

Challenges for Infrastructure in Ports and Fairways – Maintenance and Daily Operations

Bo Svedberg, Sven Knutsson, Maria Johansson, Åsa Erlandson,
Maria Mustonen, Kristina Lundberg.

Ecoloop/Luleå University of Technology

The PortInfra network

“The PortInfra network aims at improving the exchange of knowledge and develop knowledge on **construction and maintenance** of port infrastructure”

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Typical port constructions



Infrastructure such as:

- Docks, piers, terminal surfaces
- Roads, railroads
- Fairways, buoys, lighthouse foundations

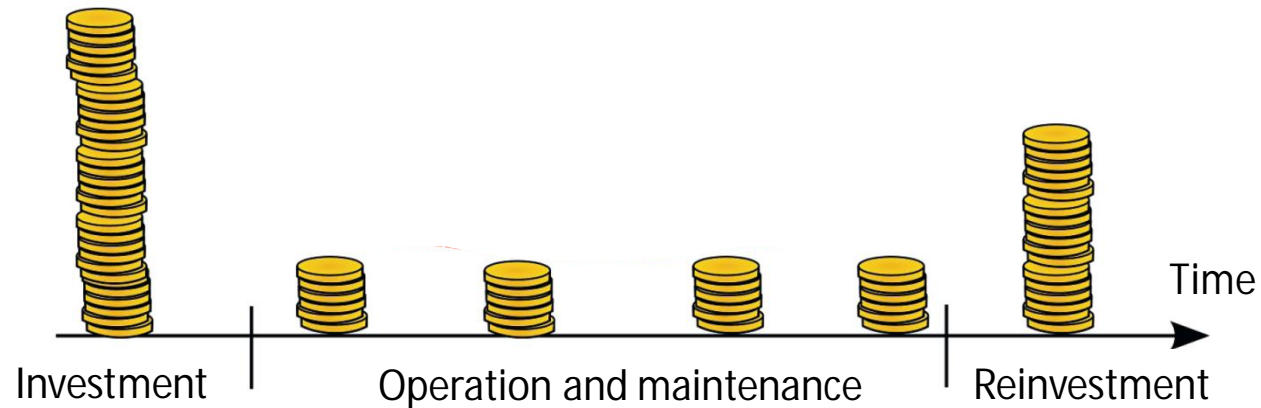
...are exposed to rain, wind, salt water, heavy loads, collisions...

Port and fairway construction and maintenance challenges



- Challenges identified in a series of interviews conducted in projects SMOCS and StabCon, with ports in Sweden and in the Baltic Sea region
- Reports available at PortInfra.se

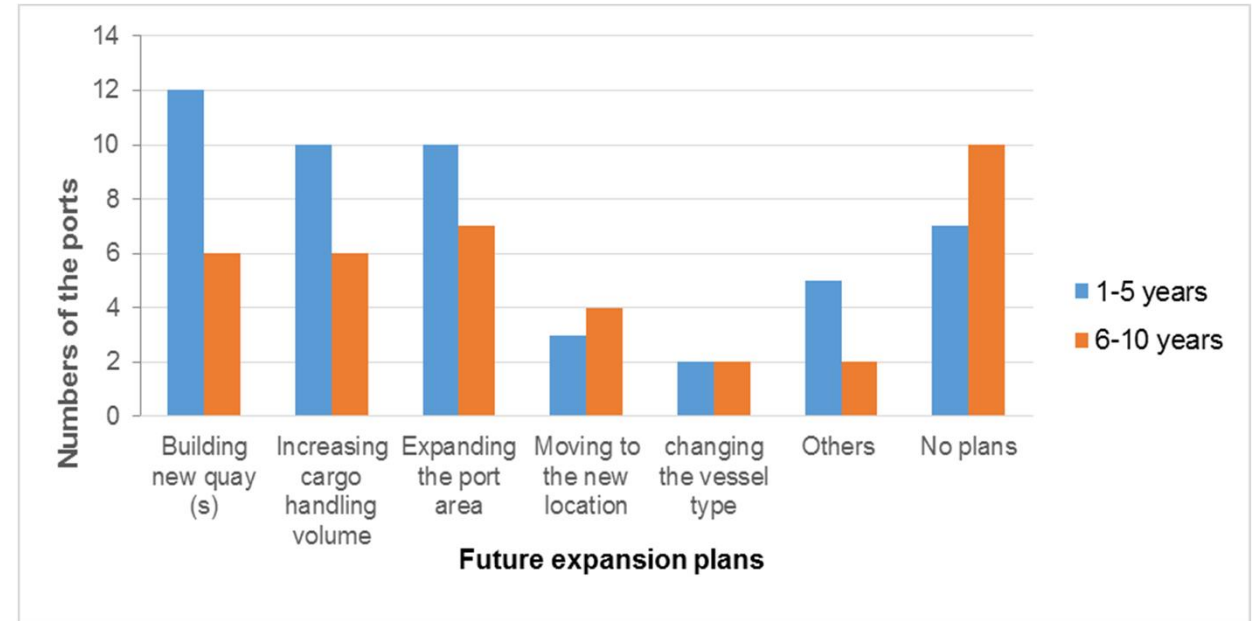
Definitions



- Initial investment cost
- Yearly operation and maintenance cost
 - Routine maintenance – planned, preventive maintenance
 - Corrective maintenance – when fault is discovered, to get the unit operational again
- Reinvestment costs

Future plans of ports

- Growing cities = more business but less space
- Plans for infrastructure investments
- Plans for dredging when expanding



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Challenge: aging infrastructure and maintenance debts



- Budgets don't cover maintenance to existing standards
- Reinvestments are not budgeted for
- Infrastructure not dimensioned for today's heavier loads

Challenge: knowledge transfer

- "A quilt of construction designs"
- Written documentation lacking



Wish list:

- Operation and maintenance management tools that clarifies the connection between measures for reinvestment, and operation and maintenance, for increased cost efficiency

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Challenge: knowledge development



- Need location specific solutions
- Wish list: Marine construction technologies, dock inspection methods, maintenance technologies for old docks, ...

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Challenge: land transport connections

- Lack of capacity land connections
- Ports are affected by national priorities in land based transport systems but have little influence over them
- Investments in new railroads are expensive, but little forehand knowledge of new standards creates uncertainties



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Challenge: developed knowledge of dredging



- Dredging done intermittently – hard to keep up to date with legal requirements
- Wish list: Cost effective dredging methods, sustainable handling of sediments, Procurement requirements



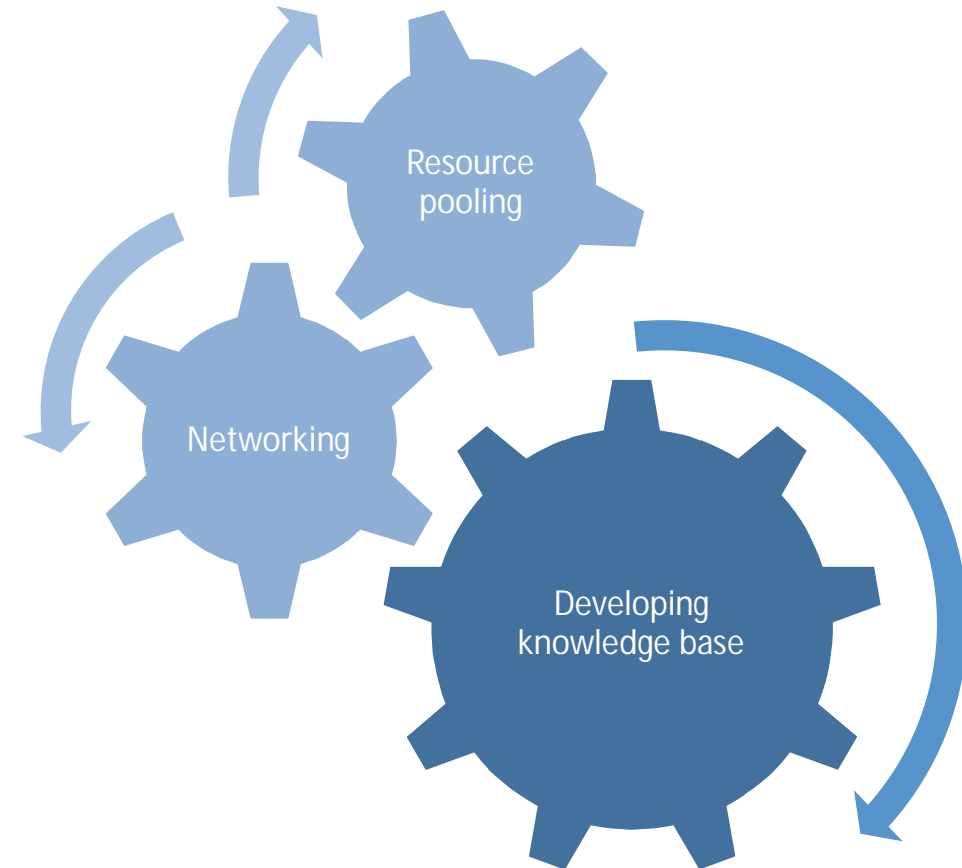
- LTU leads the work with a "strategic innovation agenda", funded by the Swedish innovation agency (Vinnova).
- Some overlap in operation and maintenance between land based systems and ports

Future work for PortInfra

Compiling existing knowledge and
BAT on maintenance of port and
fairway infrastructure

Propose development areas

Join us!



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Thank you!

Get in touch:

Maria Johansson

maria.johansson@ecoloop.se

+46-706 57 44 95

Bo Svedberg

bo.svedberg@itu.se

+ 46-730 30 04 10

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