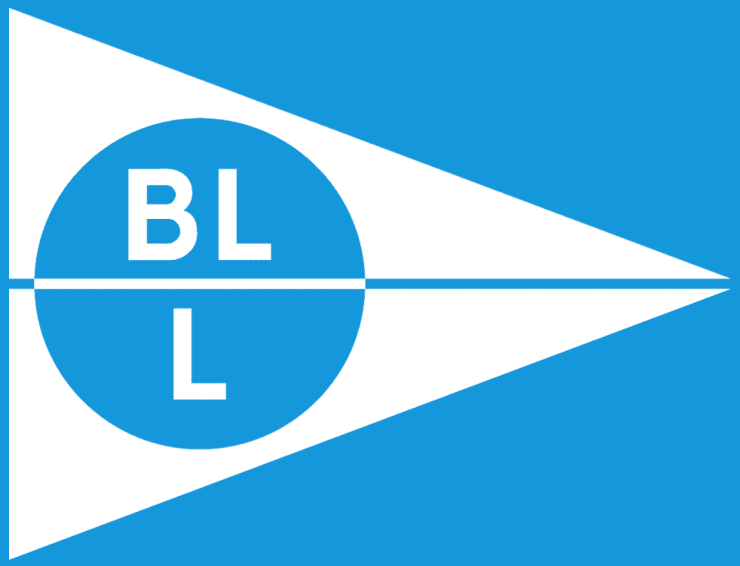

Blue Line Logistics

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The Problem

Solutions

Problem needs a cocktail of responses such as :

- *Road infrastructure Improvement*
- *Full cost of transport (environmental taxes)*
- *Higher urban density (resulting in higher use of public transport)*
- *Performant public transport*
- *Modal shift*
  - Train
  - Waterborne transport

Modal Shift : Pallet Shuttle Barge

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Logistic System

for Goods on Pallet, in Big Bag or Roll Container

with

Flexible & Specialised inland barges

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Blue Line Logistics

Aims

- Implementation innovative multimodal total-concept for door-to-door logistics of goods on pallets, in big bags or roll-containers, structured on a new type of small barge, active on short & medium distances, in complement to road transport
- A price competitive logistic solution versus road transport, making use of the inland waterway system in Belgium, the Netherlands and Northern France
- An integrated network of bi- & tri-modal logistic hubs with regional coverage
- A combination of ecology, safety, quality and flexibility

Traditional Inland Waterway Transport (IWT)

- Traditional Inland waterway transport cannot offer a response to shippers for
  - *Efficient*
  - *Qualitative*
  - *Safe*

  transport of goods on pallets, in big bags or roll-containers

- Existing solutions raise a number of specific problems
  - *Operational need for large loads and limited types of goods*
  - *Not a one-stop solution, needing extra administration & management*
  - *A large amount of manipulations of pool- or one-way pallets resulting in high incidence of damages*

TRUCK versus BARGE

ELEMENTS

- Critical differenciating elements
  - *Loading/unloading cost*
  - *Transport cost*
- Total chain needs to be considered

BARGE can be competitive on selected tracks.

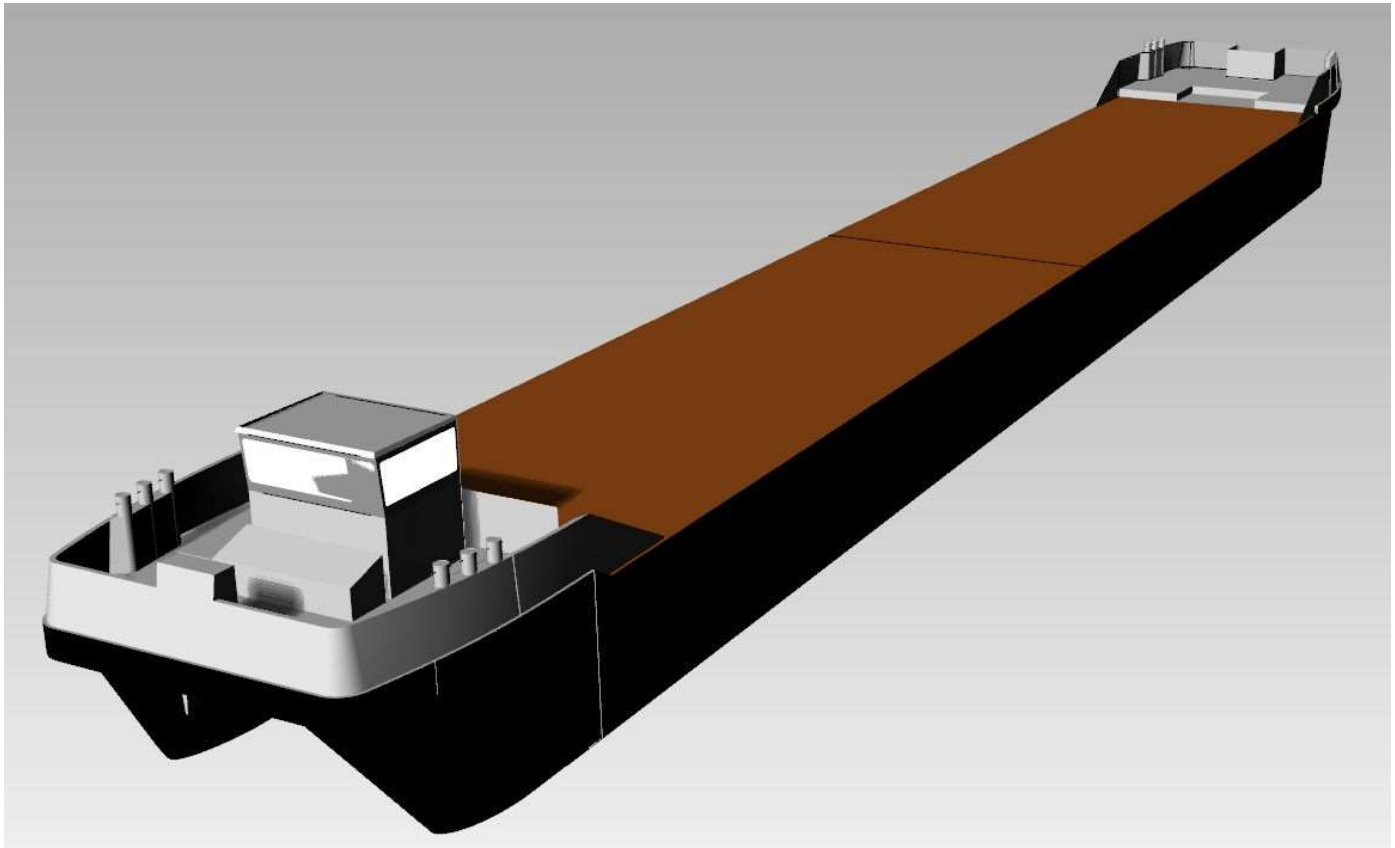
TRUCK versus BARGE

To make Barge competitive

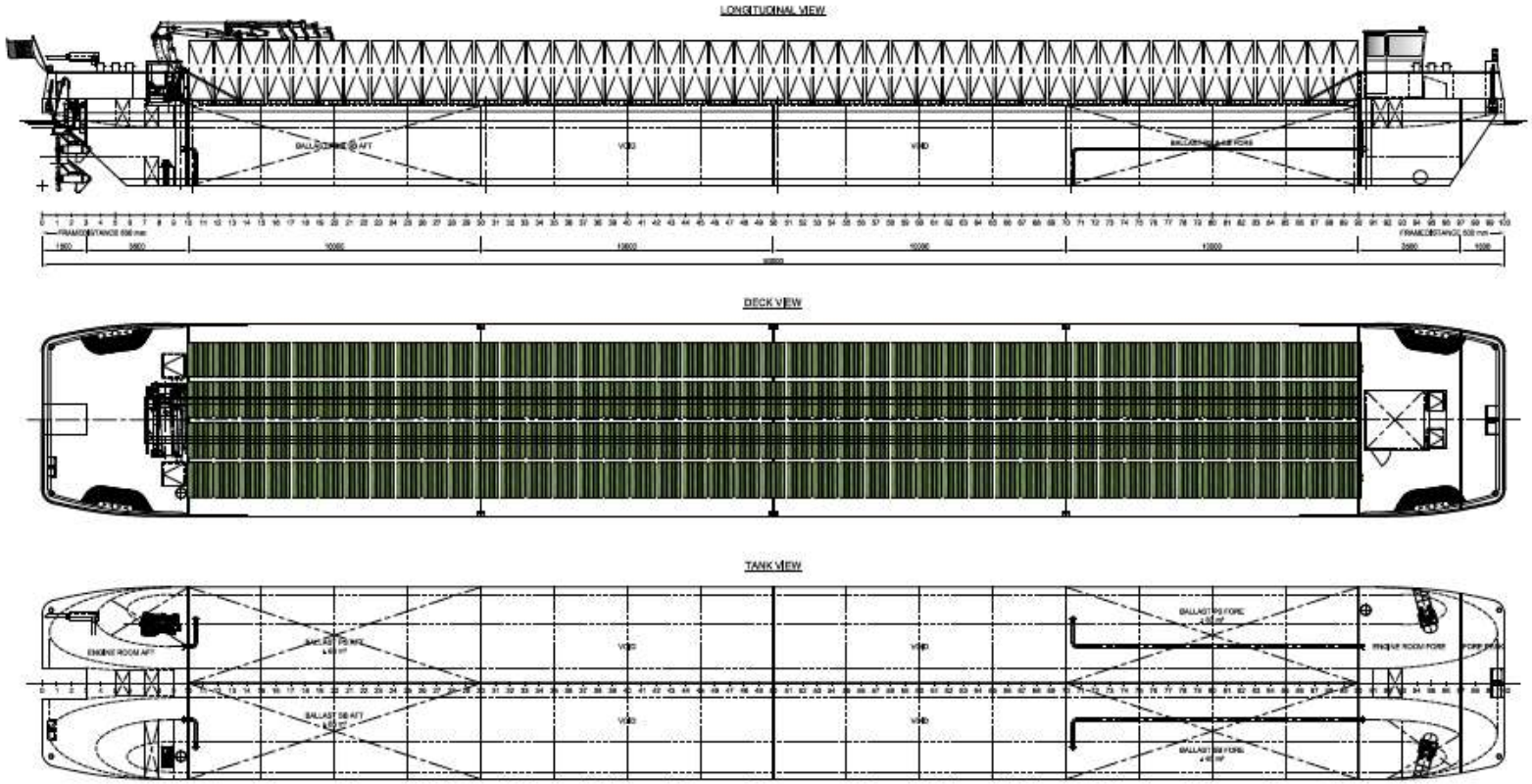
- *Reduce costs loading/unloading*
  - Crew operates equipment
  - No harbour infrastructure
  - Load on deck (ease of operation)

- *Reduce operating costs*
  - Limit size
  - Simple construction – low investment
  - Easy maintenance
  - Crew limited to 1 person
  - No accommodation
  - Extensive use of data-communication

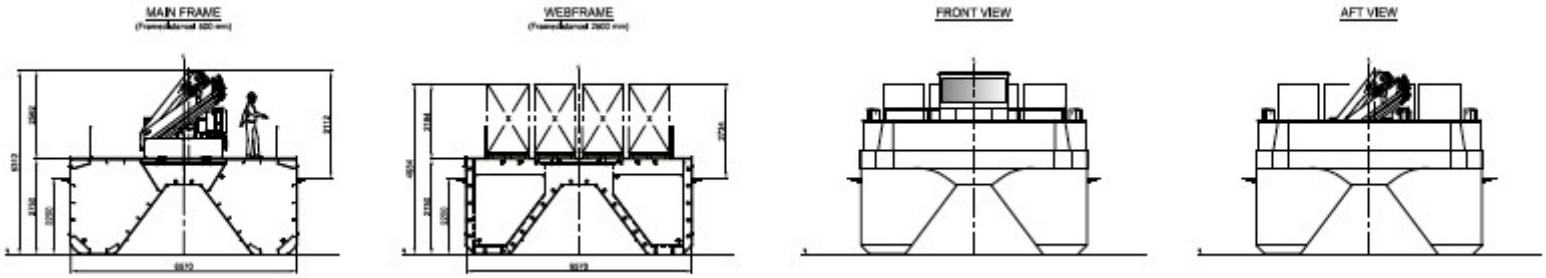
Innovative concept
Fleet & Hubs



Pallet Shuttle Barge (PSB 1.0)
Basic lay-out



Pallet Shuttle Barge
Basic lay-out



Pallet Shuttle Barge
Technical

- Construction
  - *Steel*
  - *Modular*
  - *Length 50 m, width 6,6 m, draught maximum of 2,20 m*
  - *Production in large quantities, with standard dimensions*
  - *Design focused on simple & fast maintenance or part replacement*
- Dedicated versions
  - *Possible for specific loads*
  - *Specific handling equipment*
- Crew
  - *1 FTE*
  - *No living quarters/accommodation*

Pallet Shuttle Barge
Technical

- Load
  - *platform 210 m2 on 4 meter height (due to height restrictions)*
  - *198 EuroPallets on one layer*
  - *Maximum Tonnage 300 ton*

- Motorisation & Propulsion
  - *Diesel or other hybride propulsion, driving hydraulic power*
  - *1 shottle motor (306 HP)*
  - *2 horizontal bowthrusters*

- Weather protection
  - *Hood*

Pallet Shuttle Barge
Technical

- Crane
  - *PSB has on-board crane to load/unload independently*
  - *Capacity 2 ton at 12 meter*
  - *Radio controlled operation*
- Reduced need for Quayside equipment
  - *PSB can berth unassisted*
  - *PSB has spud-poles*
  - *Fork-lift sized cargo*
- Control & Steering
  - *Joystick, automatic pilot, AIS en/of GPS*
  - *Radar (optional) and depth control*
  - *Use of bar-coding, RFID, …*

Port Fore View

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Pallets with goods

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Containers

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In Operation

Blue Line Logistics

In Operation

Blue Line Logistics

In Operation

Blue Line Logistics

In Operation

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In Operation

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In Operation

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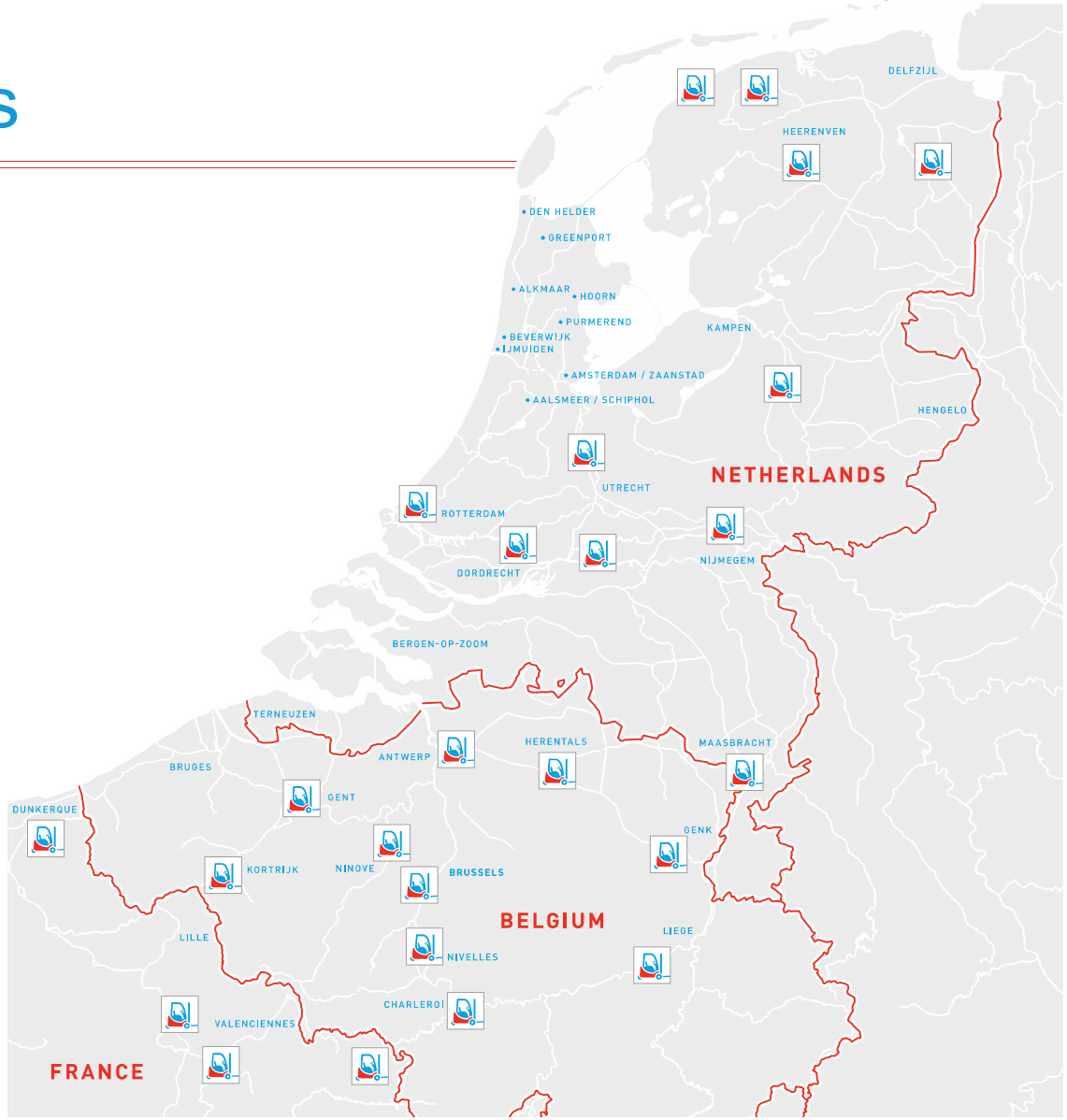
In Operation

Network of regional hubs
for transshipment & distribution

- Setup of network of hubs (terminals), with bi- of tri-modal functions
- Hubs also to be used as warehouse and distribution center
- Hubs situated with shippers or on dedicated sites
- Hubs specialized in goods on pallets or in big bags
- “All weather” hubs

Network of regional hubs



Network van regional hubs

- Extensive network
  - *Belgium*
    - Large cities : Antwerpen, Brussel, Charleroi, Gent, Hasselt, Kortrijk, Luik, , Mons, Namen,)
    - Regional Hubs (Aalst, Andenne, Brugge,, Genk, La Louvière, Leuven, Oostende, Rumst, Tessenderlo, Tournai, Vilvoorde, Wevelgem, Wielsbeke, Zeebrugge, …)
  - *Netherlands*
    - Amsterdam-Zaanstad (Aalsmeer, Alkmaar,Beverwijk,Den Helder, Greenport, Hoorn, Ijmuiden, Purmerend) , Breda, Bergen op Zoom, Hengelo, Kampen,, Nijmegen, Rotterdam, , Venlo, Utrecht,…
  - *Northern-France*
    - Lille, Valenciennes, …
- Short & medium distance routes

Goods

- Goods on pallet or in big bags
  - *Building materials*
  - *FMCG (drinks,, …)*
  - *Semi finished products*
  - *Packaging*
  - *…*
- City distribution
  - *All types*
  - *Specific containers*
  - *Small scale distribution*
- Projects
  - *Large building sites & infrastructure works*

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Planning operations

- Planning & real-time follow-up of
  - *Barges*
  - *Crew*
  - *Loads*
- Software (routing, track & trace) for
  - *Simulations*
  - *Routing software*
  - *Routes*
  - *Pallet Management*

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Present Situation

- ZULU 01 is operational
- ZULU 02 is operational
- Review of design : optimisation : PSB 2.0
- ZULU 03, 04, 05, 06 expected in 2016.
- More ZULU's ……

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ZULU ?

Contact

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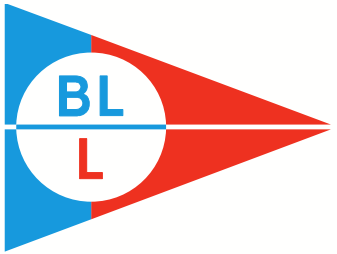
Thank You for your Attention



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