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BOOSTLOG PROJECT

DELIVERABLE REPORT

BOOSTLOG – D4.2

M 11 – 30 November 2021

31 January 2022

Gap analysis for R&I Logistics Clouds (version 1)

WP4

ZLC

Final

Disclaimer

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Document History:

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-commerce delivery system of logistics networks: the physical internet

supply chain resilience

interconnected logistics networks supply chain visibility data sharing architecture / technology synchromodality

fostering cooperation and collaboration among the logistics chain

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1 Introduction

1.1 BOOSTLOG project

Companies

1.2 Scope of this deliverable

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2 Heat map

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	Trends																			
	Distributed Ledger Technology & Blockchain	Next Generation Wireless - 5G	Clouds & Virtualisation	Standardisation & data modeling	Internet of Things	Mobile Computing	Digital Twins	Data Science	Artificial Intelligence	Big Data Analytics	Robotics, Cobots & Automation	Self Driving Vehicles / CCAM	Platooning	Augmented reality	Virtual Reality	Additive Manufacturing / 3D printing	Nano technologies	Alternative fuels & drive train technology	Predictive maintenance
Crowd shipping	2	3	3	1	3	3	1	3	3	2	1	1	1	2	1	1	1	1	1
Shared warehousing	1	1	2	2	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1
Hyperconnected hubs	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	1	1	2
Agility: Plan, forecast and adapt to disruption	3	3	2	3	3	3	3	3	3	3	2	2	2	2	2	3	1	2	3
Influencing consumer behaviour	1	1	1	1	2	1	1	2	2	2	1	1	1	2	2	2	1	1	1
End-to-end international booking systems	2	2	3	3	2	2	2	3	2	3	2	2	2	2	1	2	2	2	2
Dynamic supply and demand planning	2	3	2	3	3	3	3	3	3	2	2	2	1	1	1	1	1	1	2
Flow synchronisation	2	2	2	2	2	2	2	3	2	2	2	2	2	1	1	1	1	1	1
Sustainability assessment tools	2	2	2	2	2	2	2	2	2	2	1	1	1	2	2	1	1	1	1
Autonomous logistics nodes	2	2	3	2	2	2	2	2	3	2	2	2	2	2	2	1	1	2	2
Shared networks	2	2	3	3	3	2	2	3	3	3	2	2	2	2	2	1	1	2	2
Public transport for logistics	2	2	2	2	2	2	2	3	2	3	2	3	2	2	1	1	1	2	2
Modular loading units (PI container)	2	2	2	3	3	2	3	2	2	2	3	2	2	2	2	2	2	1	2
Sustainable logistics sites, incl. warehouses	2	2	2	2	2	1	2	2	2	2	3	2	1	2	2	2	1	2	2
Sustainable fleets & assets	2	2	2	3	2	2	2	2	2	2	2	2	2	2	1	1	2	3	3
Synchromodality	2	2	2	3	3	2	3	3	3	3	2	2	2	2	2	2	2	2	2
Connected corridors and hubs	2	3	3	3	3	2	3	2	2	3	2	2	1	2	2	1	1	2	2
Emissions measurement & reporting schemes	2	2	2	3	2	2	2	2	2	3	1	1	1	2	2	1	1	2	2
Autonomous operations	2	3	3	2	3	3	2	2	3	2	3	3	2	2	2	1	2	2	2
Autonomous transport	2	3	2	3	2	2	2	3	3	3	3	3	2	2	2	1	2	2	2
E-commerce delivery concepts	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	1	1	2	1
Supply chain visibility	2	2	3	3	3	3	2	3	2	3	1	1	1	2	2	1	1	1	2
Shared transport / pooling and goods consolidation	2	2	2	3	2	2	2	2	3	3	2	2	2	2	1	1	1	2	2
Fostering cooperation and collaboration among the logistics chain	2	2	2	3	2	2	2	3	2	3	2	2	1	1	1	1	1	2	2
Interconnected logistics networks	2	2	3	3	2	2	2	2	2	3	2	2	1	1	1	1	1	2	2
Supply chain resilience	2	2	2	2	2	2	2	3	2	2	2	2	1	2	1	2	2	2	2
System of logistics networks: The Physical Internet	2	2	3	3	3	2	3	3	3	3	2	2	2	2	2	2	1	2	2
Zero emission vehicles / cargo bikes	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	3	2
Data sharing architecture / technology	2	2	2	3	3	2	2	2	2	3	2	2	2	2	1	2	2	2	2

Figure 1.

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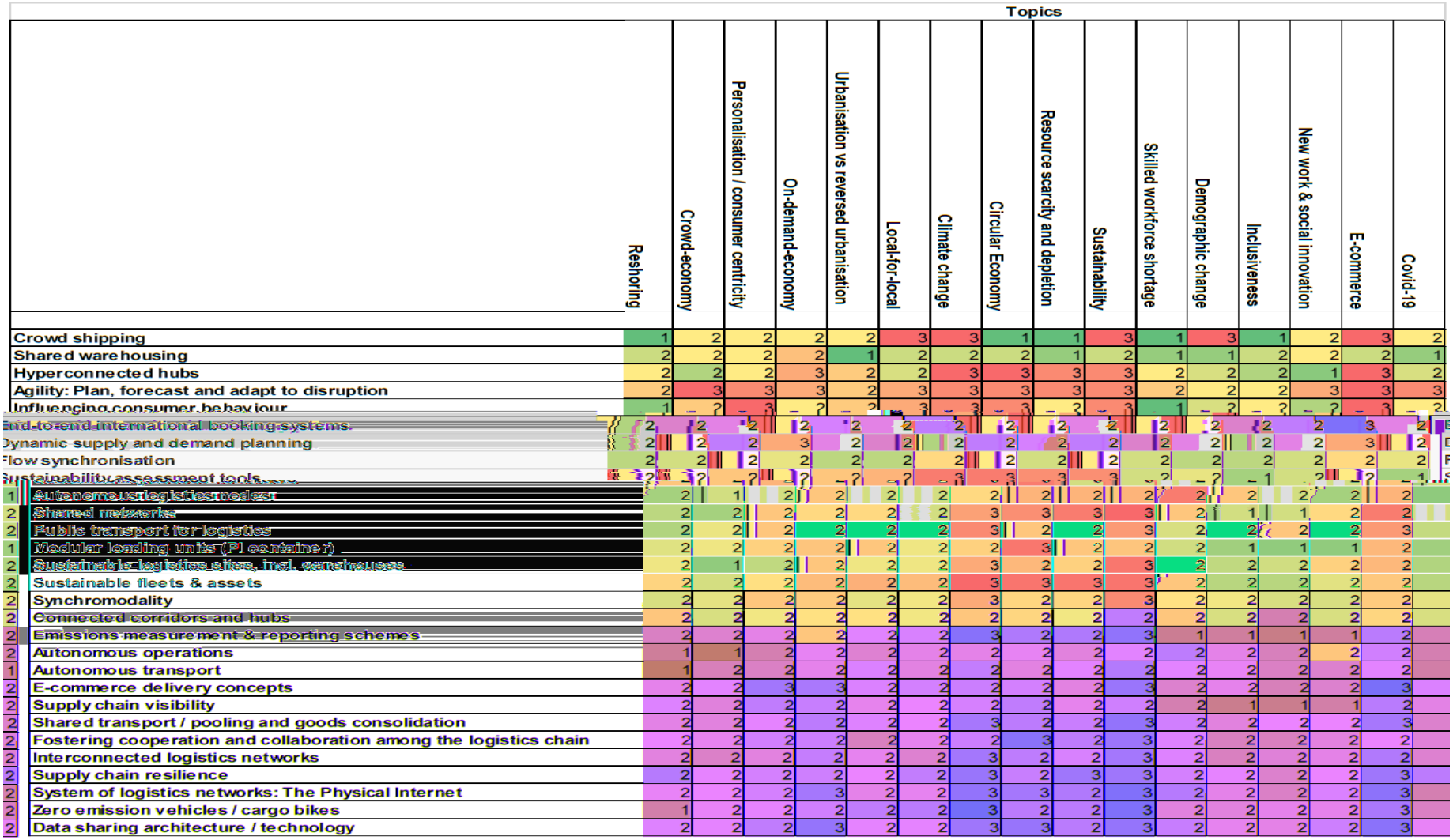

		Topics																
	Reshoring	Crowd-economy	Personalisation / consumer centricity	On-demand-economy	Urbanisation vs reversed urbanisation	Local-for-local	Climate change	Circular Economy	Resource scarcity and depletion	Sustainability	Skilled workforce shortage	Demographic change	Inclusiveness	New work & social innovation	E-commerce	Covid-19
Crowd shipping	1	2	2	2	2	3	3	1	1	3	1	3	1	2	3	2
Shared warehousing	2	2	2	2	1	2	2	2	1	2	1	1	2	2	2	1
Hyperconnected hubs	2	2	2	3	2	2	3	3	3	3	2	2	2	1	3	2
Agility: Plan, forecast and adapt to disruption	2	3	3	3	2	3	3	3	3	3	2	2	2	3	3	3
Influencing consumer behaviour	1	2	3	2	2	3	3	3	2	3	1	2	2	2	3	2
End-to-end international booking systems	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2
Dynamic supply and demand planning	2	2	2	3	2	2	2	2	2	2	2	2	2	2	3	2
Flow synchronisation	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Sustainability assessment tools	2	2	2	2	2	2	2	2	3	3	2	2	1	2	2	1
1 Autonomous logistics robots	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2 Shared networks	2	2	2	2	2	2	3	3	3	3	2	1	1	1	2	2
2 Public transport for logistics	2	2	2	2	2	2	3	2	2	3	2	2	2	2	2	3
1 Modular loading units (PI container)	2	2	2	2	2	2	2	3	2	2	2	1	1	1	1	2
2 Sustainable logistics sites, incl. warehouses	2	1	2	2	2	2	3	2	2	3	2	2	2	2	2	2
2 Sustainable fleets & assets	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2
2 Synchromodality	2	2	2	2	2	2	3	2	2	3	2	2	2	2	2	2
2 Connected corridors and hubs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2 Emissions measurement & reporting schemes	2	2	2	2	2	2	3	2	2	3	1	1	1	1	1	2
2 Autonomous operations	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1 Autonomous transport	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2 E-commerce delivery concepts	2	2	3	3	2	2	2	2	2	3	2	2	2	2	2	3
2 Supply chain visibility	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2
2 Shared transport / pooling and goods consolidation	2	2	2	2	2	2	3	2	2	3	2	2	2	2	2	3
2 Fostering cooperation and collaboration among the logistics chain	2	2	2	2	2	2	2	3	2	3	2	2	2	2	2	2
2 Interconnected logistics networks	2	2	2	2	2	2	3	2	2	3	2	2	2	2	2	2
2 Supply chain resilience	2	2	2	2	2	2	3	2	3	3	2	2	2	2	2	3
2 System of logistics networks: The Physical Internet	2	2	2	3	2	2	3	3	2	3	2	2	2	2	2	3
2 Zero emission vehicles / cargo bikes	1	2	2	2	2	2	3	2	2	3	2	2	2	2	2	3
2 Data sharing architecture / technology	2	2	2	3	2	2	3	3	2	3	2	2	2	2	2	3

Figure 2.

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3 R&I Logistics Clouds

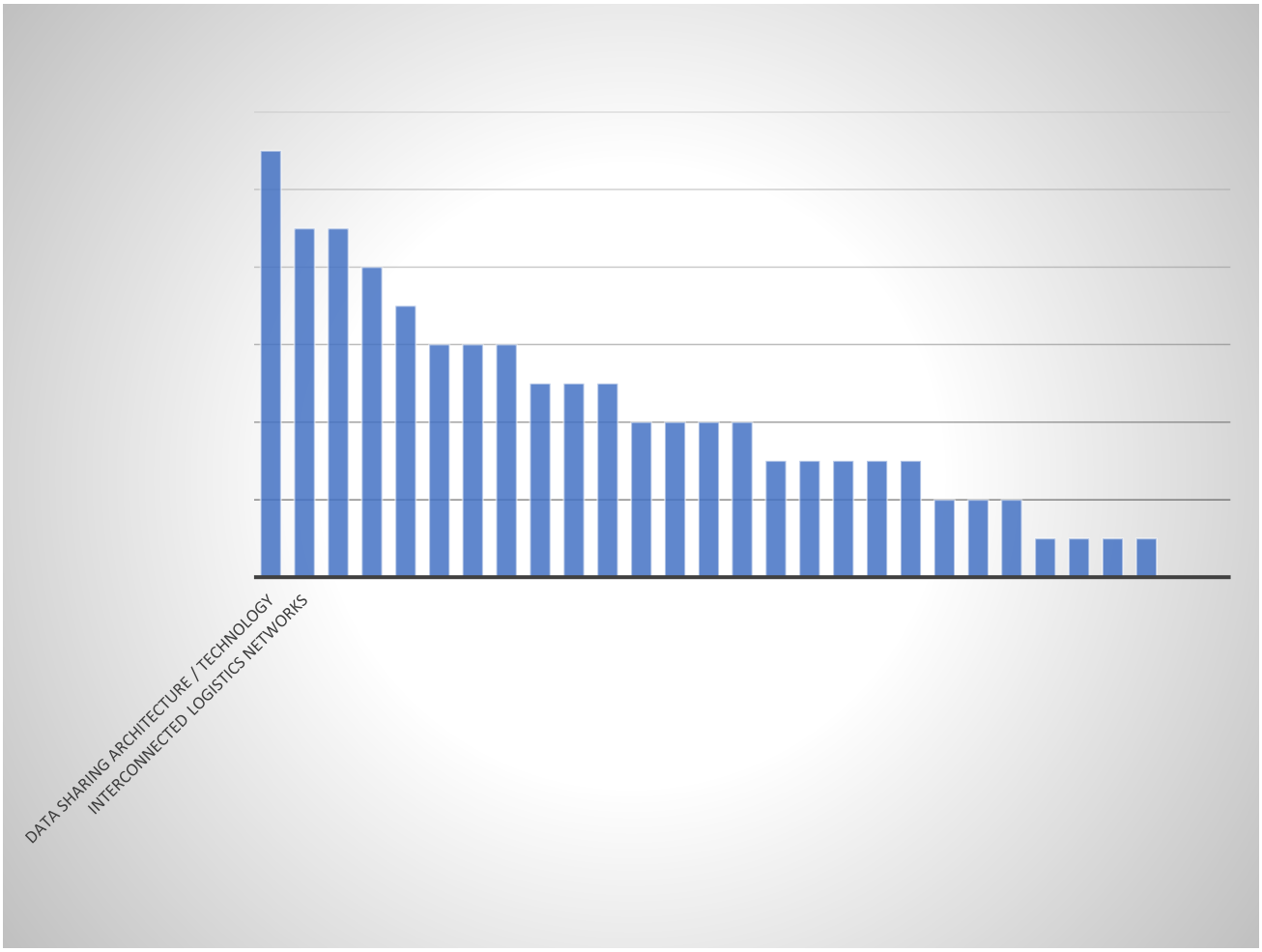

Figure 3.

Data sharing architecture / technology

Interconnected logistics networks

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System of logistics networks: the physical internet

Fostering cooperation and collaboration among the logistics chain

Supply chain visibility

Autonomous operations

Autonomous transport

E-commerce delivery concepts

Supply chain resilience

Synchromodality

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4 Mapping of projects contributions to the Logistics Clouds

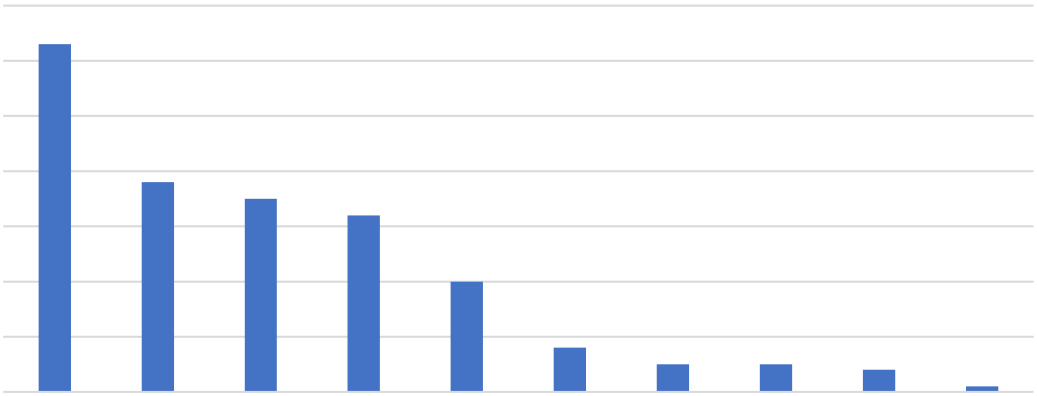

Figure 4.

autonomous operations

LOGISTICS PROMISING CONCEPTS	PERCENTAGE OF PROJECTS ADDRESSING THE CONCEPT
fostering cooperation and collaboration among the logistics chain	
synchromodality	
data sharing architecture / technology	
supply chain visibility	
interconnected logistics networks	

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LOGISTICS PROMISING CONCEPTS	PERCENTAGE OF PROJECTS ADDRESSING THE CONCEPT
supply chain resilience	
system of logistics networks: the physical internet	
autonomous transport	
e-commerce delivery concepts	
autonomous operations	

-
-
-
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5 Gap analysis

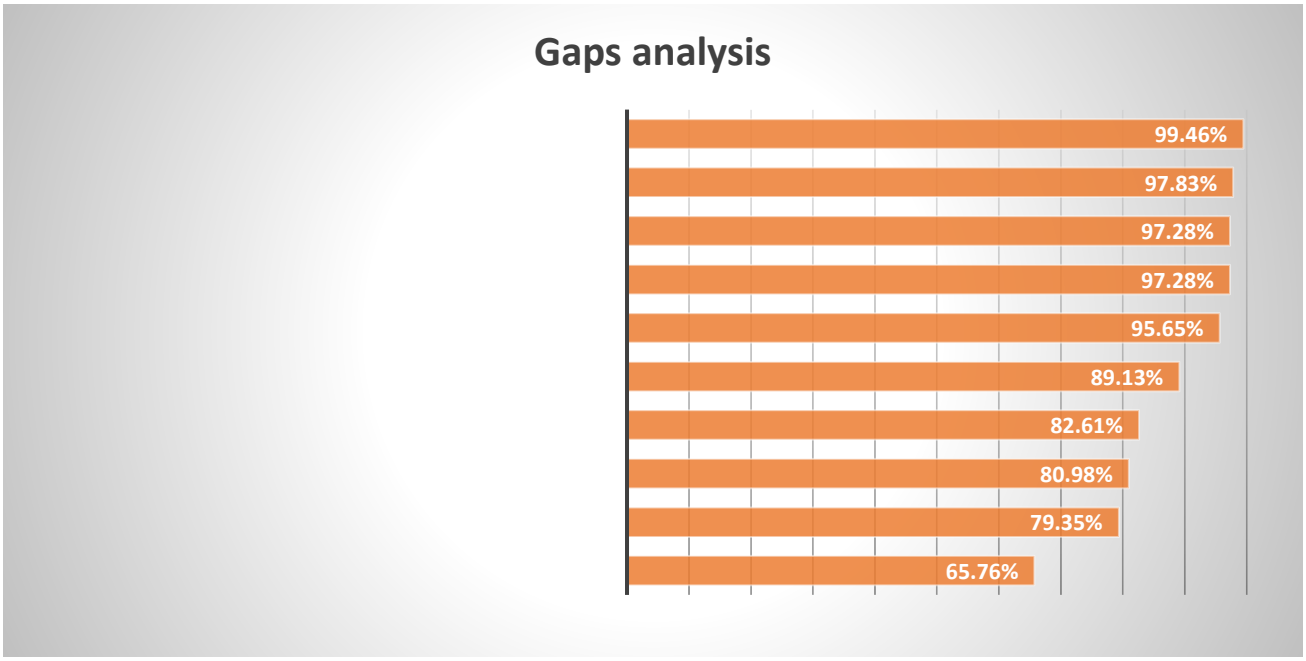

Figure 5.

autonomous operations

E-commerce delivery concepts autonomous transport system of logistics networks: the physical internet supply chain resilience

Seamless safe logistics through an autonomous waterborne freight feeder loop service[2].

interconnected logistics networks supply chain visibility data sharing architecture / technology synchromodality interconnected logistics networks

More efficient and effective multimodal freight transport nodes to increase flexibility, service visibility and reduce the average cost of freight transport[3].

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fostering cooperation and collaboration among the logistics chain

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6 Recommendations for policymakers

6.1 First collection of recommendations

1. **Connected networks in a sustainable society**

2. **Coping with the on-demand economy**

3. **Prepare for disruption – resilience and visibility to the next level**

4. **Modular loading units for e-commerce**

5. **Requirements for sustainable intermodal networks, fleets and assets**

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6. Aligning initiatives for sustainability measurement schemes

7. Aligning initiatives for carbon emission accounting/measuring schemes

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7 Outline

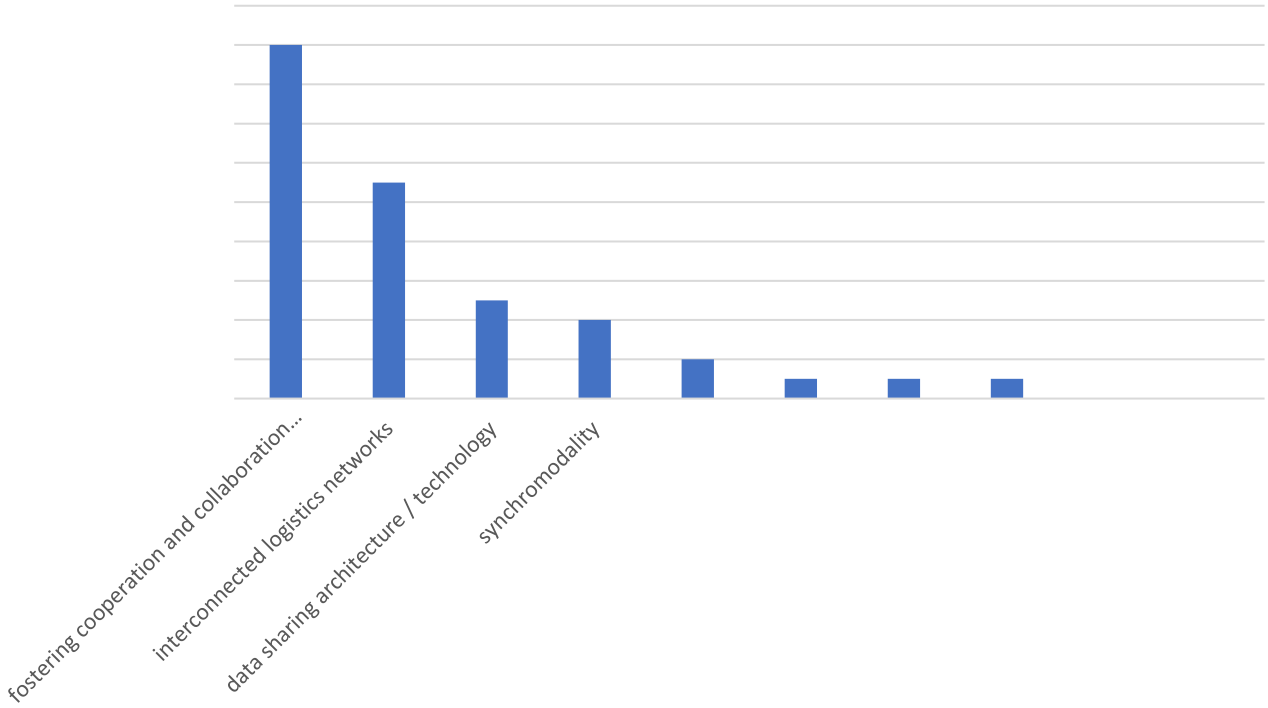
fostering cooperation and collaboration...
interconnected logistics networks
data sharing architecture / technology
synchromodality

Figure 6.

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ACRONYM	DATA SHARING ARCHITECTURE / TECHNOLOGY	INTERCONNECTED LOGISTICS NETWORKS	SYSTEM OF LOGISTICS NETWORKS: THE PHYSICAL INTERNET	FOSTERING COOPERATION AND COLLABORATION AMONG THE LOGISTICS CHAIN	SUPPLY CHAIN VISIBILITY	AUTONOMOUS OPERATIONS	AUTONOMOUS TRANSPORT	E-COMMERCE DELIVERY CONCEPTS	SUPPLY CHAIN RESILIENCE	SYNCHROMODALITY
MOSCA										
CITYLAB										
NEXTRUST										
NOVELOG										
SUCCESS										
U-TURN										
MAIN-E										
PRODCHAIN*										
EURIDICE										
KOMODA										
SECURE SCM										
E-FREIGHT										
CO3										
ICARGO										
MODULUSHCA										
CLUSTERS 2.0										
COG-LO										
ICONET										
LOGISTAR										

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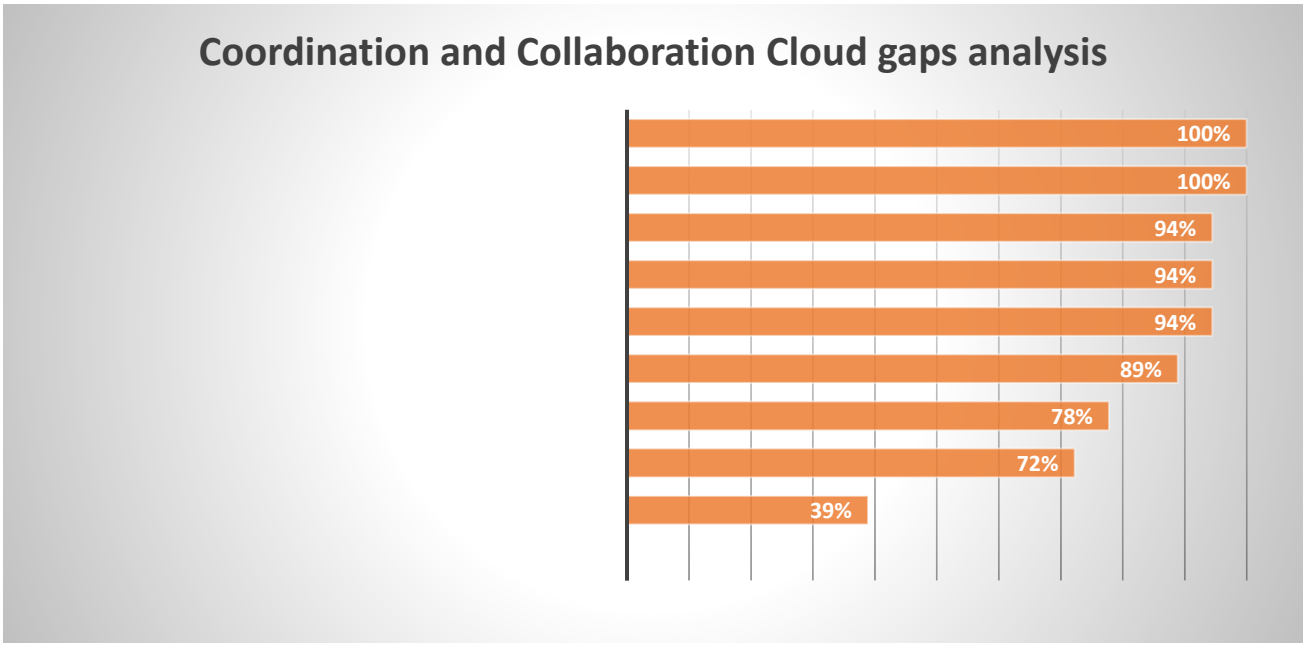

Figure 7.

autonomous transport *supply chain visibility* *autonomous operations* *e-commerce delivery concepts* *supply chain resilience* *system logistics networks: the physical internet* *synchromodality* *data sharing architecture / technology* *interconnected logistics networks*

Autonomous transport
Supply chain visibility
Autonomous operations

E-commerce delivery concepts

Supply chain resilience

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System of logistics networks: the physical internet

Synchromodality

Data sharing architecture / technology

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Interconnected logistics networks

Fostering cooperation and collaboration among the logistics chain