
TPR
Departement of Transport and Regional Economics
University of Antwerp

26/11/2020

PORT CO.INNOVATION

26/11 - ANTWERPEN

**BNP Paribas Fortis Port Co.Innovation Happy Hour 1**
**Theme: Risk & Resilience – Topic: Geopolitical**

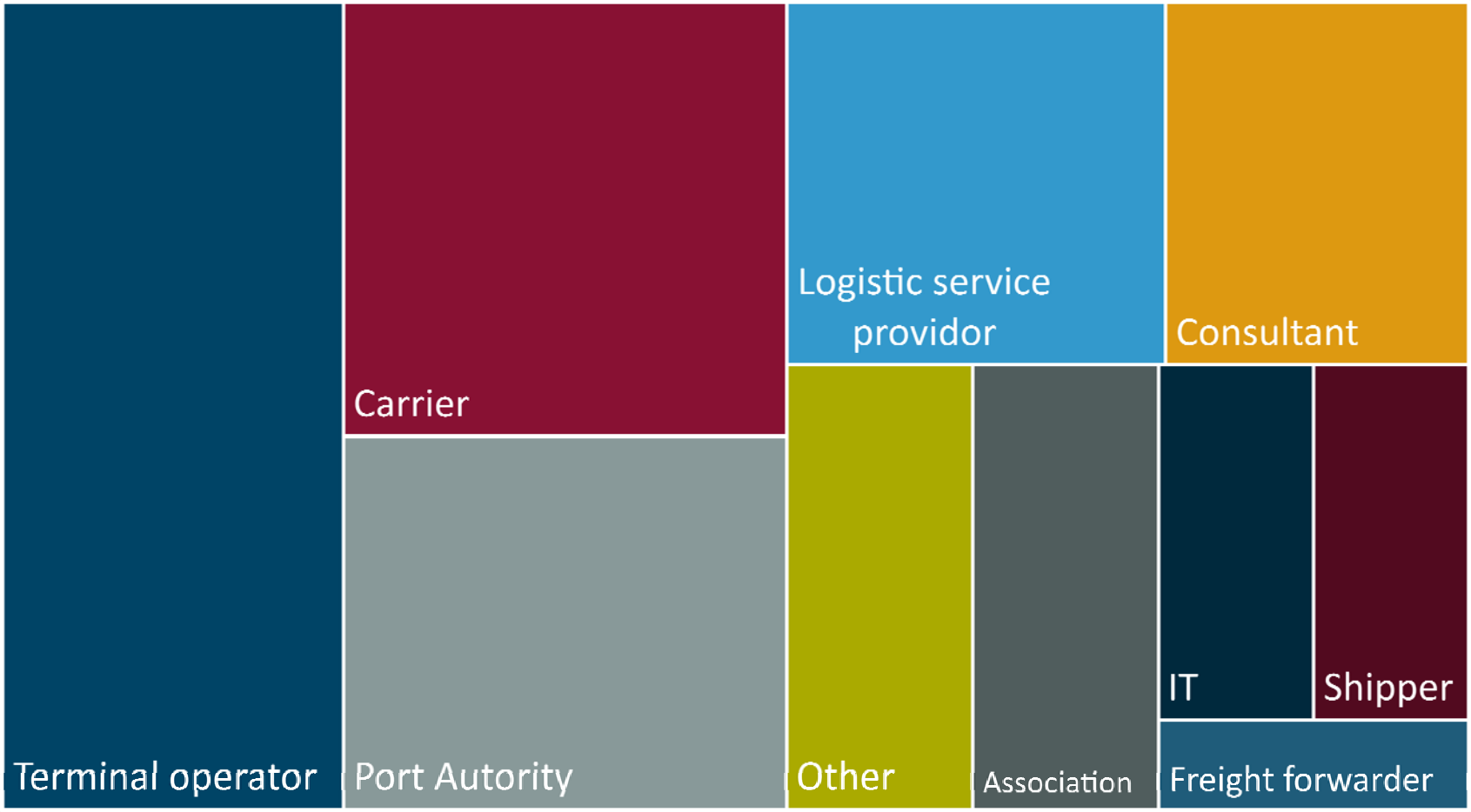
Online
@ Bruges

# WELCOME

## Prof. dr. Christa Sys

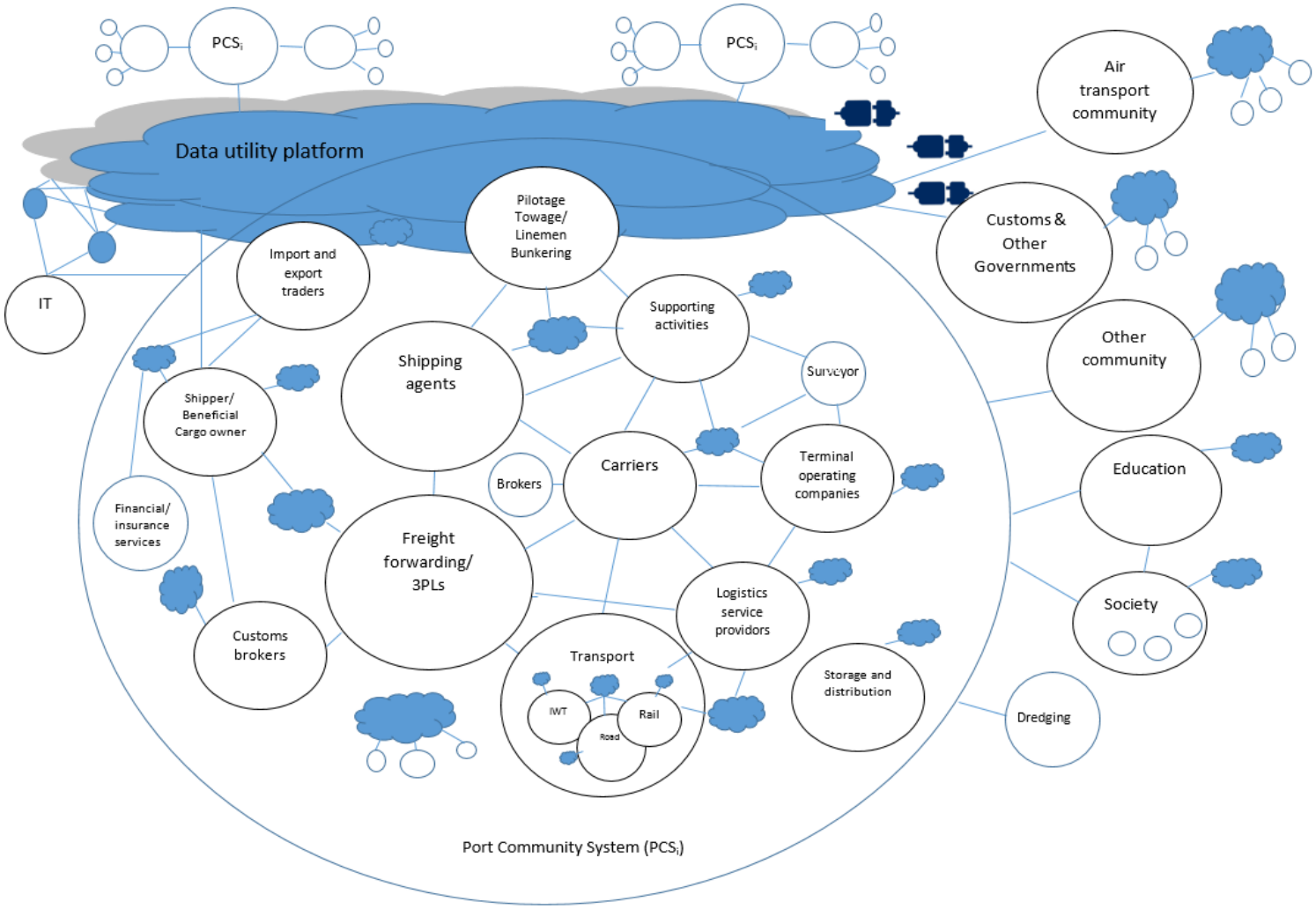
*Holder of the Chair BNP Paribas*
*Fortis Transport, Logistics and Ports*

# Welcome @ participants (84 registrations)



# Goal

## Creating resilient maritime ecosystem

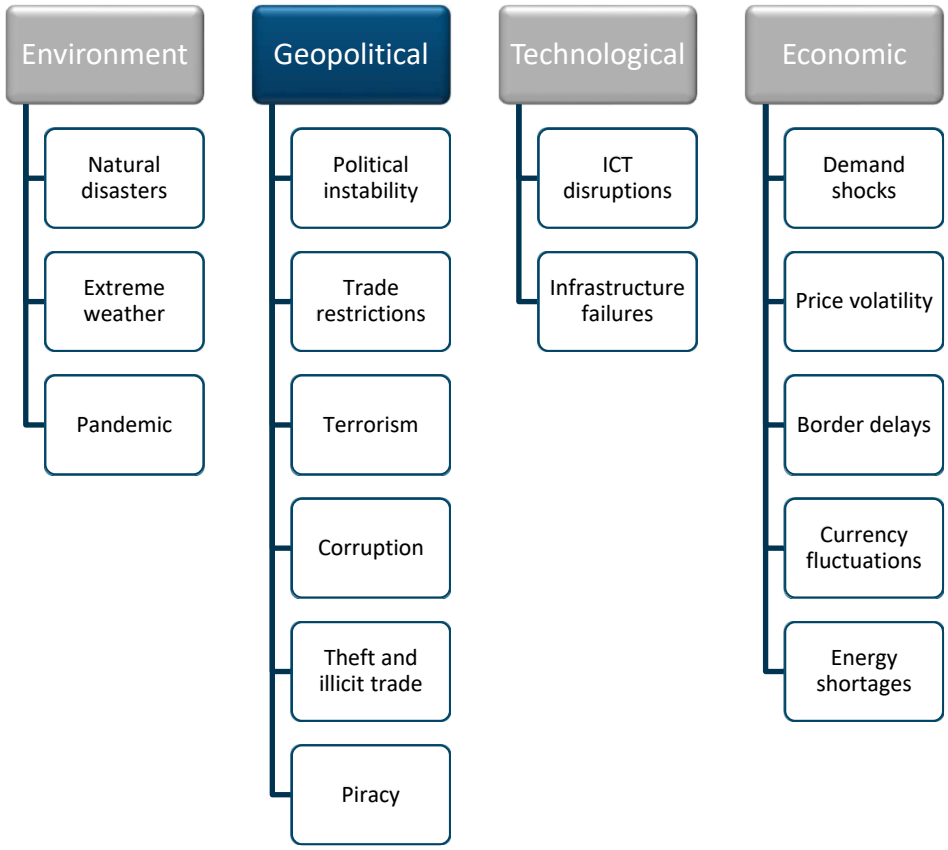



Vanelslander & Sys, 2020

# Theme: risk & resilience

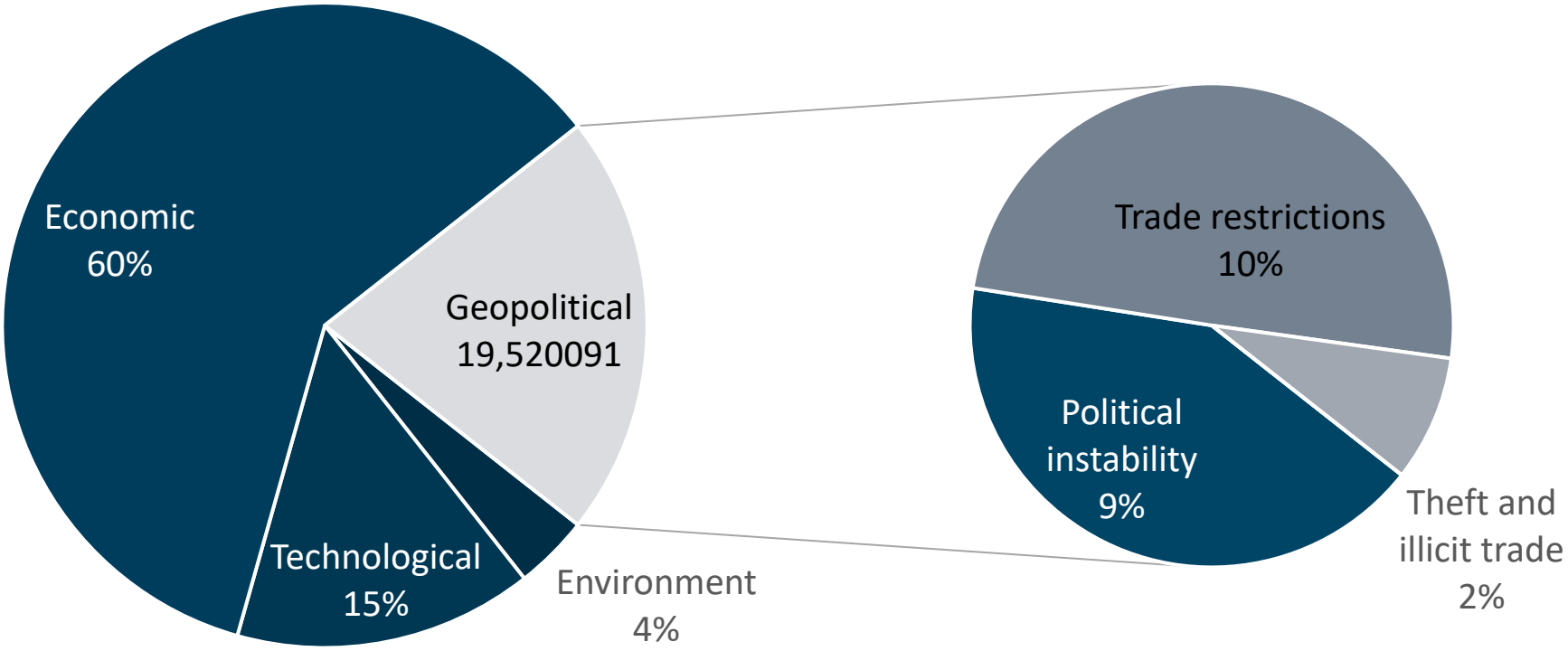
**Risk**

- a situation involving exposure to danger (threat)((Oxford dictionary)
- the combination of the probability of occurrence of an event and its negative consequences (Holton, 2004).
- with respect to supply chains, a risk could be any factor that obstructs the flow of information, materials, and products from the supplier to the consumer (Juttner et al., 2003).



# Theme: risk & resilience

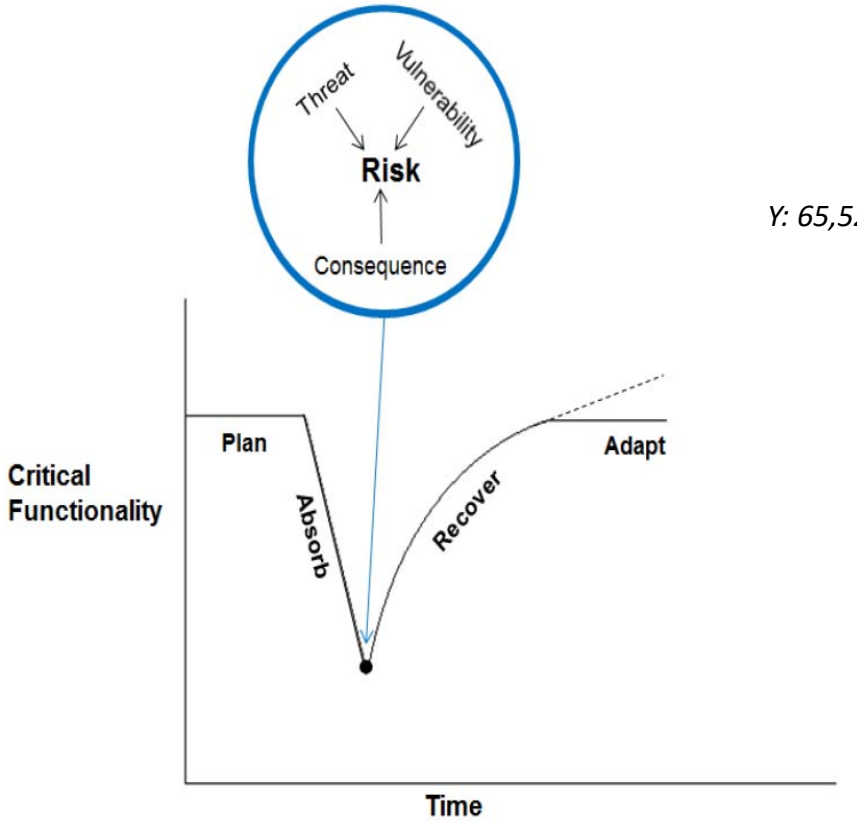
## From the survey (30)



# Theme: risk & resilience

**Resilience**:

- the capacity to recover quickly from difficulties (Oxford dictionary)
- means the ability to anticipate, prepare for, and ***adapt*** to changing conditions and ***withstand***, ***respond to***, and ***recover*** rapidly from disruptions (US National Academy)
- the ability of a system to return to its original state or move to a new desirable state after being disturbed (Christopher and Peck, 2004)




Source: Linkov et al, Nature Climate Change 2014

# Program

| | |
|---|---|
| 17.00-17.05 | Welcome by Prof. Christa Sys |
| 17.05-17.35 | Did COVID-19 push digital handling of documentary products to the next level' by Dhr. Frank Haak, Head Sales Global Trade Solutions, BNP Paribas Fortis |
| 17.35-17.45 | Q&A |
| 17.45-18.15 | 'Near- and reshoring: the solution for everything and everyone after COVID-19?' by Prof. Thierry Vanelslander, University of Antwerp |
| 18.15-18.25 | Final Q&A |
| 18.25-19.00 | COVID Safe Happy Hour by Wout Mampaey, student University of Antwerp |

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# Frank Haak

*Head Sales Global Trade Solutions*

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# Near- and reshoring: the solution for everything and everyone after COVID?

Online
@ Antwerp


## Prof. dr. Thierry Vanelslander

*Transport economist*

# Contents

- Definition
- Advantages and drawbacks
- Concrete examples

# Offshoring

- “An operational shift of a process that was at first organised and managed internally, to an external party. This transfer implies a long-term contract” (Duhamel & Quélin, 2003)
- “A substantial, mutual transfer of information, co-ordination and confidence” (Ahmed & Erber, 2005)
- Hype 1990-2000, especially in US, later also European companies.
- Evolution: first tasks for low-qualified staff, later also for trained personnel → ICT.
- Quickly rising wage costs, rising oil prices, and hidden costs and quality aspects → nearshoring

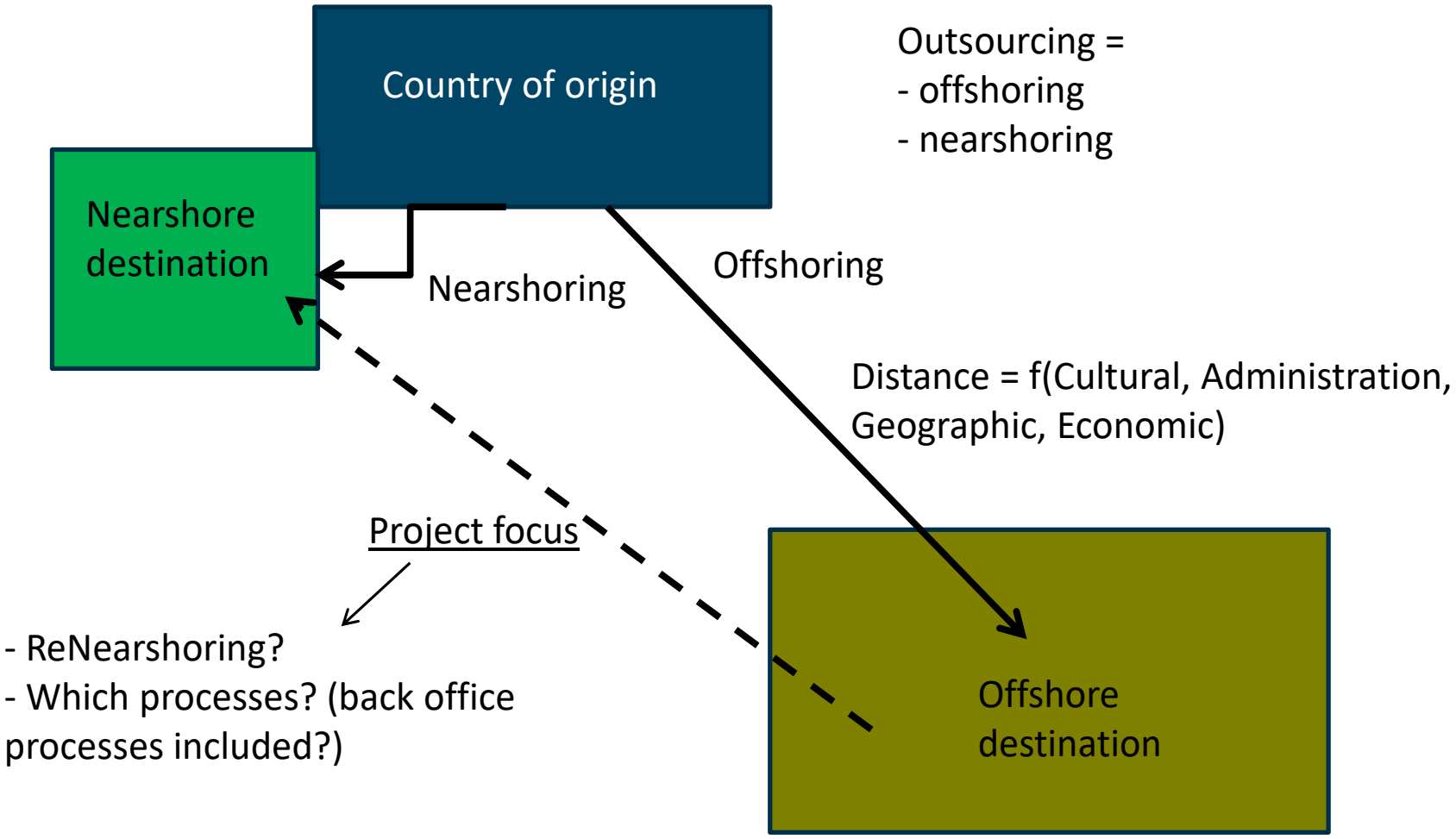
# Nearshoring

- “Sourcing work to a foreign, lower-wage country that is relatively close in distance and/or in time zone. The customer expects to benefit from one or more of the following constructs of proximity: geographic, temporal, cultural, linguistic, economic, political, and historical linkages.” (Autesserre, 2012)
- By the expansion of the European Union (EU), lifting trade barriers and the implementation of the NAFTA agreement: direct competition between “nearshore” and “farshore” countries.
- US and Canada → Mexico, Brazil and other Central- and South-American countries
- Western-Europe → Central- and Eastern-European (CEE) regions

# COVID-19

- Nearshoring not caused but triggered and re-inforced by COVID-19
- Past decade: gradual shift
- Supply chain and production control: food, medicine, protective wear, replacement components for essential equipment, etc.)
- COVID-19 was also not the first, but most certainly the largest, test for the globalized production and supply system

# Concepts

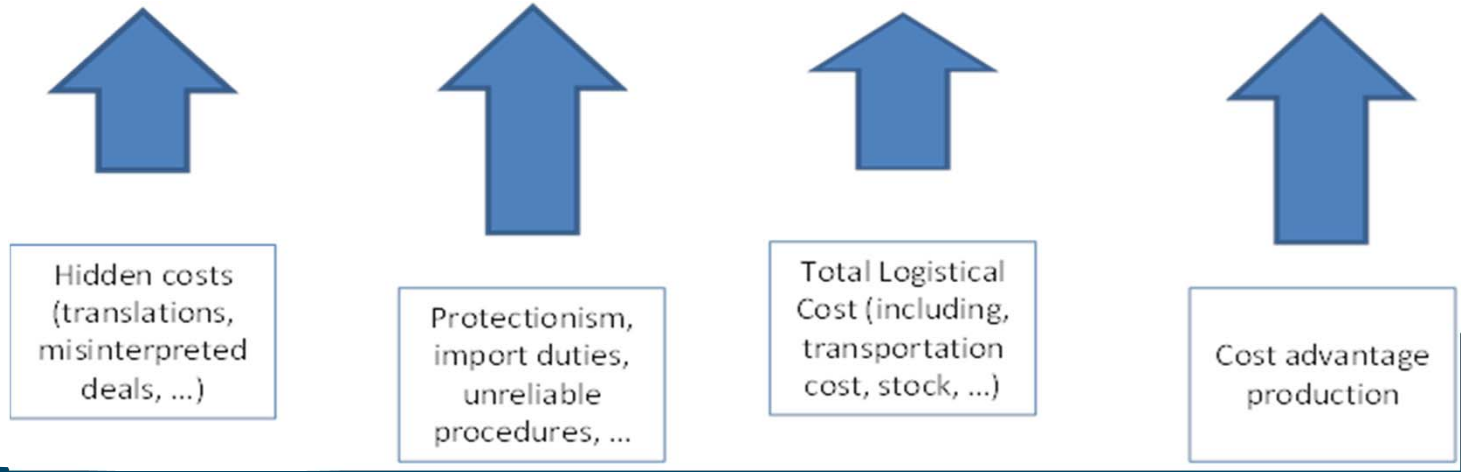



Based on Ahmed & Erber (2005)

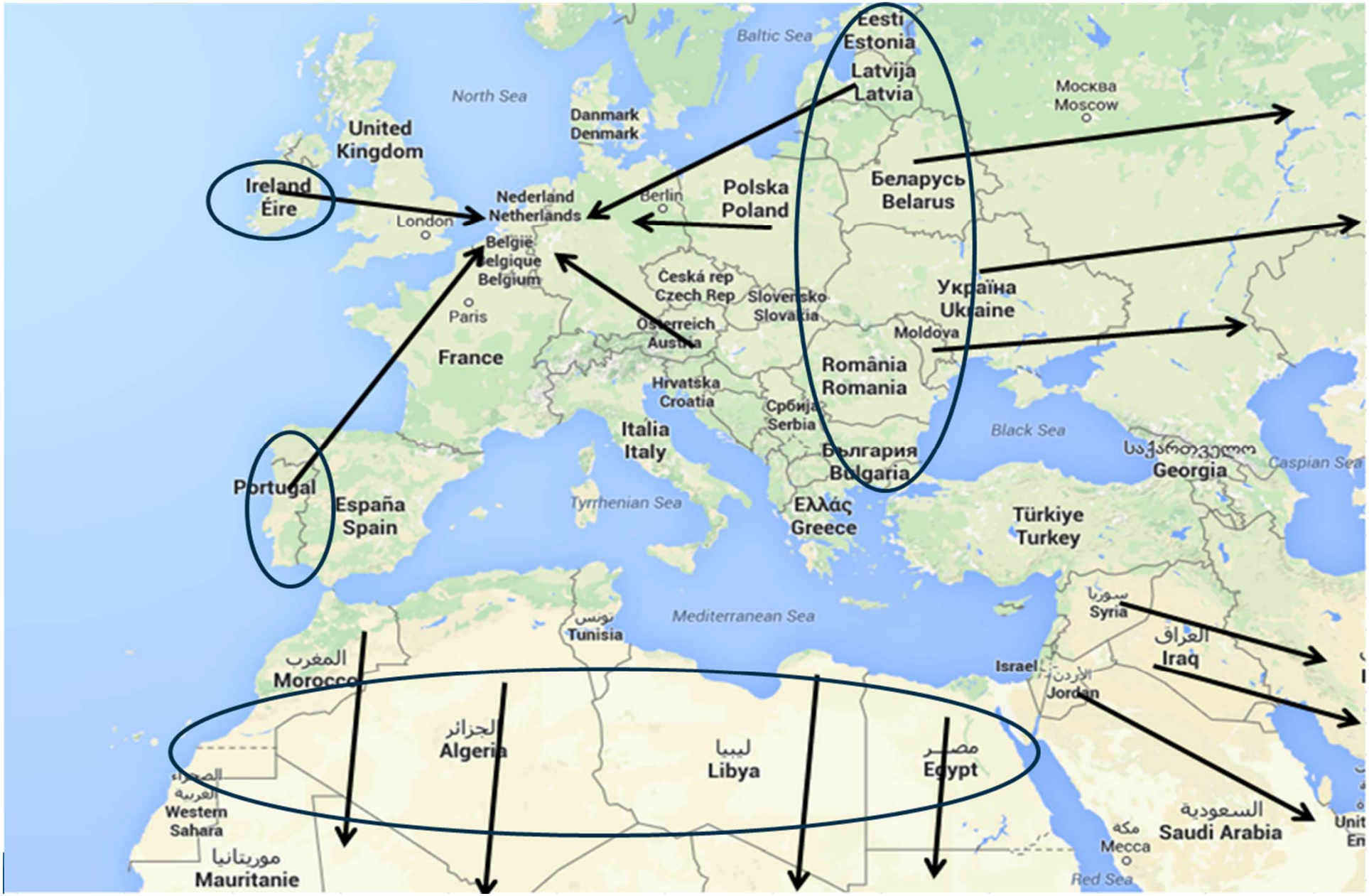
# Distance

| Distance parameter: | Cultural | Administrative | Geographic | Economic |
|---|---|---|---|---|
| Attributes of distance: | Languages | Colonial ties | Physical distance | Difference in consumer income |
| | Religions | Monetary union | Lack of common border | Difference in cost and quality of: |
| | Social norms | Political situation | Sea access | * Natural resources |
| | | Institutional weakness | Infrastructure links | * Financial resources |
| | | | | * Human resources |
| | | | | * Infrastructure |

Ghemawat (2007)



# Distance applied



# Characteristics of nearshoring

| Candidate-domains | Motives | Barriers | Risks |
|---|---|---|---|
| - Management of a sub-task<br>- Operational processes<br>- Back office processes | - Costs<br>- Human resources<br>- Herd behavior | - Management (control and risk)<br>- Out-of-stock issues<br>- Transport cost (varying lead times) | - Import duties<br>- Transport: time and cost<br>- Political stability<br>- Currency value<br>- Labour circumstances<br>- Language<br>- Education<br>- Infrastructure |

Source: own composition based on various sources

# Modified context

| | Positive motives for reshoring | | Negative motives for offshoring |
|---|---|---|---|
| 1 | Skilled working population | 1 | Lead time |
| 2 | Image / brand | 2 | Quality |
| 3 | Government support | 3 | Increasing wages |
| 4 | Automation | 4 | Freight prices |
| 5 | Energy price | 5 | Total cost |
| 6 | Product redesign | 6 | Stock |
| 7 | Higher productivity | 7 | Risk of chain interruption |
| 8 | R&D | 8 | IP |
| 9 | Process improvements | 9 | Delivery |
| 10 | Synergies with ecosystems | 10 | Communication |

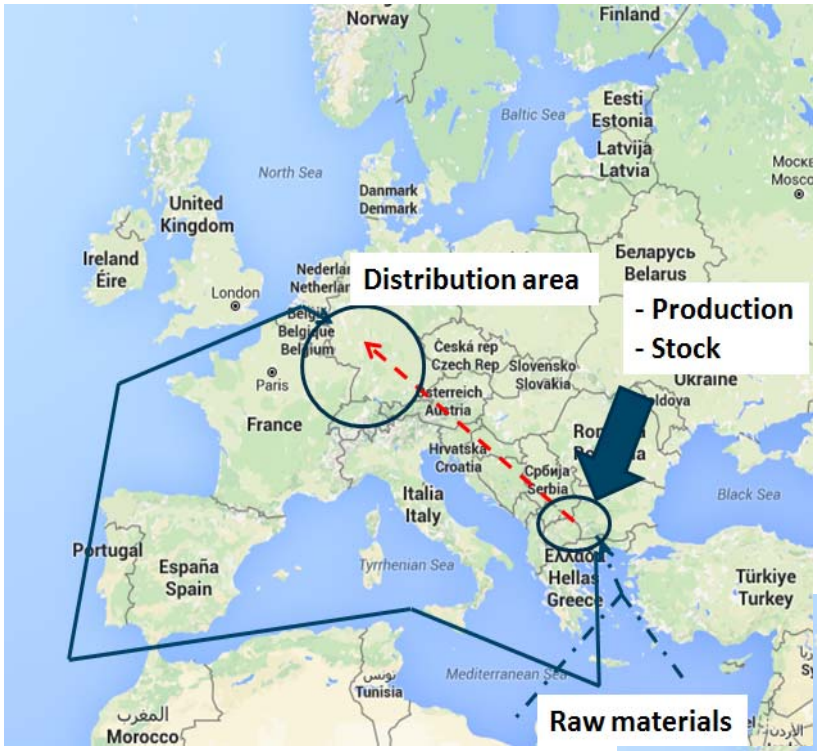
Source: AlixPartners, 2015

# Product types

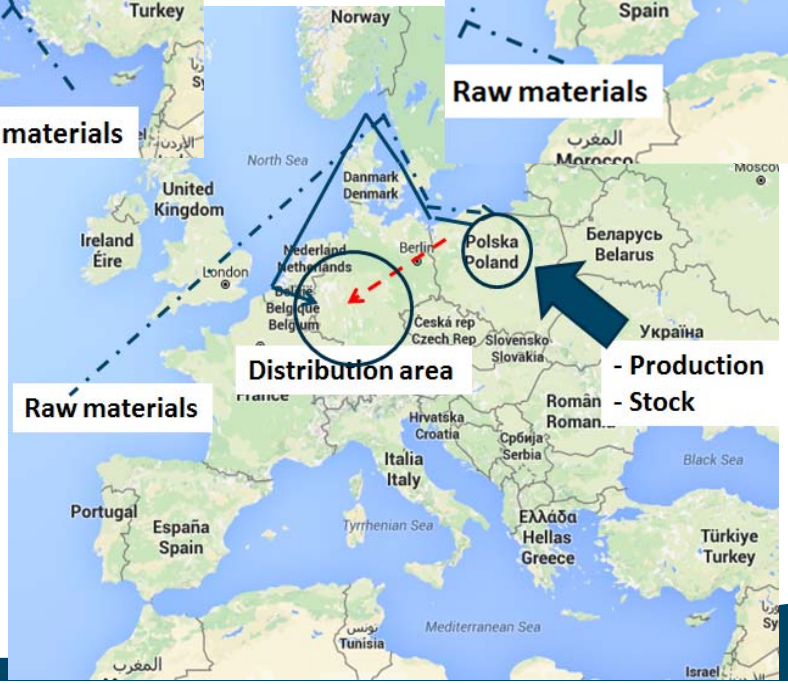
| Sector | | Global innovation for local markets | Regional processing | Energy- / raw material intensive goods | Global technologies / innovators | Labour-intensive trading goods |
|---|---|---|---|---|---|---|
| Sub-sector | | Chemicals, motorized and other vehicles, machines | Rubber and plastics, finished metal products, food and drinks, tobacco, printing | Wood, refined petrol and cokes, paper, minerals, base metals | Office equipment, semiconductors, electronics | Textile, furniture, toys |
| Industry share (%) | | 34 | 28 | 22 | 9 | 7 |
| Characteristic scores (1 = not important, 2 = slightly important, 3 = important, 4 = very important | R&D intensity | 3.4 | 2 | 1.6 | 4 | 2 |
| | Labour intensity | 1.6 | 3.5 | 2.4 | 1.66 | 4 |
| | Capital intensity | 1.8 | 2.25 | 3.4 | 3.33 | 1.5 |
| | Energy intensity | 2 | 2.75 | 4 | 1 | 2.5 |
| | Trade intensity | 3 | 1 | 1.6 | 4 | 4 |
| | Value density | 2.8 | 2 | 1.2 | 4 | 3 |

# Reference scenario

# Alternative scenarios

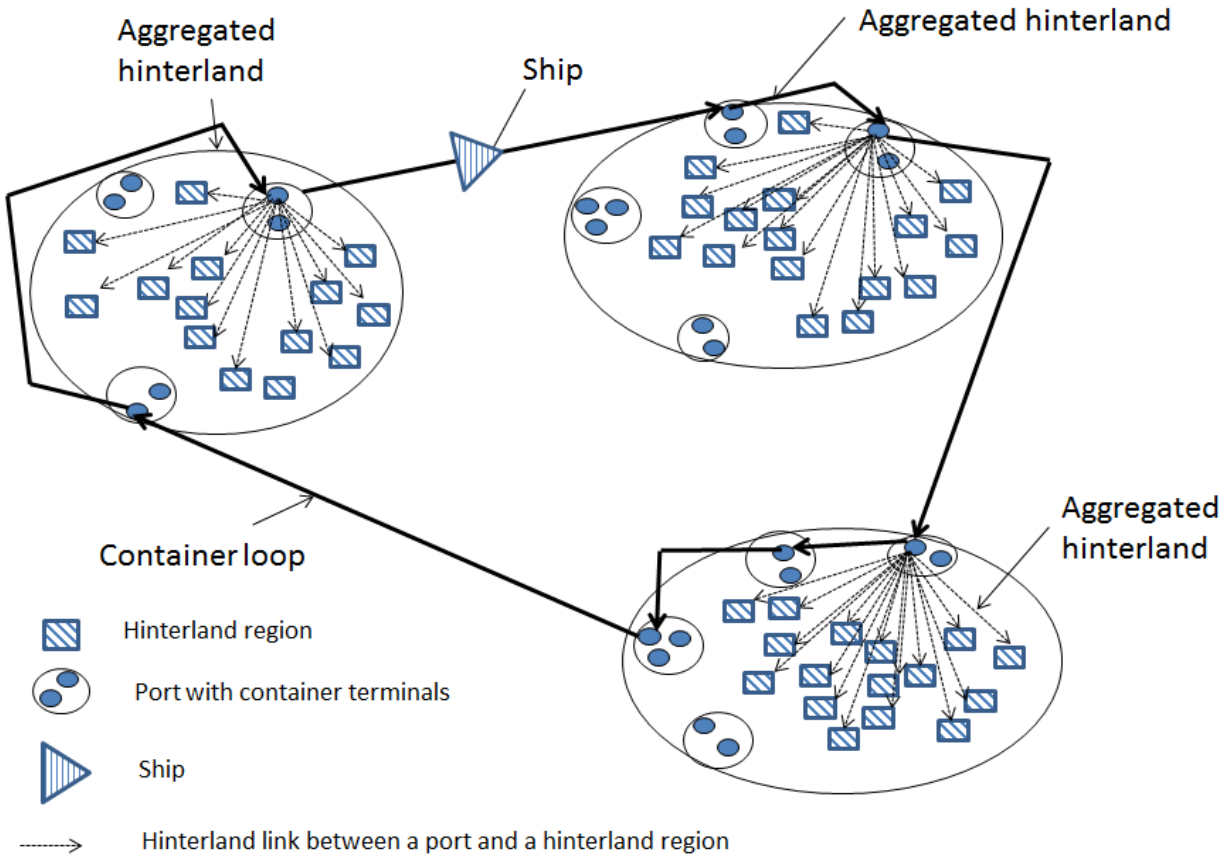






# Quantitative: Total cost of ownership

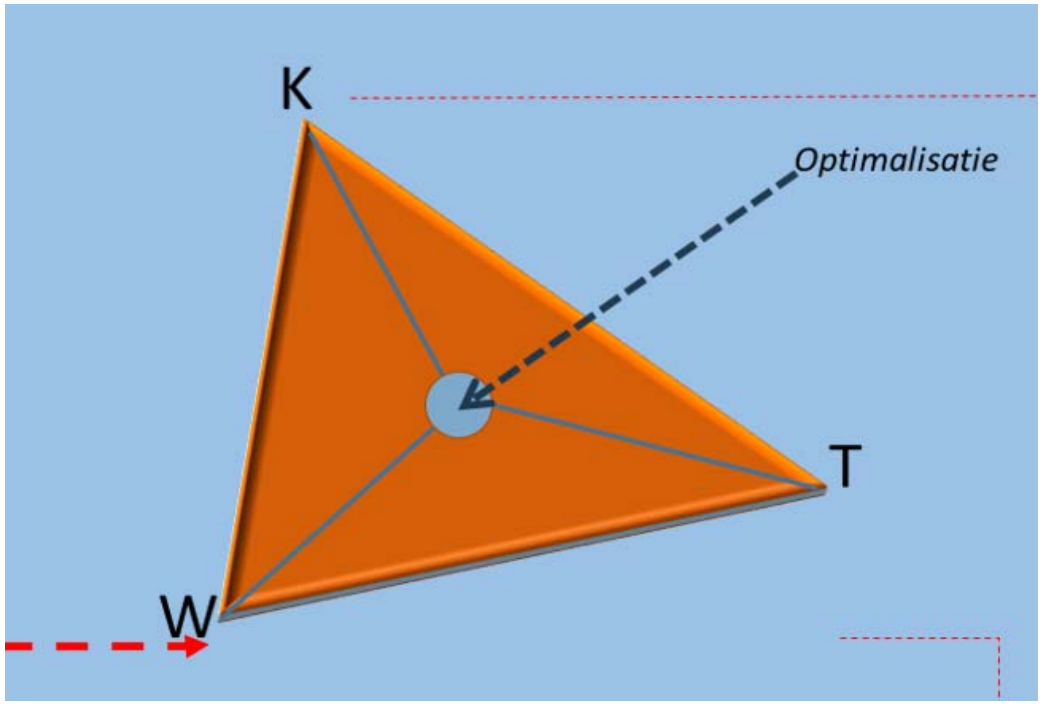
## Transport: TPR Chain Cost Model




+ Air

+ R&D, materials, wages, energy and manufacturing

# Qualitative: Time, value, cost




Global Innovation Index

Global Competitiveness Report

# Case assumptions

- Final destination of the goods is assumed to be Kortrijk (Belgium).
- 30 container shipments per year are needed
- The current transport mix is taken to be 90% maritime and 10% rail, which implies no usage of rail nor air.
- Two alternative transport mixes

| Mode | Alternative mix 1 (%) | Alternative mix 2 (%) |
|---|---|---|
| Maritime | 10 | 0 |
| Rail | 20 | 30 |
| Road | 50 | 70 |
| Air | 20 | 0 |

- ‘Global innovation for local markets’
- Production costs are assumed equal to €5,000,000 for the reference scenario.
- R&D, materials, energy and manufacturing are considered fixed, no matter the scenario.

# Results

| | China | Macedonia | Poland | Benelux |
|---|---|---|---|---|
| **Production costs (€)** | | | | |
| R&D | 200000 | 200000 | 200000 | 200000 |
| Materials | 3400000 | 3400000 | 3400000 | 3400000 |
| Wages | 250,000 | 174,000 | 394,000 | 1,901,000 |
| Energy | 150,000 | 150,000 | 150,000 | 150,000 |
| Manufacturing | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 |
| Total | 5,000,000 | 4,924,000 | 5,144,000 | 6,651,000 |
| **Transport costs (€)** | | | | |
| Maritime | 51,063 | 54,531 | 46,334 | N/A |
| Rail | 204,608 | 67,027 | 39,724 | 7,587 |
| Road | N/A | 71,687 | 42,316 | 8,411 |
| Air | 1,996,525 | 370,476 | 272,663 | N/A |
| **Lead time (days)** | | | | |
| Maritime | 47 | 30 | 24 | N/A |
| Rail | 20 | 14 | 6 | 4 |
| Road | N/A | 2 | 1 | 0 |
| Air | 3 | 2 | 2 | N/A |
| **Stock costs (€)** | | | | |
| Maritime | 500,000 | 399,527 | 356,682 | N/A |
| Rail | 327,696 | 271,245 | 185,137 | 146,543 |
| Road | 0 | 101,445 | 79,990 | 35,039 |
| Air | 119,774 | 109,492 | 109,913 | 0 |
| **TCO (€)** | | | | |
| Maritime | 5,551,063 | 5,378,057 | 5,547,016 | N/A |
| Rail | 5,532,304 | 5,262,272 | 5,368,861 | 6,805,130 |
| Road | N/A | 5,097,131 | 5,266,305 | 6,694,449 |
| Air | 7,116,300 | 5,403,968 | 5,526,575 | N/A |
| Current transport mix cost (€) | 5,549,187 | 5,366,479 | 5,529,201 | N/A |
| Alternative transport mix 1 cost (€) | N/A | 5,219,619 | 5,366,941 | N/A |
| Alternative transport mix 2 cost (€) | N/A | 5,146,673 | 5,297,072 | 6,727,654 |

# Results qualitative

| | Alternative 1 | Alternative 2 | Alternative 3 |
|---|---|---|---|
| **Cost** | 40 | 80 | 10 |
| **Value** | 30 | 10 | 45 |
| **Time** | 30 | 10 | 45 |

| | Cost | Value | Time | Weighted sum 1 | Weighted sum 2 | Weighted sum 3 |
|---|---|---|---|---|---|---|
| **Rank 1** | Macedonia | Belgium | Belgium | Belgium | Macedonia | Belgium |
| **Rank 2** | Poland | Macedonia | Macedonia | Macedonia | Belgium | Macedonia |
| **Rank 3** | Belgium | China | Poland | Poland | Poland | China |
| **Rank 4** | China | Poland | China | China | China | Poland |

# In summary

| | Qualitative ranking | TCO alternative transport mixes (€) | | |
|---|---|---|---|---|
| | | Current | Alternative 1 | Alternative 2 |
| **Rank 1** | Belgium | N/A | N/A | 6,727,654 |
| **Rank 2** | Macedonia | 5,366,479 | 5,219,619 | 5,146,673 |
| **Rank 3** | Poland | 5,529,201 | 5,366,941 | 5,297,072 |
| **Rank 4** | China | 5,549,187 | N/A | N/A |

# Conclusion

- Nearshoring has potential
- It is increasingly being considered by production companies
- Not a solution for any goods type and for all producers: depending on conditions
- Tool is not an exact company-specific calculation!

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# Closing


## Guy Haesevoets

*Director Corporate Banking*

# Volgende events

- 2nd BNP Paribas Fortis Port Co.Innovation Happy hour
- 3nd BNP Paribas Fortis Port Co.Innovation Happy hour
- Spring 2021: 10 jaar Chair BNP Paribas Fortis Transport, Logistics and Ports

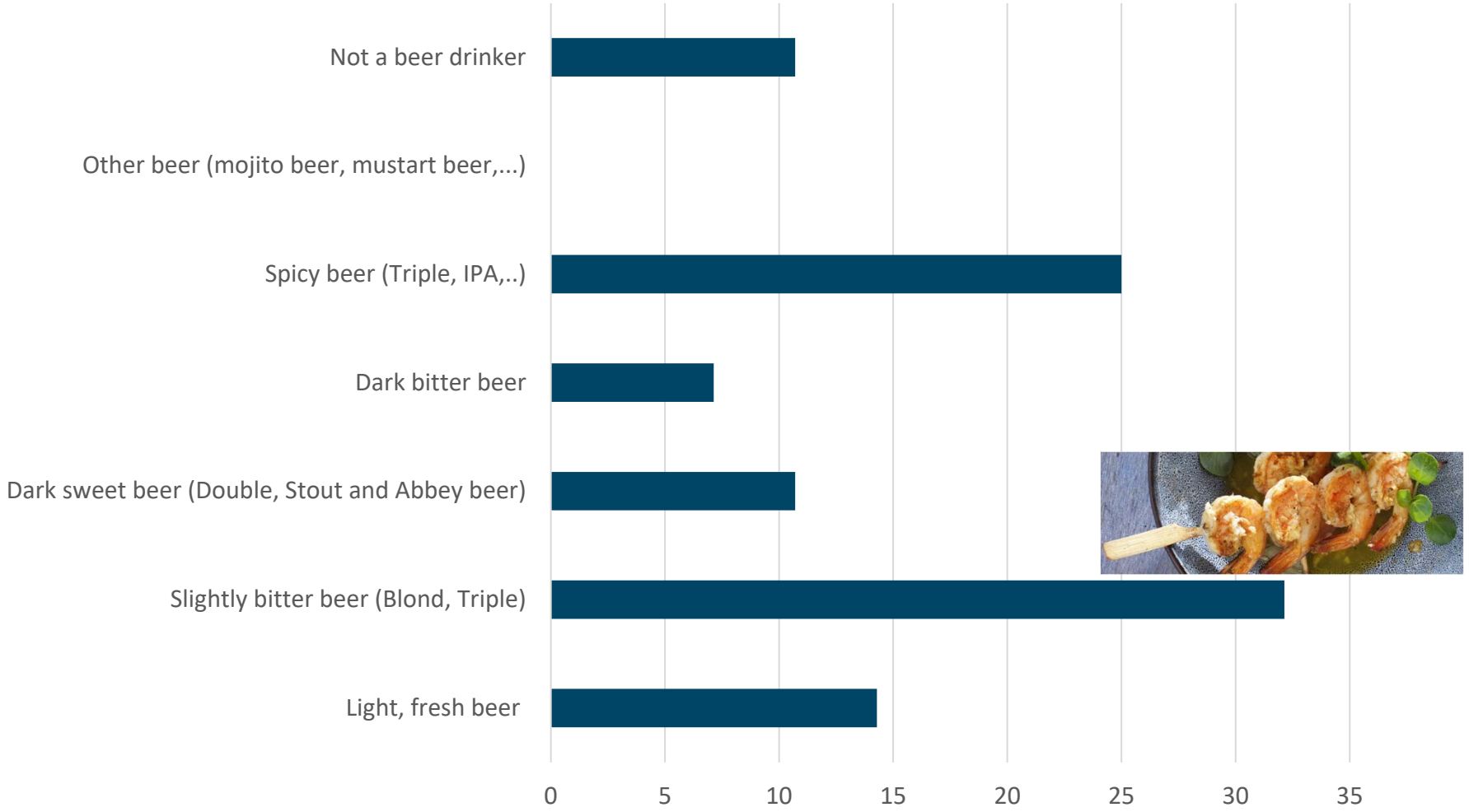
>>Want to cooperate: christa.sys@uantwerpen.be

# BNPPF Port Co.innovation Happy Hour


Apero suggestion: Tuna cheese ball (with gazpacho)

Tuna in its own juice, 40gr spreadable (goat) cheese, 50g peeled pistachios (roasted), allspice d'Espelette (or black pepper + chilli powder): mash drained tuna with cheese to a homogeneous mixture, season and mix again. Taste and spice up if necessary. Put in the fridge for 15 minutes so that the mixture can stiffen. Meanwhile, crochet the pistachios very fine (no powder, however). Wet your hands and make balls of a. 2 cm, roll in pistachio crumb so that a nice pistachio layer is round. Do not serve immediately: keep cold until the moment of serving. A step further: pour gazpacho into a glass, tuna-cheese ball on a skewer. Enjoy

# COVID safe happy hour: a beer taster first learns to recognize the five flavor profiles



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# Put Belgian beer in bags for maritime transport


Wout Mampaey

*Student Universiteit Antwerpen*

TPR
Departement of Transport and Regional Economics
University of Antwerp