitalisation has been especially developed for existing and prospective international strategic partners. On request, we can also organise a custom Port Management Programme - Digitalisation that is tailored to your requirements.
MAIN TOPICS	• Levels of digitalisation • Digitalisation in practice • Digital maturity • Approach
OBJEC-TIVE(S)	Participants in the Digitalisation Spin-off Programme are offered a quick yet comprehensive overview of Rotterdam's digitalisation expertise. In addition, the programme provides an opportunity to build solid new contacts with other professionals from port organisations around the world. The programme provides insight into the most relevant subjects and tools that can be used to take the next step in the implementation of digitalisation in your port and its environs, the Digitalisation Spin-off Programme enables your organisation to take digitalisation to the next level.
DURATION	Six weeks - 3.5 to 4.5 hours per week
TARGET GROUP	Port professionals at the level of (Senior) management, Digital project teams and related support functions and students.

PROGRAMME CHARACTERISTICS

Tailored to Market needs

We have designed a special PMP digitalisation programme that effectively addresses current market-specific issues. Subjects covered include the latest insights, implementation and impact on the total logistics chain, stakeholder engagement, finance, etc.

Interactive lectures

The programme comprises a number of interactive lectures given by digital experts at the Port of Rotterdam Authority and STC-Group. The lectures draw on over 10 years of combined expertise in port digitalisation, applied to both local and international contexts.

Case studies

The programme includes interactive case studies, during which participants are invited to apply the insights they have acquired to local contexts. The experts subsequently offer feedback, which is discussed by the group.

Deliverables

PDF of the presentations held during the programme and a PMP Certificate of Attendance.

Participants

We recommend a maximum of 20 participants per programme. To successfully take part in the PMP, participants' English language proficiency should be at the very least at intermediate level.

PROGRAMME TARGET GROUPS

The Digitalisation PMP is a strategic and tactical implementation tool developed for the following target groups:

Senior management

Programmes focusing on Strategic and Board-related digital challenges faced by senior executives working for port authorities, government administrations and terminal operators.

Digital Project Teams

Digital programmes that are suited for team-building within newly formed departments or mixed project teams working in this field.

Support functions

In-depth programmes for port employees in IT, Finance, HR, Communication, Marketing, as well as Project Managers and Consultants who are directly or indirectly involved in digitalisation processes.

Students

Programme suited for students of IT and Digitalisation, as well for students with a specialisation in port management or maritime economics and logistics.

Other Programmes

Manager Port Operations and Maritime Supply Chain management.
Please refer to https://www.stc-international.nl/courses/ for details.

EXAMPLE PROGRAMME

WEEK	SUBJECTS	TOPICS
WEEK 1	**INTRODUCTION**	
- Introduction	Introduction	Welcome & introduction to the course
- Presentation	Introduction	General introduction Port of Rotterdam and STC
- Presentation	Historical perspective digitisation	How was it? ❙ How is it now? ❙ How did digitisation originate?
- Presentation	Why digitisation?	How to deal with complexity? *(Values in ports are becoming increasingly complex due to social importance, regulations, new developments such as artificial intelligence, internal and external drivers of digitisation, Covid-19, etc.)* This more complex world is also recognisable for other ports.
- Workshop	Core questions by candidates & case	Case is related to the 'why' and will be the bridge to week 2
WEEK 2	**LEVELS OF DIGITISATION**	
	Wrap-up week 1	
- Presentation	5-step digital maturity model	Explanatory model
- Presentation	Standardisation	Importance of standardisation & international forces such as IMO
- Workshop	Workshop 5-Step digital maturity model	Determine the level of digital maturity in your port
WEEK 3	**DIGITISATION IN PRACTICE (PART I)**	
	Wrap-up week 2	
- Workshop	Levels of maturity	Outcomes of levels of maturity & their argumentation by candidates
- Presentation	Best practices	Examples from Rotterdam and other ports of how the levels of maturity have been scaled up (in line with the digital maturity model), Navigate & Cargotracker
- Presentation	Implementation	How to implement digitisation? ❙ What is needed in an organisation?
- Presentation	Portbase	An example in practice including FAQ

EXAMPLE PROGRAMME (CONTINUATION)

WEEK	SUBJECTS	TOPICS
WEEK 4	**DIGITISATION IN PRACTICE (PART II)**	
	Wrap-up week 3	Welcome & introduction to the course
- Presentation	Examples	Demonstration of examples through internet (internally and externally focused) asset management system Port Maps & harbour master system Hamis
- Presentation	Digital solutions	Explanation of existing digital products (e.g. PortXchange, Navigate, TimetoPort, Portinsider, Cargotracker etc.)
- Presentation	Challenges	Challenges and lessons learned during implementation of digitisation projects in the port of Rotterdam and port industrial complex. (Besides barriers to implementing digitisation projects in the entire port of Rotterdam and industrial complex, some general barriers found worldwide could potentially also be explained [legal, cultural etc.])
WEEK 5	**APPROACH**	
	Wrap-up week 4	
- Presentation	Digitisation & finance	Investments and business case digitisation
- Presentation	Stakeholder management	The influence of stakeholder management & digitisation
- Workshop	Introduction to the case	Which one or two things will you do / tackle when you are back at your project / in your port and why?
- Workshop	Case & dilemmas	Create a plan of approach for one port or project (in small groups). Take what has been learned in this programme to your port or project.
WEEK 6	**SUMMARY & CONCLUSION**	
	Wrap-up week 5	
- Presentation	Innovation & digitisation	Learn to know the relation & combination of digitisation and innovation and education
- Workshop	Presentations plans of approach	Presentations of plans of approach and feedback session
- Workshop	Feedback & conclusion	Short evaluation, feedback and suggestions for improvement by the participants & closing ceremony
	Conclusion	

A SMART PORT IS A CONNECTED PORT

A giant step forwards in developing the digital maturity of your wide port area. Tools for overcoming greater and smaller challenges in the field of digital connectivity. Increased efficiency within the logistics process. Deeper insight into the bits and bytes logistic chains can't do without!

15 M
6 M

TERMS & CONDITIONS

Confidentiality:
Standard as per agreement

Limited Liability:
Liability Port of Rotterdam Authority/STC International for these services will be limited to the Fees paid by the Client

IP rights:
Intellectual Property developed by Port of Rotterdam Authority/STC International will vest in and remain the property of Port of Rotterdam Authority/STC International

Detailed Terms & Conditions:
Available on request

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