



GREENPORT
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COURSE NAME: Sustainable Maritime Operations and Green Ports

Module 13 (Week 13)

Faculty of Maritime Studies, University of Rijeka

COLLABORATION AND COMMUNICATION WITH STAKEHOLDERS



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1. Introduction

- Maritime transport and port operations lie at the heart of global trade and are facing growing demands for sustainability, digitalization, and cross-sector collaboration.
- The transition to green ports requires not only technical innovations and environmentally friendly technologies but also a fundamental change in how complex systems are managed and multiple stakeholders are coordinated.

2. The Role of Port Authorities in Green Ports

- Their key responsibilities:
- Port authorities act as central coordinators, connecting various port operation actors.
 - Regulate planning and development of port infrastructure
 - Decision-making and enforcing regulations
 - Financing port projects
- In green port initiatives, they:
 - Lead projects like shore power systems
 - Coordinate diverse stakeholder interests
 - Ensure solutions are environmentally, economically, and socially sustainable

3. Key Operational and Stakeholder Actors in Ports



- **Pilots and tug operators:** Core to safe, efficient port services; require close collaboration, planning, and clear communication.
- **Shipowners and vessel operators:** Drive demand for efficiency; their cooperation is vital for adopting green technologies.
- **Customs and regulatory agencies:** Oversee cross-border goods flow; enforce international and environmental regulations.
- **Technology providers:** Enable digital transformation by implementing advanced management and communication systems; crucial partners for port authorities.
- **Local communities:** Directly impacted by port activities (emissions, environment); need transparent communication and involvement in green projects

4. Information coordination and collaboration in digital processes

- **Digitalization** boosts efficiency, safety, and transparency in logistics and maritime environments.
- **Port Community Systems (PCS):**
 - Centralized information platforms connecting all logistics chain actors (freight forwarders, terminal operators, customs, land/sea transport, authorities).
 - Provide 40+ services for seamless, secure data exchange, optimizing cargo flow and reducing processing time.
- **Blockchain & Distributed Ledger Technology (DLT):**
 - Decentralized databases record transactions transparently and immutably across multiple sites.
 - Main benefits: automated transactions, fewer manual processes, real-time tracking, high data security.

•Port Collaborative Decision Making (PortCDM):

- Digital methodology for real-time information sharing and activity synchronization between ports and inland operators.
- Results: less vessel/cargo delay, improved situational awareness.

•Advanced Communication Standards & Tools:

- Technologies: Digital Selective Calling (DSC), Automatic Identification System (AIS), VHF/UHF/MF/HF radio, satellite comms, NAVTEX.
- Enable interoperability and system modularity, adapting to varied port needs.

•Best Practices & Innovations:

- Maritime and Port Authority of Singapore sets standardization benchmarks.
- Just-In-Time (JIT) platforms and apps like Wärtsilä Pilot PRO improve coordination and navigation.
- IoT sensors enable real-time analytics: cargo tracking, predictive maintenance, route optimization, and fleet management.

5. Change management and cross-sector communication

- **Integrated approach essential:**
Combines strategy, technology, and cross-sector collaboration for sustainability and efficiency.
- **European port development stages:**
 - Reactive
 - Proactive
 - Transactional
 - Interactive
 - Sustainable port
- **Key success factors:**
 - Strong leadership
 - Stakeholder involvement
 - Step-by-step implementation
 - Employee training and education
- **Barriers to change:**
 - Poor coordination and unclear procedures
 - Public-private communication gaps
 - Risk during digital system outages → need for continuity plans
- **Prosci Study:** 88% of projects with strong change management meet/exceed goals

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- **Cross-sector cooperation:**
 - Horizontal collaboration optimizes resources and assets
 - EU CO3 Project: Clear rules and structures enable sector connectivity
 - Public-private partnerships drive infrastructure, especially cybersecurity
- **Communication essentials:**
 - Pre-planned towing operations and berth scheduling shared among stakeholders
 - Continuous, clear communication between pilots, captains, and tug operators
- **Key tools & practices:**
 - Performance monitoring and feedback systems
 - Forums, workshops, and best practice platforms for knowledge transfer
 - Dynamic curricula through industry–education partnerships
- **Sustainable ports require:**
 - Systematic stakeholder engagement using both traditional and digital tools
 - Defined roles, flexible strategies, and high-level cybersecurity
 - Ongoing collaboration supporting green corridor initiatives and digital innovation



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