INTEGRATING PORTS OF THE FUTURE IN SUPPLY CHAINS: NEW PLATFORMS OF SYNERGY

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FutureMed

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Presentation Structure

1. Definition of Ports of the future
2. A view to the present & the future of MED Ports :
   - **Current & future MED ports “ecosystem” challenges**
   - **Competition challenges of Ports for being part of global supply chains**
   - **Ports Territorial dimension**
   - **Innovation & Technology in maritime based transport chains**
3. Which new synergies & for what?
4. Synergy Platforms examples
5. Conclusions

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Features of Ports of the Future

Horizon 2020: Call MG-7.3-2017

- Multi-modal optimized cost-effective & flexible operation **inside the terminal and in the wider port area.**
- **Improving the level of integration among all actors** and facilitating critical decision-making through the reengineering of port operational processes (tools: process analysis & interoperable ICT systems)
- Sustainable maintenance, repair and reconfiguration
- Low environmental impact, climate change adaptation, **moves towards the circular economy,**
- Better capacity management (reduced costs and land use-improvement of the **quality of services through real time indicators**)
- Efficient **connections with hinterland transport network** (increased use of the most energy-efficient transport modes → rail)
- **Advanced and efficient links and integration in the socio-economic industrial and urban surrounding environment**

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2. A view to present & the future of MED Ports

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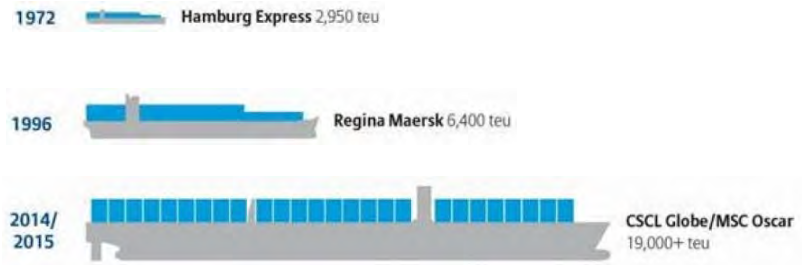
Client evolution & requirements

Main issues:

- Ocean carrier alliances – consolidation of flows on international routes & reduced number of calls – but liners' reliability remains an issue (average performance on east-west routes: 64%)
- Ship sizes
  - x3 compared to 20 years ago
  - Asia – Med: average ship capacity (TEU) increase ≈ 35% in the past 5 years
  - 14,000+ TEU vessels on the primary routes => 8,000-10,000 TEU vessels on secondary ones
  - Inadequate road-rail infrastructure and port capacity
  - Impact on infrastructure & operations



Source: PTI

Challenges:

- To balance port congestion with the need for speedy transfer to the hinterland
- To balance the need for additional capacity due to higher peak volumes with the need to avoid underutilised infrastructure (equipment + areas) between peaks
- To strike a balance between customer requirements and port profitability (e.g. optimal level of transfer productivity?)

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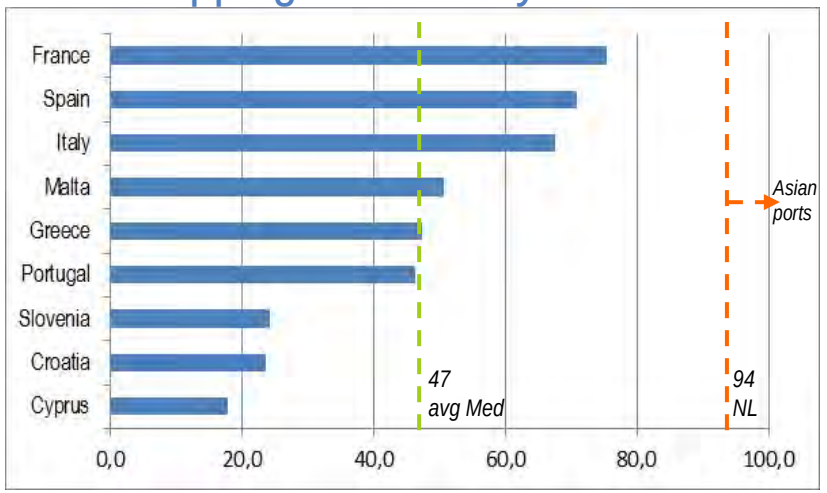
Competition (1)

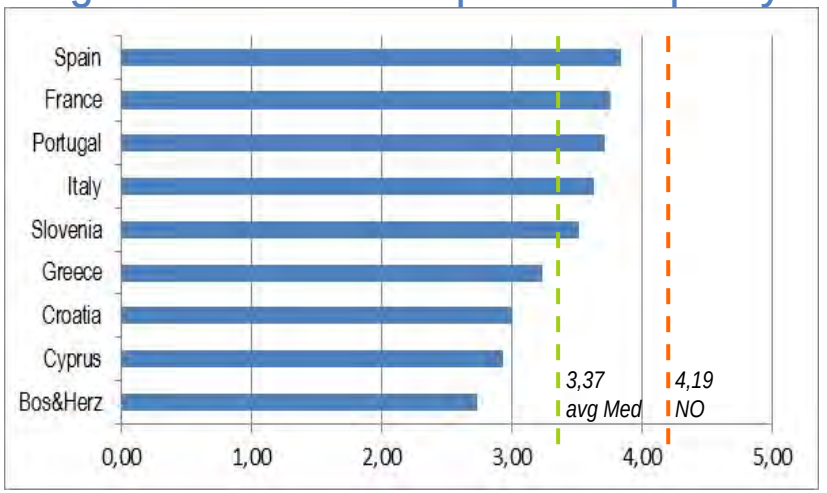
Main issues:

- Med vs north European ports
  - service efficiency/infrastructural gap
  - governance & administrative gap
  - market-orientation gap
- Global trade changes
  - Transatlantic Trade and Investment Partnership (TTIP)
  - enlarged Suez canal
  - enlarged Panama canal / future Nicaragua canal
- Inefficient port <=> inefficient supply chain
- Port choice based on the overall efficiency of the supply chain it belongs to (geographical location is not enough any more)
- Ability to enter other ports' hinterland through (rail) corridor development (competition islands) – the natural gateway port to a region is not necessarily the closest one

Liner shipping connectivity index (1)



Logistics services competence & quality (2)



(1) UNCTAD 2014 (2) World Bank LPI 2014

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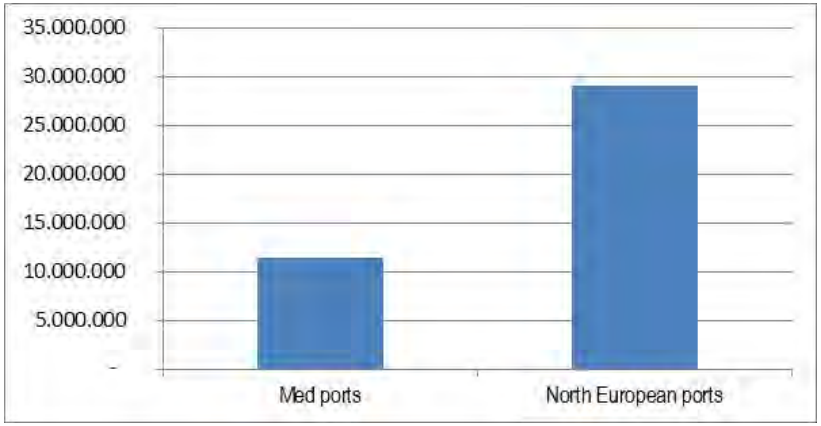
Competition (2)

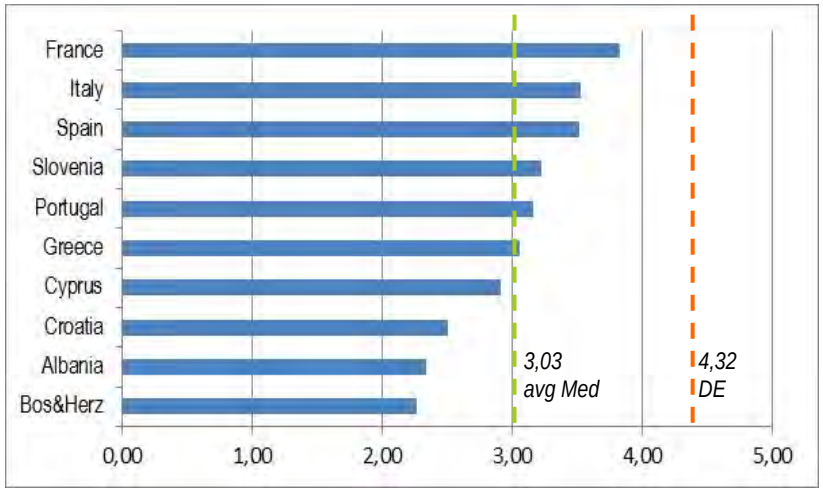
Main issues:

- A country's overall infrastructure quality has a direct impact on a port's competitiveness
- Average infrastructural project cost of a NE port ≈ x3 of the one of a Med port
- Med ports mainly study while NE ones mainly implement (development time gap)
- EU funds allocation based on efficiency (existing or future) or territoriality)?

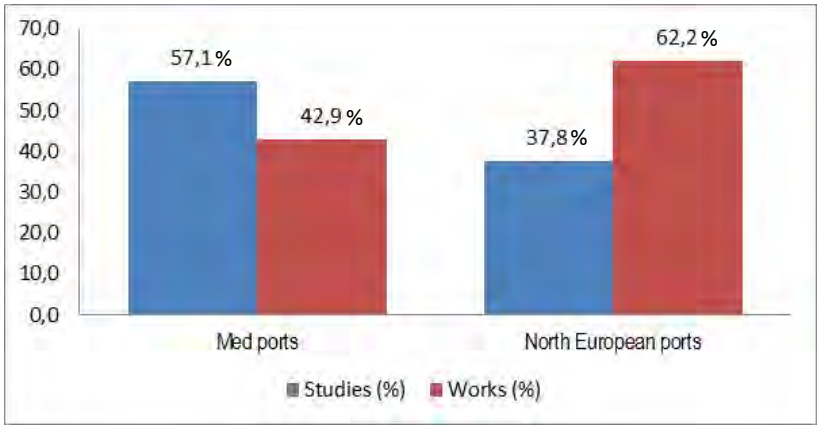
Average project cost (2)



Infrastructure quality (1)



Studies vs works (2)



(1) World Bank LPI 2014 (2) analysed TEN-T 2007-2013 data

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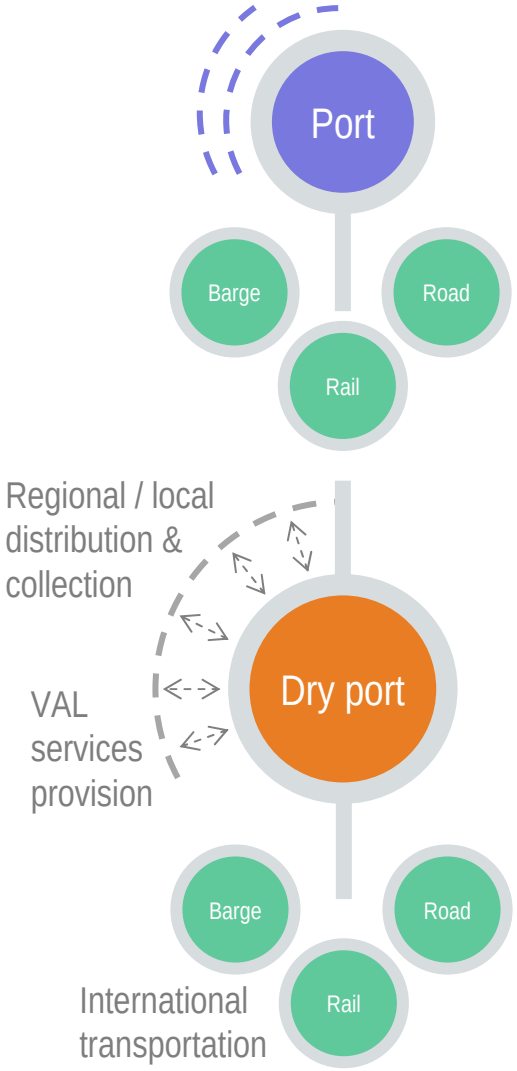
Competition (3)



Challenges:

- To shift competition strategies from port-based, to gateway region-based and to port-centric corridor based
- To explore areas (e.g. marketing & development, operations, policy development) and mechanisms of (e.g. alliances) cooperation among Med ports
- To develop cost/gain sharing models to guide cooperation initiatives
- To align multi-actor performance along complete port-centric corridors
- To focus on the implementation of transnational infrastructural projects with a clear European added value (both financial & socio-economic)

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Territorial dimension

Main issues:

- Historically many ports have served as the origin of cities => today most Med ports are adjacent or within the city complex
- Port-city relationship: Where do the main impacts occur?
  - negative impacts -> port city & region
  - positive impacts -> spilt over many regions
- Port authorities and local governments not necessarily sharing same goals and policy perception

Challenges:

To create local value from port operations by exploring:

- the role of ports as industrial and innovation clusters & locations
- ports' contribution to smart specialisation strategies

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Innovation & technology

Main issues:

- Increased automation of port terminal equipment
- Increased use of optimisation (yard, berth, etc.)
- Rather traditional processes
- Information barriers between ports and hinterland operators
- Regulation compliance-oriented vs efficiency-oriented ICT
- Innovation & technology for the ‘big guys’

Challenges:

- To integrate pieces of port-hinterland transparency (cargo & services)
- To generate business benefits out of compulsory reporting applications
- To incorporate SME actors into the ICT setting
- To address evolving ICT-related threats - Cybersecurity

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3. Which new synergies & for what?

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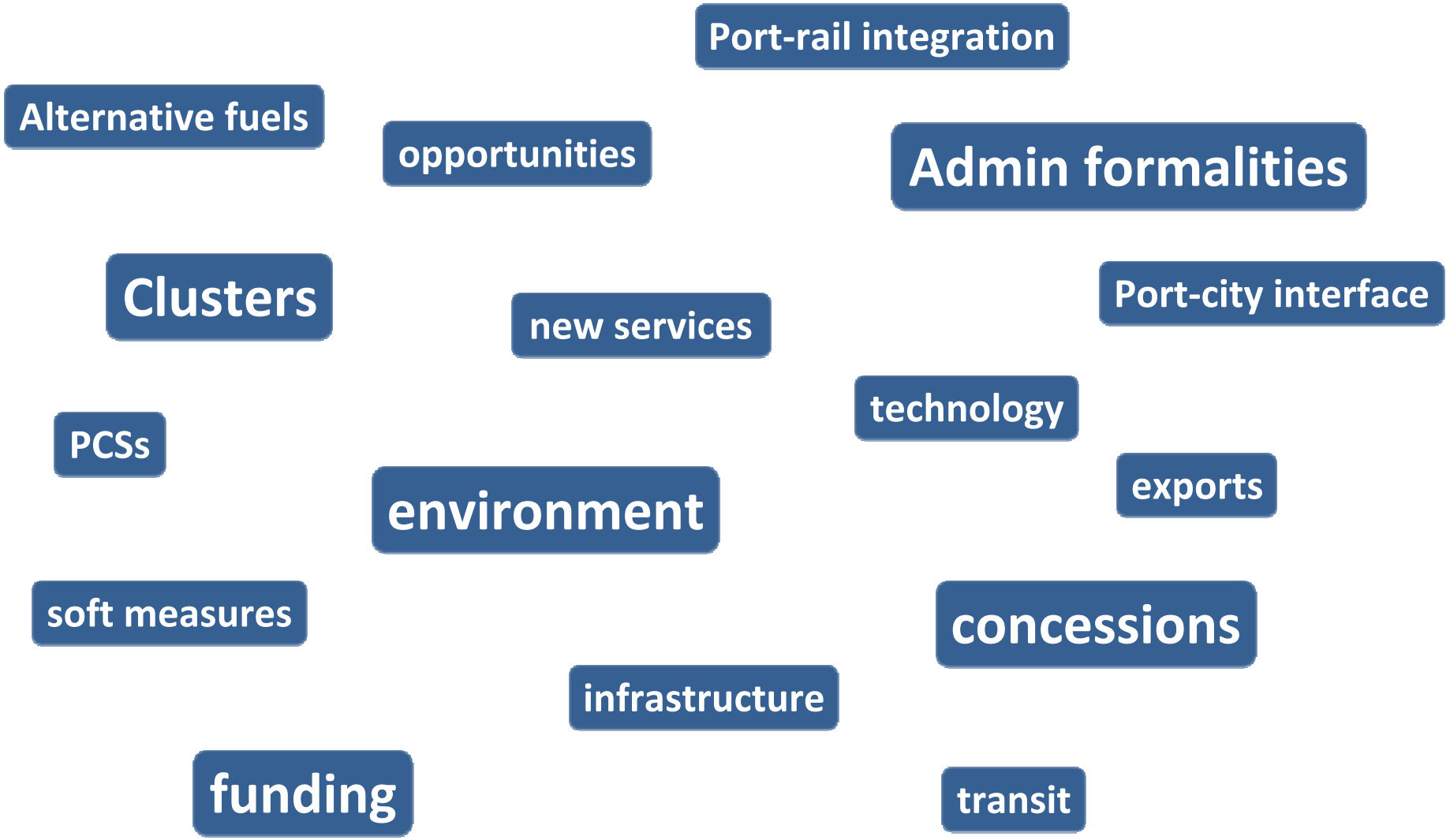
Potential themes of synergies



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New synergy platforms for paradigm shift

FROM	TO
Cooperation platforms	**New Multi-stakeholders Governance Schemes** involving ports operators, consignees, industrial stakeholders, local authorities, competent actors for coordinated planning & implementation
Efficient Smart Ports	**Intelligent Multimodal Regional hubs** involving connected multimodal infrastructures, efficient management of flows of different modes & at different levels (urban regional cross border) for better use of modal capacities, improved regional attraction, promotion of environmentally friendly solutions…
Efficient ICT systems	**Integrated multi stakeholders Communication Platforms** securing trust and meeting the need of emerging economies
Fragmented information	**Open and shared data** for added value services creation & **Supply Chain Visibility** Platforms
Sectorial knowledge	**Cross Sectorial Competences Centers** for managing changes
Innovation & technology for the 'big guys	**Innovation acceleration and Community Shared Technology** platforms for the SMEs enabling their entrance decreasing costs and increasing competitiveness

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Some examples of Synergy building Platforms

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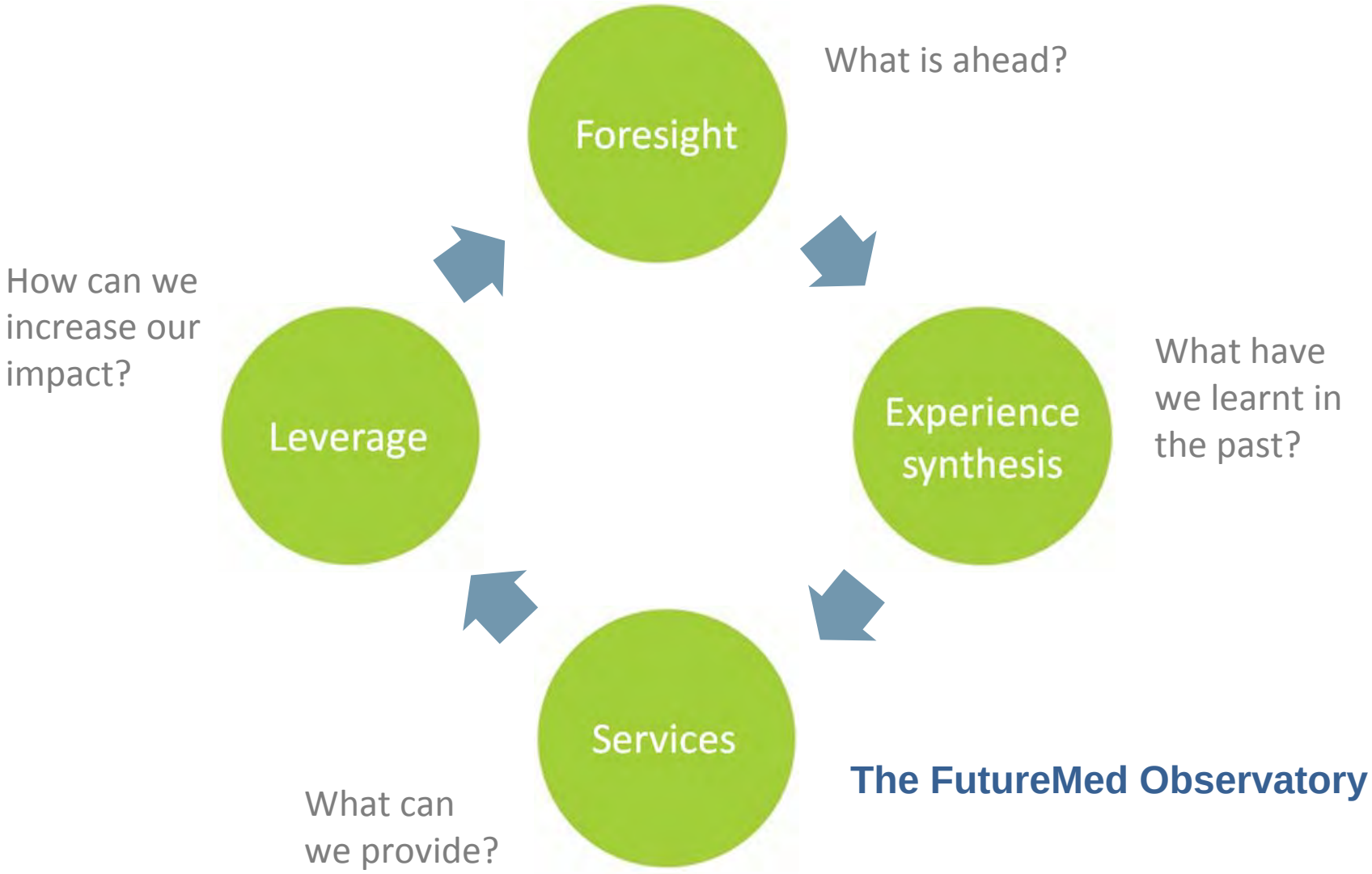
The **Observatories** may add value through: (1)



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The **Observatories** may add value through: (2)

Foresight

- Practitioner workshops
- Experts' debates
- Scenario development

→

- *Market requirements (demand)*
- *Service responses (supply)*
- *Regulatory constraints (environment)*

Experience synthesis

- Pilot results (processes, ICT, TIS, benefits, lessons learned)
- Sectorial best practices (freight, infomobility, agrologistics, cruise)

Services

- Focused studies (trend analysis, opportunities justification, better use of current infrastructure, externalities minimisation)
- New legislation impact assessment (ports policy, environmental policy)
- Cluster promotion & development (port-hinterland, port, agrologistics)
- Med corridors' promotion
- Training

Leverage

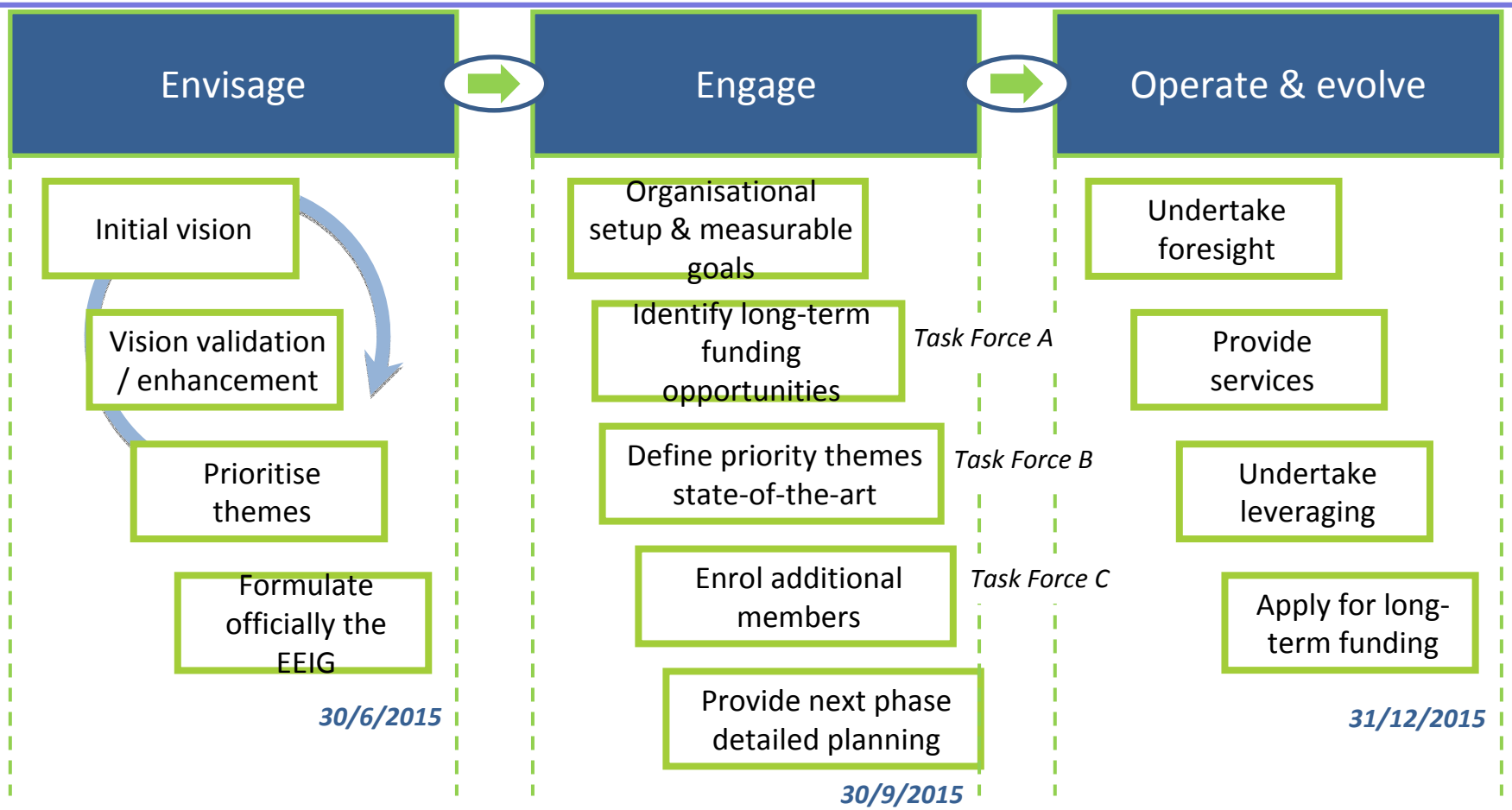
- Networking with complementary initiatives

(actor-, project-, association-driven)

- Fact-based policy proposals (new/altered legislation, promotion of new trans-national cooperation areas & further research)

The FutureMed Observatory

Observatory Implementation roadmap



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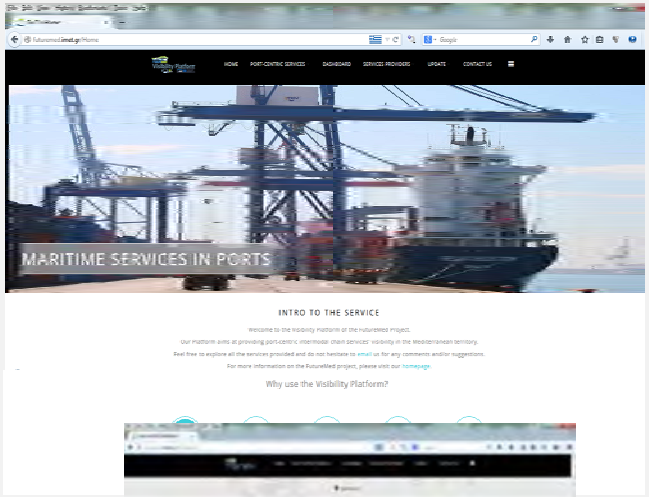
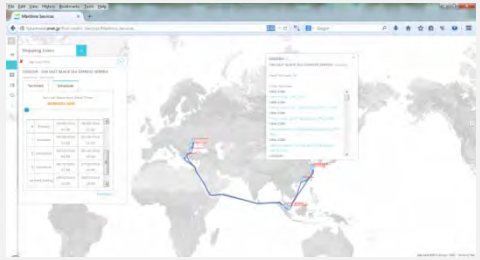
Maritime-Rail Services
Visibility platform *(FutureMED project)*

- one stop shop port-centric intermodal chain services' visibility in the Mediterranean territory promoting port-rail integration
- wide spectrum of SC actors (shippers, Mediterranean port & rail terminal operators, shipping lines, rail operators and policy makers)
- facilitates policy making through the provision of dedicated set of tools (dashboard, KPIs etc)





awarded with the Excellence performance Award (Transport& Logistics Awards 2015)

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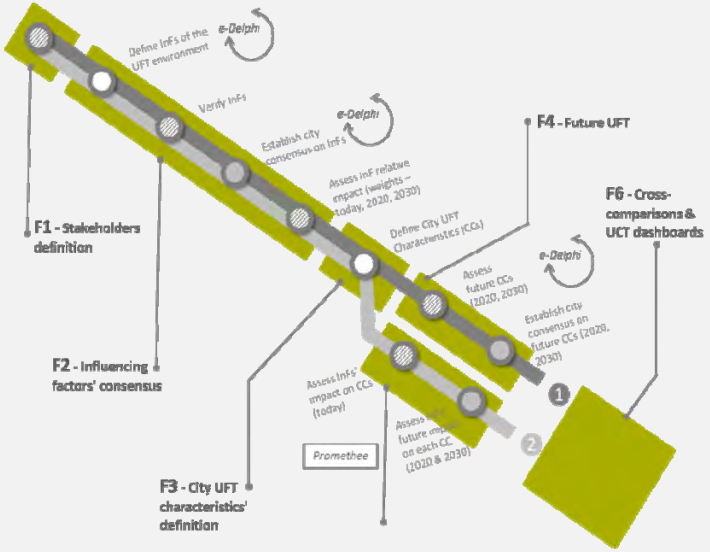
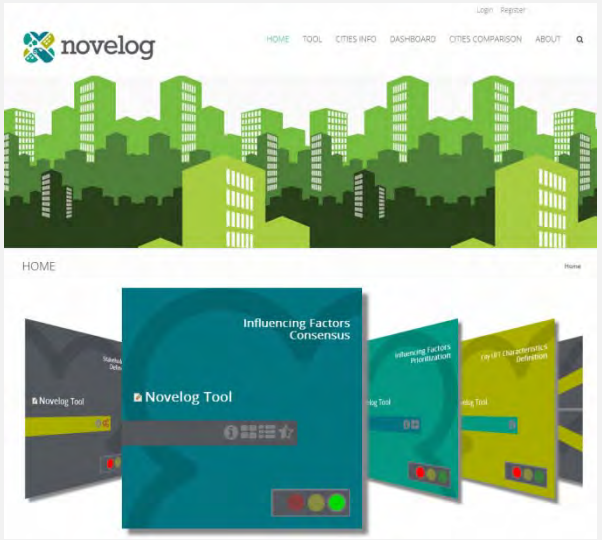
Urban Logistics Multi -stakeholders governance platform *(NOVELOG)*

starting point for the UFT stakeholders to identify :

- the key **In**fluencing **F**actors (**InF**) of UFT demand & supply
- how will the UFT look in the **future**
- the **InF** interrelations with the UFT characteristics





UFT governance facilitating platform at the city level for:

- building a **common view** among stakeholders on their UFT environment
- reaching **consensus** on the critical **InF** to be addressed

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Med L'Europe en Méditerranée / Europe in the Mediterranean

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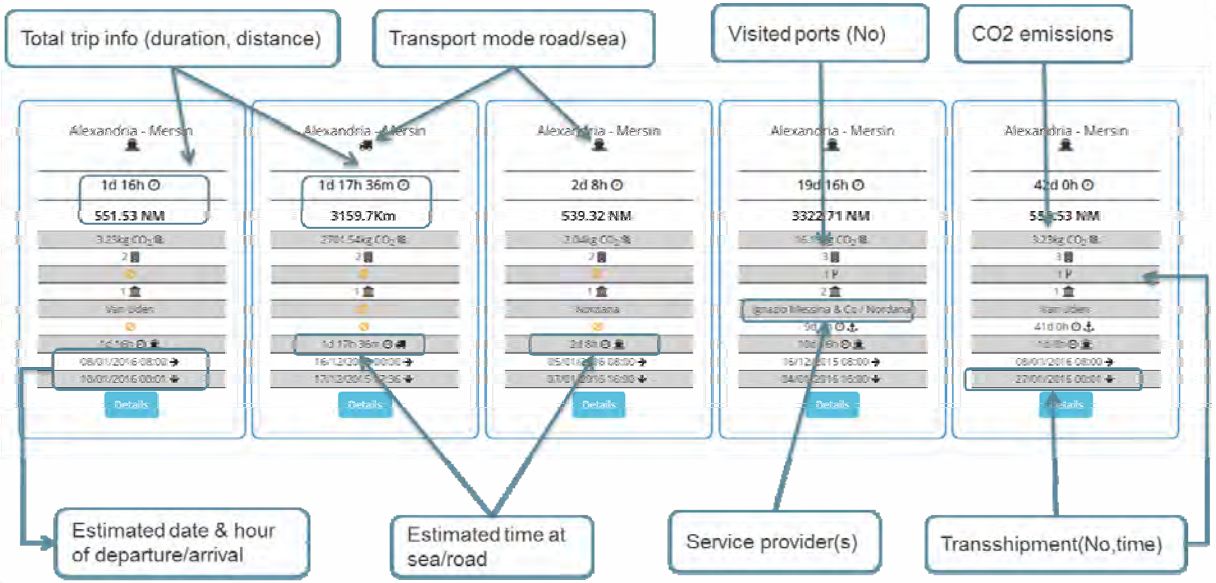
Intermodal Transport planning-monitoring

(assigned by the Chamber of Commerce of Mount Lebanon)

An e-space supporting efficient Ro-Ro services in the Mediterranean Sea by:

- supporting new maritime and trade opportunities
- promoting the use of low environmental impact transportation modes
- exploiting ICT solutions as a support for better planning, management & integration of transport flows
- informing transport users on the available alternatives
- providing evidence of the current state of the Mediterranean Ro-Ro system and the implementation of a proposed hub & spoke



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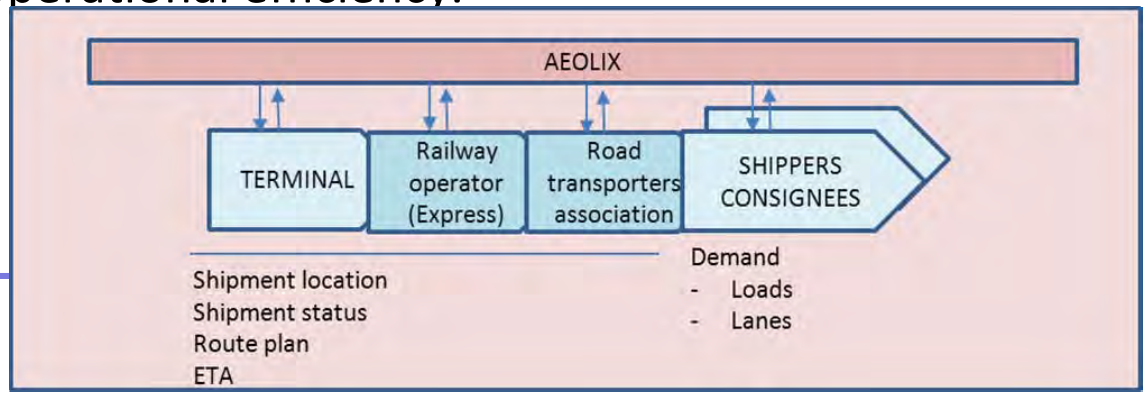
Thessaloniki Intelligent Hub initiative

- Reducing data fragmentation and enhancing **information sharing between private and public actors** in logistics operations in the area .
- Streamlining the inefficient use of road and rail freight transport modes in northern Greece and Southeastern Europe by **promoting co-modal transport** operations for ameliorating service provision and increasing the share of railway transport for cargo arriving through the Port of Thessaloniki.
- **Better matching demand to offered capacities**:
  - Cooperation on data sharing for improving logistics performance and facilitating load factor increase of containers and a modal shift to rail.
  - Cooperation on data sharing for enabling the development of a **Virtual Freight Village (VFV)** for new industry dynamics, business models, business networks and technologies, thus generating a co-operative business plan and increase the overall operational efficiency.



Conclusions

- Evolution is natural but not sufficient .
- Innovation application in supply chains of the future requires communities of actors to share the same vision & culture for managing perpetual changes
- Future ports should benefit from their regional ecosystem of supply chain actors
- New synergy building platforms should focus in supporting :
  1. trust
  2. knowledge & information sharing
  3. diverse modes of stakeholders interaction
  4. complementary and constructive oversight
  5. Common technologies and connected infrastructure

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New synergy platforms

The paradigm shift:

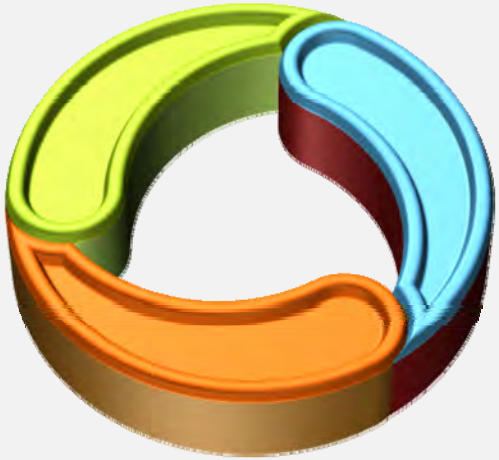
- From cooperation …..> to **New Multi-stakeholders Governance Schemes** involving ports operators, industrial stakeholders, local authorities, competent actors ……
- From ports ----→ to **Intelligent Multimodal Regional hubs** involving connected infrastructures, efficient management of flows of different modes & at different levels (urban regional cross border) for better use of modal capacities, improved regional attraction, promotion of environmentally friendly solutions…
- From efficient ICT systems …> to **Integrated multi stakeholders Communication Platforms** meeting the need of emerging economies and
- From fragmented information ….> to **open and shared data** for added value creation
- From Sectorial knowledge …> to **Cross Sectorial Competences**
- From Innovation & technology for the 'big guys'….> to **Innovation acceleration and Community Shared Technology** for the SMEs

Challenges:

What we do

Policy support & business guidance

- Group Decision methodologies
- Consensus building methods
- Supply Chain performance measurement systems
- Supply Chain optimisation based on algorithms & technologies (nodes & flows)
- Targeted / sectoral analysis



Tools and technologies

- Logistics performance dashboards
- Pilot applications
- Supply Chain Benchmarking
- Intermodal nodes optimisation
- Multistakeholders governance platforms
- Intermodal planning-monitoring

Applied research & industry interface

- Representation in relevant fora (national-international)
- Thematic workshops and Round Tables organisation
- Policy briefs and position papers
- Logistics cluster development
- MoUs with industrial associations

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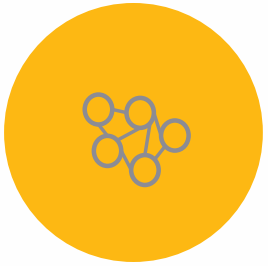
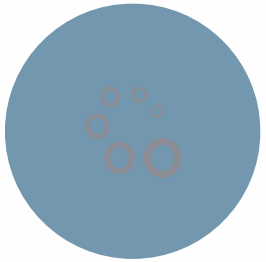
Our strengths





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Our projects

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novelog

Eferry
connecting blue and green

OPTIMIZEMED

Optimed

ACROSSEE

LOGINN

FREIGHTWISE

SMART-CM
smart container chain management

BACKGROUNDS

GIFTS
Global Intermodal Freight Transport System

STRAIGHTSOL
Strategies and measures for smarter urban freight solutions

AGRO FOOD LOGISTICS
COMPETENCE CENTRE

ENVIROPORT

FREIGHT

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