



## WP8: FUNCTIONAL, ECONOMIC AND ENVIRONMENTAL ANALYSIS

DHL + CENIT

2<sup>nd</sup> global meeting

Espoo, September 2018





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# 1- WP OVERVIEW

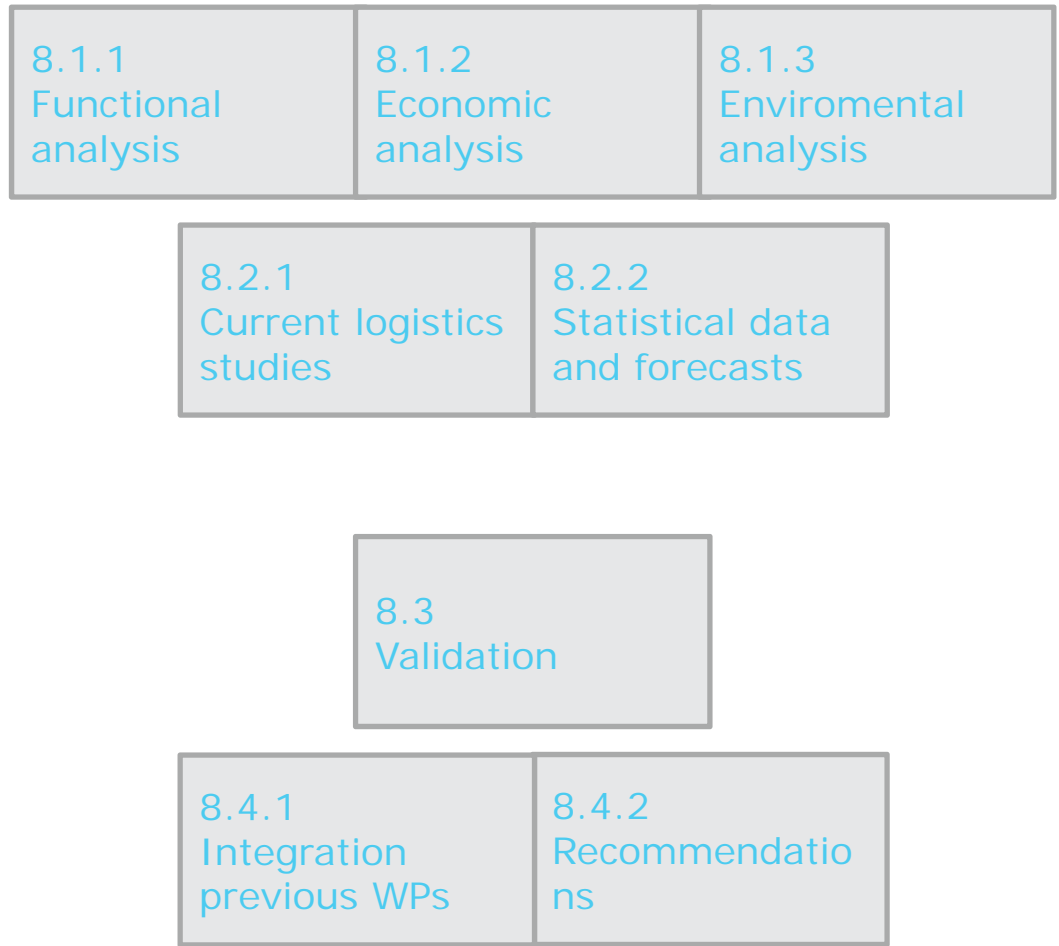
**Main goal:** Functional, economic and environmental analysis of role of intermodal terminals on the **overall logistic network**

Current trends in the logistic sector both characterizing flows, organization, volume and technical advancements and their effect overall

**Link quantifiable findings from WP4 to WP7** and the ratings from WP3 with a **high level** analysis on the trends of the sector (technology and market evolution studies and statistical data and forecasts)



# 1- WP OVERVIEW



**INFO GATHERING  
DIGEST & ASSESSMENT  
(BENCHMARKING)**

**VALIDATION  
APPLY TO RESULTS**

No deliverables yet

	Year 1												Year 2												Year 3											
	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
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D8.1 (M20)  
Definition and description of functional, economic and environmental analysis

D8.2 (M27)  
Assessment of current transportation and logistic studies and trade statistics

D8.3 (M34)  
Set of KPIs for assessing and operating intermodal terminals (F, E and Env perspectives)

D8.4 (M34)  
Assessment & validation workshops onsite at selected terminals with local specialists

D8.5 (M36)  
Results of WP 2-7 and their implications. Recommendations for new / to be renewed intermodal terminals.

## Diapositiva 5

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**PM1**

Afegir imatge text

Pau Morales; 19/09/2017



# 3- PREVIOUS PLANNING AND WORK DONE

## Project approach



**KPIs selection**

- Identification of standard KPIs
- Validation from conceptual and business perspective
- Additional KPIs if required (business / technical aspects)

**Integration into BIM (cause and effect)**

- Identification of cause and effect relations
- Establishment of drivers trees and underlying logic

**Decision support for stakeholders**

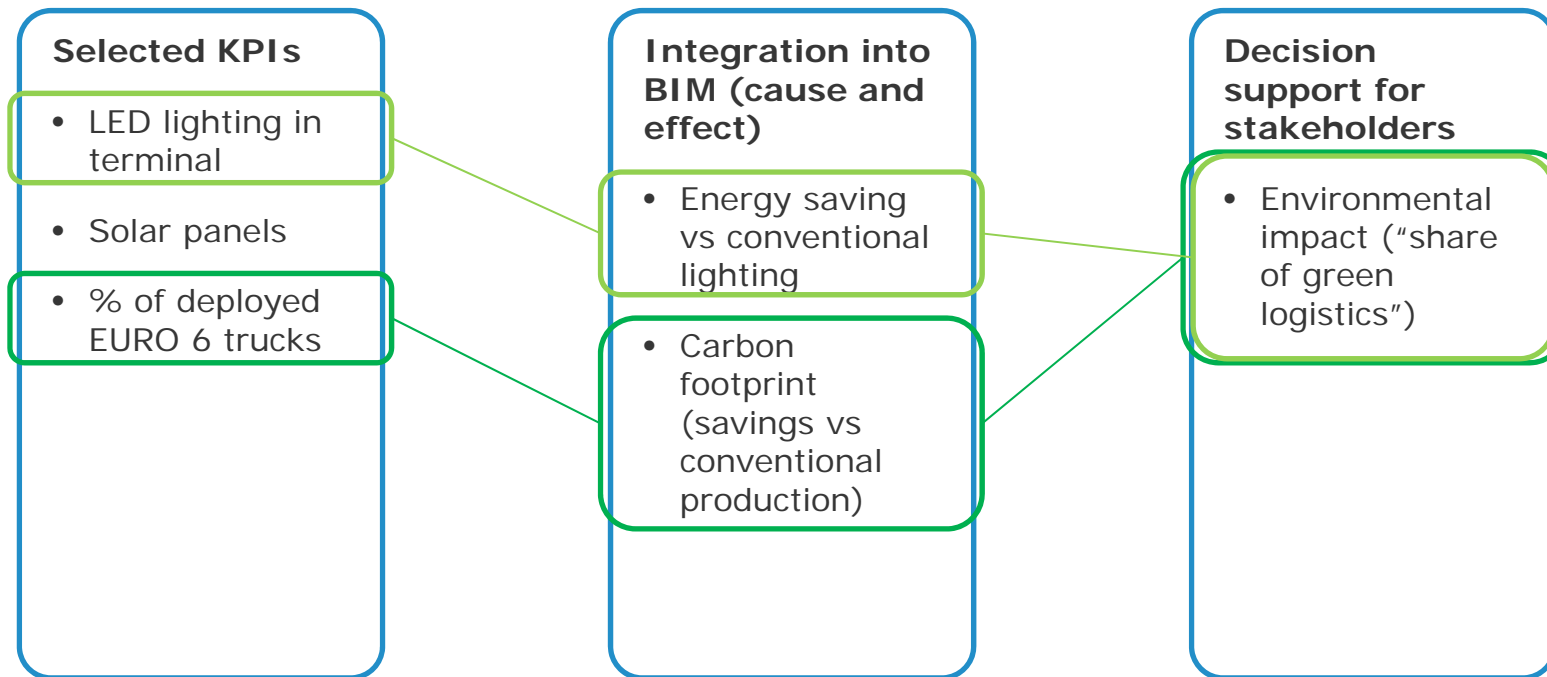
- Public institutions
  - Local, national and international
- Private stakeholders
  - Business
- Society/citizens
  - Labor
  - Employment
  - Living conditions

**Main interfaces for WP 8: Functional, economic and environmental impact**



### 3- PREVIOUS PLANNING AND WORK DONE

Example for cause and effect and impact on decision support



**Decision criteria:**  
Functional, financially sound, safety compliance and environmentally friendly





### 3- PREVIOUS PLANNING AND WORK DONE

#### WP 8.1

- Industry benchmarking on regularly published KPIs (annual and sustainability reports)

Typical KPIs published (selection)	Contship Italia	Dachser	DB Schenker	DHL	DSV	Geodis	Kühne & Nagel	LKW Walter	Waberer	Xpo-logistics
<b>Financial KPIs</b>										
Revenue	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gross Profit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EBIT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cash Flow	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Operational KPIs</b>										
Number of shipments										
Handled units/volumes (Air, Sea, Road, Rail)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Socio economic</b>										
Number of employees (FTEs)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Emissions (e.g. sustainability reports)				✓	✓		✓			
Energy consumption	✓		✓	✓	✓					✓
<b>Ratios</b>										
Gross Profit Margin	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EBIT Margin	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Profitability ratios (e.g. ROCE)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Revenue per FTE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Revenue per handled unit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



## 3- PREVIOUS PLANNING AND WORK DONE

### Business Case Analysis

- PROJECT SUBJECT
- RESPONSIBILITIES
- BCA APPROVAL STATUS
- EXECUTIVE SUMMARY
- STRATEGIC RATIONALE
- EXISTING BUSINESS PERFORMANCE
- INITIAL SITUATION
- AIMS & CONTENT
- **PROJECT VOLUME**
- **PROJECT EFFECTS & BENEFITS**
- **PROJECT RISKS: RISK OVERVIEW, DETAILED ASSESSMENT & SENSITIVITIES**
- CONTRACT & COMMERCIAL TERMS
- **GoGREEN CO<sub>2</sub> STATEMENT**
- MILESTONES / PROJECT PHASE SCHEDULE
- PROJECT ORGANIZATION & GOVERNANCE
- **PROJECT REVIEW STRUCTURE AND SUGGESTED OPERATIONAL KPIs**
- **ALTERNATIVE SCENARIOS / ALTERNATIVE STRATEGIC OPTIONS**
- APPROVAL TEMPLATE - LEGAL SERVICES
- APPROVAL TEMPLATE - CORPORATE PROCUREMENT
- CONTRACTING PARTNER
- EU / NATIONAL FUNDING

Source: WP8; Comparison annual reports 2016 / publications



### WP 8.2

#### Done:

- Bibliographic analysis: So far 115 scientific papers, articles, books and industry reports processed
- Incipient structure and framework (need to structure the information gathered)

#### Approach:

- Analysis of trends and evolution on logistics affecting intermodal terminals at logistics transport network and terminal operations levels.
- Picture should come from listing and assessing the role of the following trends on the terminals.
  - Technology evolutions (enablers): Augmented reality, 3D printing, smart factories (digital twin), automated driving, blockchain, ...
  - Transportation trends: Shipper and forwarders consolidation, terminal specialization, new transport corridors, larger vehicles, platooning, mega-trucks, teardrop trailers, diesel restrictions, ...



### 3- PREVIOUS PLANNING AND WORK DONE

	Year 1												Year 2												Year 3											
	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
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#### Previous planning:

- May'17 Scientific documentation
- May'17 Other partners information
- Sep'17 First digest/paper (d8.1)
- Oct'17 Alignment with main partners involved
- Oct'17 Identify congresses where to send



### 3- PREVIOUS PLANNING AND WORK DONE

	Year 1												Year 2												Year 3											
	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
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8.1																																				
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8.3																																				
8.4																																				

Previous planning:

- May'17 Scientific documentation (ongoing list and digest)
- May'17 Other partners information (tbd)
- Sep'17 First digest/paper (d8.1) (preliminar work)
- Oct'17 Alignment with main partners involved (tbd)
- Oct'17 Identify congresses where to send



# 4- IMMEDIATE OBJECTIVES (NEXT 6 MONTHS)

## New Planning

	Year 1												Year 2												Year 3											
	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
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### Milestones for upcoming 6 months:

- M14: First framework on existing analytics to be used in functional, social and environmental assessments
- M18: Compendium of existing analytics and expert assessment on their fitness (first paper draft)
- M18: First draft on logistic trends at international and European level

### Requirements to other partners:

- M14-18: Additional contributions to be considered in the bibliography
- M15-16: Contributions from partners over analytics framework (used at their companies, general knowledge, other sources) - possibility of bilateral meetings (M15-16)
- M17-18: Comments and discussion of compendium of existing analytics



# 4- IMMEDIATE OBJECTIVES (NEXT 6 MONTHS)

Any area where more comfortable to collaborate?

- Functional analysis:
- Network structure
  - Placement functional requirements
  - Indexes (connectivity, accessibility, others)

- Economic analysis:
- Microeconomic values (aspects valued, metrics used)
  - Macroeconomic (aspects valued, sources of information used)
  - BCA

- Environmental impacts:
- Carbon footprint calculation
  - Other environmental cost calculation (noise, hazardous risk,...)
  - Whole supply chain assessment
  - Construction environmental costs and operational

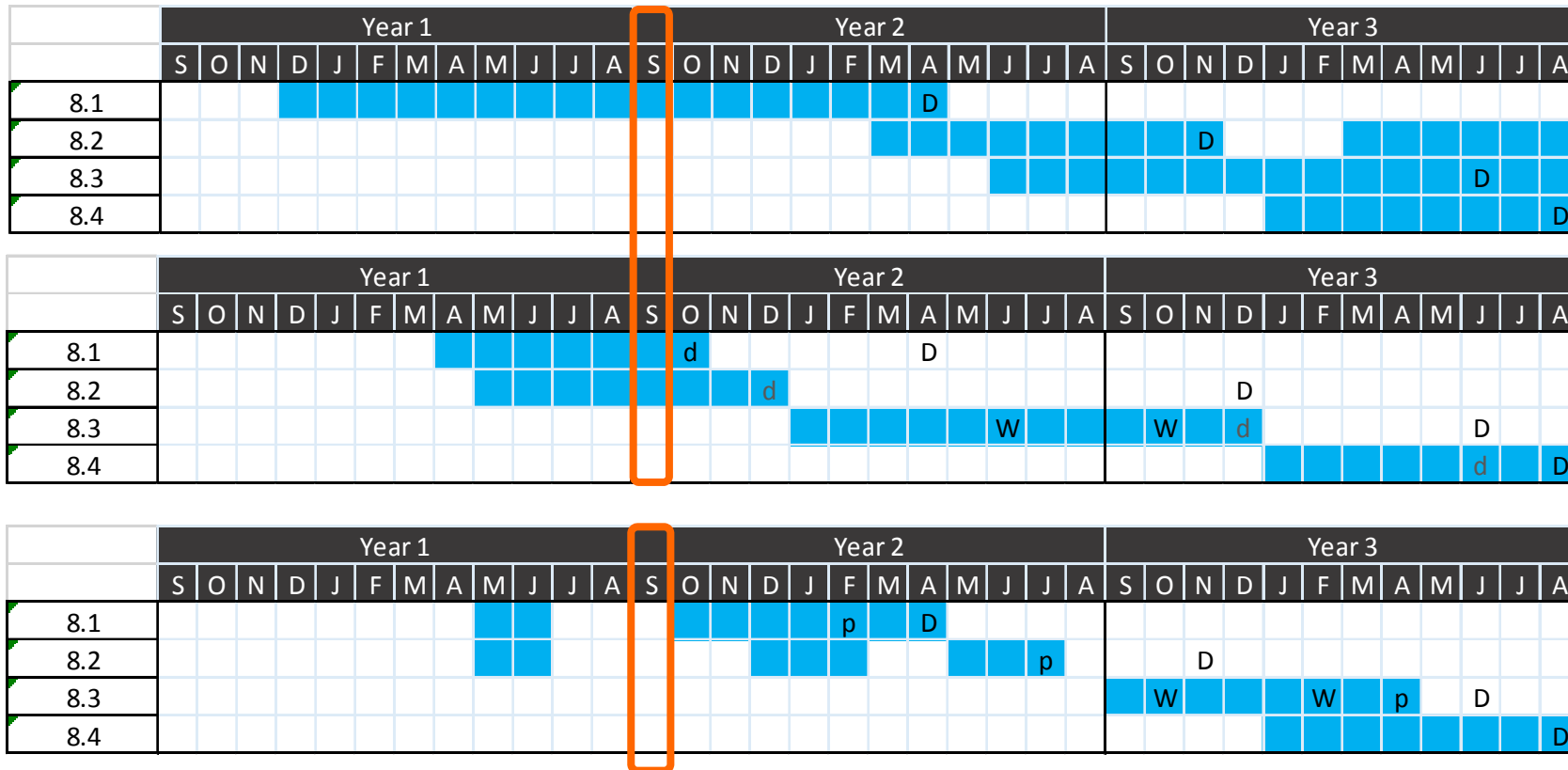
- Evolution trends of the drivers of logistics and trade:
- Policy
  - Energy
  - Economy
  - Demography
  - Technology developments
  - Finance

	8.1	8.2	both
<b>IDP</b>	1	1.5	<b>2.5</b>
<b>FGC</b>	0.2		0.2
<b>CENIT</b>	2.3	2.2	4.5
<b>DHL</b>	0.4	0.5	0.9
<b>MAC</b>	2		<b>2</b>
<b>VIAS</b>	0.5	0.5	1
<b>BED</b>	1.1	1.5	<b>2.6</b>
<b>CSI</b>	0.5		0.5
<b>APSP</b>	0.1		0.1
<b>ZNIK</b>		2.1	<b>2.1</b>
<b>BASF</b>	2		<b>2</b>
<b>KIR</b>	0.5	0.5	1



# 5- CHANGES FROM ENVISAGED PLAN

No real changes on planning. Still planning to work on some of the tasks (mainly 8.2 and 8.3) ahead of time as found in the DoA







## 6- POTENTIAL RISKS AND OPPORTUNITIES

Ass. WP	Risks	Mitigation measures
8.3	R24: Delay in validations at selected terminals	Add resources, new collaboration schemes
8.2	R25: Specific concept / results cannot be agreed among partners	Review process and corrective actions
8.4.1	R26: Failure in integration of Key Results	Reinforce integration task. Involve new end users. Reinforce commitment of facilities for demonstration activities

Ass. WP	Risks	Mitigation measures
All	Analysis disconnected from other WP approaches and findings	Involve companies and regular alignment
8.2	Distortions due to high volatility of logistics business	Multidisciplinary WP team: research experts combined with business experts

Ass. WP	Risks	Mitigation measures
8.1-8.2	Market knowledge and approach lost with leadership transfer	Increase PM of CENIT, compensated with lower personnel costs. Add "8.0" Lit. Rev.
All	Lack of coordinated effort due to atomized partnership	Specific role and requests per partner. Force 8.1-8.2 bilateral meetings.
8.1-8.2	Dissemination limitations. Congress + Peer review processes	Speed up completion of work packages



## 6- POTENTIAL RISKS AND OPPORTUNITIES

Ass. WP	Opportunity	How
8.1 to 8.3	Increase scientific visibility through potential production of 3 papers	D8.1, D8.2 and D8.3 conceived as paper/conference proceeding from the beginning
All	Wider and complementary approach (better coverage and closer to reality)	Development of analytics specific to partner's area of expertise. Iterative process from wider (high level) to more specific Possible bilateral meetings

The background of the slide features a dense array of fiber optic cables. The cables are illuminated from the left, creating a bright, multi-colored glow. The colors transition from cool blues and greens on the left to warm oranges and reds on the right. A large, semi-transparent white triangle is positioned in the center-right of the frame, pointing downwards. Inside this triangle, the text "QUESTIONS?" and "10'" is displayed in a blue, sans-serif font.

QUESTIONS?  
10'

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**THANKS!**

