



University of Antwerp
| TPR | Department of Transport
and Regional Economics

Supply Chain Reality

BNP Paribas Fortis Chair and Dennie Lockefer Chair

House rules



Participants other than speakers are **muted**.



Please write **questions** as the talk is progressing **in the Q&A**. The chair of the session will then serve as host and call upon you to ask your questions directly (allowing speaking/ microphone privileges) at the end. Do not ask the question in an anonymous mode as we will not be able to find you to give you microphone access.



If you have no microphone capabilities and still would like the question to be read out for you, please indicate this by **raising your hand**. Keep the questions short and to the point.



The session will be **recorded**. You will receive info on recording/presentation after the webinar



Technical issues: mail to katrien.storms@uantwerpen.be



Welcome

Prof. dr. Christa Sys

- Holder BNP Paribas Fortis Chair
- Promotor Dennie Lockefer Chair
- Professor University of Antwerp

Dennie Lockfeer Chair

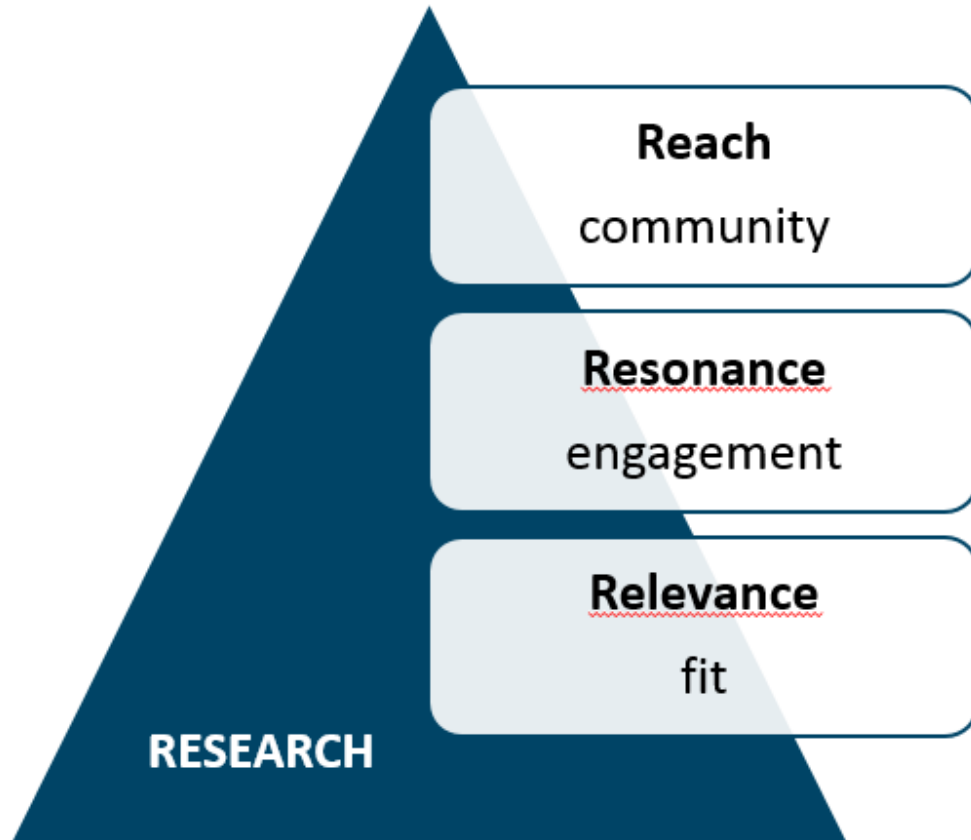
Unique ecosystem of 33 companies and 'friends of the chair'



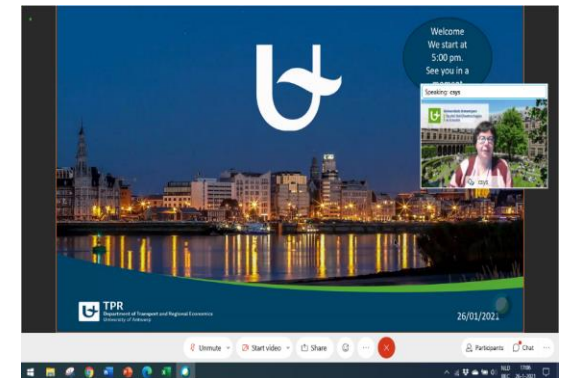
BNP Paribas Fortis chair Transport, Logistics and Ports



A bridge between scientific research, industry and education around new development in the maritime, logistics & transport sector.



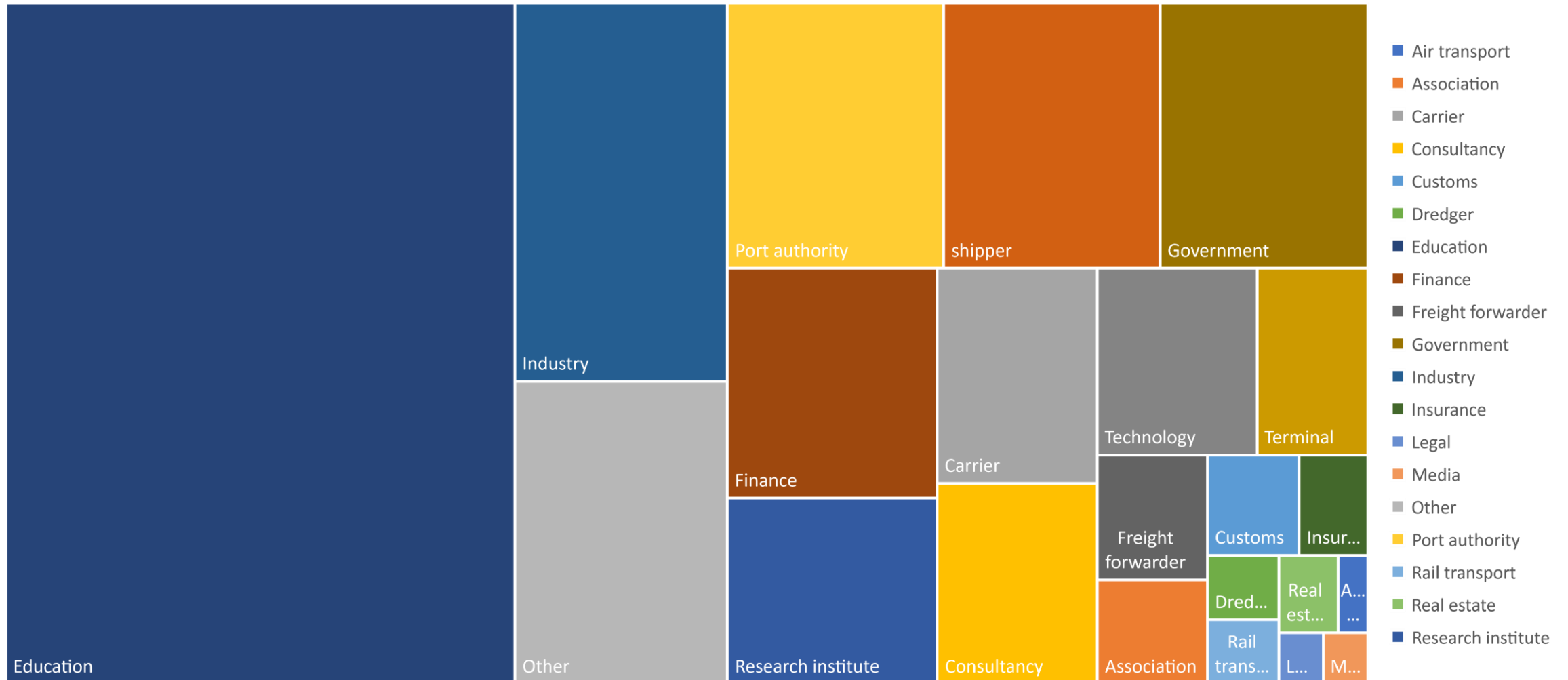
- BNP Paribas Fortis Port Co.Innovation /Happy Hours(online)
- Shipping event



Program

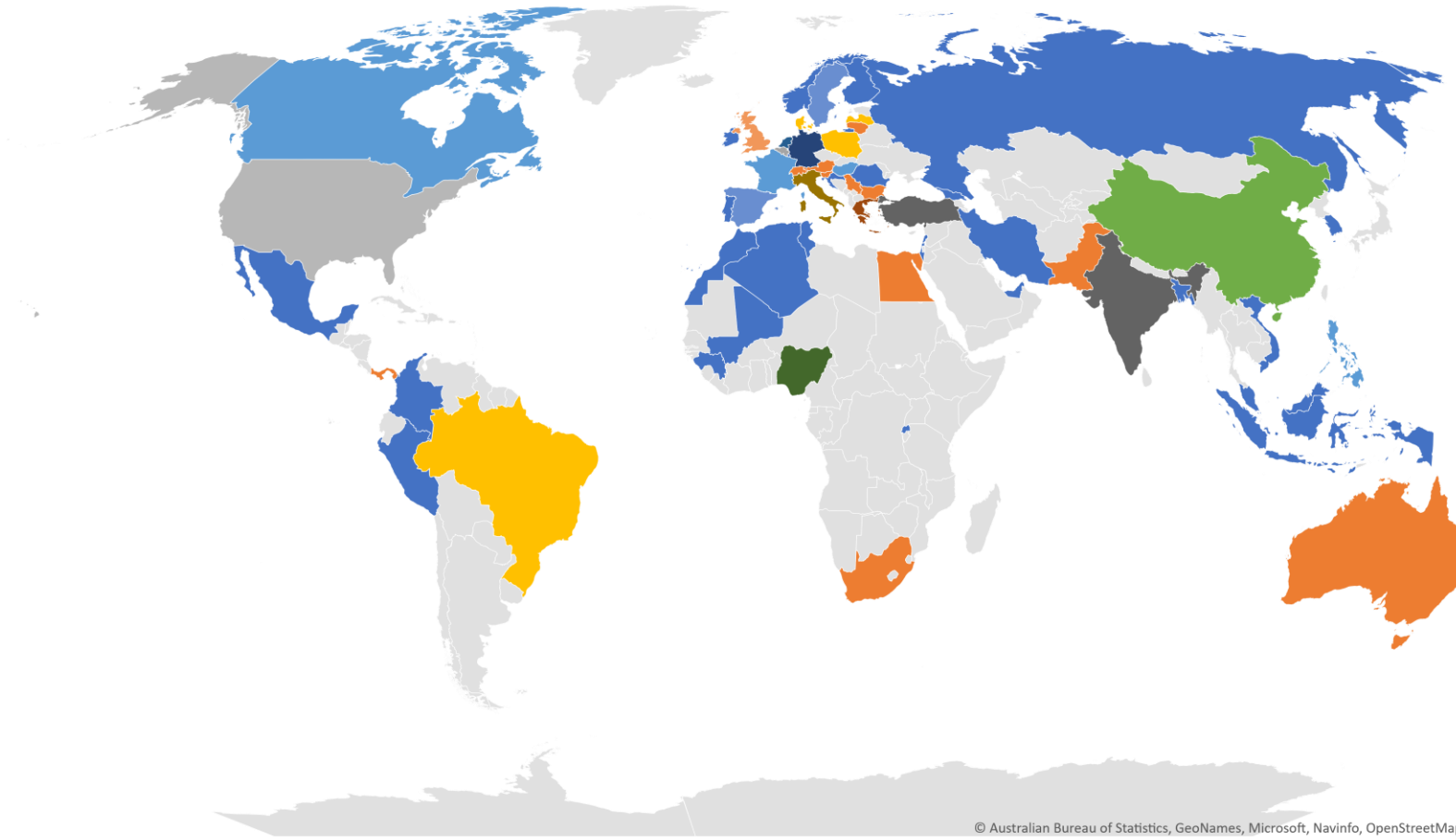
| Timing | Speaker |
|-----------------------|--|
| 4:30 p.m. – 4:40 p.m. | Welcome by Prof. dr. Christa Sys, holder BNP Paribas Fortis Chair and promotor Dennie Lockefer Chair |
| 4:40 p.m. – 5:00 p.m. | Supply Chain Reality presented by prof. dr. Thierry Vanellander |
| 5:00 p.m. – 5:20 p.m. | Research “Demurrage and detention: from operational challenges towards solutions” by Katrien Storms, holder Dennie Lockefer Chair |
| 5:20 p.m. – 5:40 p.m. | Setting the scene: 3 partners Dennie Lockefer Chair moderated by prof. dr. Christa Sys: <ul style="list-style-type: none">- Customs: Kurt Crauwels, Customs Support;- Legal: Philip Vanlommel, Ponet & LVP Advocaten and;- Finance: Guy Haesevoets, BNP Paribas Fortis |
| 5:40 p.m. – 6 p.m. | Q&A by Katrien Storms |
| 6 p.m. | Closing by prof. dr. Thierry Vanellander, promotor Dennie Lockefer Chair |

411 registrations – Profiles



411 registrations – Nationalities

- 60 countries



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Supply Chain Reality

Thierry Vanellander



University of Antwerp
TPR | Research Group Transport
and Regional Economics

Dennie Lockefer
Chair



Dear,

The Dennie Lockefer Chair organizes the lecture 'Supply Chain Reality' on **20 January at 4.30 p.m. (CET)**. In order to make an actual representation of the challenges encountered in the supply chain, it is interesting to inquire input by a questionnaire. In this way, we can already take into account the challenges you have in your supply chain as well as the implemented solutions or the solutions you have in mind. We, therefore, ask you to share your opinion, experiences, implemented solutions etc., in the questionnaire below.

The questionnaire consists of 13 questions covering general identification, questions regarding supply chain reality and solutions. Your input will be processed anonymously and will contribute to the first part of the lecture. Deadline: **before 17th of January 2022.**

The data is not reported individually. For more information regarding your rights in this regard and the privacy policy pursued at our institution, we would like to refer you to [our Privacy Statement](#).

Thank you for your cooperation, Katrien Storms, [holder of the Dennie Lockefer Chair](#)



Survey

- Objective: gaining insight into SCR
- Approach: input via Qualtrics
- Response ratio: 79 → 72 complete responses
- Building blocks survey (13 questions)



WHAT IS SCR?



RANKING



COSTS –
BENEFITS



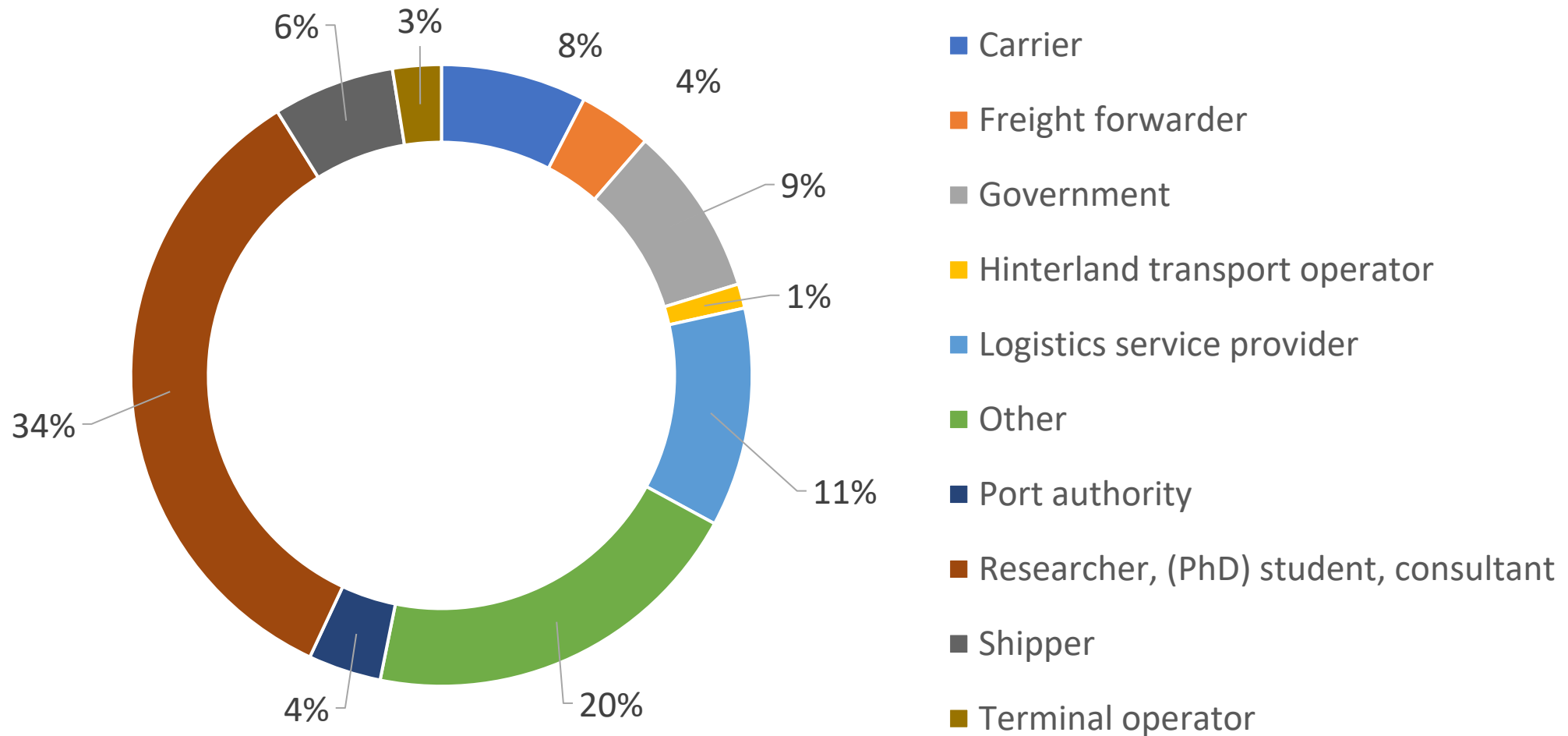
SOLUTIONS



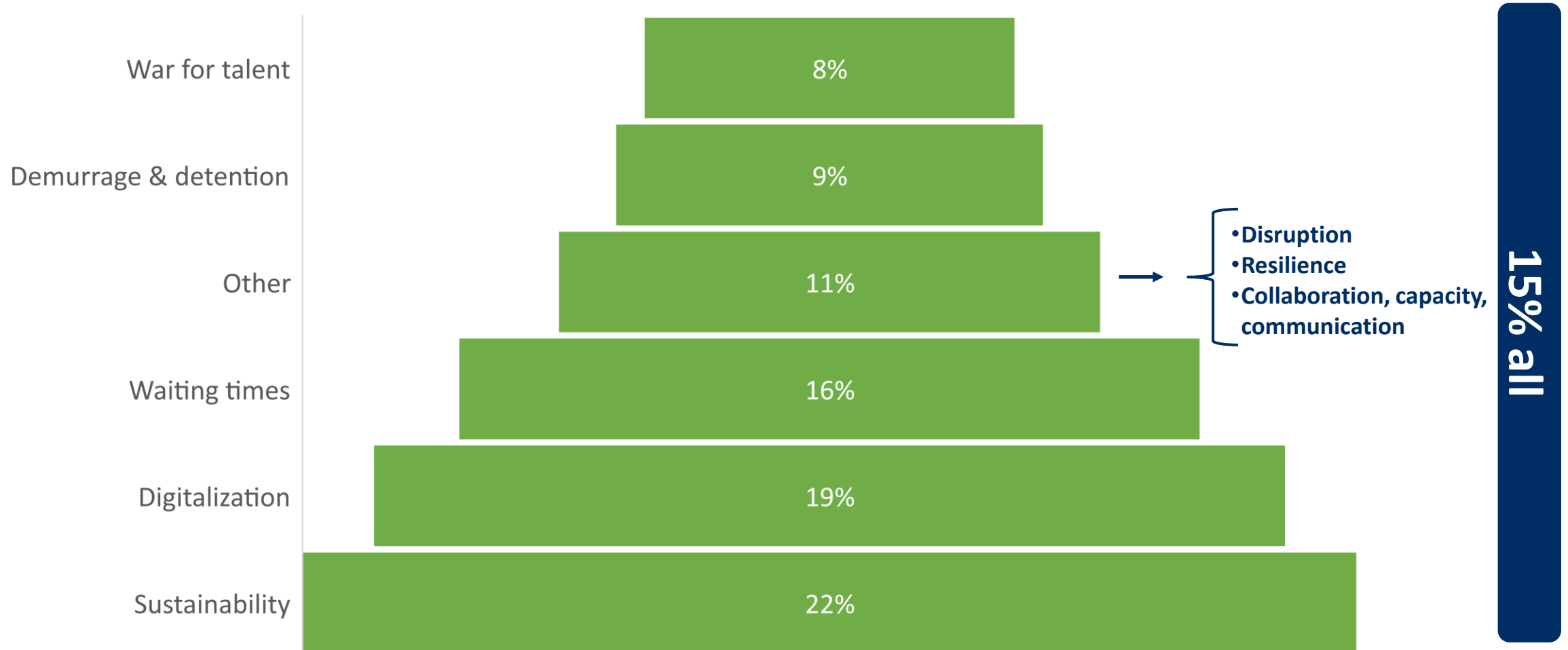
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Results - Profile

2/3 industry

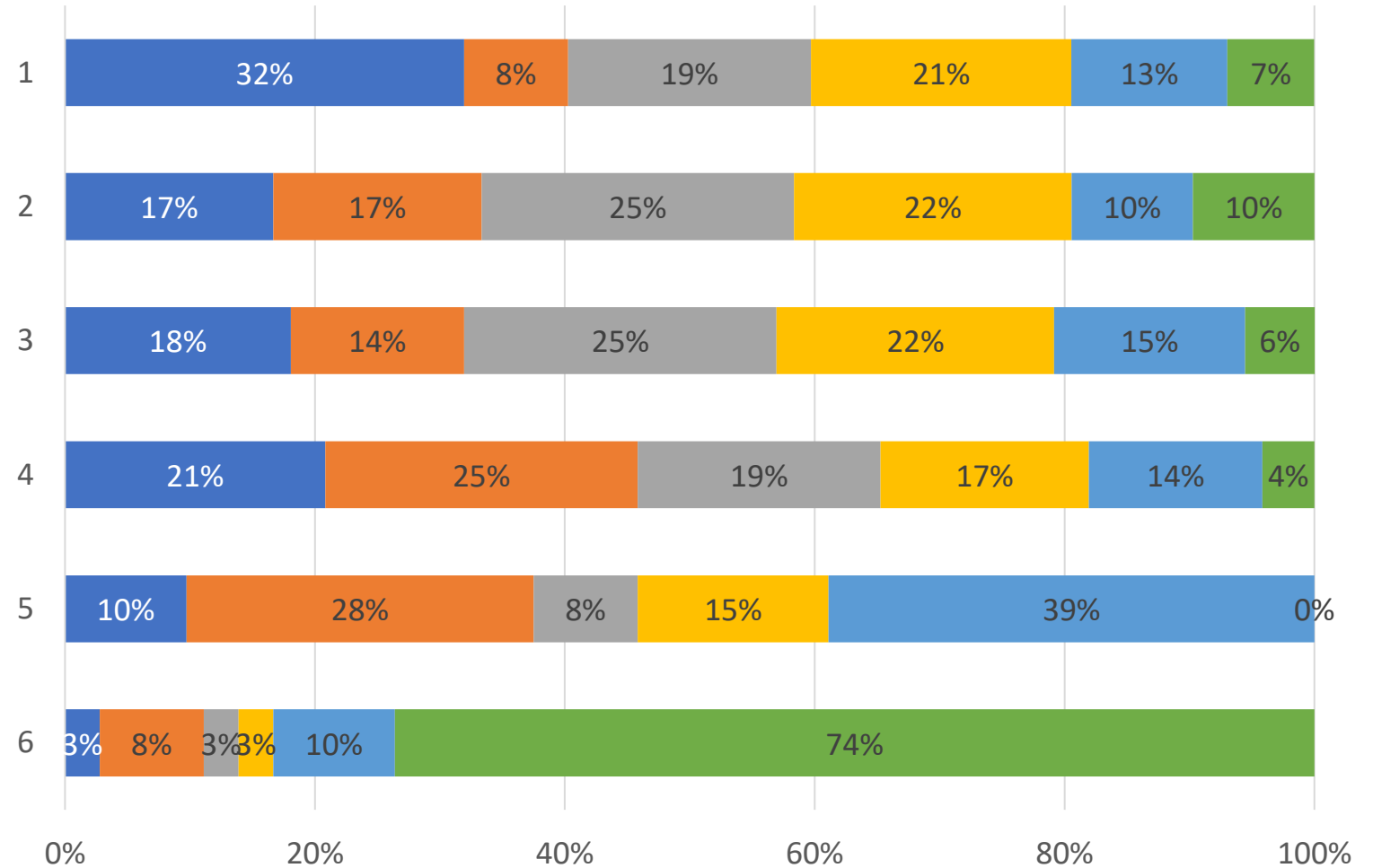


Results – What is Supply Chain Reality?



Results

- Overall ranking
- 1: most important
- Top 3:
 1. Waiting times
 2. Digitalization
 3. Sustainability



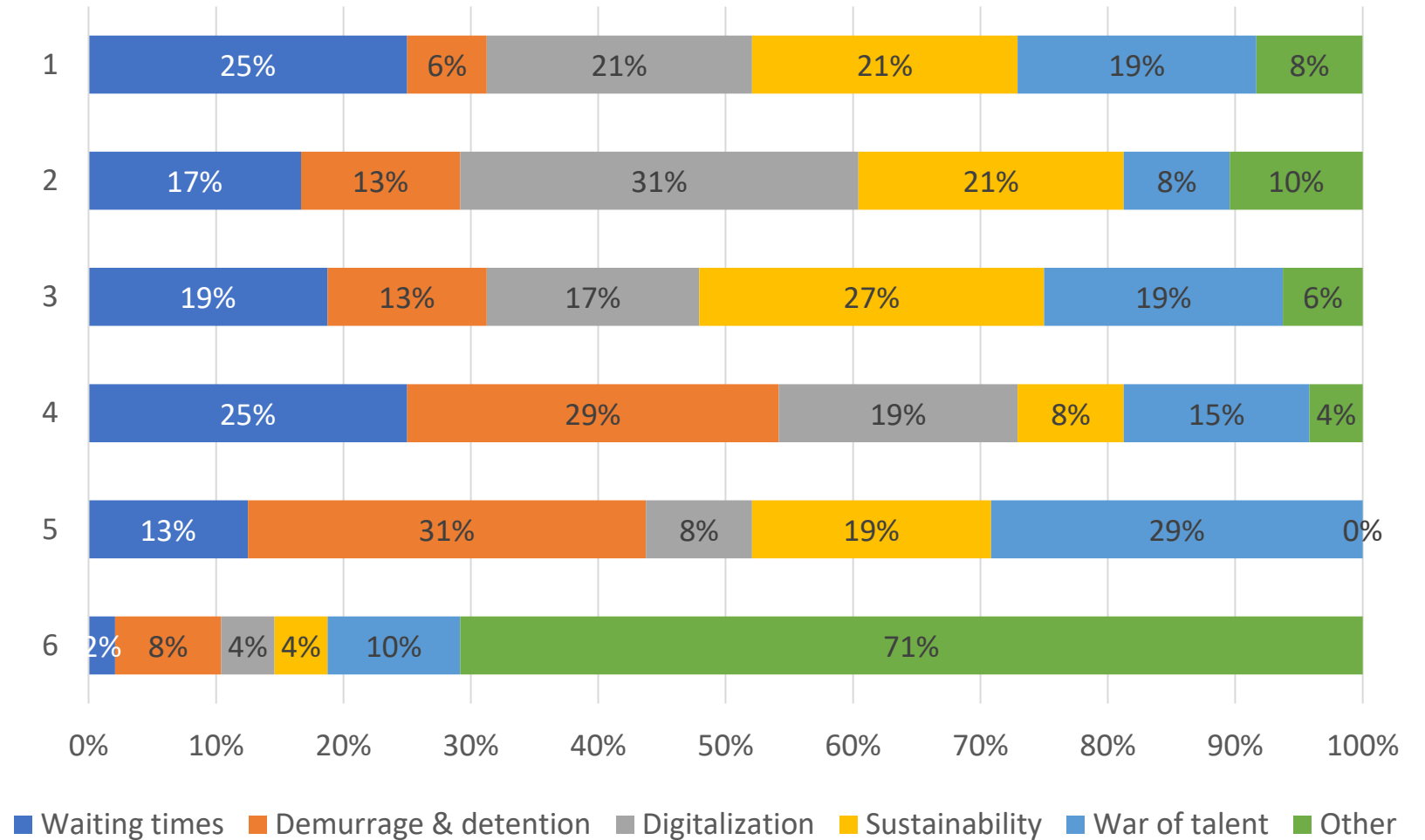
■ Waiting times ■ Demurrage & detention ■ Digitalization ■ Sustainability ■ War of talent ■ Other

Results

- Ranking by industry (67%)

- Top 3:

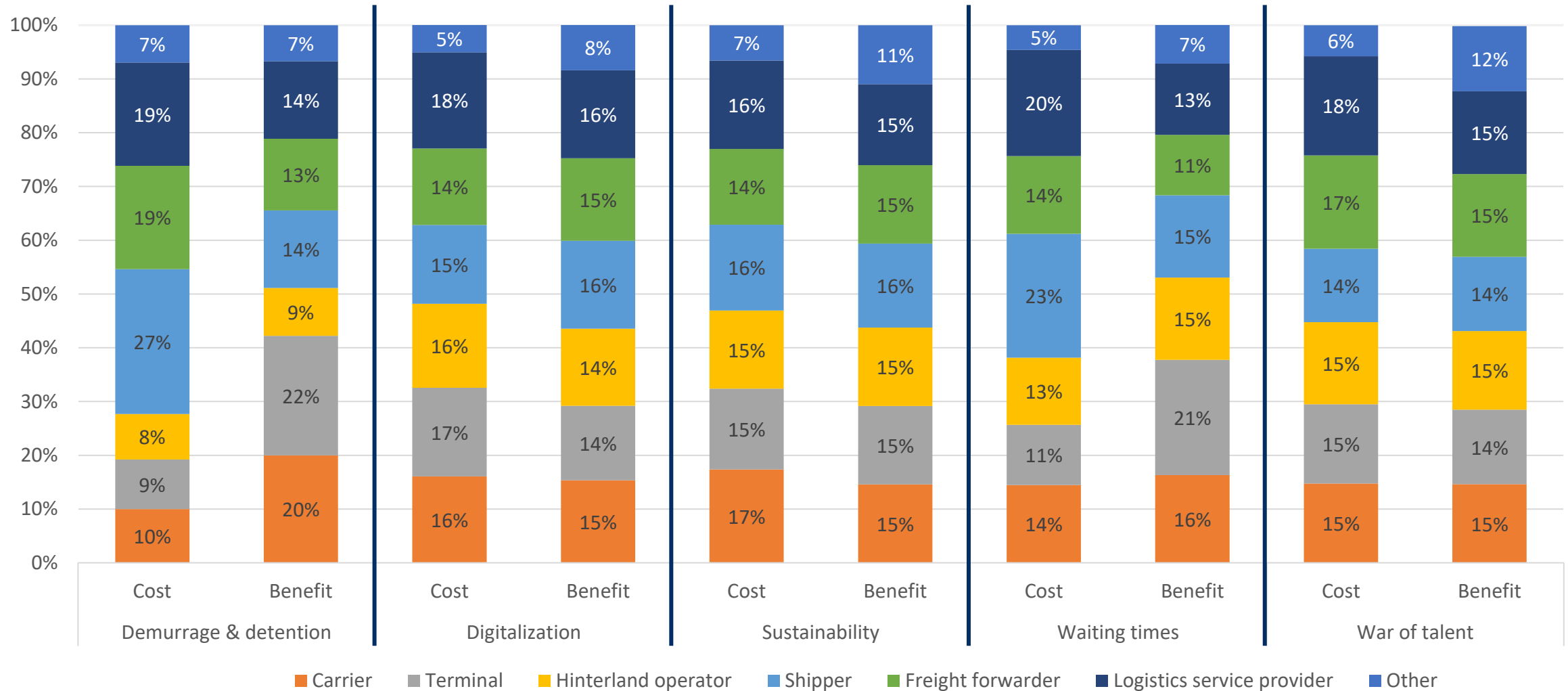
1. Waiting times
2. Digitalization
3. Sustainability



Results – Reasons top 3

| Waiting times | | Digitalization | Sustainability | |
|------------------------|---------------------|---|---|--|
| Important | Unimportant | Important | Important | Unimportant |
| (Extra) Costs | Temporary | Impact on cost | Financial stability in the long run/avoid losses of investments | Cost-efficiency still rules over sustainability in decision making |
| Congestion | Will resolve itself | Efficiency | Climate change | |
| Time of delivery | Can be optimized | Future | Public image of shipping | Greenwashing |
| Delay production cycle | | Insight/Flow visibility/Real-time track and trace | To guarantee continuity of business | |
| Decreases reliability | | Optimization | Green economy/Circularity | |
| Increases inventory | | Solve mismatch between supply and demand | License to operate | |
| Shortage containers | | Can minimize waiting time | Changes decision criteria (tender processes) | |
| (Resource) Planning | | Info-sharing among actors | | |
| Customer satisfaction | | Supports innovation | | |
| Unproductive handling | | Data | | |

Results – Costs and benefits



Implemented solutions



Waiting times

- Improvement in terminal efficiency
- Planning
- Safety buffers
- Adapt scheduling
- Higher inventory
- Slack management
- Transparent processes



Digitalization

- Automation
- Software
- Internal solutions
- CPU, NxtPort
- Track and trace solutions
- Artificial intelligence
- Worldwide centralized system
- Big data access



Sustainability

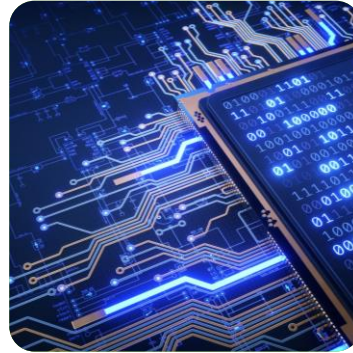
- Different energy sources
- Investments in green alternatives
- Modal shift
- Multimodal solutions
- Round trips

Needed solutions



Waiting times

- Rescheduling of sailings
- Better risk management for cargo clearance agreements
- Sufficient workforce
- Visibility
- Collaborative networks
- Overall agreement between parties



Digitalization

- Standardized data
- Data-sharing
- Regulation
- Cooperation
 - Full digital port community system
 - Involvement of all parties
 - Coordinated systems
 - 1 integrated solution
 - Integration with the customs system
- eCMR, eB/L
- Artificial intelligence
- Real-time visibility



Sustainability

- The synchronicity of transport modes
- Connectivity different modes of transport
- Hardware & software solutions

Key takeaways

- **Waiting times/Digitalization/Sustainability**
 - Not new
 - $1+1+1 = \text{success}$
- **Cost <> benefits**
 - Waiting times and D&D: share cost shippers, forwarders, logistics service providers outweighs share cost carriers, terminals (in relative terms) vice versa benefits
 - Other elements: share cost/benefit per actor less pronounced
 - Further research needed
- **Solutions identified → actions (short – medium – long run)**
- **Collaboration, co.innovation**
- **Maritime ecosystem thinking!**
- **Responses biased by the current situation?**

Demurrage and detention: from operational challenges to solutions

Katrien Storms, Christa Sys, Thierry Vanelslander and Ruben Van Deuren

Research rationale

Starting point of debate

<> Green Deal

Changed practices of shipping companies (at head office)

Reduced free time (+10d > 7d > 5d > 3d)

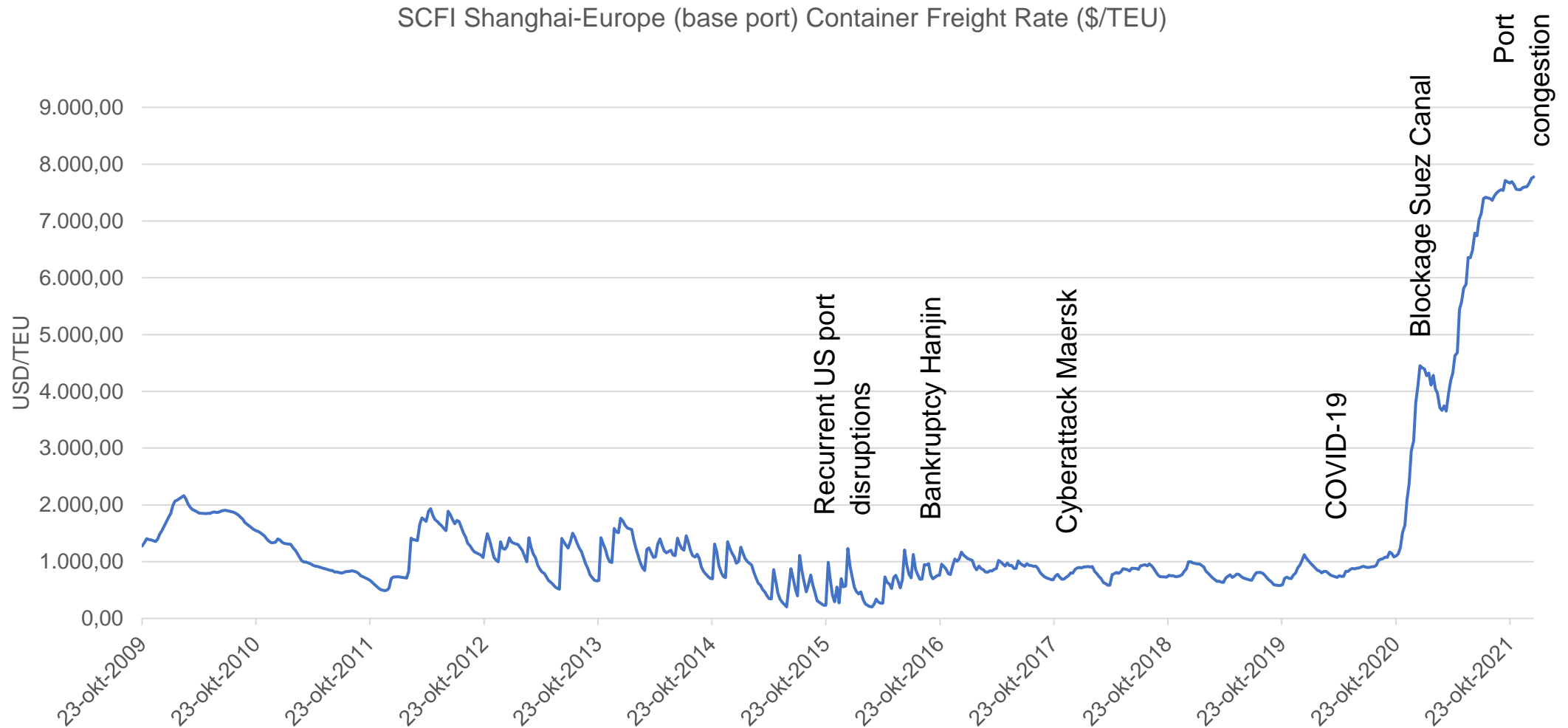
Increased demurrage and detention (D&D) charges

Organizational challenges (e.g. intermodal transport) for the shipper or receiver of the goods

Maritime supply chain more complex

Research rationale

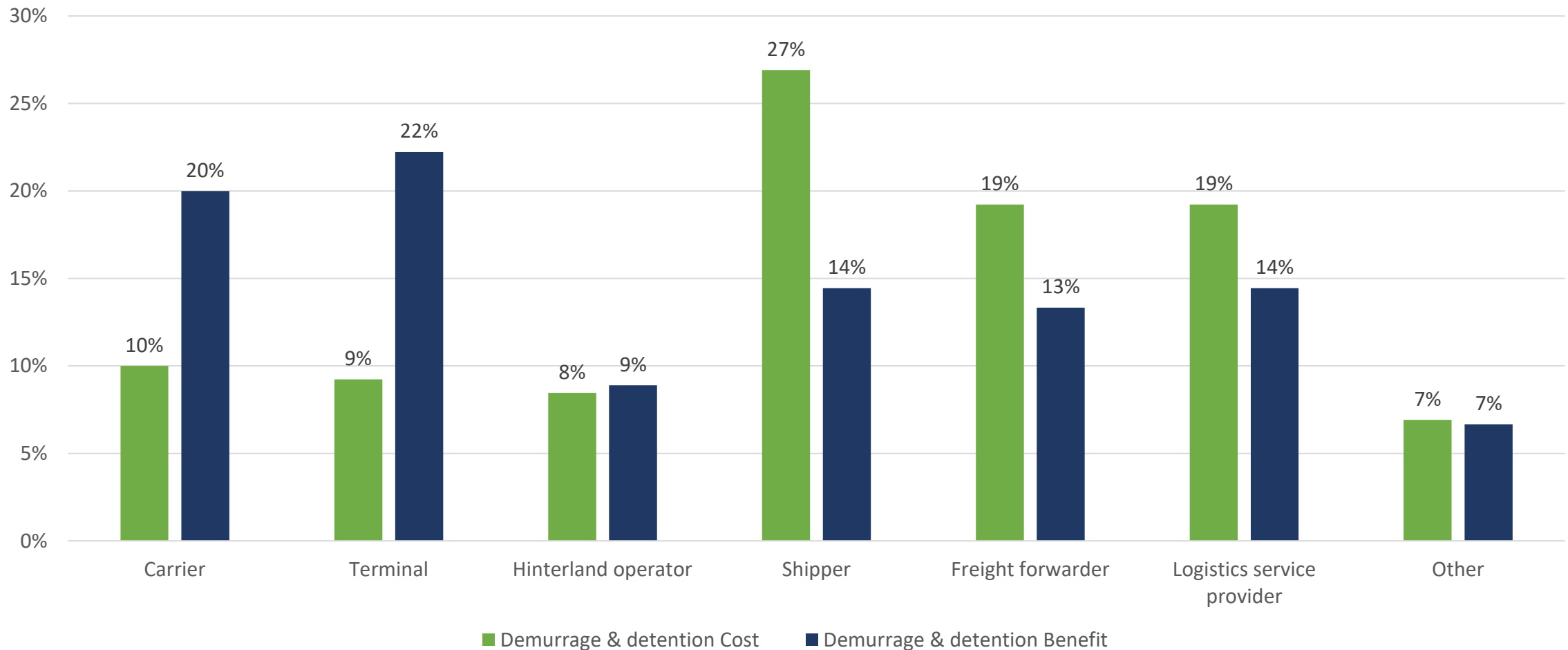
D&D: profit center or not?



Survey results – why D&D (un)important?

| Demurrage and detention | |
|--|--|
| Important | Unimportant |
| Shortage of containers | Charge-through |
| Increases (product) cost for shipper/consignee | Avoidable by planning and having reserves in the chain design and operational patterns |
| Hinders sustainable transport | |
| Negative effect | |
| Is a disruption in SC | |
| Impact on pricing | |
| Cost | |
| Delays shipments, consignment time and shipment arrivals | |

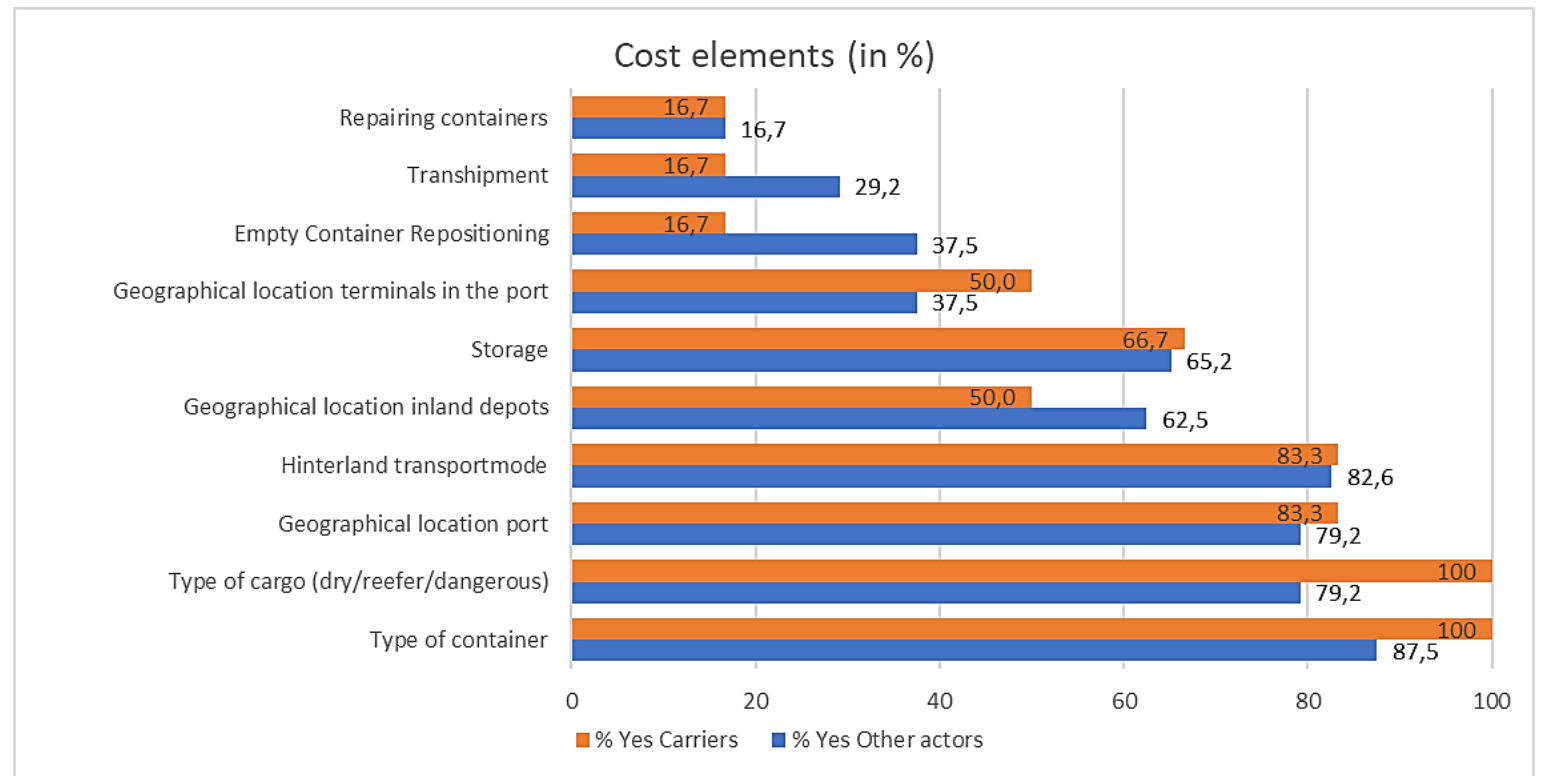
Survey results – Share cost vs. share benefits



Back-to-back compensation

■ Which factors are the basis for D&D?

- Type of container
- Type of cargo
 - Dry, reefer, dangerous
- Geographical location port
- Availability hinterland transport modes



Aim



Clarify commonly used terminology



Identify factors that contribute to D&D



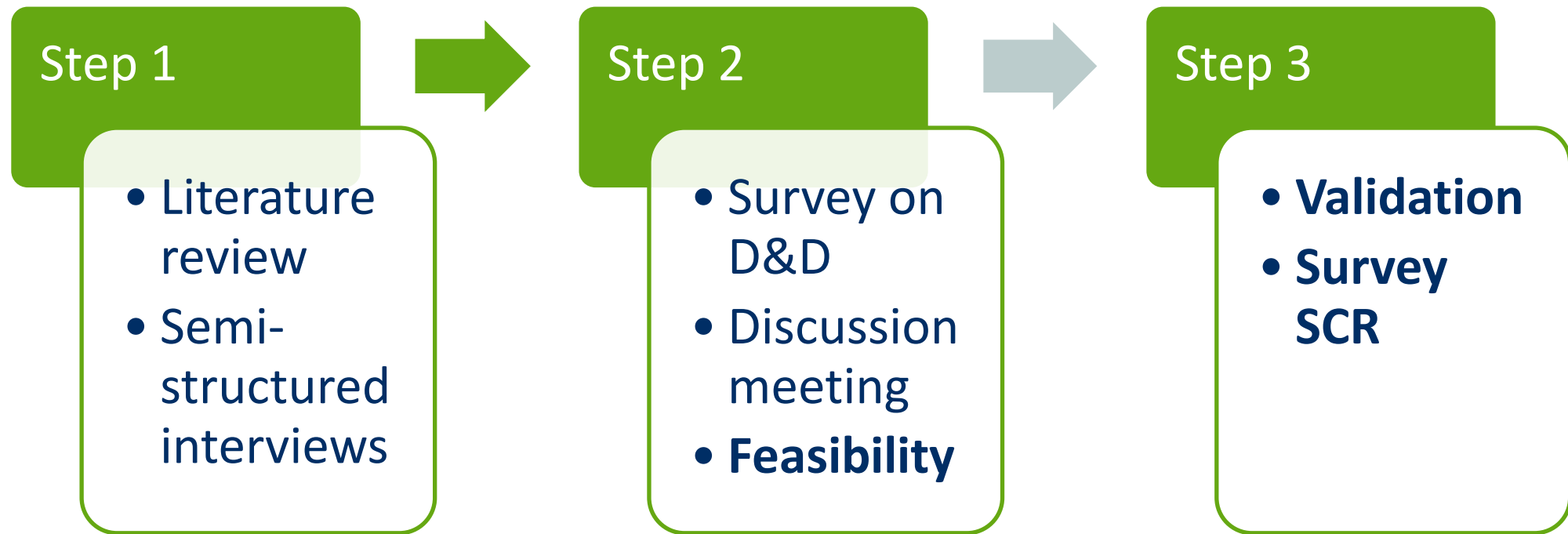
Validate feasible solutions

Research question

- Are D&D functioning properly?
 - Does the use of demurrage and detention hinder the further development of intermodal/sustainable freight transport?
 - What are the solutions that can be put forward?

Research approach

- Focus on container D&D
- 3 step approach:

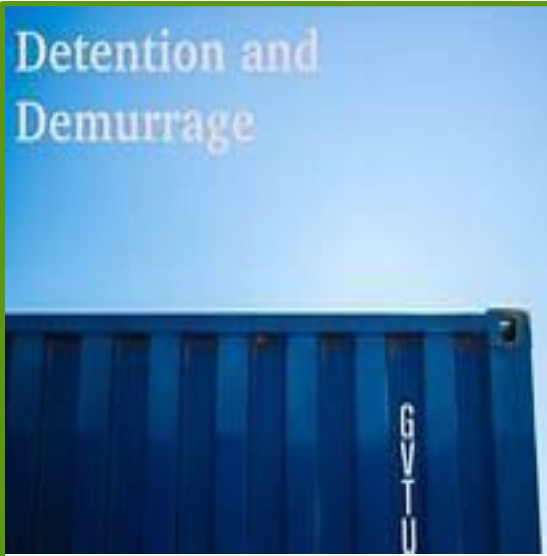




Step 1 – Theory

- It's all about capacity
 - Capacity shipping line: equipment container
 - Capacity terminal: storage yard
 - Capacity hinterland: trucks/chassis, warehouse

Literature review – Terminology



“The compensation paid depending on the Incoterms and Bill of Lading (Merchant Clause) **by** the shipper or receiver (including freight forwarders and others acting on their behalf) **to** the shipping company for the delay of the container

- at the terminal (= demurrage), and/or
- in the chain (= detention),
 - if the agreed period (free time) has expired”

Storm, 2011; Federal Maritime Commission, 2015; Chaudhri, 2016

Free time or “the duration of days, calendar or working days, which are pre-negotiated or determined between the carrier and the shipper, before the imposition of any D&D charges.” (Chaudhri, 2016)

- 7d free time @ terminal, 7d free time @ chain
- 14d combined free time (5d @ terminal/9d @chain)



Literature review – Organizational practices

Shortening free
time

Higher D&D

Starting/ending
period of D&D

Working vs.
calendar days

Document closing
and physical closing

Negotiations

Intermodal
transport

Re-using containers

(Lack of)
legislation

Earlier
announcement
planning –
information sharing

Scale increase

Terminal
congestion



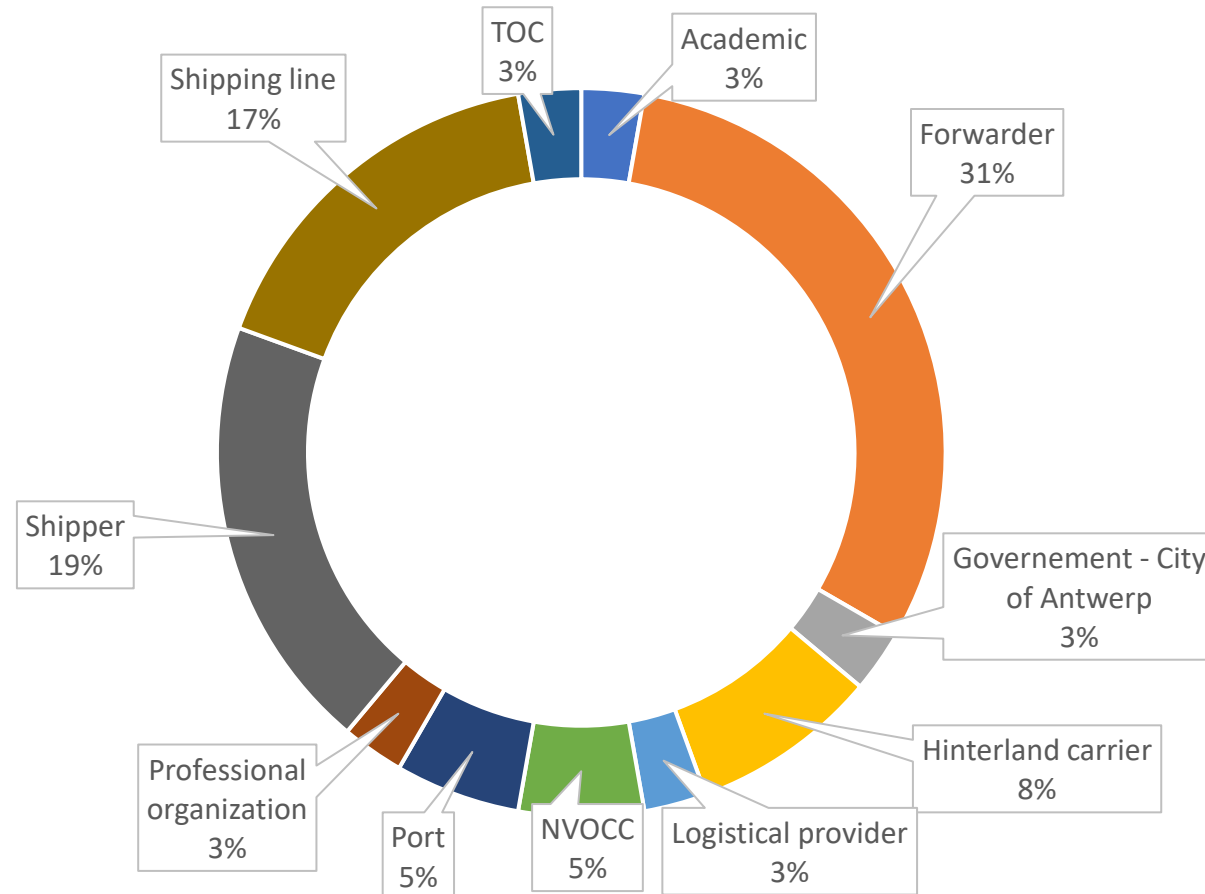
Step 2– From problem to solution

- Survey
- Discussion meetings
- Ranking of solutions

Survey on D&D/Discussion meeting

■ Supply chain approach

- 53 attendees → 36 complete responses



From problem...

| Problem | Number of times ranked as (in %) | | | | | |
|-------------------------------------|--|-----|-----|--------------------|-----|-----|
| | All actors (except shipping companies) | | | Shipping companies | | |
| | 1-2 | 3-5 | 6-7 | 1-2 | 3-5 | 6-7 |
| Shortening of free time | 47% | 53% | 0% | 80% | 20% | 0% |
| Increasing D&D fees | 42% | 37% | 21% | 40% | 60% | 0% |
| Changed practices terminals | 24% | 35% | 41% | 20% | 60% | 20% |
| Terminal congestion | 37% | 58% | 5% | 50% | 50% | 0% |
| Scale increase | 26% | 21% | 53% | 20% | 0% | 80% |
| Changed practices of shipping lines | 33% | 50% | 17% | 0% | 60% | 40% |
| lower (labor) productivity | 6% | 33% | 61% | 0% | 40% | 60% |

... to solution



Using working days instead of calendar days



Increased negotiations



Earlier announcement planning



More free time for inland locations when using intermodal transport



Digitalization



Re-use of containers



Legislation

Step 3 – Feasibility of the solutions

| Proposed solution | Amount of respondents | Feasibility (scale from 0 – 5) | | |
|-------------------------------------|-----------------------|--------------------------------|--------|---|
| | | Average | Median | % that indicated a score of 3 or higher |
| Calendar <> working days | 34 | 3,26 | 3 | 76,47% |
| Increased negotiation | 33 | 3,79 | 4 | 84,85% |
| Earlier announcement planning | 28 | 3,21 | 3 | 75% |
| More free time intermodal transport | 31 | 4 | 4 | 96,77% |
| Increased digitalization | 34 | 4,09 | 5 | 88,24% |
| Re-use containers | 34 | 3,76 | 4 | 79,41% |
| Legislation | 16 | 2,94 | 3 | 62,50% |

Step 3 – Feasibility of the solutions

| Proposed solution | Action by whom? |
|-------------------------------------|---|
| Calendar <> working days | Headquarter carrier |
| Increased (re)negotiation | Carrier – shipper (or actor acting on behalf) |
| Earlier announcement planning | Maritime ecosystem including customs |
| More free time intermodal transport | Carrier – shipper (or actor acting on behalf) |
| Increased digitalization | Data utility platform |
| Re-use containers | Association |
| Legislation | Association |

In search for other key solutions



CUSTOMS



LEGAL



FINANCE

Conclusion

- **D&D is a globally used practice, local implications**
- **D&D can meet its original purpose when**
 - Every actor has right, transparent and explicit knowledge and understanding
 - Correctly applied
 - Standardization
- **So... Several actions still have to be taken**
- **The impact of D&D-practices on the development of intermodal freight transport can be limited through coordination, collaboration, communication (digitalization), (re)negotiation**

Panel

Christa Sys



KMOinsider Lunch

Kurt Crauwels

- Managing Director, Customs Support Belgium



[Philip Vanlommel « Ponet-law](#)

Philip Vanlommel

- Lawyer, Ponet & LVP advocaten



Guy Haesevoets

- Senior Working Capital Advisor-Transaction Banking, BNP Paribas Fortis

Customs Support





Customs formalities – impact on demurrage & detention

- Project on promoting inland waterways
 - Transport of goods via barge
 - Customs were not involved, complexity...

- Example, import tires
 - Discussion with Customs Authorities regarding HS code that was used
 - In total 26 containers involved / blocked during weeks
 - Finally, importer and customs broker were right
 - Lots of extra costs, certainly demurrage & detention (warehousing, waiting hours, et cetera...)

- Solution
 - Proactive (while sailing)
 - Apply for a BTI decision (Binding Tariff Information)
 - Exchange of information → digitized

- Customs controls are necessary
- Let's simplify as much as possible



**CUSTOMS
SUPPORT**

TAKE THE LOAD OFF YOUR MIND

LEGAL ASPECTS OF CONTAINER DEMURRAGE & DETENTION

PONET & LVP
advocaten

D&D CLAUSE QUALIFIES AS A DAMAGE CLAUSE

- A damage clause is a clause by which a person, in order to ensure the performance of a contract, undertakes to do something specific in the event of non-performance (art. 1226 B.W.)
- **Demurrage:** This charge will be levied when the Customer holds CMA CGM equipment inside the terminal for longer than the agreed free days and is applicable to all containers that remain at the terminal longer than the agreed free time.
- **Detention:** Detention charges will be levied when the Customer holds CMA CGM equipment outside the terminal longer than the agreed free time : it is applicable throughout the duration of Customer's possession of CMA CGM container(s) in his custody, and until its safe return to CMA CGM.
- Contractual clause that seeks a lump-sum compensation for the possible damage suffered by the shipping line if the receiver fails to pick up and return the container within the agreed free time

DAMAGE CLAUSE

- Damage clause is valid as long as it aims to compensate the possible foreseeable damage and is not punitive in nature
- Damage clause requires a notice of default (art. 1146 B.W.)
- Principle of Freedom of Contract: free time – tariff – notice of default
- Limited power for courts to intervene: Power to mitigate in case the charges manifestly exceed the possible damage (art. 1231 B.W.)
- Case law mostly with respect to extreme cases (Antwerp, 18 March 2019, CMA-CGM / ASECO) – reduced to one year: as from then it no longer aims to compensate the damage and is manifestly exaggerated (i.e. in total disproportion to the possible limited disadvantage of the carrier)

HOW TO LIMIT D&D CHARGES

- Do not put too much hope in the courts: limited power to intervene
- Avoid D&D charges by being proactive
- Stop D&D charges as soon as possible – discuss later (payment under reservation of all rights - provide security- discharging of containers – sale of goods): contractual obligation to mitigate the damage – contracts must be executed in good faith -obligation to timely invoicing services

SUPPLY CHAIN REALITY

IMPACT ON WORKING CAPITAL AND LIQUIDITY

GUY HAESEVOETS

WORKING CAPITAL ADVISORY

20/01/22



BNP PARIBAS
FORTIS

The bank for a changing world



EXTENDED SUPPLY CHAIN MODEL

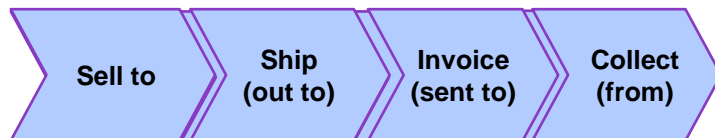
- Your suppliers



- Your company

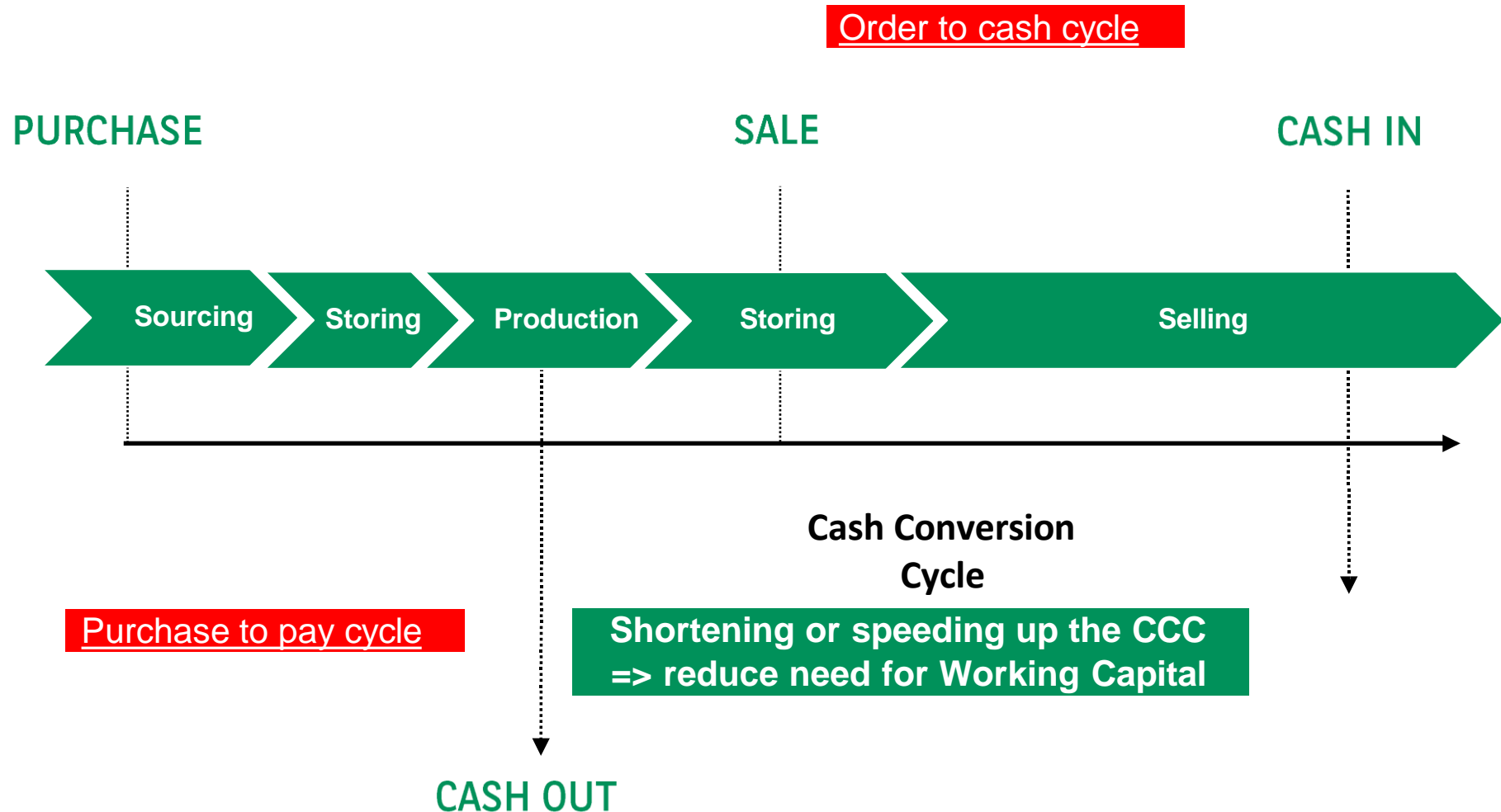


- Your clients



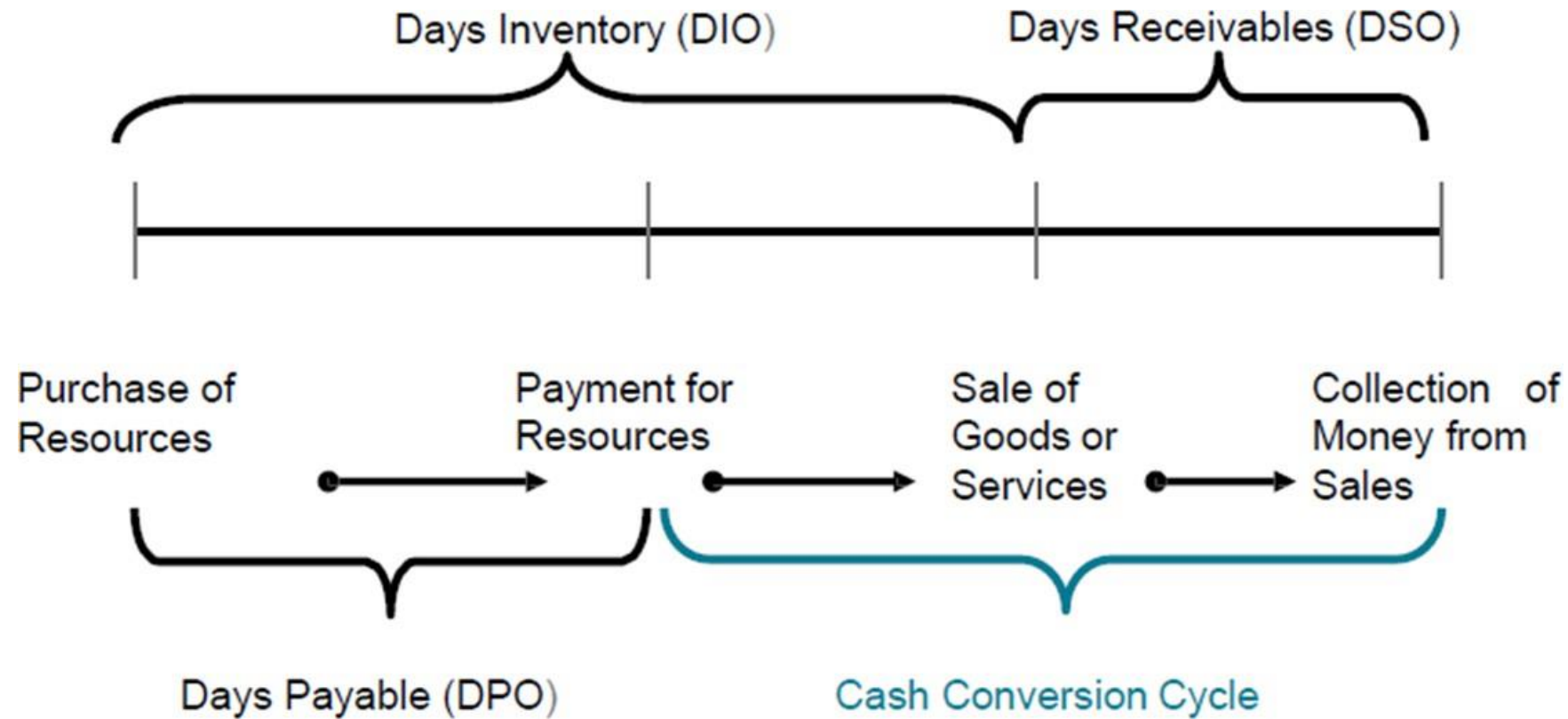


CASH CONVERSION CYCLE (1/2)





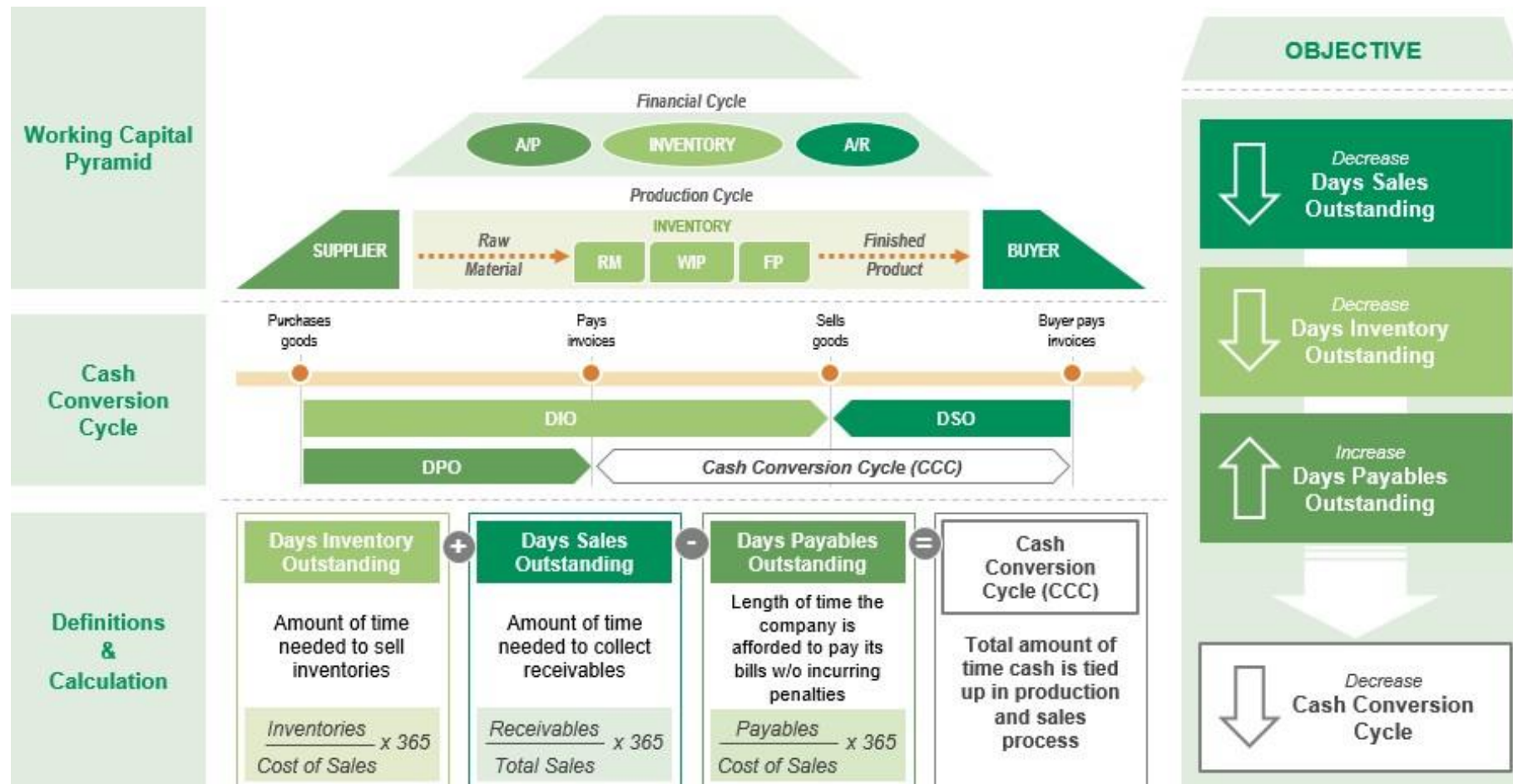
CASH CONVERSION CYCLE (2/2)





USE CASE - INTRODUCTION

The shorter the Cash Conversion Cycle, the less capital is tied up in the business process





LINK TO THE BALANCE SHEET

| <u>Assets</u> | <u>Liabilities</u> |
|--------------------------|--------------------------|
| Fixed Assets | Equity |
| Inventory (DIO) | Long Term Loans |
| Debtors (DSO) | Short Term Loans |
| Cash Surplus | Creditors (DPO) |
| | Accruals and Liabilities |
| Total Assets | Total Liabilities |

Supply Chain disruptions
will have an impact on
your working capital!

- Lower DIO and DSO leads to a lower requirement for Long Term/Short Term Loans (a shorter balance)
- Higher DPO also leads to a lower requirement for Long Term/Short Term Loans (alternative funding)



DEMURRAGE & DETENTION DISPUTES: IMPACT ON LIQUIDITY AND WORKING CAPITAL (1/2)



↓
Who should bear which cost: Shipper, Freight Forwarder, Transport Cy, Logistics provider, Terminal?

↓
Increasing amounts of invoices are challenged/contested !

↓
Uncertain Trade Receivables (A/R) and Trade Payables (A/P)



Tailor-made financing options and solutions are available !



DEMURRAGE & DETENTION DISPUTES: IMPACT ON LIQUIDITY AND WORKING CAPITAL (2/2)

Accounts Payables (A/P)

➤ Positive impact on CCC BUT:

- Liabilities increase
- Solvency decreases
- Profitability uncertain
- Need to reserve cash that can not be used for other purposes
- Increased uncertainty in financial reporting



Accounts receivables (A/R)

➤ Negative impact on CCC:

- Increased need for working capital (increased funding cost)
- Profitability uncertain
- Negative impact on financial ratio's (leverage, solvency, operating CF, net debt)
- Uncertain cash flow





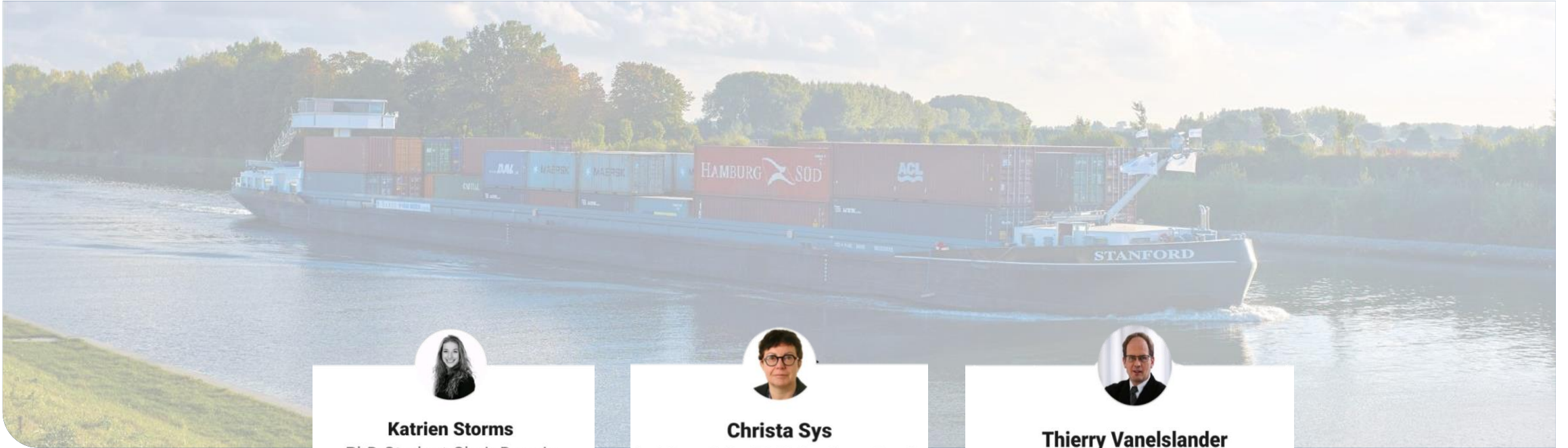


Closing

Prof. dr. Thierry Vanellander

- Professor University of Antwerp
- Copromotor Dennie Lockefer Chair

Thank you for your attention



Katrien Storms

PhD Student Chair Dennie
Lockefer



Christa Sys

holder of the BNP Paribas Fortis
chair on transport, logistics an...



Thierry Vanelslender

Professor at University of
Antwerp - Faculty of Business and...





Dennie Lockefer Chair

Dennie Lockefer Thesis Prize 2022 Inland Antwerp Navigation School 2022



More info website:

[Dennie Lockefer Chair | !\[\]\(d66ff64371a51729ac8c1cdaa685ba6f_img.jpg\) Transport and Regional
Economics | !\[\]\(0f31ebba7abcd47777e178db26f29705_img.jpg\) University of Antwerp
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