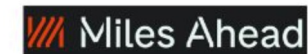




Supply Chain Management and Trade Finance



Summary

1. Introduction and objectives of the Roadmap report
2. Overview of the participants
3. Methodology and Starting point
4. Results, Insights, Roadmap
 - Market opportunities and trends
 - Technology
 - Scaling
 - Competition
 - Challenges and risks
 - Customer segments and distribution channels
 - The evolution of the sector
5. Authors

Introduction

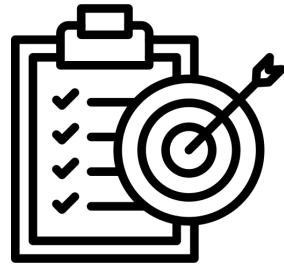


Aalto University
Startup Center

www.d2xcel.eu

Introduction and objectives of the Roadmap report

This report was developed as part of a broader initiative to identify and capitalize on market opportunities within the **Supply Chain Management and Trade Finance** sector. The report serves as a guide that maps out the market potential, challenges, and strategic actions necessary for the successful scaling of businesses in this sector.



The primary goal of the Supply Chain Management and Trade Finance Roadmap Report is to equip companies and stakeholders within the sector with the knowledge and tools needed to navigate the transition **towards more efficient, sustainable, and competitive market positions**.



Main function of the report is to highlight opportunities that the participating start-ups may have not recognised. It provides a structured approach to understanding market dynamics, customer needs, and emerging trends, thereby helping businesses position themselves effectively in the evolving marketplace.

Overview of the Participants



Aalto University
Startup Center

www.d2xcel.eu

Ventures

Following the evaluations by the selection panel, 11 of the most promising European ventures in Supply Chain Management and Trade Finance were chosen through a competitive process. Companies were selected based on leadership potential, product/technology strength, market opportunity, go-to-market strategy, and business clarity.



Manage all your ESG needs from a single platform, including CSRD compliance, double materiality assessments, carbon footprint, and more. Automate your reporting and get a 360-degree view of your sustainability performance.

CarbonCompete introduces innovative and essential changes to the product supply chain, driving sustainable development.



Unlock revenue & empower your partners: Cashy – Financing-as-a-Service tailored for large enterprises and their SME contractors



Our solution facilitates the aggregation and orchestration of material flows, automating processes for enhanced scalability and efficiency.



Enterspeed is a low-code SaaS integration platform between the backend and frontend architecture.



Faradaic Sensors miniaturizes gas sensors on microchips in order to solve the biggest problem facing our customers; gas sensors today are too expensive and large for the devices they want to make.



Real-time asset visibility empowers businesses to digitize operations, automate workflows, and boost efficiency.



To accelerate the world's transition to a greener manufacturing industry by eliminating carbon emissions in steel products and building transparent, decarbonised supply chains.



OGOShip helps eCommerce businesses to optimize their supply chain, speed up delivery times and reduce costs



Transmetrics optimizes transport planning by leveraging the power of predictive analytics and machine learning.



EX9 develops and offers a full service solution of automated yard transport to logistic companies looking for long-term competitiveness, resilience and sustainability.

Market opportunity Stakeholders

European
Innovation
Council



Funded by
the European Union

Investors



Prequel Ventures



Shell Ventures



theDOCK



Lead Customers



PORTNET



SEA-invest

Network partners



ALDI SUD Holding / MIT Horizon



Atlan

Atlan - The Nature-Tech Venture
Studio



KONECTICA

Konectica



Marinnovators



MSC



Universidad de los Andes



Manhattan Associates



Market opportunity Mentors

European
Innovation
Council



Funded by
the European Union



Kris Kosmala
Yilport Holding



Hovik Torkomyan
36Growth Marketing



Anne Lebreton-Wolf
ALW Finance & Innovation



Estelle Linget
ESL.Consulting



Gaurav Bansal
Mentor



Manuel Correché
FundingBox



Emilio Rull Quesada
onTech Innovation



Ximena A Valente Hervier
TealSense

Methodology

We state here some of the underlying assumptions and 'facts' about the Supply chain management and trade finance sector that serve as the basis and context of this analysis.

- **Globalization and Interconnectivity:** Supply chain management and trade finance are deeply influenced by the global nature of trade, which involves complex networks of sourcing, manufacturing, distribution, and sales across multiple countries and regions.
- **Role of Trade Finance:** Trade finance is crucial in supporting global trade, with billions of dollars facilitated annually through various financial instruments that manage risk and enable payment assurance. Trade finance instruments such as letters of credit, guarantees, and supply chain finance are used to mitigate trade risks, ensuring liquidity, and facilitating smooth transactions.
- **Complexity and Scale:** Modern supply chains are highly complex, consisting of multiple tiers and extensive networks of suppliers, manufacturers, distributors, and retailers. This complexity necessitates sophisticated management and coordination.
- **Regulatory Environment:** The sector operates under stringent regulatory frameworks that include international trade agreements, customs regulations, compliance standards, and anti-money laundering laws.
- **Risk Management is Essential:** Effective management of risks—including geopolitical tensions, natural disasters, market volatility, and cyber threats—is fundamental to maintaining stable and resilient supply chains.

Methodology

- ❖ 5 in-depth interviews were conducted with industry stakeholders using an AI tool to extract expert opinions across the following categories
 1. *Market trends and opportunities*
 2. *Challenges and needs in sector*
 3. *Key technologies and technology infrastructure*
 4. *Competitive structure of sector*
 5. *Risks for start-ups*
 6. *Customer segments and distribution channels*
 7. *Scaling and growth*
 8. *Roadmap, i.e. evolution of sector*
- ❖ Surveys: Collected 10 survey responses to gather initial insights. The survey included 11 structured questions.
- ❖ Challenge queries for start-ups: We collected challenge statements from applying start-ups, and organized them by Market Opportunities and category, and analysed the interviews for expert insights for these categories of challenges.
- ❖ The gathered data was analysed by focusing on key categories, identifying strategic opportunities and potential barriers. The analysis provided a comprehensive view of the sector, enabling the development of targeted insights for growth and scalability.



5 Stakeholder interviews



10 Survey respondents



31 Stated challenges by applying start-ups analysed



Validation

Total of 20+ Participants

Results, Insights, Roadmap

Opportunities and market trends: Digitalisation to enable flexibility and scalability in supply chain management and trade finance. (1)

Accessible trade finance and solutions to **democratize digitalization** for smaller companies represent significant gaps and opportunities. Accelerated by crises like the pandemic, businesses are integrating technologies such as blockchain, AI, analytics, and IoT **to enhance visibility, optimize logistics, and manage risks** more effectively. There is growing demand for **solutions that track and reduce carbon emissions**, with opportunities for startups to create standardized and AI-driven tools for collecting and exchanging such data. **The sector is highly dispersed**, with both large companies like SAP and innovative startups addressing specific niches, leaving room for tailored solutions to emerging challenges. Innovations targeting **synchronization and optimization of supply chains**—such as strategic sourcing, predictive analytics, and automation—are critical for cost reduction and resilience. Businesses need systems that **integrate seamlessly with existing technology infrastructures** while addressing unmet needs in logistics, procurement, and visibility.

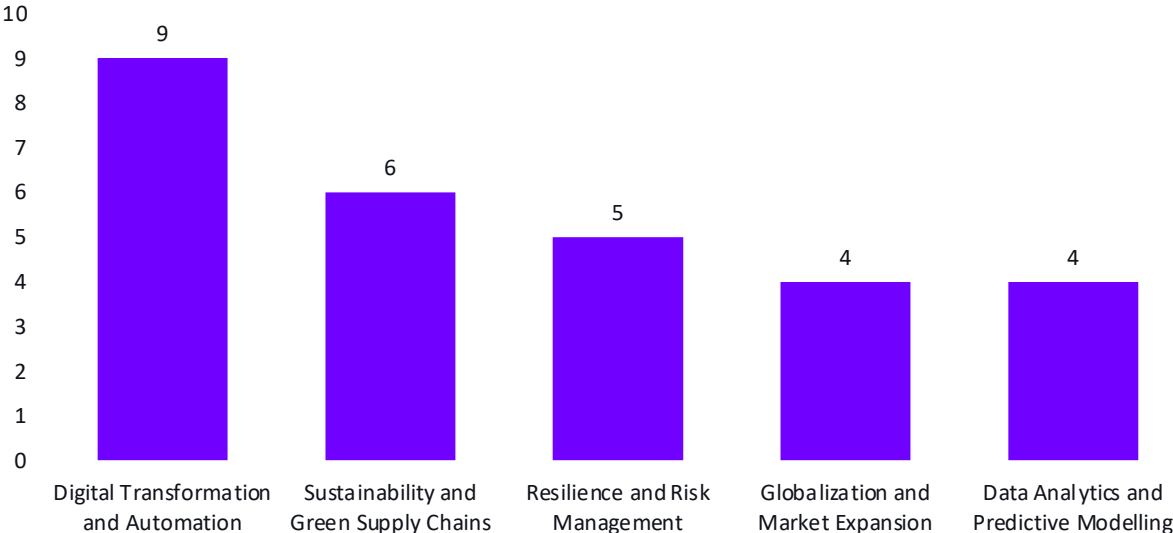
Kris Kosmala

Supply chain management Expert



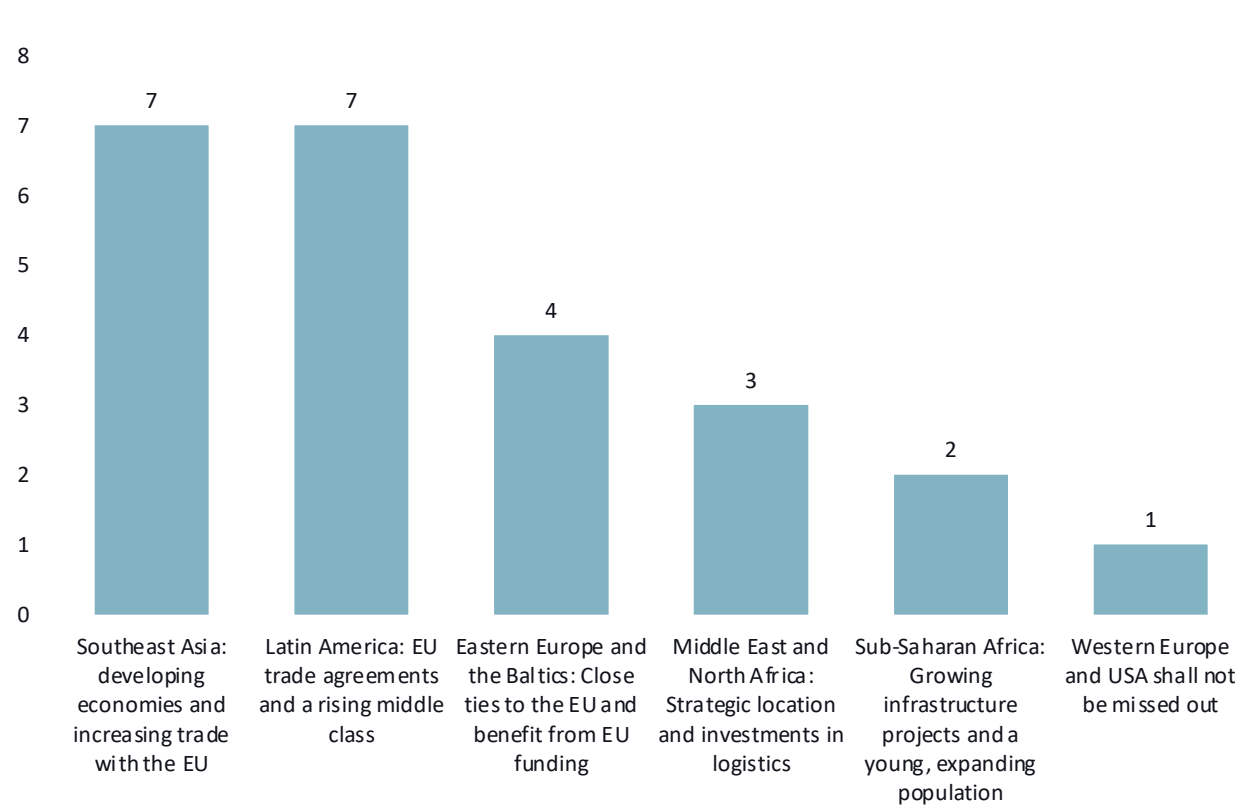
"The supply chains became more agile as a result of shocks to the systems introduced by events like the recent pandemic and the raising of trade barriers"

Which of the following **market trends** do you believe are **most important** for startups in the area of supply chain management and trade finance?

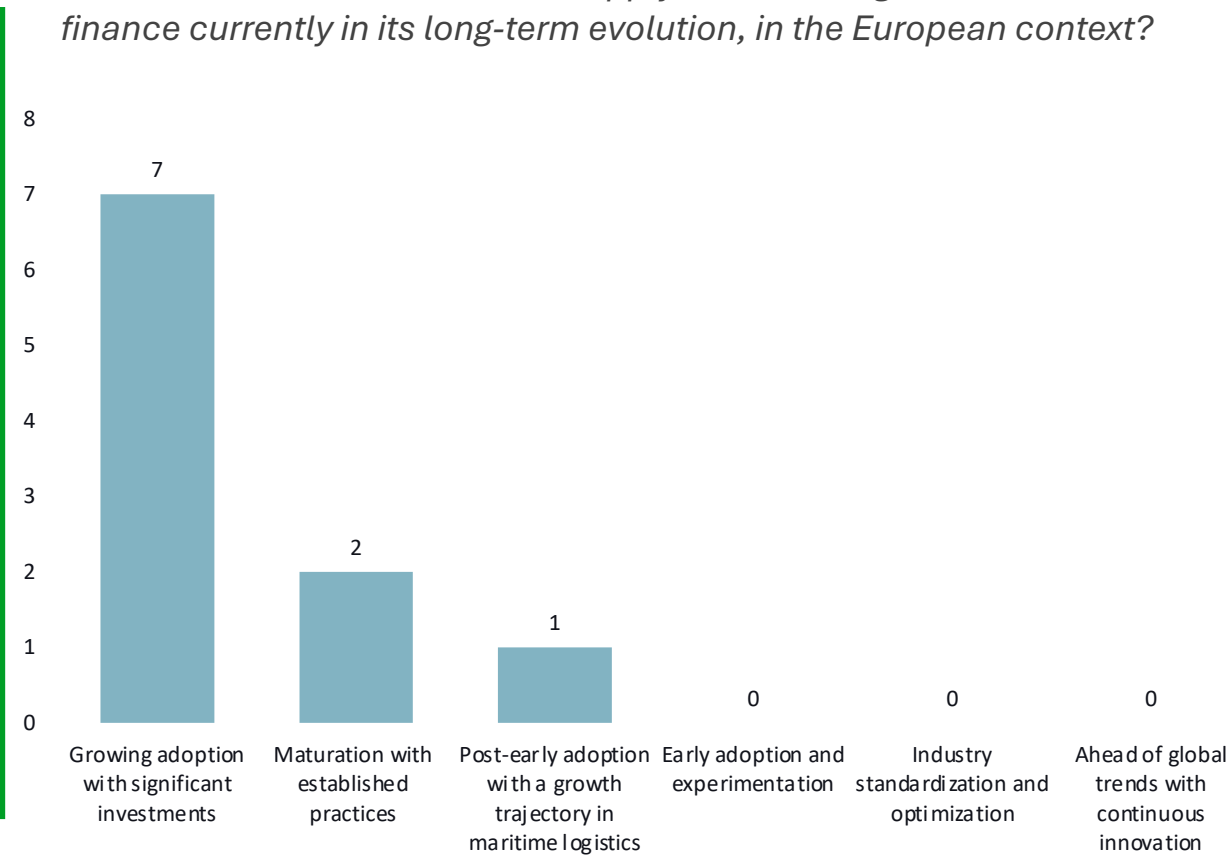


Opportunities and market trends: Digitalisation to enable flexibility and scalability in supply chain management and trade finance. (2)

In terms of **geographic markets**, where do you see the **greatest opportunities** for growth in the area of supply chain management and trade finance?



What is the **state of the area** of supply chain management and trade finance currently in its long-term evolution, in the European context?



Technology: Cross-border trade can gain increasing efficiencies from several recent digital technologies



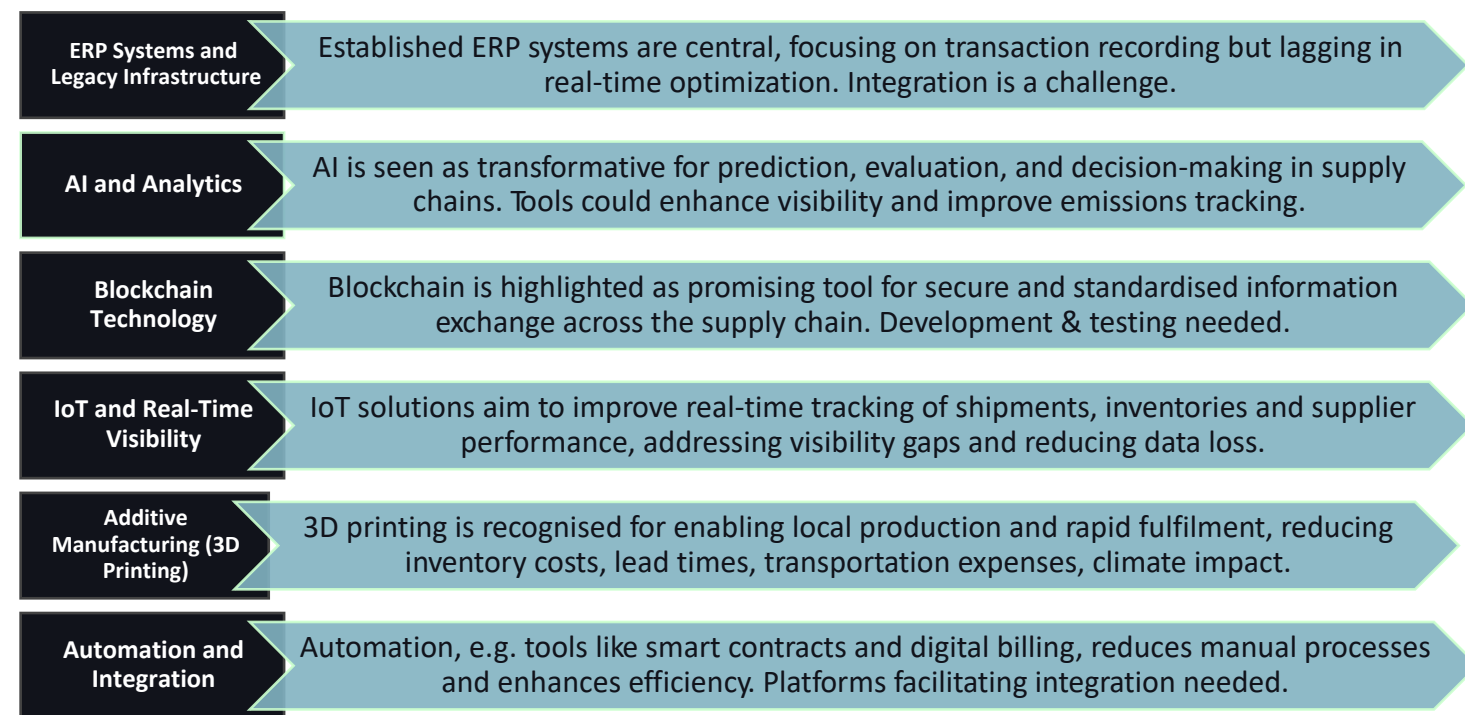
Gadi Benmoshe

Managing Director, Marinnovators Consulting &
Vice Chair of Data Collaboration Committee, IAPH

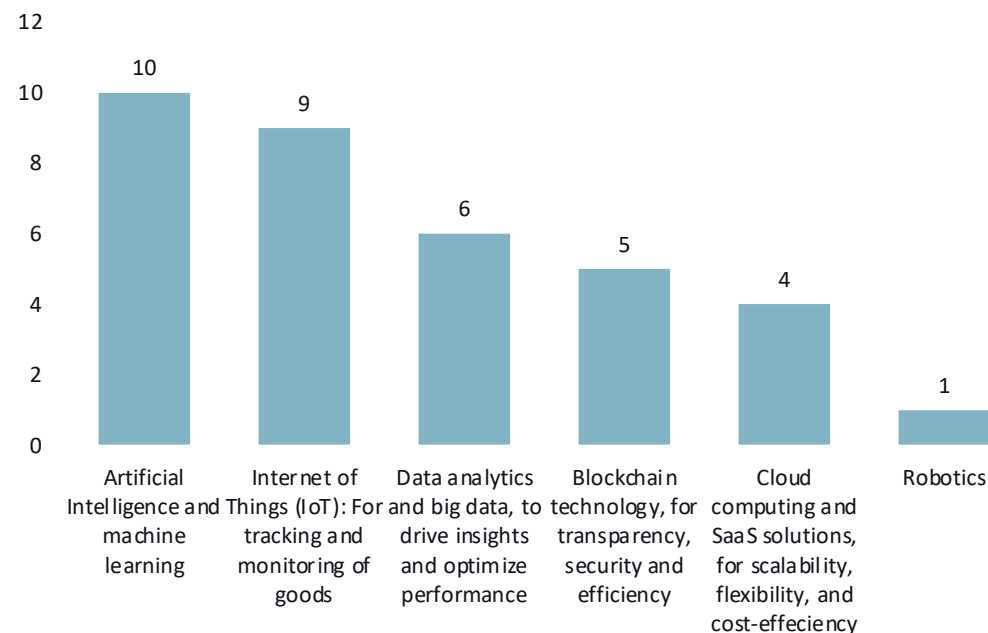
"Today in supply chain management, there are existing solutions based on newer or older technology, it's not a green field. Because those infrastructures are already there, they are used to them, so to change or upgrade them it's one of the challenges."

There is much that modern digital technologies can do to improve the supply chain management and trade finance. Different software applications provide tools at different points of this area.

Predicting, tracking, inventory management, payments are just some of the areas that can be made more efficient and smooth with these technologies.



Which of the following **technology needs** do you think are critical for the future of the area of supply chain management and trade finance?



Scaling: Growth in supply chain management depends on use of digital tools and strong networks. (1)

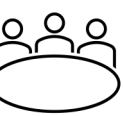
Growth in supply chain management and trade finance is seen as promising due to the **increasing demand for digital resilience**, operational efficiency, and sustainability. Technological innovation, building strong networks, achieving scalability, and addressing economic and regulatory barriers effectively are key elements. Opportunities exist in **bridging gaps left by traditional systems**, but these efforts require to address challenges in adoption and integration.



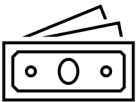
Innovation and Technology Adoption: Significant growth potential from technologies like AI, blockchain, IoT, and automation. These tools enhance visibility, traceability, and operational efficiency while enabling e.g. carbon emission tracking and data analytics.



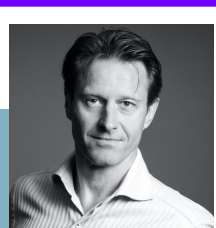
Scalability and Adaptability: Scalability of start-up solutions and adaptability to meet the needs of diverse customers are vital. Modular, easy-to-integrate technologies are favoured, particularly for overcoming challenges posed by legacy systems and fragmented infrastructures.



Networking and Strategic Partnerships: Success in scaling within this sector hinges on building focused networks, alliances with large players, and validation through early customers. Strategic partnerships, especially with banks, fintechs, and logistics operators, are key.



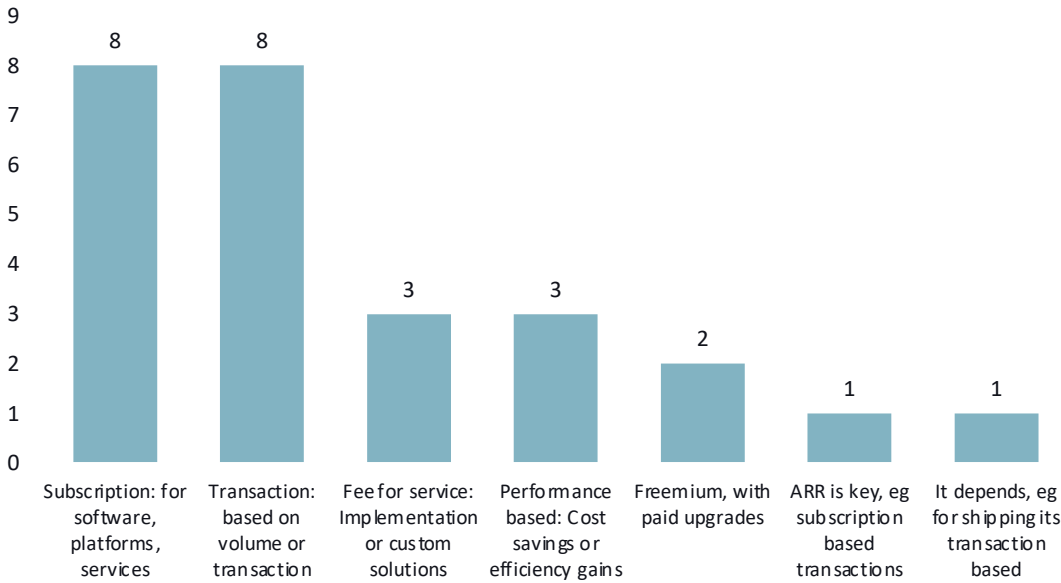
Economic and Regulatory Considerations: Growth opportunities are also linked to navigating financial hurdles, compliance issues, and creating ROI for enterprises. Startups must align with key performance indicators of larger companies, offer regulatory-compliant solutions, and ensure cost-effectiveness.



Pieter Ruijsenaars
CEO, DiManEx BV

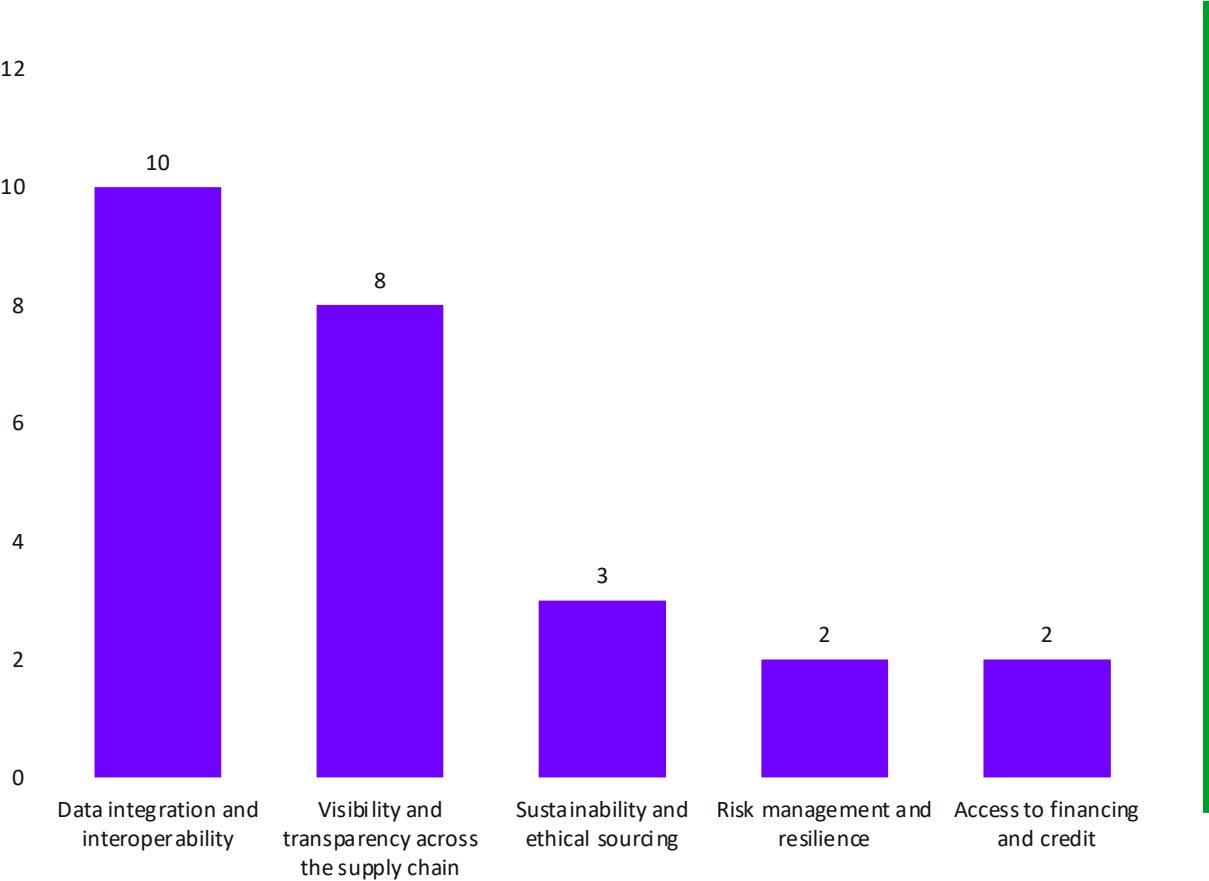
"There is definitely room for growth here, that is because the traditional supply chains with the problems that they are experiencing now have to change, that is one. Second, the world is becoming more global and international and it is no longer possible to grow in a physical way, but that has to be done in a more digital way."

Which types of **revenue models** do you find **most sustainable or appealing**, given the current market conditions in the area of supply chain management and trade finance?

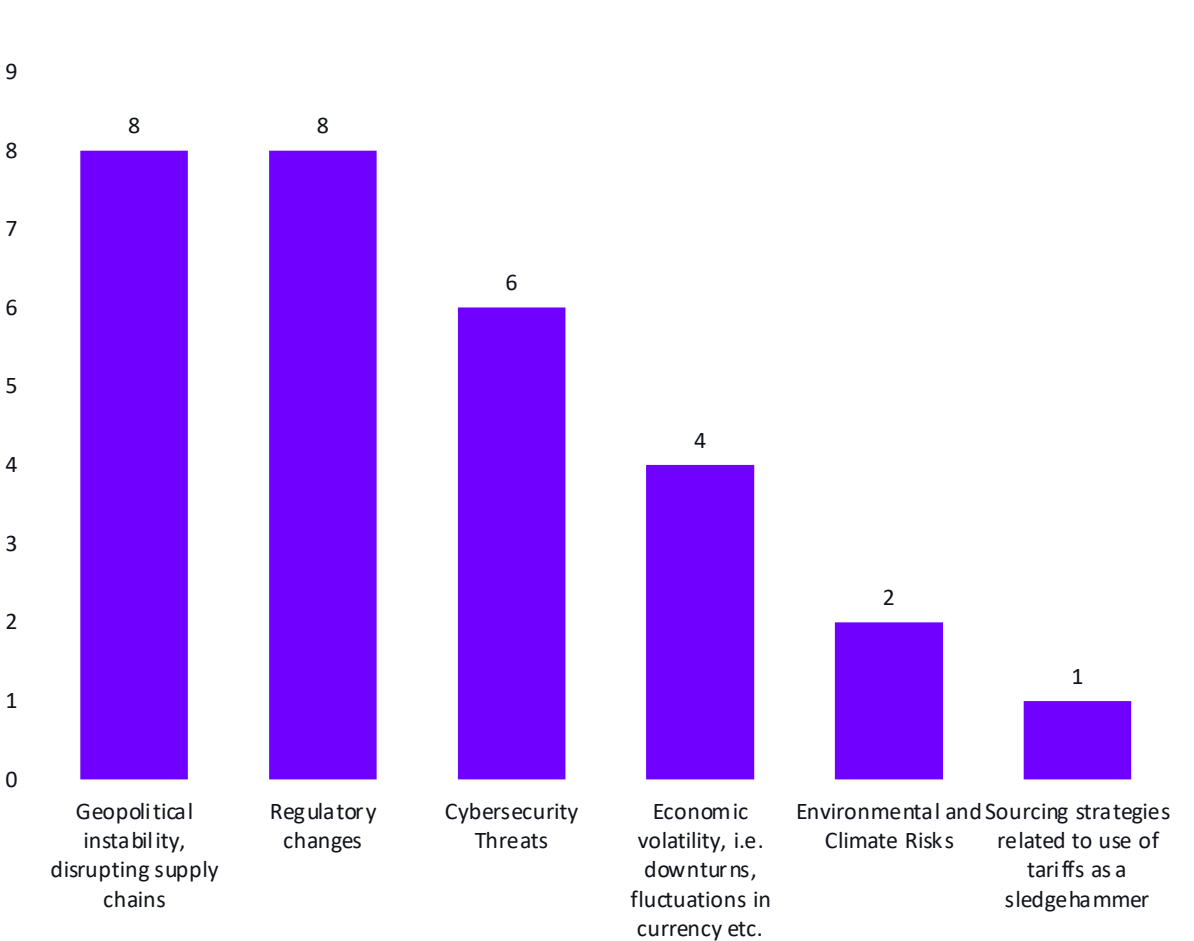


Scaling: Growth in supply chain management depends on use of digital tools and strong networks. (2)

In what **areas of supply chain management** and trade finance are there **still needs and/or challenges** that are not adequately solved or provided for?



What do you consider to be the **key risks** that could impact the area of supply chain management and trade finance in the next 3–5 years, particularly in the European context?



Competition: The competitive landscape is seen as fragmented and dynamic

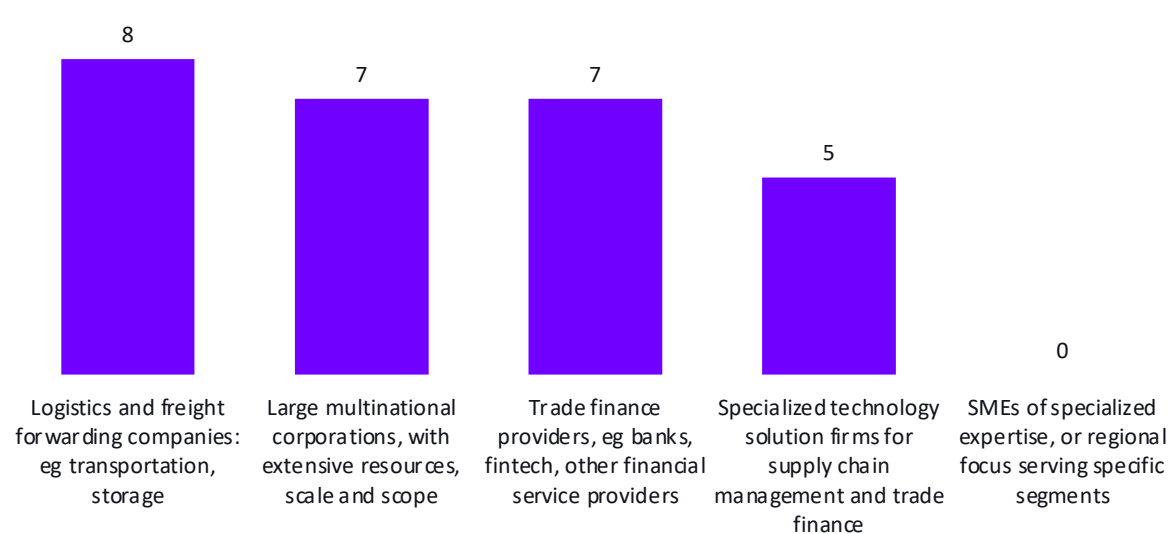
The market is populated by a **mix of large companies** like SAP, Microsoft, Oracle, **and traditional financial institutions**, alongside a growing wave of specialized startups offering niche solutions such as real-time visibility, automation, blockchain applications, and predictive analytics. Despite the presence of dominant players, **no single entity fully controls either sector**, leaving room for innovation and new entrants. **Smaller companies often provide specialized tools** that address specific pain points - and large corporations sometimes acquire these vendors. The **dispersed market is viewed as a natural characteristic of the industry**, driving tailored solutions rather than universal ones due to varying disciplines, industries, and ownership structures.

Oswaldo Almonacid Rivas

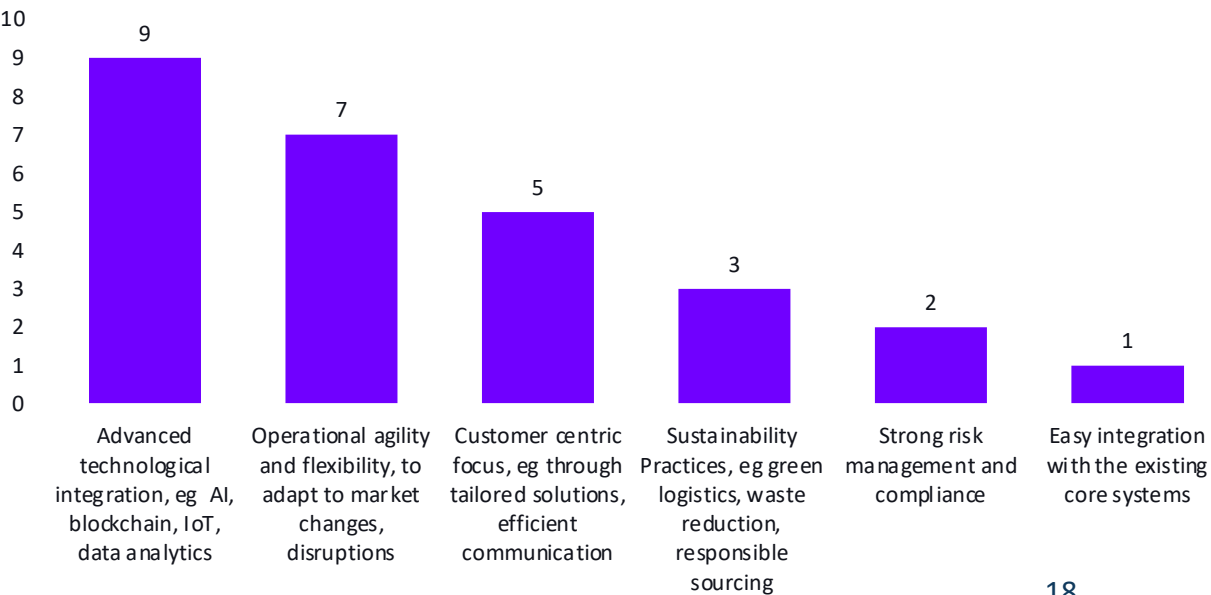
Global Supply Chain Consultant, Aldi SUD Holding

“It's an interesting competition because startups don't try to directly beat the tech giants, but rather find smart ways to differentiate themselves... Large companies tend to offer broad, generic solutions, while startups specialize in very specific problems. In trade finance, a fintech may focus on providing fast-track credit to exporting SMEs, while traditional banks have more bureaucratic and lengthy processes.”

What is the **competitive structure of the area** of supply chain management and trade finance, i.e. what kinds of companies dominate this sector?



What **specific attributes or capabilities** do you look for to **indicate a competitive advantage in the area** of supply chain management and trade finance?



Challenges and risks: Fragmented market, legacy systems and difficulty in acquiring customers and scaling

Financial barriers related to trade finance and supply chain disruptions make operations more precarious for start-ups. Also gaps in planning, logistics, and resilience necessitate innovative tools and strategies, which many start-ups struggle to implement effectively.

Customer Acquisition and Scalability:
Start-ups struggle to secure initial customers who validate their solutions. Scaling beyond early wins is challenging due to a lack of clear go-to-market strategies and difficulties integrating with established systems.

Technology and Legacy Systems Integration:
Many companies rely on legacy tech infrastructure, limiting the adaptability of new solutions. Start-ups face barriers in aligning their solutions with ERP systems, particularly when enterprises are resistant to change.

Competition and Market Fragmentation:
The sector is highly fragmented. Dominance by major firms and dispersed smaller vendors makes it difficult for start-ups to gain market share.

Financial Barriers and Trade Finance Risks:
Access to funding is a critical issue for start-ups, compounded by the lack of inclusive trade finance solutions. Risks like fraud and credit access pose significant challenges in trade finance.

Supply Chain Disruptions:
Start-ups must navigate supply chain disruptions, caused by geopolitical events, natural disasters, and pandemics. These demand high resilience from start-ups, which often lack resources or diversified supplier networks.

Operational Planning and Execution:
Challenges arise in complex areas like supplier evaluation, inventory optimization, and fulfillment schedules. Start-ups often lack the advanced tools required to address these gaps effectively.

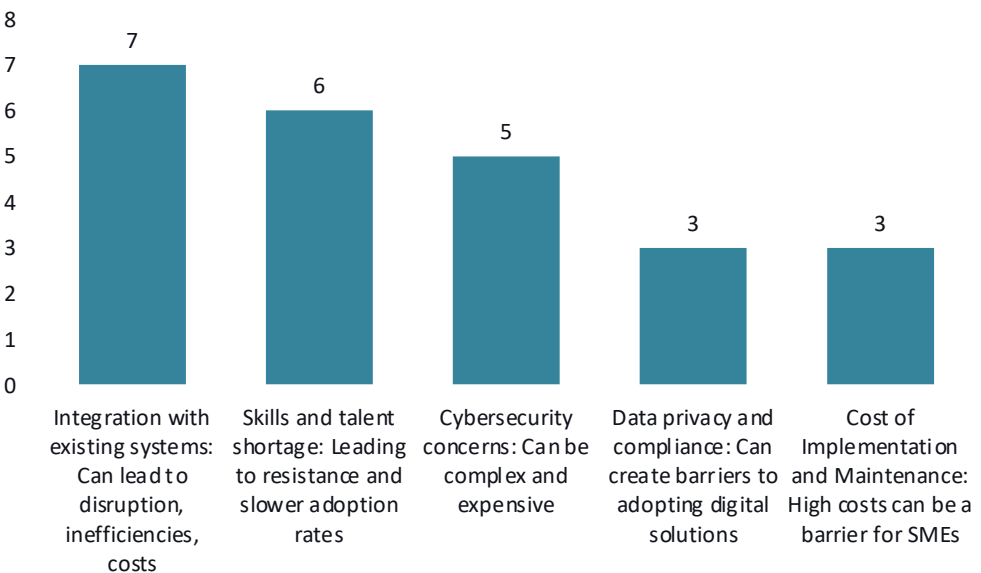


Rutger Nouwen

Consultant, Supply chain/operations (ex-Apple, ex-Carrefour)

“The main problem in supply chain management is that companies up and down the chain are not connected with regards to planning. And that also means they're not connected with regards to working capital planning... Supply chain management startups could help solve this with blockchain and with adequate planning tools.”

What are the **main technological or operational challenges** that could **hinder the adoption of new technologies** or **operational practices** in the area of supply chain management and trade finance, and especially in the European context?



Customers and distribution: Diverse market requires tailoring of solutions, while active networking and communicating help access to distribution

Customer segments in supply chain management and trade finance vary widely, from large corporations to SMEs, each with unique challenges and needs. Effective distribution channels rely on relationship-building, adaptability, and leveraging technology to navigate a fragmented and competitive market.

Customer segments

- Complex large companies:** Large companies often have complex procurement processes and can be challenging to integrate with, while SMEs require simpler, scalable, and budget-friendly solutions.
- More agile smaller companies:** Medium-sized businesses can be agile and focused on tools for scaling operations without major infrastructure investments, while SMEs seek digital tools to improve efficiency and access to financing.
- Specific segments:** Exporters, importers, transportation companies, freight forwarders, and port operators are some of the active participants in this space.

Distribution channels

- Active network building:** Networking, trade shows, and building relationships are essential for integrating into larger supply chains and distribution networks.
- Active communication strategy for visibility:** Social media and strategic alliances play significant roles, particularly for smaller companies trying to gain visibility and connect with larger players.
- No one-size-fits-all approach:** Tailored and flexible solutions are key given the fragmented and diverse nature of the distribution landscape, with varying needs for collaboration across industries and regions.

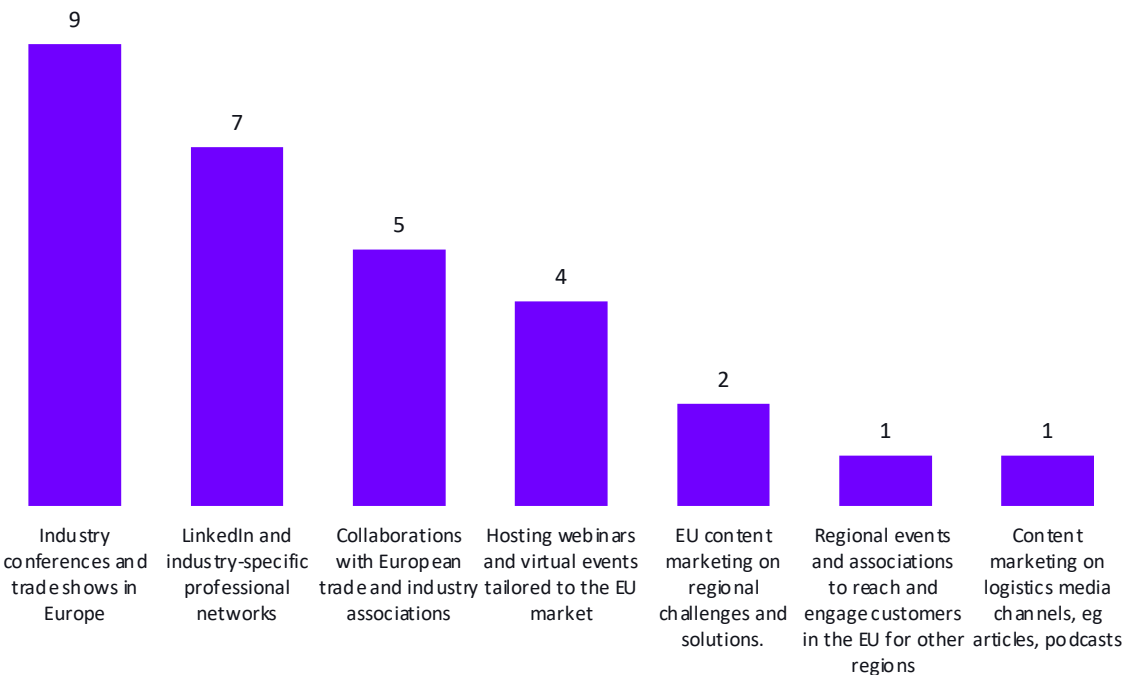
Rutger Nouwen

Consultant, Supply chain/operations
(ex-Apple, ex-Carrefour)

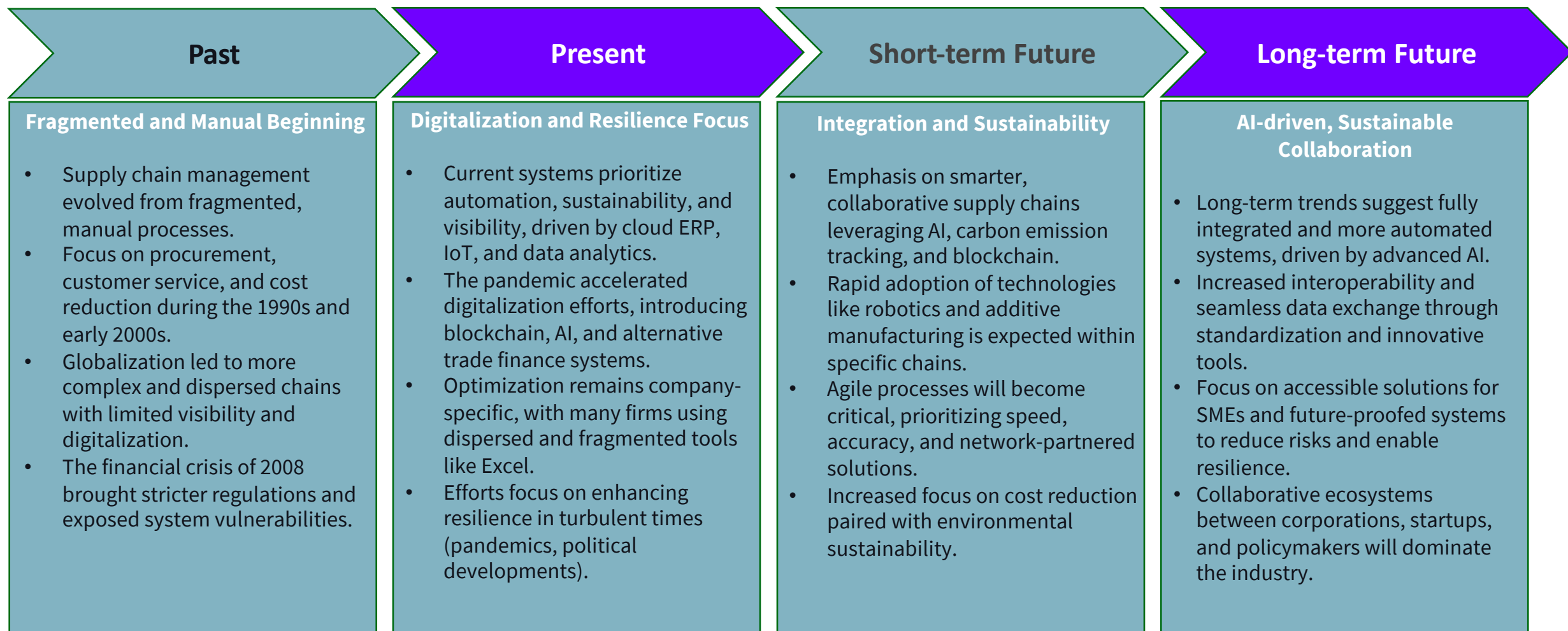


“In my experience, large companies often do business with other large companies and try to integrate the buy-sell process between each other. However, there are sometimes very small companies who supply very large companies with unique products. These two meetings are usually a matter of luck and networking, visiting trade shows and that kind of thing.”

Which of the following **channels** do you believe are most effective for reaching and engaging customers in the area of supply chain management and trade finance?



Roadmap: The evolution of supply chain management and trade finance



Challenge-to-Action Framework

Challenge Description	Category	Start-ups with the challenge	Mentor & Stakeholder insight	Start-up action plan
Access to capital, especially to fund product development, international expansion, and scaling efforts.	Funding	10	Show value through proof-of-concept projects and offer flexible business models, such as pay-per-use or collaboration with established entities	Develop strategic alliances with industry leaders, streamline integration with existing systems, showcase immediate ROI, and secure scalable funding sources for growth
Long enterprise sales cycles and difficulty in reaching key stakeholders or aligning with client systems.	Sales	6	Build trust with decision-makers. Strategic alliances are important, as are flexible, modular solutions that align with client needs.	Offer modular, easily integrated solutions tailored to customer needs, ensure clear ROI, and build networks with industry experts and stakeholders.
Need to recruit and retain key personnel to support growth and technical development.	Talent	3	Hire individuals with specialized knowledge of sector, leverage networking opportunities, and create scalable and adaptable business plans	Hire experts with relevant niche skills, leverage focused networking, and create flexible integration for aligning talent with strategic growth objectives.
Low market readiness, awareness, or resistance to new tech/short supply chains.	Market	2	Show simple, impactful solutions, with real-time visibility and traceability, thus focus on scalable, modular solutions that integrate seamlessly with legacy systems	Develop precise solutions addressing unmet needs, ensure ease of integration with existing systems, focus on niches, and leverage strategic networking.
Lack of brand visibility and challenges in marketing value propositions effectively.	Marketing	2	Align offerings with existing customer behaviors, and infrastructure to minimize resistance, while also focusing on niche markets where larger competitors are less agile	Develop targeted solutions for specific problems, leverage focused networking, proof of concept projects, and use accessible, scalable business models.
Complexity in integrating or scaling technical products and platforms.	Product	2	Focus on modular solutions that integrate easily with existing systems, prioritize precision and improved outputs compared to current tools, and build compatibility	Build solutions addressing unsolved problems, prioritize cybersecurity by design, ensure solutions integrate easily with existing systems, and leverage targeted networking.
Difficulty in aligning diverse stakeholders around shared sustainability or digital transformation goals.	Partnerships	1	Foster collaboration among companies, startups, and regulators; form strategic alliances to facilitate alignment	Develop specialized solutions that integrate seamlessly with existing systems, foster collaborative networks, and address unsolved problems with advanced technology adoption.

Other Market Opportunity Roadmaps



Circular Models for Cities roadmap



Renewable Energy Production roadmap



Sustainable Mobility roadmap



*AI-Powered Utility Management for
Sustainable and Smart Cities roadmap*

Authors

 [Nikita Akmaikin](#)

*Project Manager
at Aalto Startup Center,
Aalto University*



 [Roy Nyberg](#)

*Staff Researcher
at CKIR,
Aalto University*



 [Henrik Keinonen](#)

*Staff Researcher
at CKIR,
Aalto University*




Interview participants



 [Kris Kosmala](#)

*Chief Digital Officer at
Yilport Holding*



 [Gadi Benmoshe](#)

*Vice Chair IAPH, ex-CIO of
Israel Ports Company*



 [Pieter Ruijsenaars](#)

CEO, DiManEx BV

Oswaldo Almonacid
Rivas
*Global Supply Chain
Consultant, Aldi SUD
Holding*



 [Rutger Nouwen](#)

*Consultant, Supply
chain/operations (ex-
Apple, ex-Carrefour)*



THANK YOU!



d2xcel.eu



info@d2xcel.eu