

Role of rail freight transport in European reshoring location decisions

Developing and Implementing Strategic Supply Chain and Manufacturing Footprint

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1 Profile BCI Global



Corporate clients

- Manufacturing footprint strategy
- Location advice
- Supply chain optimization
- Business strategy development
- Strategic outsourcing
- Real estate strategy and projects

Profile

- Established in Nijmegen, the Netherlands in 1985
- Offices in
 - Europe: The Netherlands, London, Frankfurt
 - US: Atlanta, San Mateo, Los Angeles
 - Asia: Shanghai, Singapore
- 75 professionals
- Performed studies in more than 50 countries worldwide



Clients in Chemicals, Materials & Energy



Clients in Food & Beverages Industries



Clients in the Automotive Industry



Clients in Logistics



2 Drivers for Reviewing Value Chains

Uncertainties and risks have been increasing already for multiple years



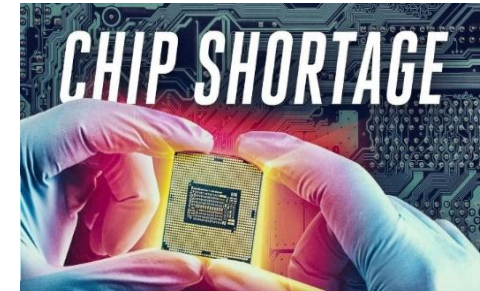
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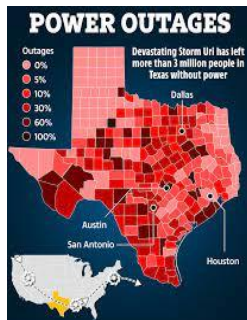
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COVID-19



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Natural Gas Soars 700%, Becoming Driving Force in the New Cold War July 5, 2022 Bloomberg

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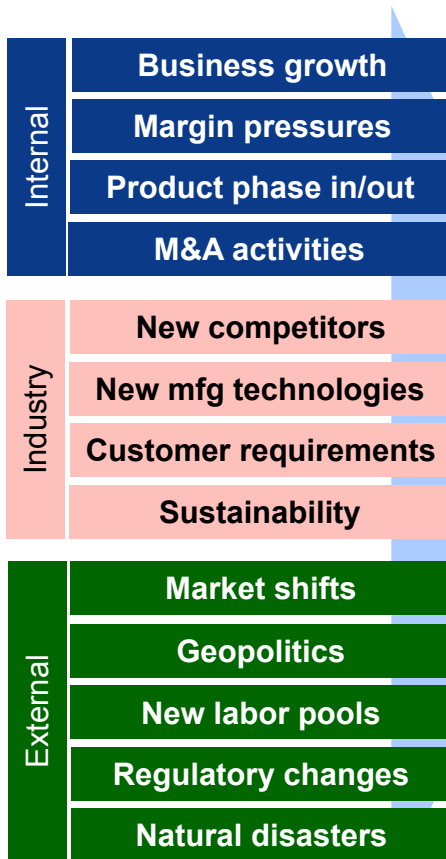
Gas or renewables? With the world in an unprecedented energy crisis, top CEOs are searching for solutions PUBLISHED FRI, JUN 3 2022 2:23 AM EDT 

Global value chain interruptions have become a constant factor!

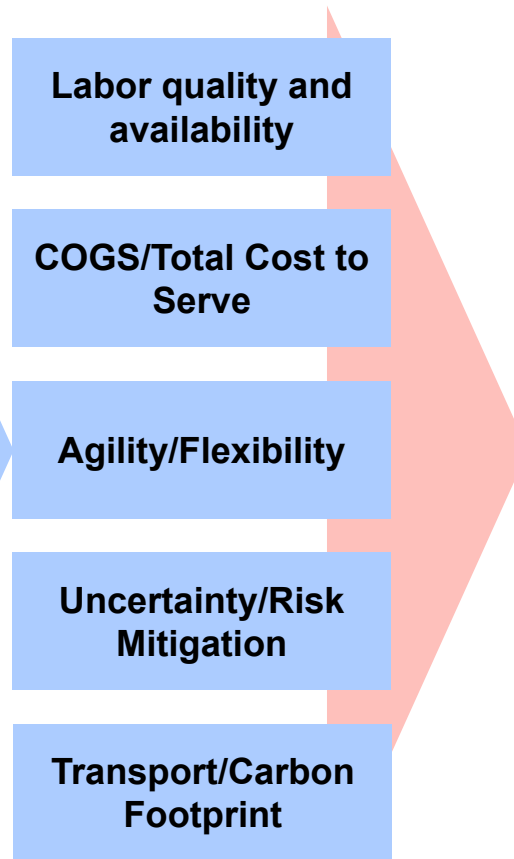
Drivers for Reviewing Value Chain Footprint



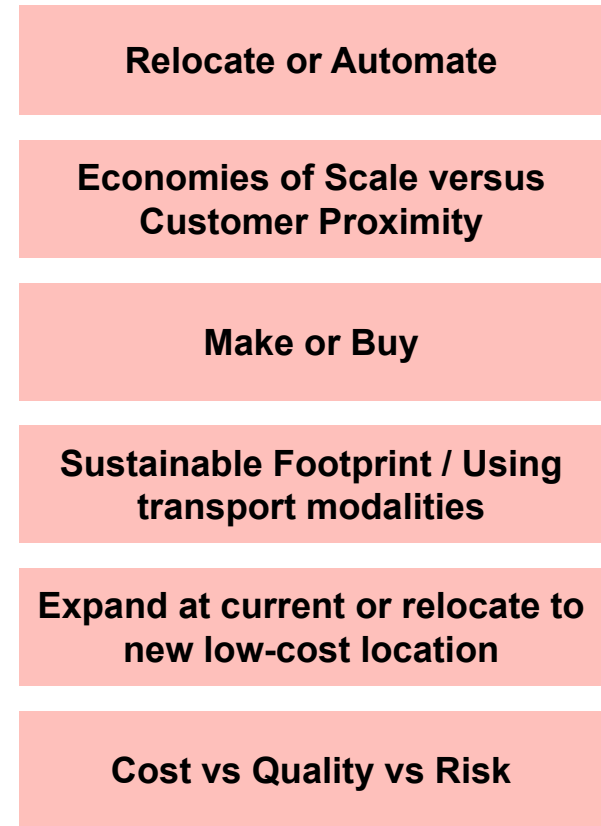
Key Drivers



Key Challenges



Typical Trade-Offs



Source: BCI

3 Footprint Optimization: Global or Regional?

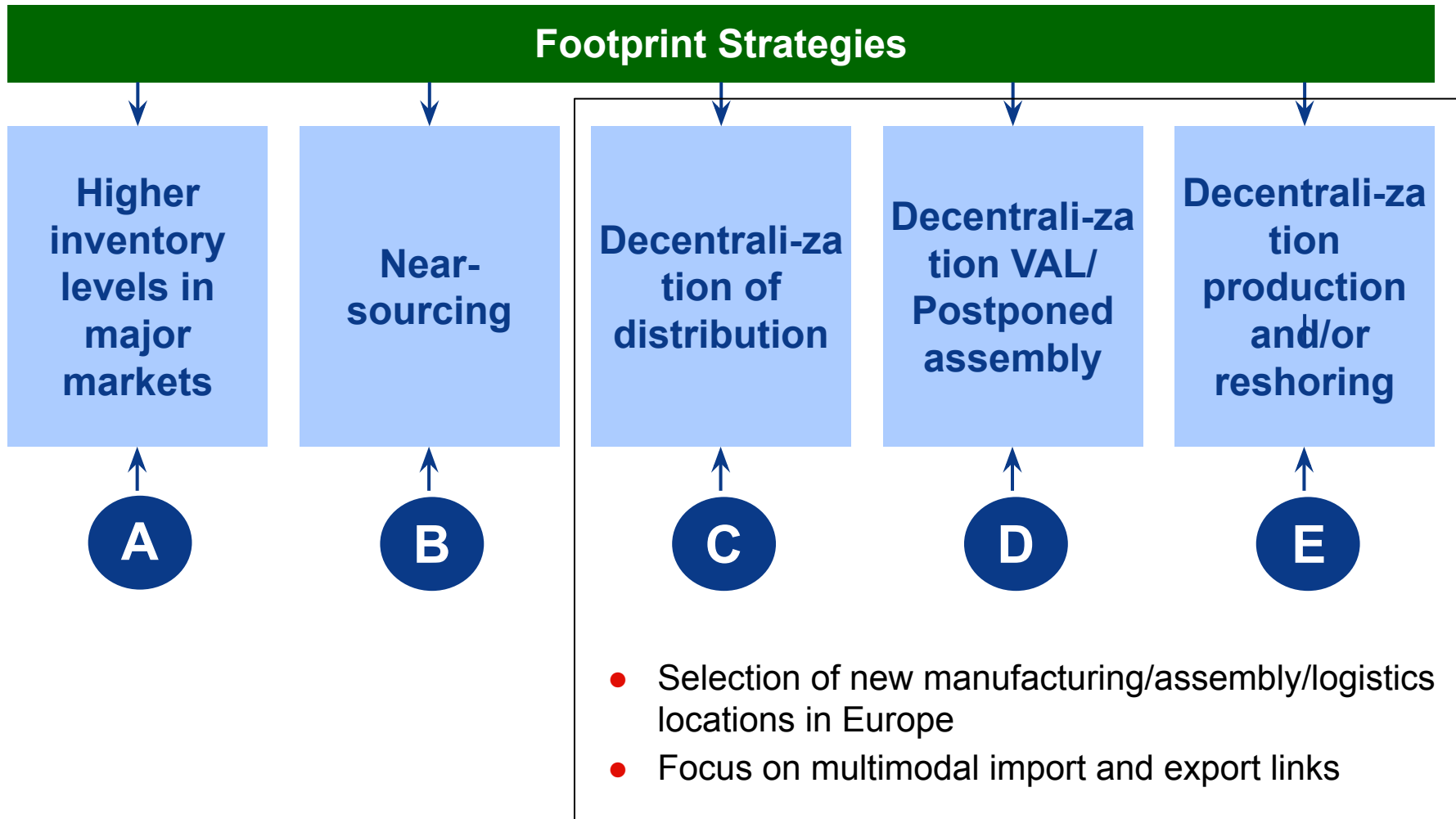


Multinationals follow the DE-strategy

- 1 De-coupling Asia – USA/Europe links
- 2 De-risking supply chains
- 3 De-single sourcing
- 4 De-centralizing production
- 5 De-carbonization transport



Five Footprint Strategies



There are clear strategic drivers for regionalization / decentralization




A Supply chain drivers	Supply risk	<ul style="list-style-type: none"> Mitigating the risk of being dependent on (critical) suppliers in a single region
	New Technologies	<ul style="list-style-type: none"> New technologies such as 3D printing/Additive Manufacturing and other smart manufacturing technologies enable decentralized manufacturing
B External disruption risks	Pandemic risk	<ul style="list-style-type: none"> Covid-19 effect: mitigating the risk / limiting the impact of value chain disruption through (new) lock-downs
	Trade barrier risk	<ul style="list-style-type: none"> Mitigating the risk / limiting the impact of value chain disruption through trade tariffs and other trade barriers (like restricting regulations, sanctions)
	Governmental push	<ul style="list-style-type: none"> Governments pushing for sourcing of critical products in or close to market (medical equipment, medicines, food, critical an/or new technologies, etc.)
C Strategic customer benefits	“Made in” advantage	<ul style="list-style-type: none"> Business value of manufacturing in perceived high quality / reliable countries (e.g. “Made in USA”, “Made in Germany”)

Decentralization of manufacturing/assembly/ logistics is easier said than done



Barriers companies need to overcome to successfully decentralize and/or re-shore manufacturing




Costs

- Cost differential with off-shore location?
- (partly) Double costs for labor, real estate, materials?
- Reducing transport costs by using different modalities?




**Supplier Base/
Supply Chain**

- Availability of relevant suppliers?
- Availability of relevant knowledge/technology?
- More complicated supply chain?



Labor

- Size of the local workforce?
- Availability of specific knowledge & experience?



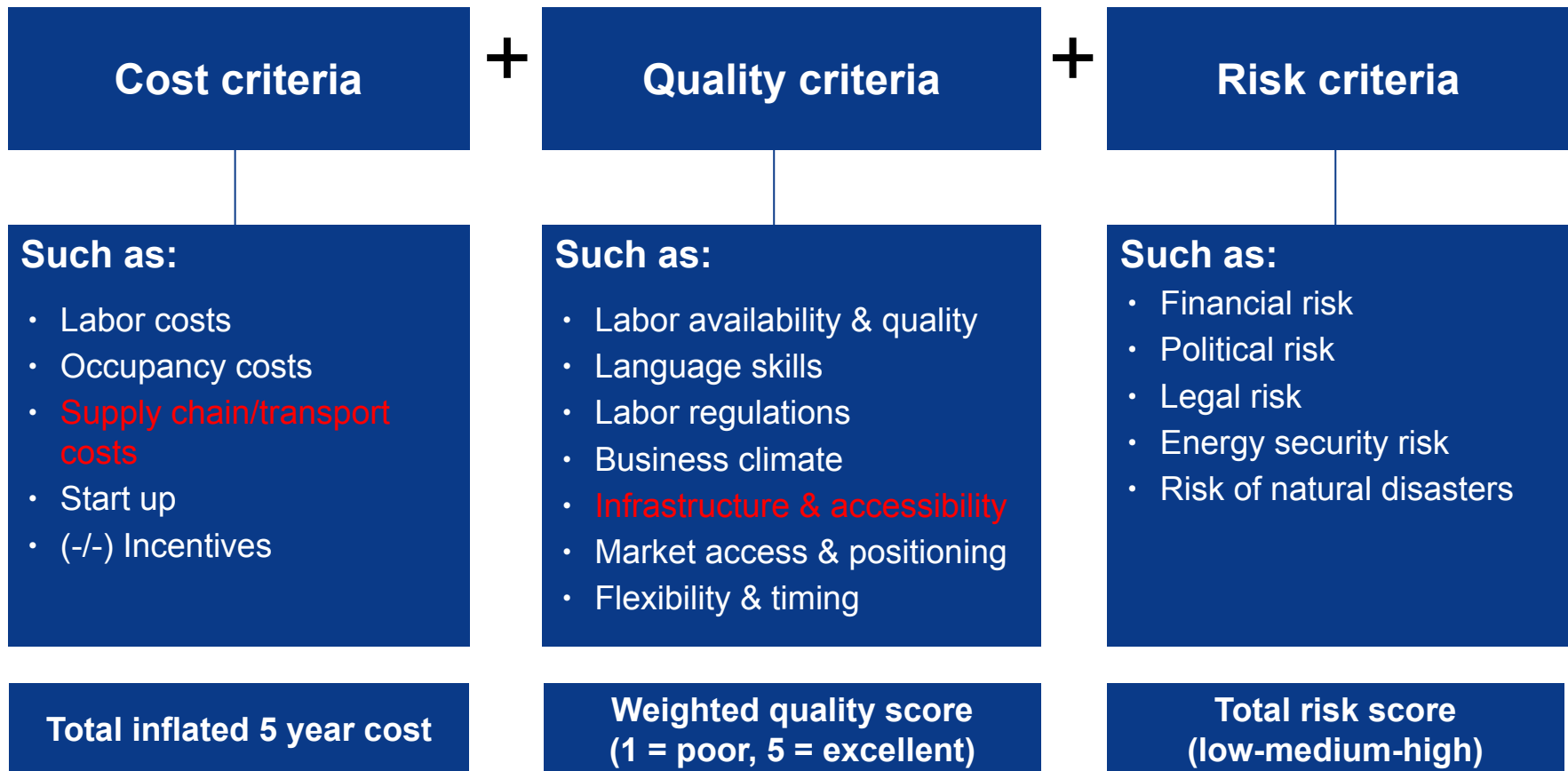
Markets

- Where are the highest growth markets?
- Can they be supported from the decentral location?
- Can different modalities be used in a reliable way?

4 Location Selection criteria



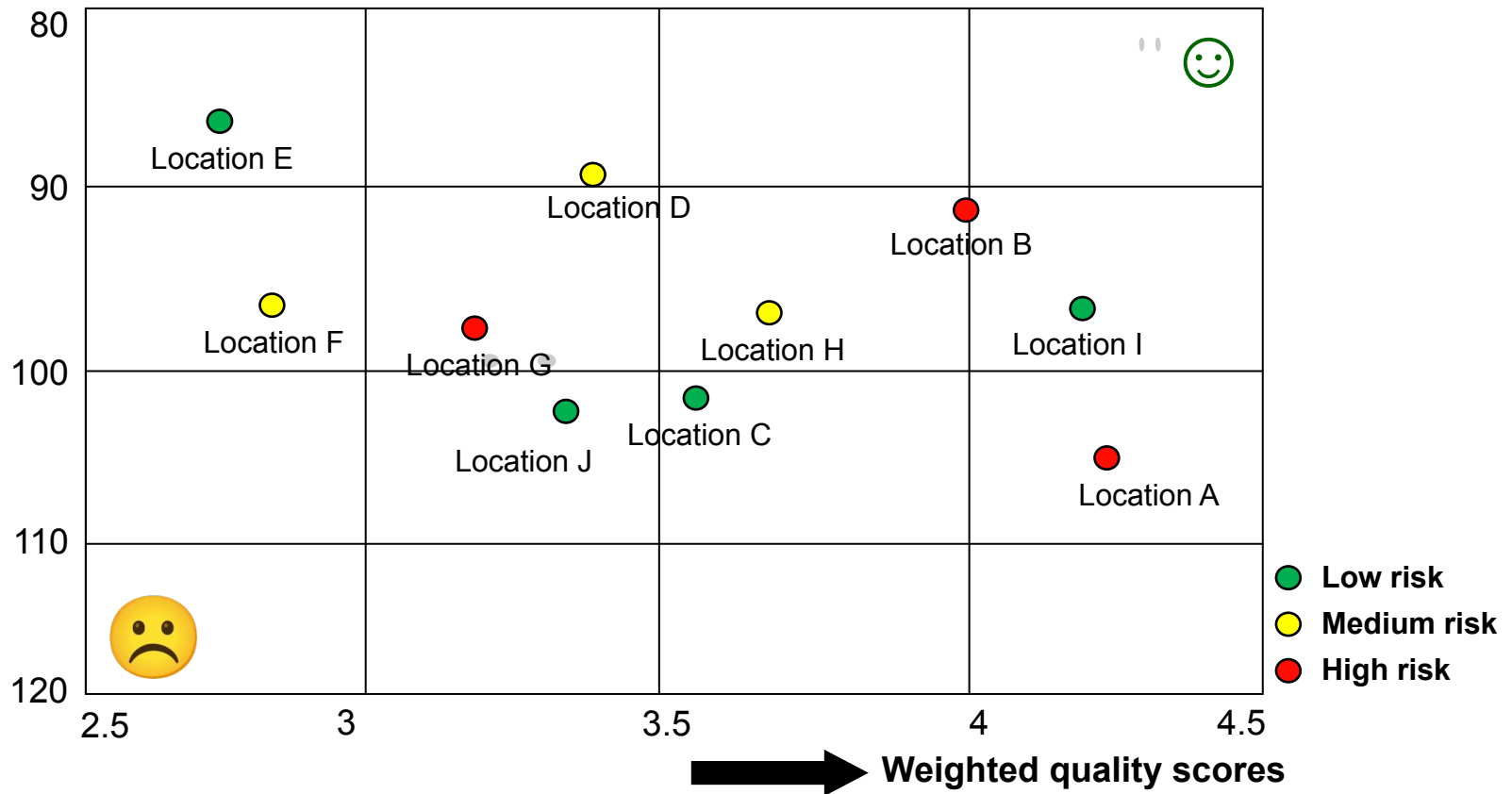
In our site selection approach we use cost, quality and risk criteria to develop a complete assessment of regions & locations



Cost-Quality-Risk matrix of 10 locations

Example: Project specific site selection results for a production plant in perspective: cost-quality-risk assessment

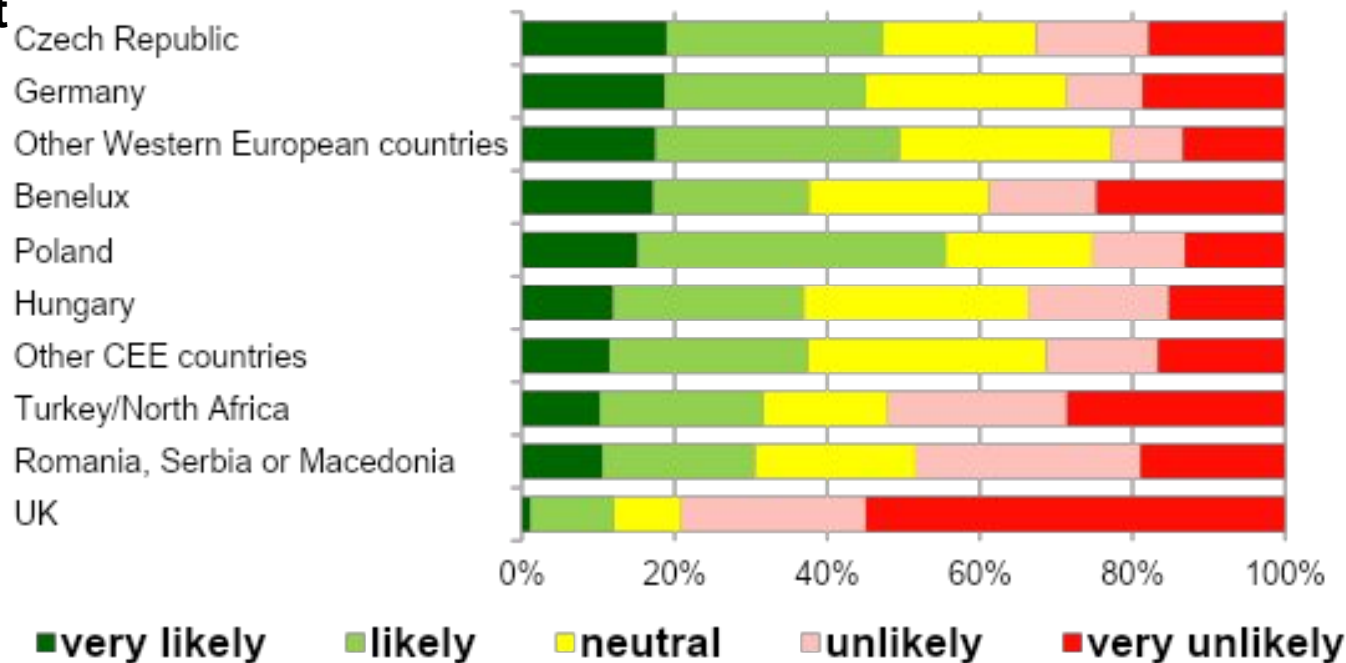
Total costs in million USD/Euro for first 5 years (all operating costs -/- investment incentives)



5 Cases – Rail transport for manufacturing & distribution flows

Geographical locations considered for reshoring / decentralization

Serving EU market



Source: BCI Survey, 2022

Case 1 Car battery production - Incorporating supply chain network resilience

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Approach

How to optimize transport network based on cost, service and risk?

Selection of multimodal locations

Use of resilient transport links

Multimodal links to car battery production locations



Takeaways of business

- **Case** Set up of manufacturing facilities in Europe: selection of multimodal accessible locations
- Resilience: both continental and maritime silk roads can be used for raw materials supply
- European car makers factories can be delivered through rail and road transport
- Investments in European multimodal rail facilities in ports on maritime silk road: shared financial costs
- Investment in European rail terminal infrastructure will provide further opportunities for using rail freight transport

Case 2 Fresh produce distribution – supply chain cost reduction and resilience

Approach

How to distribute fresh produce in Europe reliable and cost effective?

Set up of 3x/week rail service Spain - North

Future potential for fresh silk road

Cool Rail Europe

1 Use of reefers for rail transport



2 Growing European rail network



1,633 containers

transported by CoolRail, and 410 containers were transported by train instead of trucks at LPR, avoiding an equal number of trucks on the road.



Takeaways of business

case

- Set up of rail shuttle between Spain and Northern Europe, 3x /week
- Shuttle combines fresh produce in reefers and other loading units (e.g. tank containers)
- Balance in north-south trade by combining different cargo flows
- Due to energy crisis, Dutch producers/retailers are rethinking supply chains: e.g. Spain instead of production outside Europe
- Cool Rail Europe network is growing step by step, potential for fresh silk road connection in future

Source: Euro Pool System sustainability report 2021

6 Conclusions and Q & A



- Many companies are complementing decentralization of manufacturing and distribution activities to answer several crisis situations.
- The strategy for manufacturing and distribution footprint locations will continue to be highly challenging.
- Resilience of supply chains is the main driver in footprint location selection: different trade and transport scenarios should be supported.
- The optimal manufacturing and distribution footprint as well as locations are more and more based on multimodal transport solutions for (inter-) continental im- and export flows

Questions & Answers