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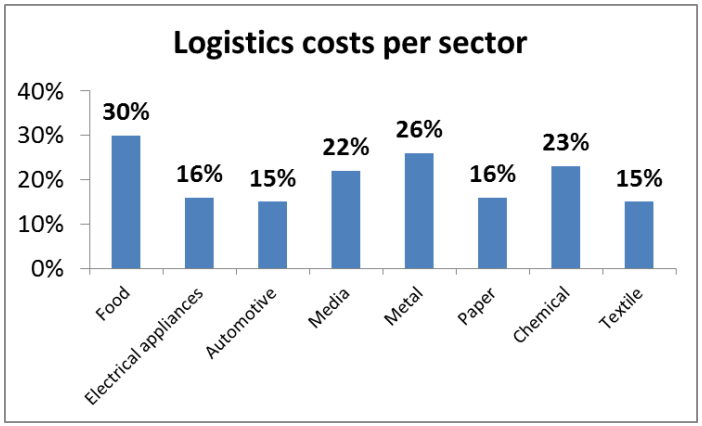
An insight into ALICE: The European Technology Platform for Logistics

Activities performed partially in the frame of WINN and SETRIS. The WINN/SETRIS project has received funding from the European Union´s FP7 and Horizon 2020 research and innovation Programme under grant agreements No. 314743 and 653739

The importance of Logistics

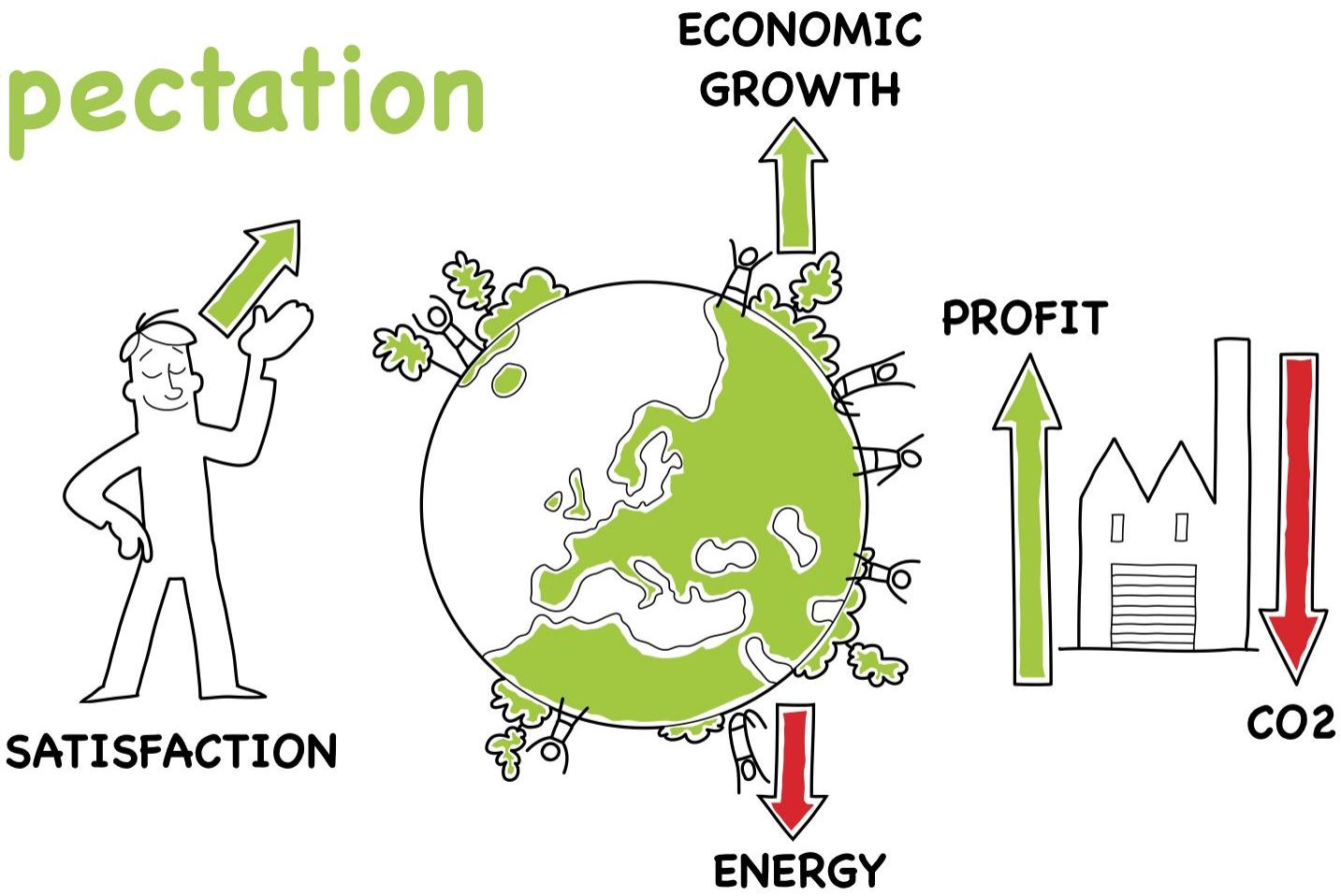
- Logistics industry in Europe → 14% of GDP[1]. Seven countries out of the global top-10 logistic performers are from the EU in 2014[2]
- Transportation is responsible for around a quarter of EU greenhouse gas emissions[3]
- On average, logistics costs account for 10-15% of the final cost of the finished product[4].



High potential **contribution** to **European competitiveness and sustainability targets** (Cost, CO_2 and energy savings)

[1] COM(2007) 607 final. "Freight Transport Logistics Action Plan" European Commission, Brussels, 18.10.2007
[2] Worldbank.org "Connecting to Compete 2012" http://siteresources.worldbank.org/TRADE/Resources/239070-1336654966193/LPI_2012_final.pdf.
[3] http://ec.europa.eu/clima/policies/transport/index_en.htm
[4] European Logistics Association (2007)

Expectation



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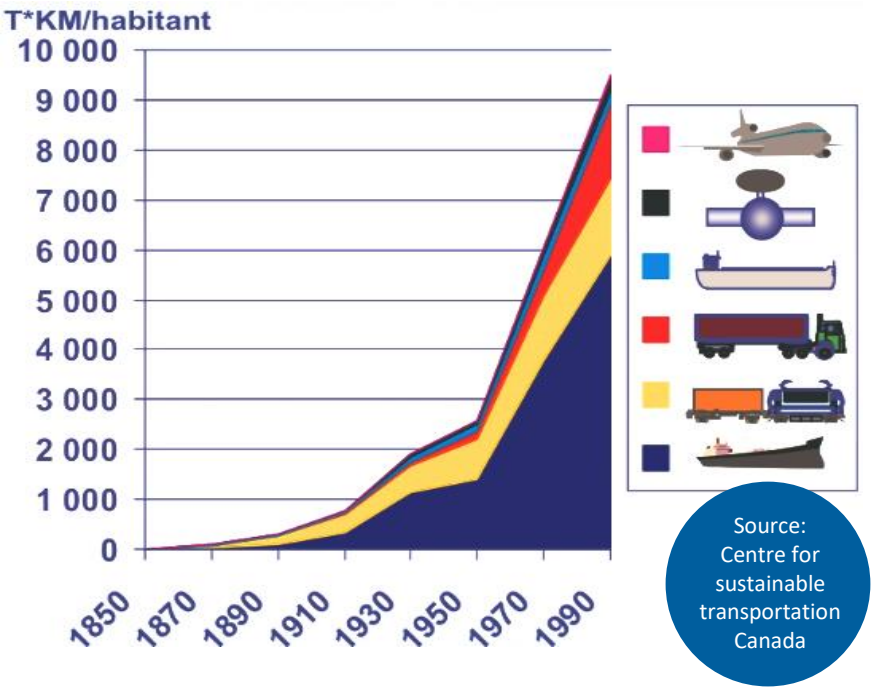
Efficiency, trends and innovations

- Efficiency, trends and innovations

  - Trends…
    - **Flow exponential growth**

  - **Shipments fragmentation**
    - Shipment median weight divided by 4,5 from 160 kg in 1988 to 30 kg in 2004
      Source IFSTTAR 2013

  - **A no cost illusion for the consumers**



  - **Expectations: better services and economic support to growth**

How to take advantage of economy of scale when shipments are getting smaller?

How to mitigate the environmental effects? Decoupling / economic activity?

How to cope with the demand and without a new physical infrastructure?

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10 YEARS: ZERO IMPROVEMENT ON LOAD FACTORS

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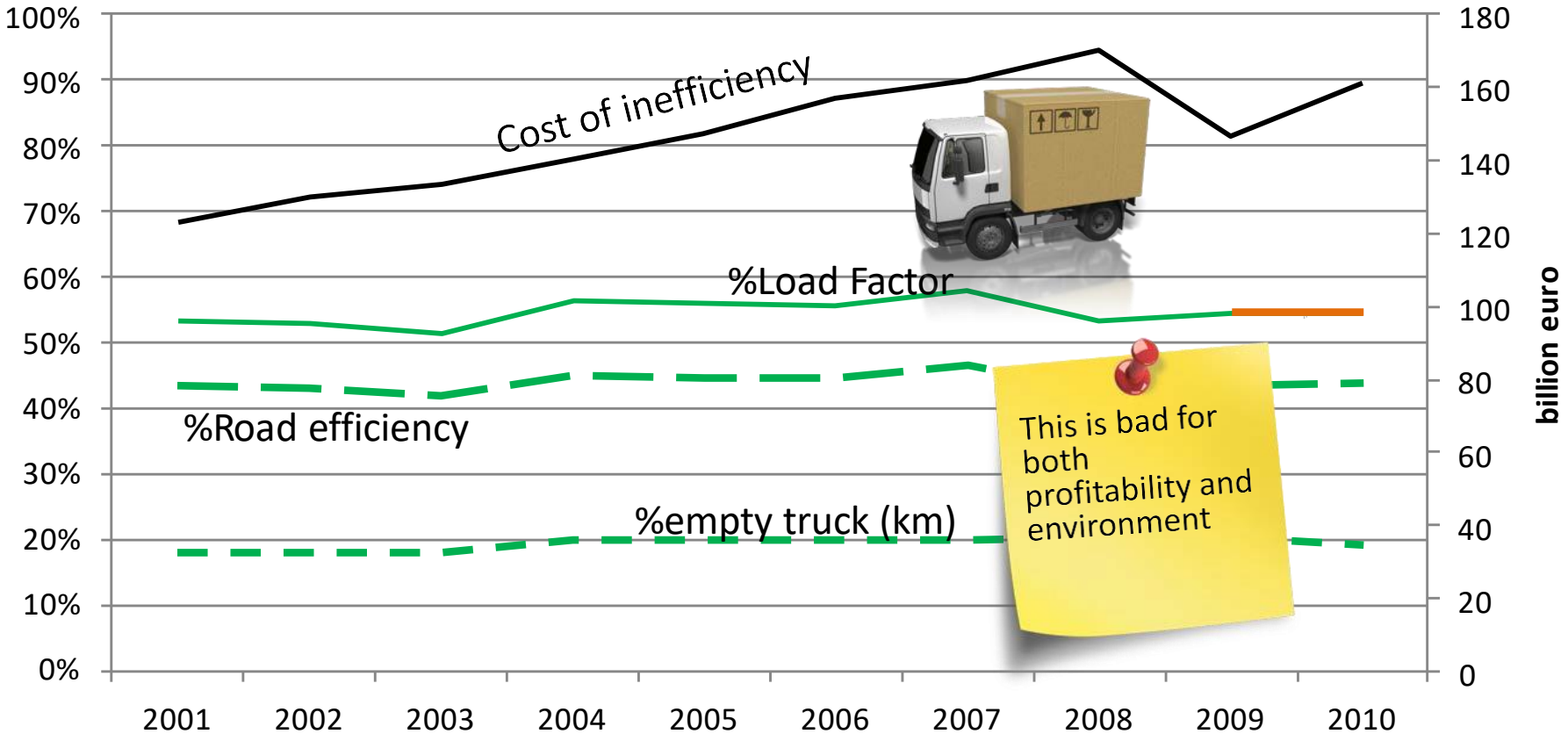

EUROPE GAINS to 70%: Eur 160 Billions

1.3% CO_2 footprint

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We need the end-to-end view

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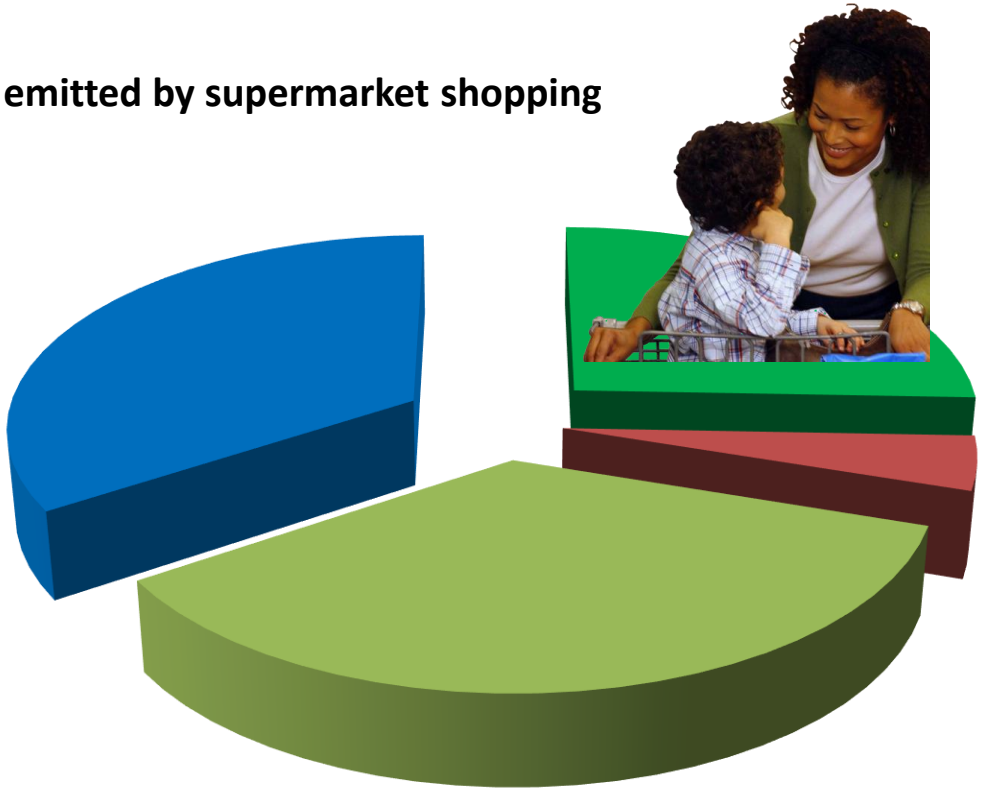
CO_2 emitted by supermarket shopping



- **Consumer trip (transport between home & store)**
- **Packaging (store - shopping bag)**
- **Retailer operations (store/ DC /transport)**
- **Manufacturer operations (DC/ transport)**

Source: LCA study, P. van Loon, J. Dewaele, L. Deketele - Heriot-Watt University / P&G
30 items/shopping basket - UK B&M supermarket - typical (average) travel behavior (distance, transport mode)

European Commission

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WHY DO WE NEED A CHANGE IN THE INTERMODALITY APPROACH?

RAIL INFRASTRUCTURE IS UNDERUTILIZED

	EU 27 - FREIGHT TRANSPORT STATISTICS					
	ROAD			RAIL		
	NETWORK (1)	VOLUME (2)	INTENSITY (4)	NETWORK (3)	VOLUME (2)	INTENSITY (4)
1995	47970	1289	26.9	227139	386	1.7
2000	54719	1519	27.8	217857	404	1.9
2005	62218	1794	28.8	212384	413	1.9
2009	66814	1690	25.3	212693	361	1.7
% CHANGE	+ 39%	+31%	-6%	-6%	-6%	0%

(1) Length of EU-27 Motorway Network in Kilometer
(2) Freight volume shipped in EU-27 in Ton-Kilometer
(3) Length of EU-27 Railway Network in use in Kilometer
(4) Million Ton-Kilometer per Network Kilometer

Source : EU Commision - Transportation Booklet

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WHY DO WE NEED A CHANGE IN THE INTERMODALITY APPROACH?

SWIFTLY Green

Co-financed by the European Union Trans-European Transport Network (TEN-T)

WE ARE NOT ABLE TO SET UP AND SUSTAIN INTERMODAL CONNECTIONS

NO CONNECTIVITY

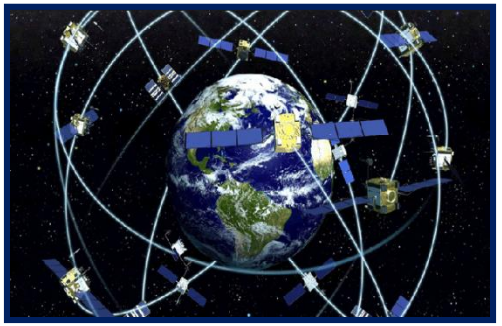
NO VOLUME

NO FREQUENCY

HIGH COSTS

WAITING TIMES

NO VISIBILITY



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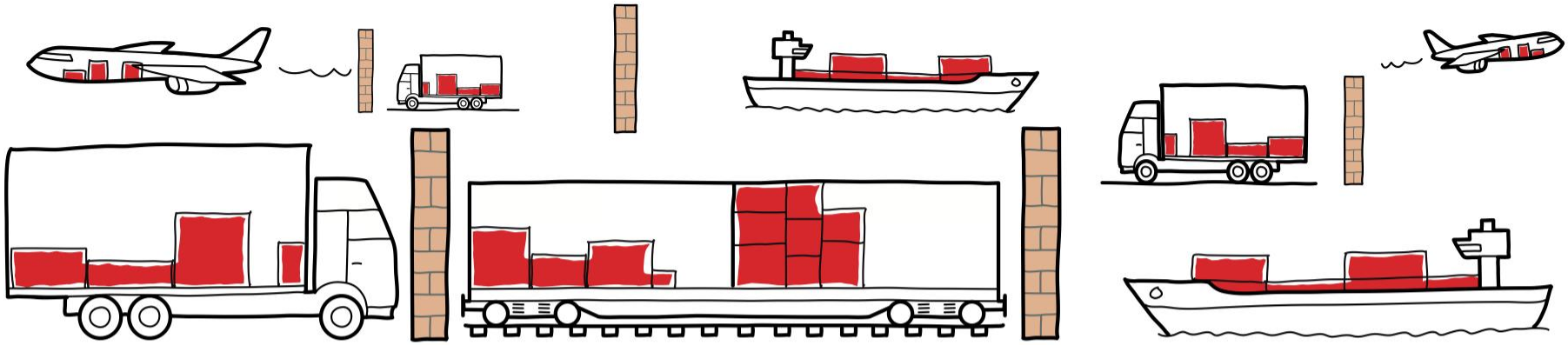
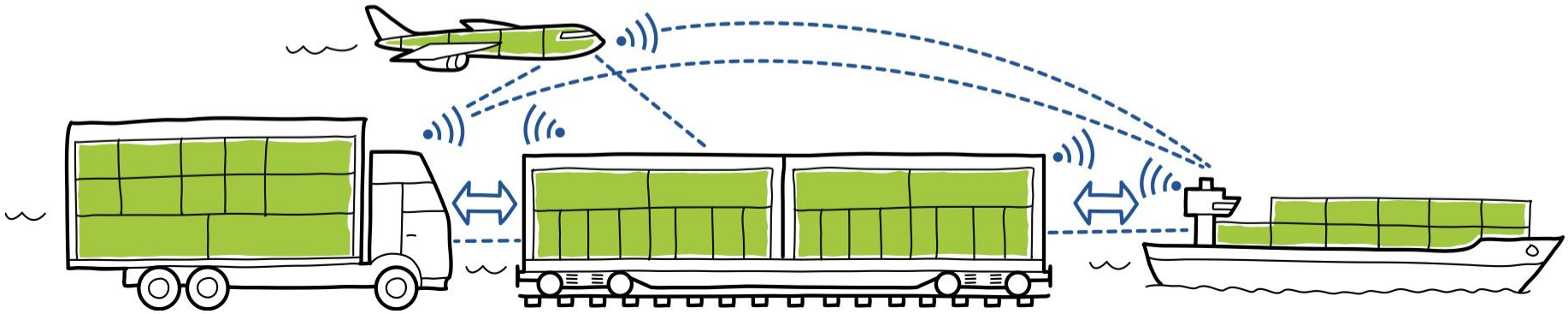


Challenge



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European Commission

We cannot stay complacent to these existing paradigms:

- *Intermodal solutions slow down the Supply Chain and increase inventory*
- *Trucks load factors cannot be improved*
- *Inventory reduction as a pure financial target*
- *Horizontal collaboration is impossible*
- *IT Connectivity is too expensive and sometimes (SMEs) not affordable*
- *…..*

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Market opportunity and vision

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A 10% to 30% ⬆ efficiency in EU logistics sector

=

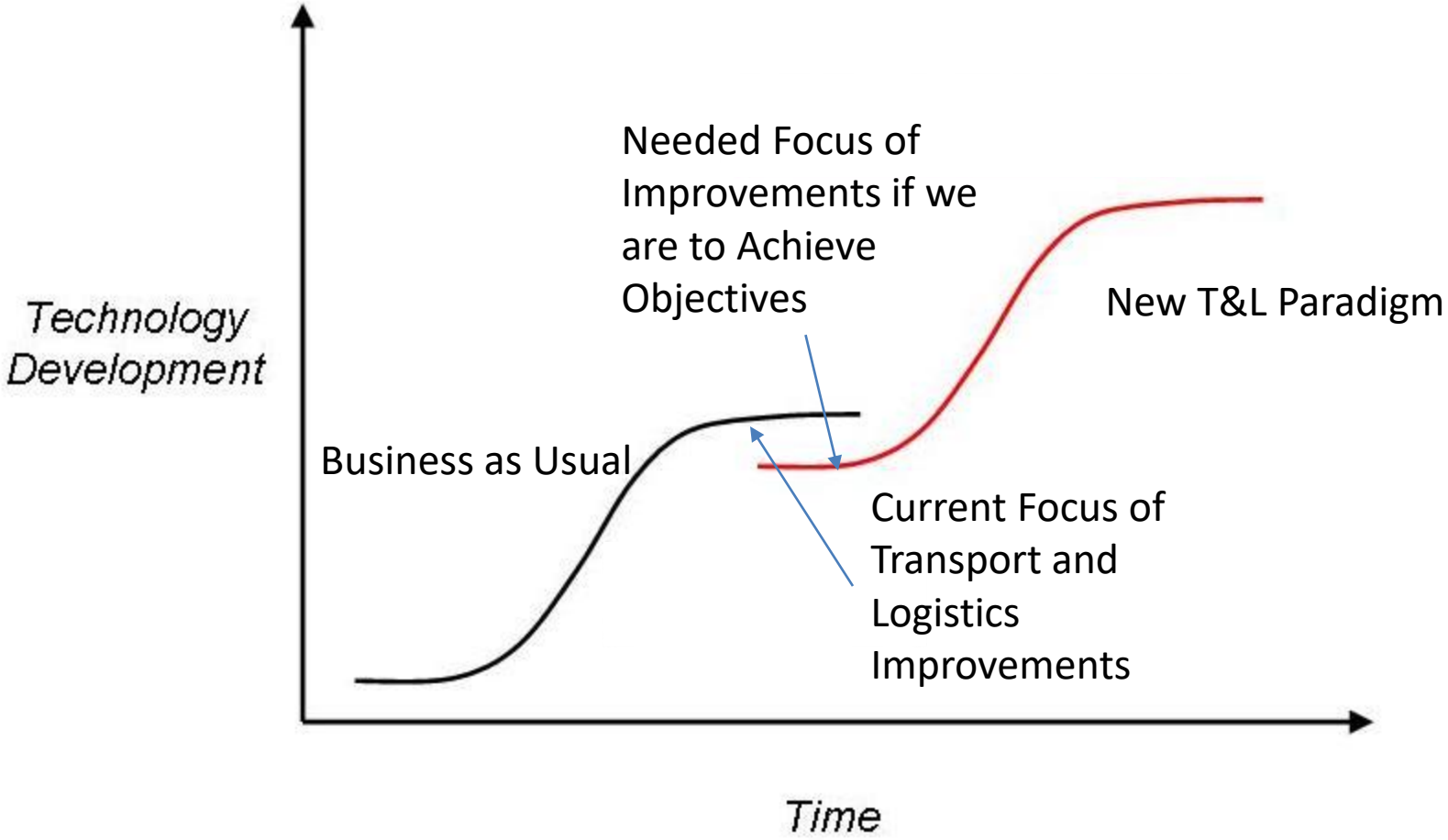
€ 100 – 300 billion cost relief for European industry

Make European industry resilient by a true “people, planet, profit” oriented logistics and supply chain sector.

A sector that is economically, environmental and socially sustainable contributing to both industry competitiveness and the EU policy targets

Activities performed partially in the frame of WINN and SETRIS. The WINN/SETRIS project has received funding from the European Union´s FP7 and Horizon 2020 research and innovation Programme under grant agreements No. 314743 and 653739

Unfortunately, current approaches focus on improving what we currently do



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What's needed is a new paradigm

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- Why are we all optimizing our small piece of the pie and not the pie itself?
- Why are we operating like technology is there to make what we do more efficient and not something that could change the industry?
- Why do we believe that in the future transport vehicles will be operated as they are today?
- Why do we ignore advances in smart infrastructures that result in dramatically different uses of the infrastructure?
- Why do we believe that our current logistics and transport models are appropriate for megacities?
- Why are we concerned about owning assets that become obsolete more rapidly than ever?
- Why are we seeking answers concerning the future by looking in the rear view mirror?

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Mission

- **Development of new logistics and supply chain concepts and innovation** for a more competitive and sustainable industry.
- The ambition is to **contribute to a 30% improvement of end to end logistics performance by 2030.**
- The ETP on logistics aims to **accelerate** the **deployment** of more efficient, competitive and sustainable supply chains.

Way to achieve

- Bring together **primary stakeholders**: Shippers and Logistics Service Providers
- Together with other **relevant stakeholders**: **transport companies, terminals and terminals operators, support industry** (IT, Consultancy, transport & logistics equipment) and **research and education**
- **Collaboration with related ETPs:** ERTRAC, ERRAC (Shift2Rail), WATERBORNE AND MANUFUTURE (FoF)

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ALICE Scope

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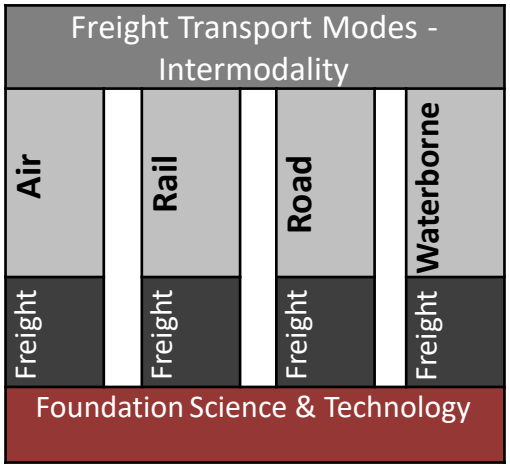
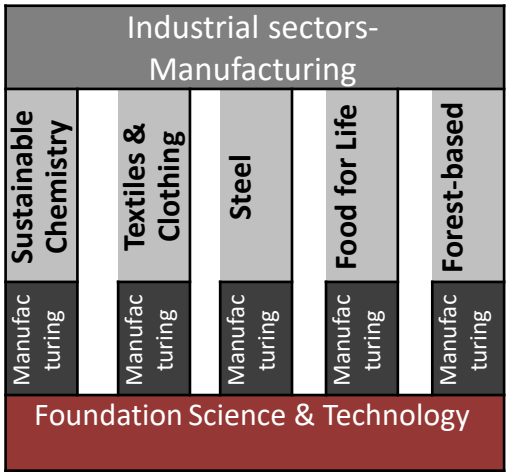
The connection between Modes and Industry for Optimized Logistics and Supply Chain Management

Logistics + Supply Chain

How to Transport



What to Transport



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ALICE and related ETPs

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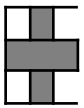
The connection between Modes and Industrial ETPs for Optimized Logistics and Supply Chain Management

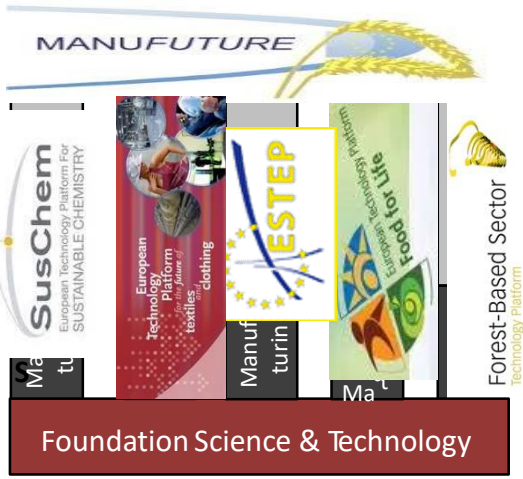
Logistics + Supply Chain

How to Transport

Synchromodal

What to Transport





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Logistics and Supply Chain

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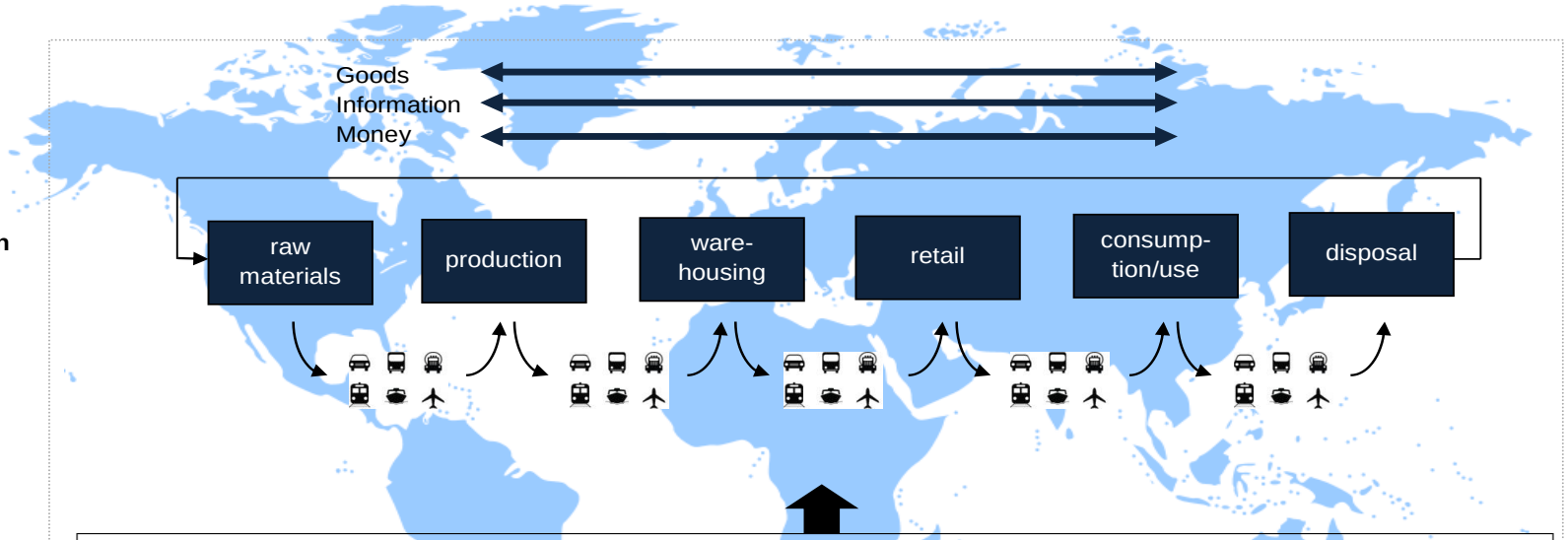
A Supply Chain



Transportation

Decisions impacting (the need for) transportation

	Design	Manufacturing	Distribution	Sales	After sales	Finance	Inspections
Supply Chain decisions	Modular design, component commonality, new materials, miniaturization	Greater machine flexibility, smaller batches, lower set-up times, production locations	The time of information availability and the remaining time for transportation	Sales planning, promotions, packaging, product variety	Guaranteeing the upkeep of machines, return flows	Financing and insurance of goods, import duties and risk management, financial liquidity	Timing of inspections, the demands for inspections for different types of products
Impact on transportation	Ship less air and larger volumes, enable value added logistics close to market, safety stock reduction	Lower inventory, smaller batches, smaller lead times, higher transportation service required	Multi-modal transportation, higher vehicle utilization, less empty miles	Efficient use of warehouses and vehicles	Where to stock spare parts, how to transport and process return flows efficiently	Port of call choice, speed of transportation	When products can be shipped, how they are routed

Enablers and drivers

ICT

Technological improvement (e.g. 3D printing)

New materials

Energy costs

Labor costs

Safety & Security

Resource scarcity / local4local

Growing economies

Knowledge availability

Regulation

Shippers decisions influence logistics and transport

- Shipping of components instead of full products: postponement whenever possible
- Supply chain consolidation and coordination, both along and across supply chains
- Reconsidering production locations, considering both transport and sustainability issues
- Pressure on consolidation as well as reverse flows in urban logistics

It is not only a matter of how to transport but also what to transport!!!!

Activities/Output:

- **Define research and innovation** strategies, roadmaps and priorities agreed by all stakeholders to achieve the ETP on Logistics vision. These items will assist the European Commission in the definition of Research and Innovation Programs, i.e. HORIZON 2020
- **Foster innovation in logistics and supply chains,** stimulating and accelerating innovation adoption in order to make possible the growth of the European economy through competitive and sustainable logistics.
- **Raise the profile and understanding of new logistics technologies** and business processes, **monitoring progress and adjusting** research and innovation roadmaps accordingly.
- Contribute to a **better alignment and coordination of European, national, regional innovation programs in logistics**.
- **Provide a network for interdisciplinary collaborative research** involving industry, academia and public institutions.

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ETP on Logistics will not…

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- Will not focus on general logistics policy applications
- Will not include building of transportation infrastructure or vehicle manufacturing and optimization for unimodal transport → This is addressed by modal ETPs: Rail, Road, Waterborne, Air and ETP on infrastructure: Construction
- Will not include manufacturing and specifics on industry sectors → This is addressed by ETPs on: food, textile, chemical, forest, steel and manufacturing

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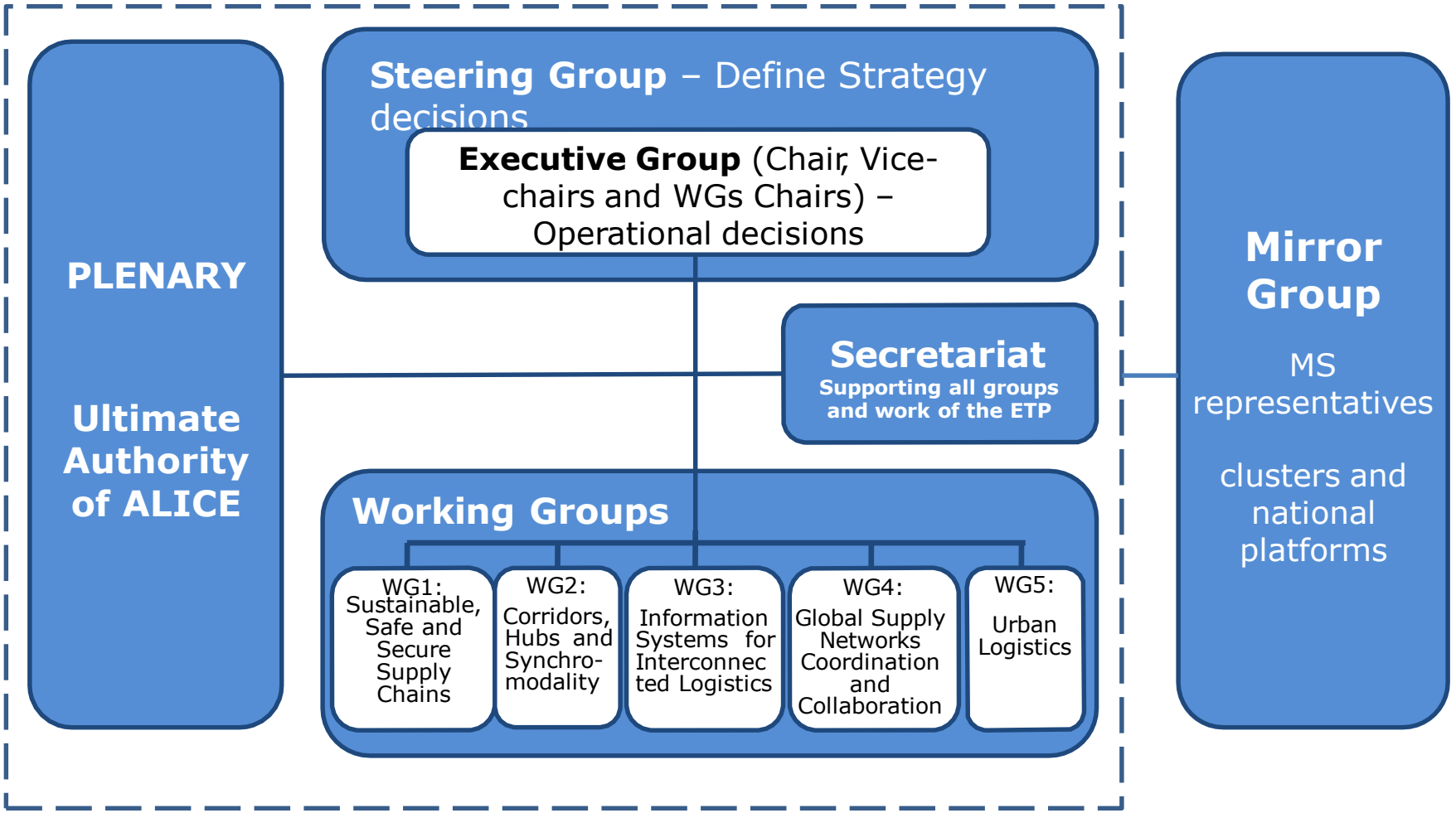
ALICE structure



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ALICE Steering Group composition (35/44 org)

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P&G · SOLVAY · Ford · VOLVO · MAN

Mondelēz International · CHEP · Groupe Casino – Nourrir un monde de diversité · Interporto Bologna SPA · valenciaport – Autoridad Portuaria de Valencia

Posteitaliane · FM Logistic · Schiphol Amsterdam Airport · Trafikverket · Port of Rotterdam

Kuehne+Nagel · IFB member of Logistics · ECO SLC Sustainable Logistics Chain · Department for Transport · vnl Österreich – Verein Netzwerk Logistik · Euralogistic – Pôle d'excellence logistique

Fraunhofer IML · The KLU Kühne Logistics University · Uniwersytet Gdański · DINALOG Dutch Institute for Advanced Logistics · ZLC MIT Global Scale Network – Talent Hub for Supply Chain · Newcastle University

Related member associations and ETPs/PPPs :

cefic · CLECAT · EALTH European Association for Logistics & Transport in Healthcare · ECTRI · ELA European Logistics Association · ELUPEG Business Collaboration. Delivered · ESC

EUCAR European Council for Automotive R&D · UIRR International Union for Road-Rail Combined Transport · C3C-LOGISTICA Centro Nacional de Competencia en Logistica Integral · ERTICO ITS Europe

GS1 · WATERBORNE TP · ERRAC The European Rail Research Advisory Council · ERTRAC · EFFRA a MANUFUTURE initiative · MANUFUTURE-EU

Additional Plenary Members (57)

Why become a member?

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- Contribute needs and challenges to industry research and innovation in logistics and supply chain management
- Support the European Commission to define EU co-funded programs, starting with HORIZON 2020, and to implement the outcomes of these programs in support of competitiveness and sustainability targets
- Access to a knowledge network of projects, initiatives and organizations for interdisciplinary collaborative research involving industry, academia and public institutions
- Be at the forefront of industry innovation, development and implementation
- Have a role in developing regulatory requirements needed for innovation implementation
- Have the right to participate in the WGs and plenary for decision making as well as the option to be part of the Steering Group and recommend experts to participate in the different WGs

Membership evolution:

2013	2014	2015	2016
32	62	84	101

ALICE Executive Group

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Prof. Dr. J. Rod Franklin, P.E – Vice Chair Alice and Chair of WG 3 on Information systems for interconnected logistics

Academic Director Executive Education, Kuehne Logistics University

Sergio Barbarino

Chair Alice and Chair of WG4 on Global Supply Network Coordination and Collaboration

Research Fellow, Procter & Gamble

Pablo Gómez

Vice Chair Alice

Innovation Director, FM Logistics

Karine Boucheri – Chair of WG1 on Sustainable, safe and secure supply chains

Innovation Director, FM Logistic

Angelo Aulicino – Chair of WG2 on Corridors, Hubs and Synchromodality Chair

Head of R&D, Interporto Bologna

Dario Biggi – Chair of WG5 on Urban Logistics

Senior Manager Technological innovation, Posteitaliane

ALICE Working Groups & Leadership team

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Logistics + Supply Chain

Sustainable, Safe and Secure Supply Chains

Prof. Dr. Albert Venstra

Karine Bouchery

Dr. Luca Urcioli

Corridors, hubs and synchro-modality

Malgorzata Kirchner

Angelo Aulicino

Lóri Tavasszy

Information systems for interconnected logistics

Andreas Nettsträter

Rod Franklin

Stefano Persi

Supply Chain Coordination and Collaboration

Dirk 't Hooft

Sergio Barbarino

Paolo Paganelli

Urban Logistics

Paola Cossu

Mr. Dario Biggi

Emilio Gonzalez

DINALOG | FM LOGISTIC | ZLC MIT GLOBAL SCALE NETWORK TALENT HUB FOR SUPPLY CHAIN | Instytut Logistyki i Magazynowania | INTERPORTO BOLOGNA | TU Delft | Fraunhofer IML | THE KLU | mosaicfactor | DINALOG | P&G Procter & Gamble | bluegreen | fit consulting | Posteitaliane | ITENE

ERRAC The European Rail Research Advisory Council

ERTRAC European Road Transport Research Advisory Council

WATERBORNE TP

ERTRAC European Road Transport Research Advisory Council

ALICE Roadmaps

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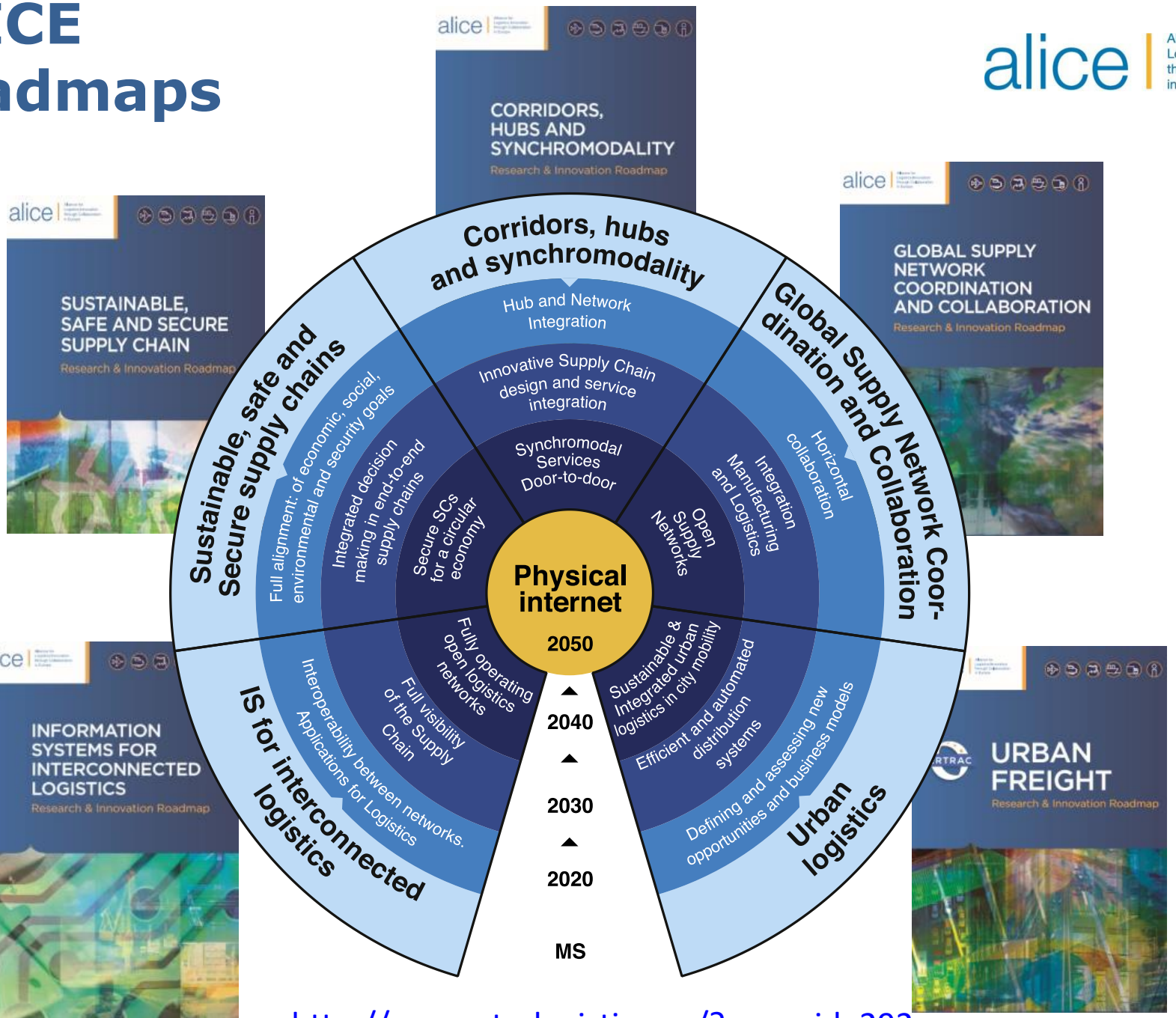

http://www.etp-logistics.eu/?page_id=292

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Expected Impacts

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	Primary Impacts	Secondary impacts
People	+ Increase customer satisfaction + Products availability + Secure societies	+ Load factors: weight and cube fill of vehicles + Volume flexibility (Time to +/- capacity) + % Synchromodal + Asset utilization + Supply Chain Visibility + Reliability of transport schedules + Perfect order fulfilment + Transport routes optimization (reducing Kms) + Transport actors using automatic data exchange + Cargo and logistics units integrated in the automatic data exchange + Upside / Downside Supply Chain Adaptability and Flexibility + Decoupling logistics intensity from GDP - Empty Kilometres - Waiting time in terminals - Risk factor reduction - end-to-end transportation time - Travel distance to reach the market - Lead times
Planet	- Energy consumption (kWh Logistics/GDP) + Renewable energy sources share - CO_2 Emissions (kg CO_2/tKm)	
Profit	+ Return on assets and working capital - Total supply chain costs - Cargo lost to theft or damage	

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ALICE vision

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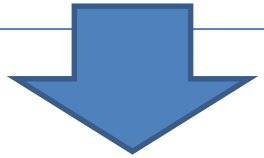
*Future logistics will be based on an **open global** logistics **system: (connecting logistics networks),** founded on physical, digital, and operational interconnectivity (access to resources), enabled through modularization, standard interfaces and protocols, with the aim to move, store, produce, supply and use physical objects throughout the world in a manner that is economically, environmentally and socially efficient and sustainable*



*We call this the **Physical Internet***

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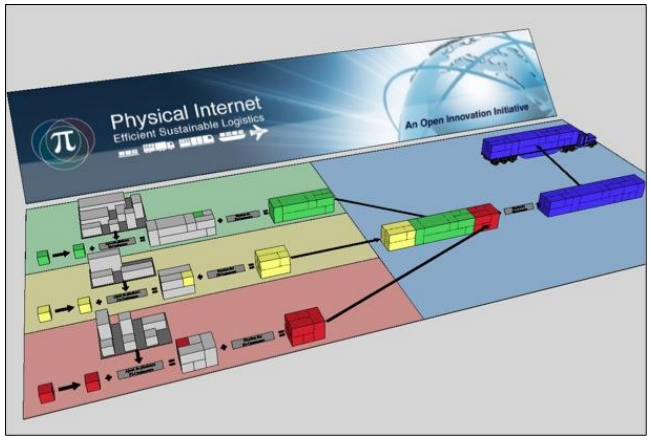
The Physical Internet in a Glance



Seamless modular container consolidation in the Physical Internet
B. Montreuil & C. Thivierge, 2011

Benoit Montreuil (Georgia Tech) and Russ Meller (Fortna)

- Goods in standard **modular load units** for transport, handling and packaging purposes
- New generation of **handling, transportation and storage technologies** and facilities for seamless, fast flow & exchange of loads
- Seamless open **asset sharing & consolidation** across interconnected networks and modes
- **Open market** for goods transportation, storage, realization, supply and usage
- **Standard interfaces & protocols**
- Service provider certification and **ratings-by-users to drive performance**
- Continuous **tracking & monitoring**

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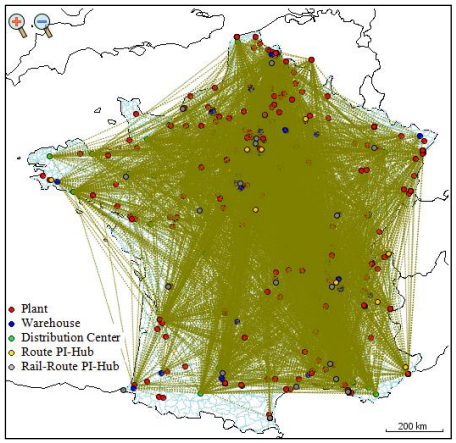
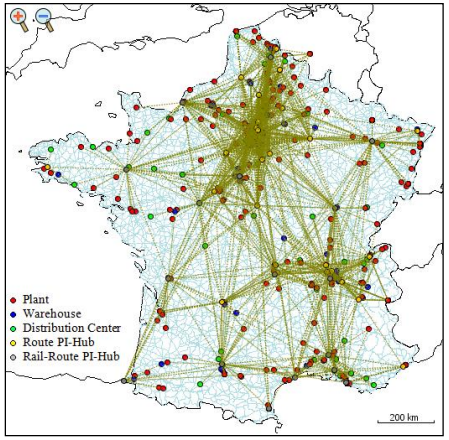
Hyperconnected Transportation

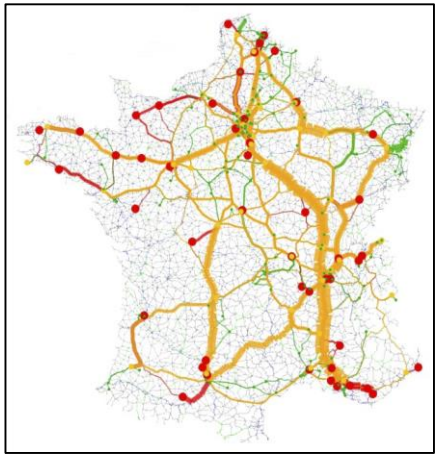
Results from a simulation experiment with top retailers Carrefour and Casino in France and their 100 top suppliers



Current flows



Hyperconnected flows



Current: Trucks
Hyperconnected: Trucks & Rail

Economical: Up to 32% overall cost saving

Environmental: About 60% reduction of greenhouse gas emissions

50% of volume shifted from road to rail

Ballot É., B. Montreuil, R. Meller (2015), The Physical Internet: The Network of Logistics Networks, Documentation Française.

Activities performed partially in the frame of WINN and SETRIS. The WINN/SETRIS project has received funding from the European Union´s FP7 and Horizon 2020 research and innovation Programme under grant agreements No. 314743 and 653739

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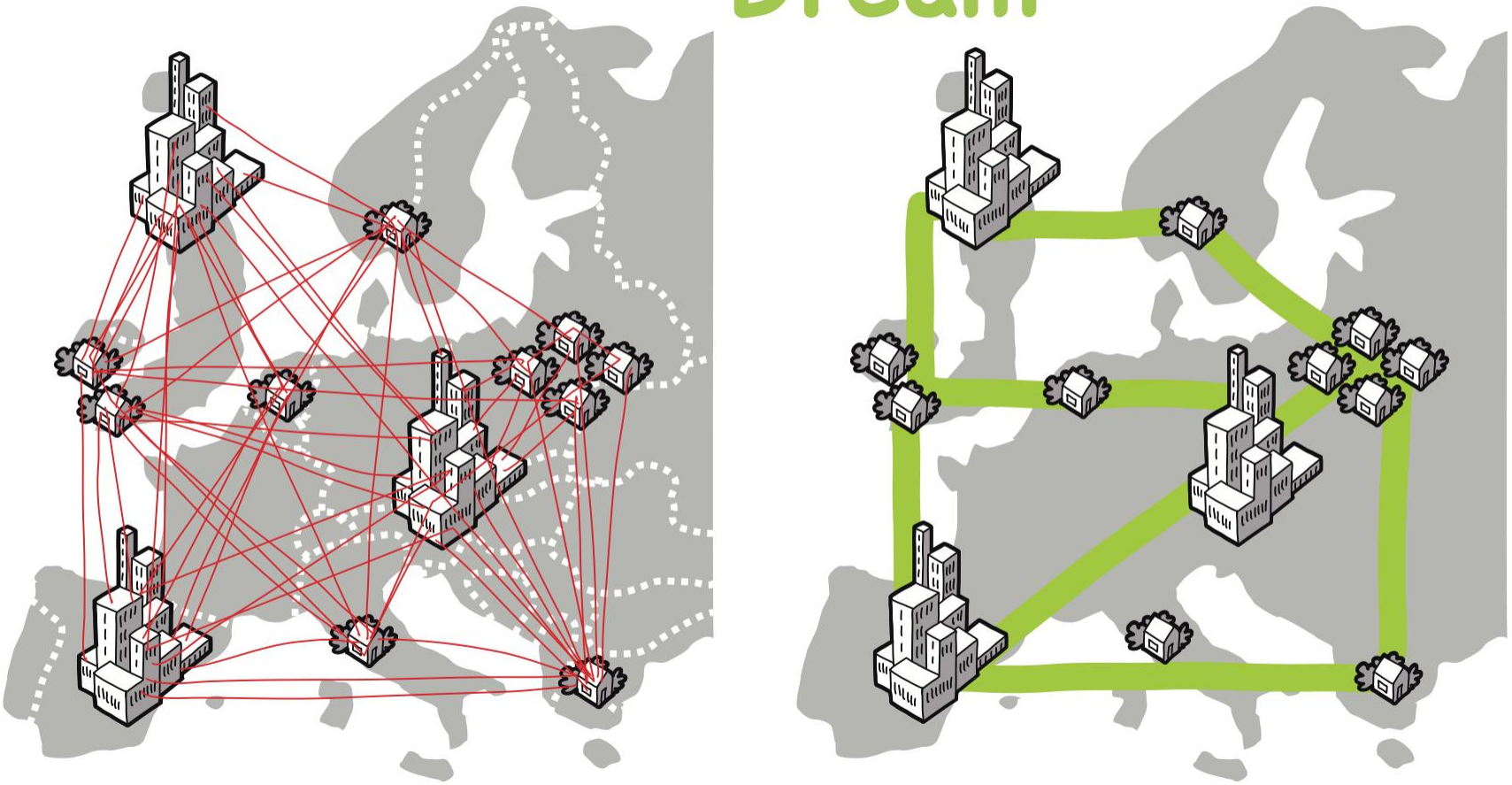
Dream



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ALICE Cycle - examples

2014-2015 ALICE Recomendations (link):
- E-commerce
- Urban freight consolidation schemes
- Horizontal collaboration
- Distressing the Supply Chain
- Single logistics information space in Europe

2014-2015 topics in calls:
MG-6.1-2014 - **Fostering synergies alongside the supply chain** (including e.commerce)
MG-6.2-2014 - **De-stressing the supply chain**
MG-6.3-2015 - **Common communication and navigation platforms for pan-European logistics applications - Single logistics Information Space in Europe**

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Liaison with Projects and Proposals

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- Strengthen and promote **ALICE liaison with projects & industry initiatives** and disseminate the program. **Sign up for your projects!**

AEOLIX · CO-GISTICS (Deploying Cooperative Logistics) · MOBILITY 4 EU · novelog · safer (Green logistics) · SELIS · synchro-NET · SMART RAIL

3 + (no logo yet)

- Launching **ALICE Program Letters of Support for R&D and Innovation Project Proposals** → For proposals committing to join the ALICE Program on liaison with projects. **Sign up for your proposals!**

11 project proposals have requested ALICE Letter of Support

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Alice Videos

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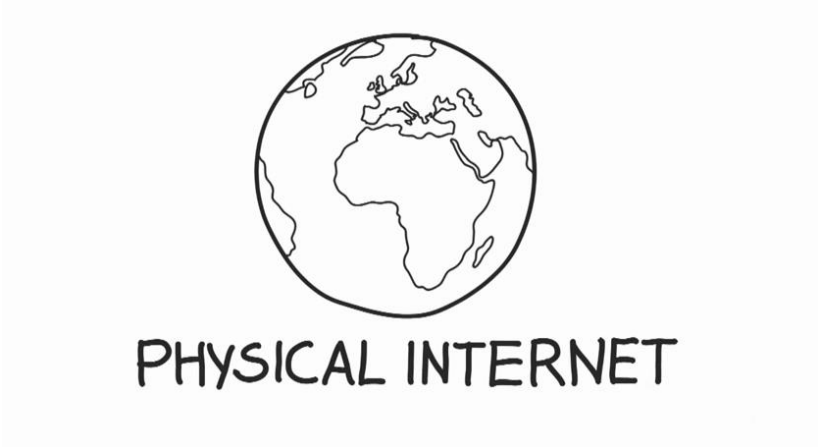
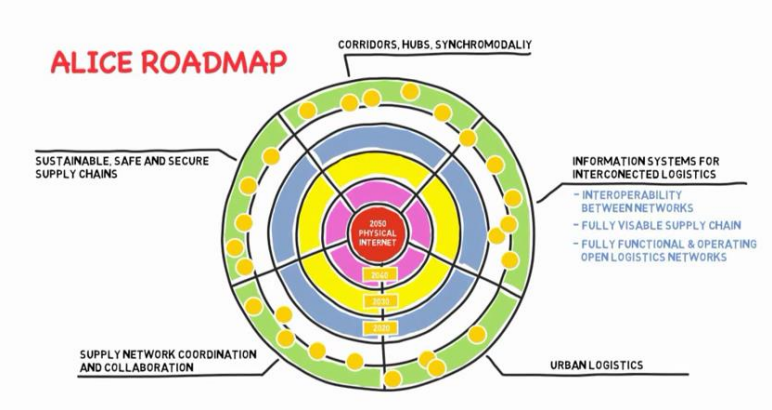


www.youtube.com/watch?v=PJyzFaKOXnY



www.youtube.com/watch?v=4vc7XoEYUs8

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Sustainable, Safe and Secure Supply Chain Research Roadmap

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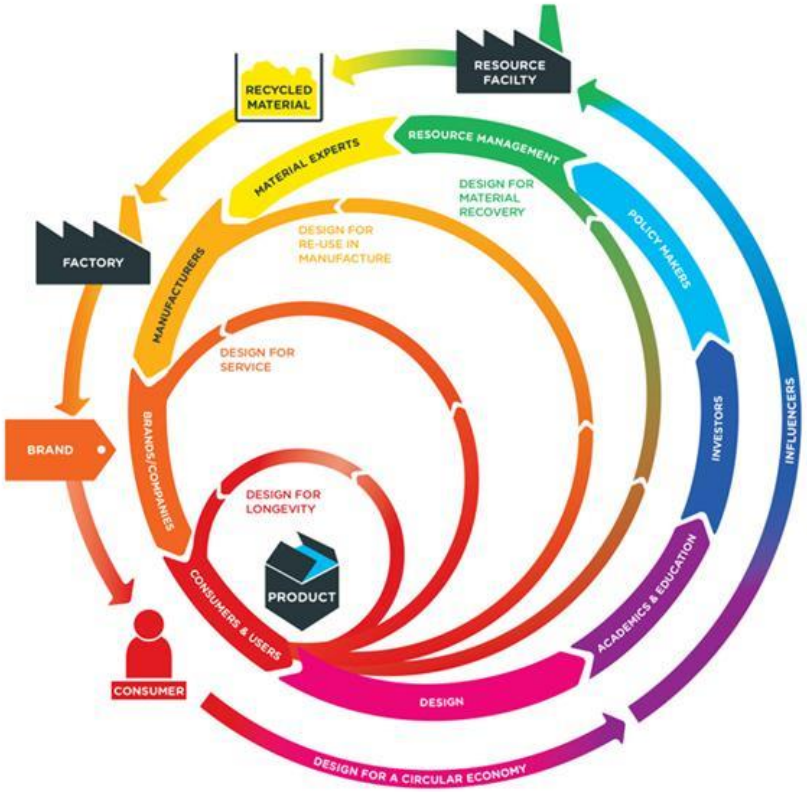
Vision & Mision

Sustainable, safe and secure logistics systems and supply chains provide an answer to the **growing concern on environmental and social problems related to logistics and security while maintaining or enhancing profitability**.

This requires fully integrated **close loop** supply networks, in which logistic service providers, shippers and authorities closely cooperate. In particular shippers, as the owners of the goods in transit, play a key role; their decisions on **product configuration** after all determine what to transport.



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Sustainable, Safe and Secure Supply Chain Research Roadmap: Milestones

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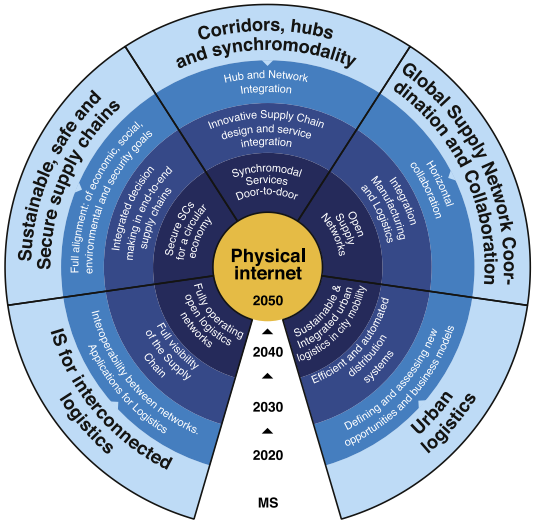
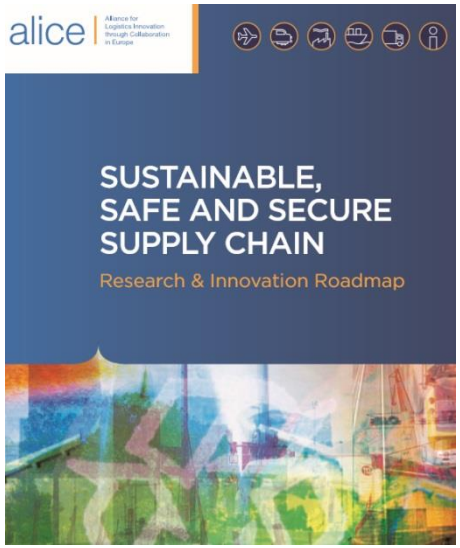
2020
- Full alignment of economics, environmental, social and security goals

2030
- Integrated decision making in end-to-end supply chain

2040
- Safe and secure supply chains for circular economy

2050
- Physical Internet





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Sustainable, Safe and Secure Supply Chain Research Roadmap: Contents

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What are the key issues?

- Logistics as a key factor enabling circular economy → Reducing waste
- Measuring and minimizing emissions and energy consumption but also logistics costs.
- Improving Load units Standardization and modularization facilitating consolidation, bundling and collaboration.
- Facilitating trade while keeping or improving security in EU borders.

Not only how to transport but also what to transport!

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Sustainable, Safe and Secure Supply Chain Research Roadmap: Video

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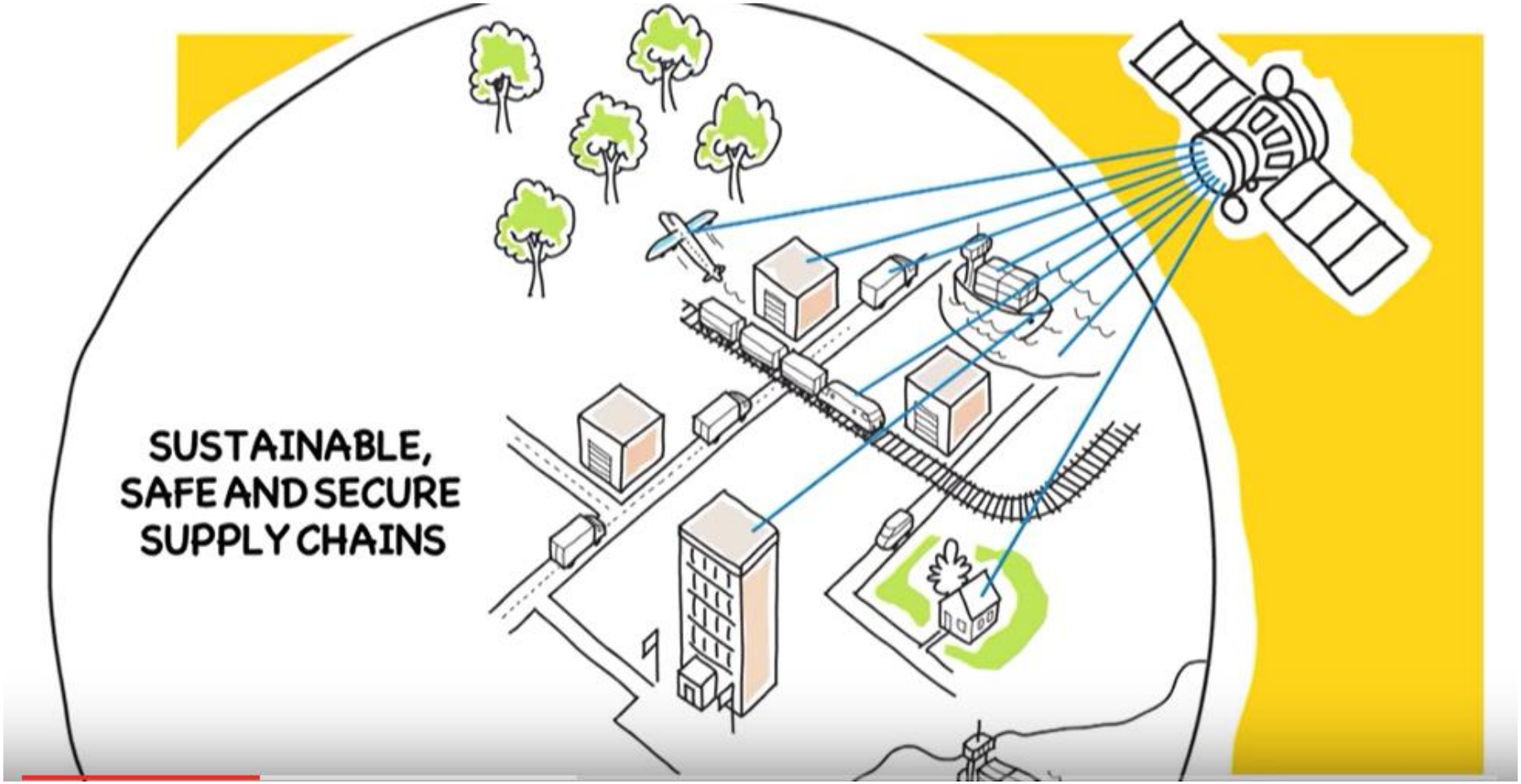

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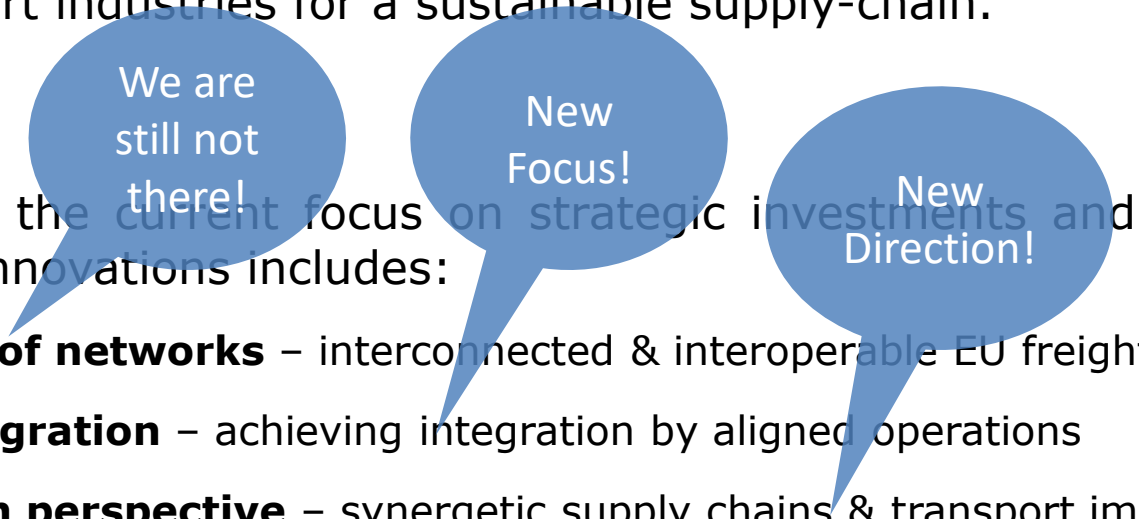
Vision

EU wide **synchromodal services** for a smart and seamless network, based on corridors and hubs facilitating efficient operations and resilient, customized, responsive supply chains.

Mission

Identify and define research and innovation challenges to establish an European core freight network of hubs and corridors bearing the novel needs of the transport industries for a sustainable supply-chain.

Main Scope



In addition to the current focus on strategic investments and policies, the new focus of innovations includes:

- **Integration of networks** – interconnected & interoperable EU freight network
- **Service Integration** – achieving integration by aligned operations
- **Supply chain perspective** – synergetic supply chains & transport improvement

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Corridors, Hubs and Synchromodality: Milestones

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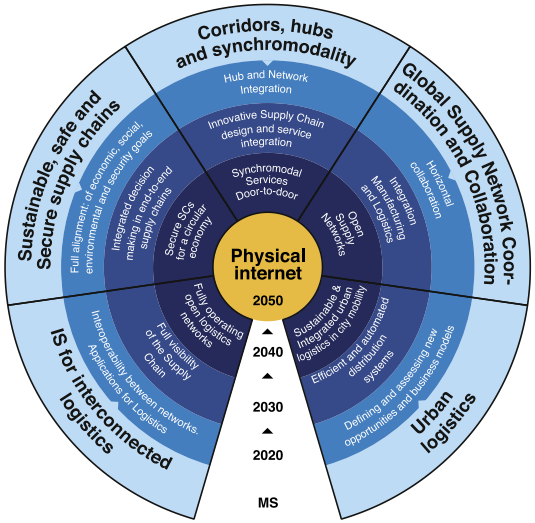
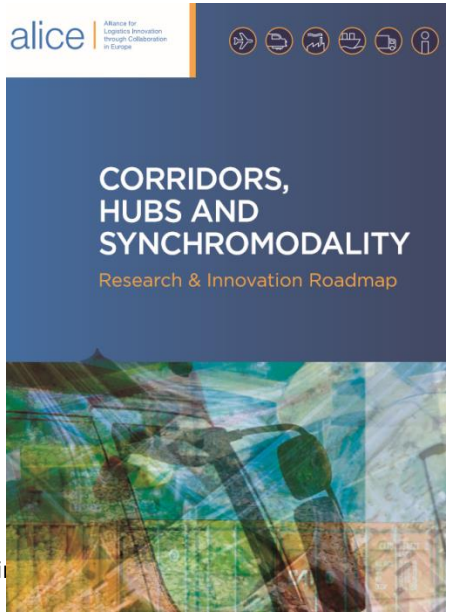
2020
- Hub and network integration

2030
- Innovative supply chain design and synchromodal service integration

2040
- Synchromodal services door to door

2050
- Physical Internet





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Synchromodal Transport

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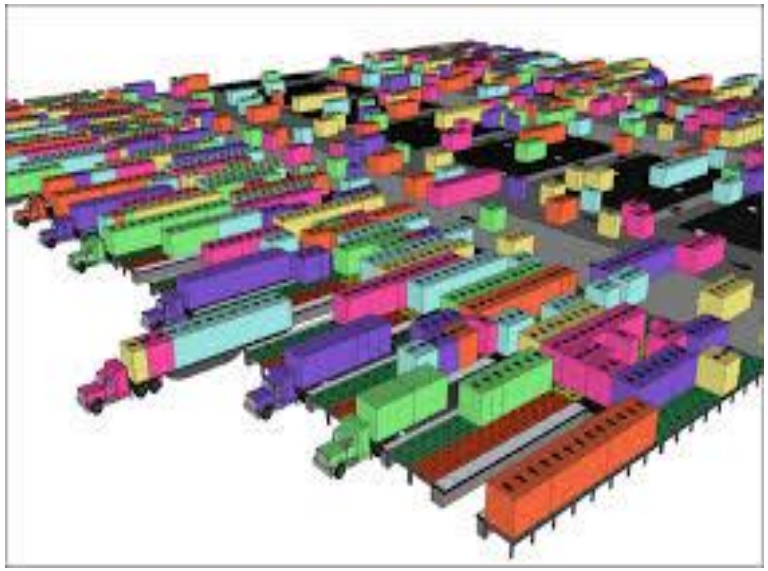
Optimally, ***flexible and sustainable deployment of different modes of transport and hubs*** *in a system operated by a logistics service provider (PI provider), so that the user or customer (shipper or forwarder) is offered or can directly access to an* ***integrated and sustainable solution for their (inland) transport needs.***



Coordination of logistics chains and networks *(different customers), transport chains and infrastructure, is made in such a way that, given* ***aggregated transport demand*** *from different owners, the right mode is used at every point in time fulfilling user service requirements.*

* See ALICE roadmap on Corridors Hubs and Synchromodality

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Corridors, Hubs and Synchromodality: Video

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Information Systems for Interconnected Logistics Roadmap

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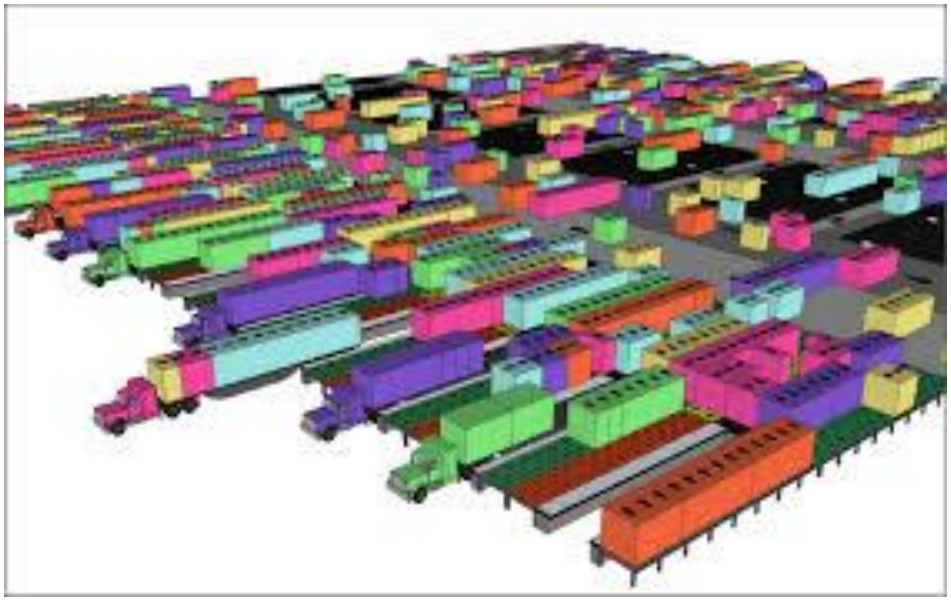
Vision

Real-time (re)configurable supply chains in (global) **supply chain networks** with **available and affordable ICT solutions** for all types of companies and participants, whether large or small.

Mission

Identify and define research and innovation **challenges** including the development of **technologies and tools** that facilitate the closure of existing **gaps in current ICT systems and data sharing capabilities in supply chains** for optimal performance in the execution of supply chain activities.



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Information Systems for Interconnected Logistics Roadmap: Milestones

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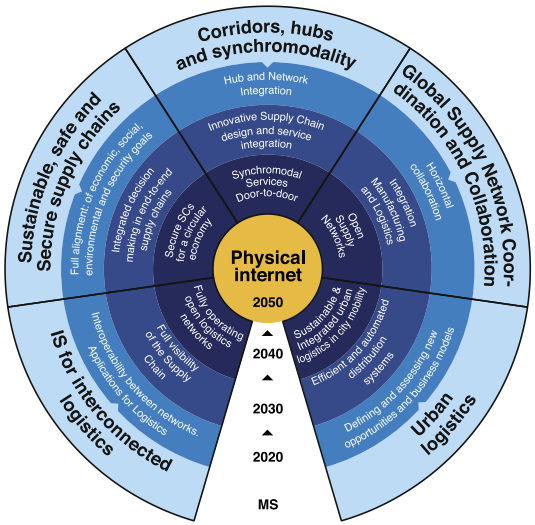
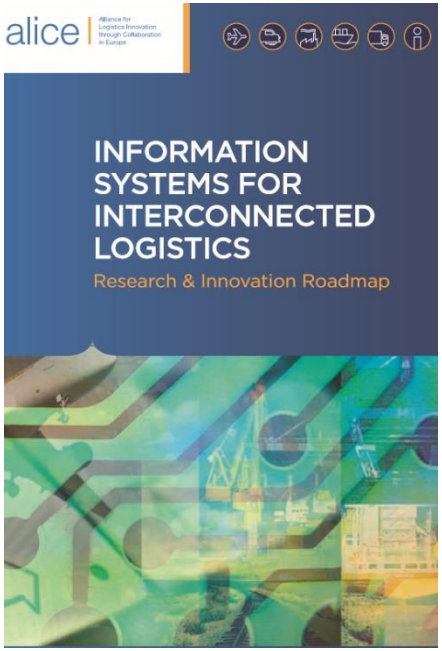
2020
- Interoperability between networks and IT applications for logistics

2030
- Full visibility throughout the supply chain

2040
- Fully functional and operating open logistics networks

2050
- Physical Internet





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Information Systems for Interconnected Logistics Roadmap: Challenges

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- The ability to **rapidly connect** to, **and disconnect from**, **supply networks** at two levels; the business level and the technical ICT level.
- **The simplification of ICT systems**, **information interfaces and business models** so that domain users are shielded from having to become technology experts and can focus instead on the efficient execution of transport and logistics operations;
- The **simplification and standardization of device interconnections** so that the rapid connection and disconnection of sensor enabled items is facilitated;
- **Open cloud based collaboration platforms** to facilitate the dynamic and cost effective formation and management of complex supply networks;
- **Secure and reliable data management** approaches that facilitate the collection and analysis of authorized data so that operational efficiency can be improved while assuring the public that privacy is maintained;
- The **development of appropriate standards and data collection systems** for reporting commercially and socially important information (e.g., emissions, load factors, congestion levels, etc.) so that proper comparisons can be obtained and informed decisions made;
- The **ability to properly manage goods flows** so that infrastructures, transport assets, modal nodes and other supply network assets are optimally utilized; and
- **The adoption, integration and use of smart infrastructures, Intelligent Transport Systems (ITSs), IoT devices** and other intelligent edge based technologies in supply chains to increase the efficiency, effectiveness and control of supply networks.

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Information Systems for Interconnected Logistics Roadmap: Video

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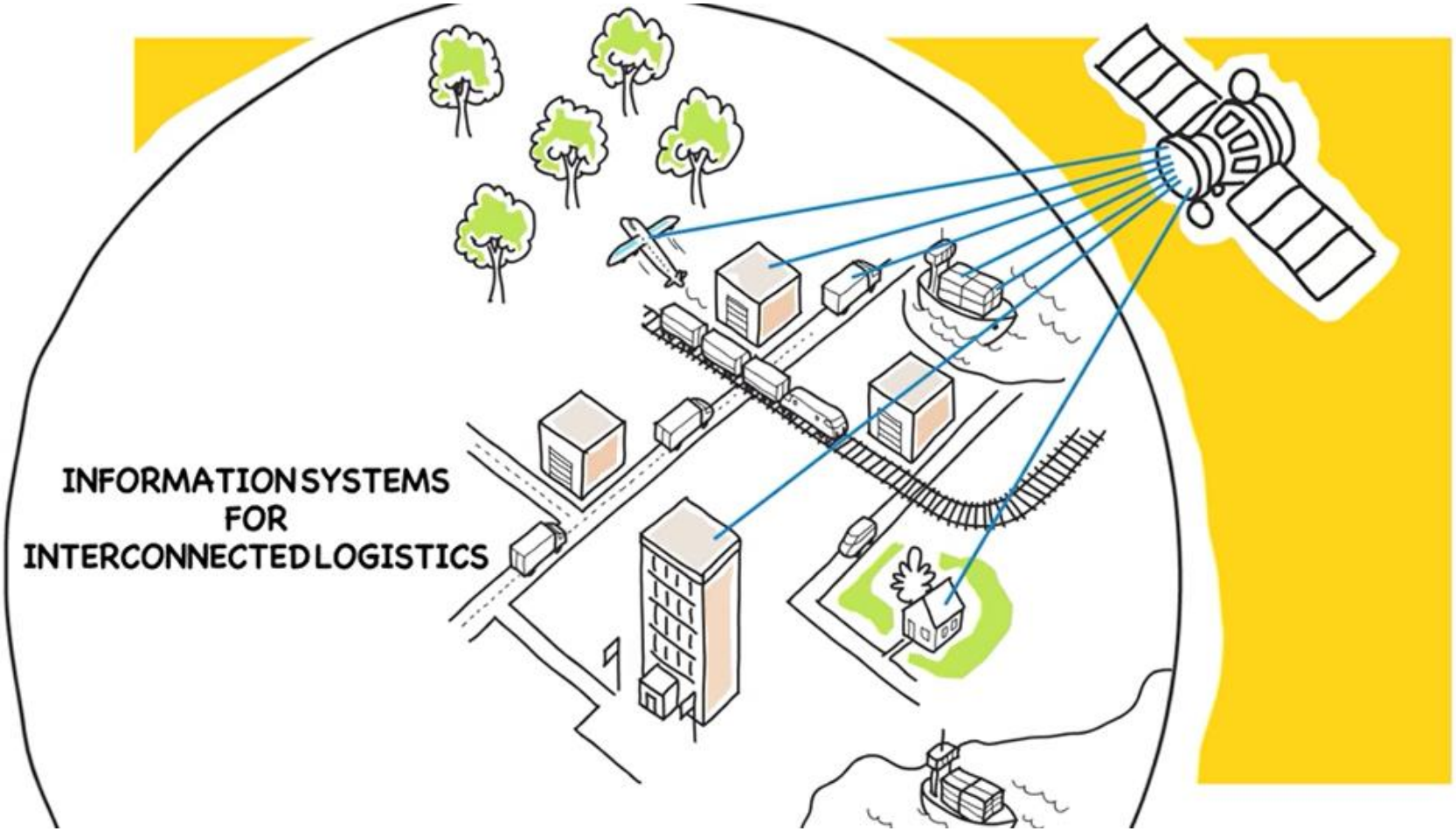

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Global Supply Network Coordination and Collaboration Research Roadmap

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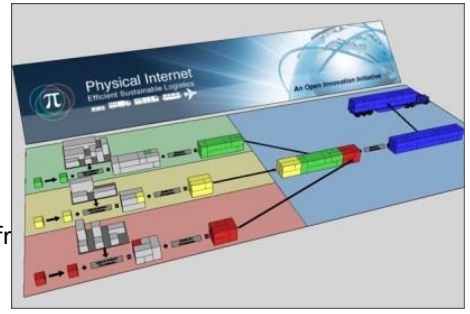
Vision

Supply networks that are operated as a whole, meaning full vertical and horizontal integration and coordination.

Mission

- **Removing barriers** through new concepts and approaches, for **closer Vertical and Horizontal Collaboration** among different Network owners in Europe.
- To favour a smooth transition **from independent Supply Chains to open global Supply Networks**.
- To make the most efficient **use of available resources and modes, they will be compatible, accessible and easily interconnected**



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Global Supply Network Coordination and Collaboration: Milestones

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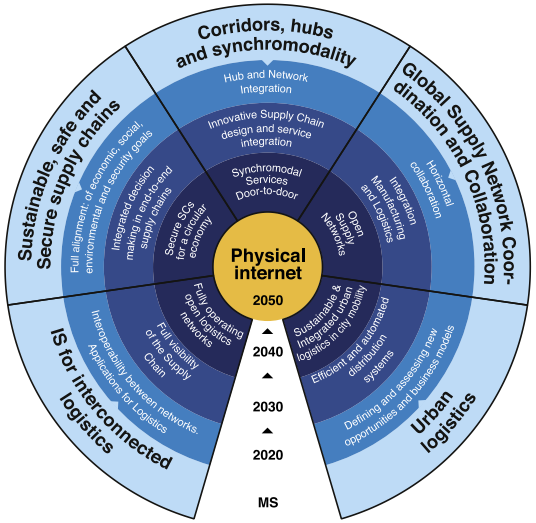
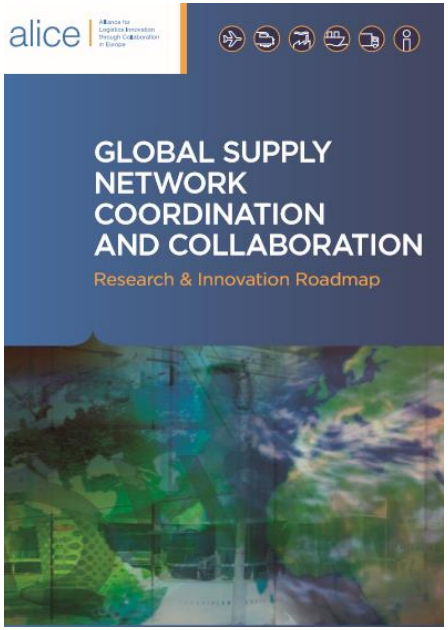
2020
- Horizontal Collaboration

2030
- Integration Manufacturing Logistics

2040
- Open Supply networks

2050
- Physical Internet





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Challenges and themes (1)

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1. **Collaborative supply network design and operation**
    - Strategic collaborative logistics network design
    - Tactical planning and execution of collaborative networks
    - Resilience capabilities and risk management of collaborative networks
    - Business models and change management for collaborative services
2. **Supply network coordination**
    - Coordinated planning of supply chain and logistic services
    - Synchronization and dynamic update of logistics operations in open networks
    - Overcoming data-sharing barriers in collaborative networks

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Challenges and themes (2)

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3. Manufacturing and logistics integration

- Holistic Supply Chain view
- Manufacturing villages for collaboration and sharing of non-unique resources (e.g. Pharma industry)
- Agile, modular and distributed manufacturing: requirements, implications and opportunities for logistics.

4. Enablers for collaboration and coordination

- Favouring the transition to the new collaborative environment
- Understanding the impact of collaborative logistics

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Global Supply Network Coordination and Collaboration: Video

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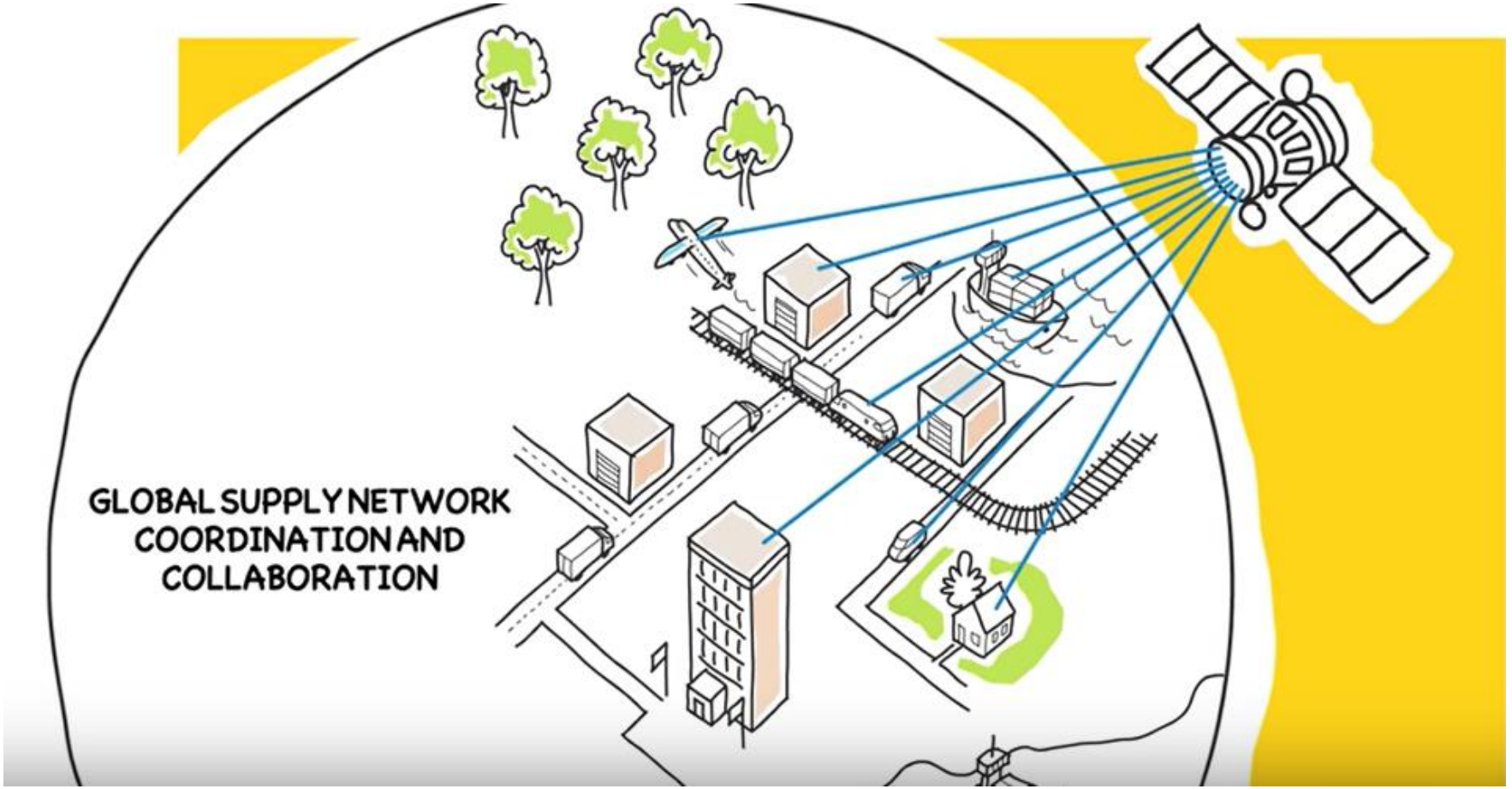

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Vision

Full integration of freight flows in cities operations and activities that allow citizens to access the goods and the goods to access the citizens they require and at the same time supporting sustainable development in cities

Mission

Identify and define research and innovation challenges to optimize flows of goods within, into and from urban conglomerates by leveraging existing infrastructure

European Commission

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Urban Logistics: Milestones

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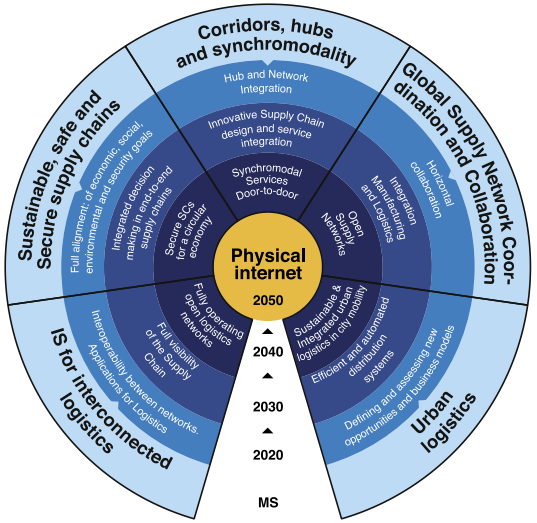
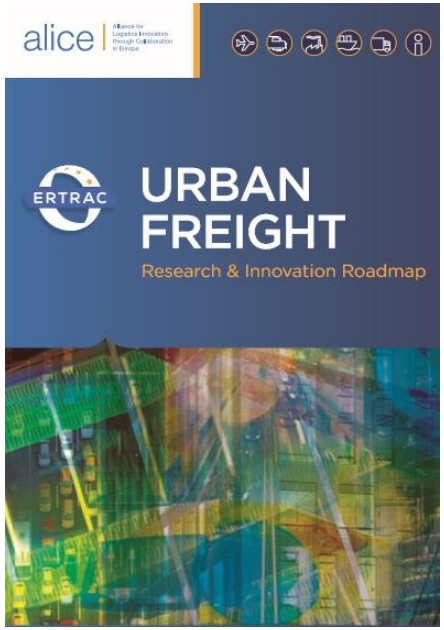
2020
- Defining and assessing new opportunities and Business Models

2030
- Efficient and automated distribution systems

2040
- Sustainable and integrated urban logistics in the city mobility system

2050
- Physical Internet





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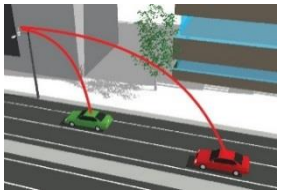
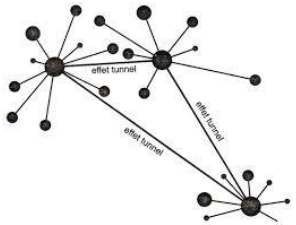
Challenges and themes

The roadmap identifies **data collection and knowledge building** on urban logistics as the first step for a relevant urban logistics research agenda.

- **Identifying and assessing opportunities** in urban freight (measuring freight component, load factors, demand B2B, B2C, set KPIs)
- **Efficient integration** of urban freight in city:
  - Understand the **impact of land use** on urban logistics activities (parking spaces, lanes, availability mgmt.)
  - **Mobility Plans** taking urban freight into consideration
  - Improving the **interaction between long distance** freight transport and urban freight (e.g. freight corridors, locations of DC and consolidation centers)
  - Better **adapting the vehicles** to innovative urban freight delivery systems (sizes, modularity, intermodality, tech. for load consolidation)





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Challenges and themes

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- **Business Models** and Innovative Services
  - Value creation **logistics services** and more efficient operations: Consolidation schemes, night deliveries, out of office hours)
  - **Collaboration and concerted actions/regulations** between local authorities, shippers, retailers and LSPs
  - New **Governance models:** Financing/Business models, roles
  - **E-commerce implications**: Direct to consumer deliveries and functional logistics services, decoupling delivery/reception
  - **Reverse logistics:** e.g. direct/reverse integration
  - Designing and operating urban **freight infrastructures**
- **Safety and security** in urban freight
- **Cleaner and more efficient vehicles**

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Urban Logistics: Video

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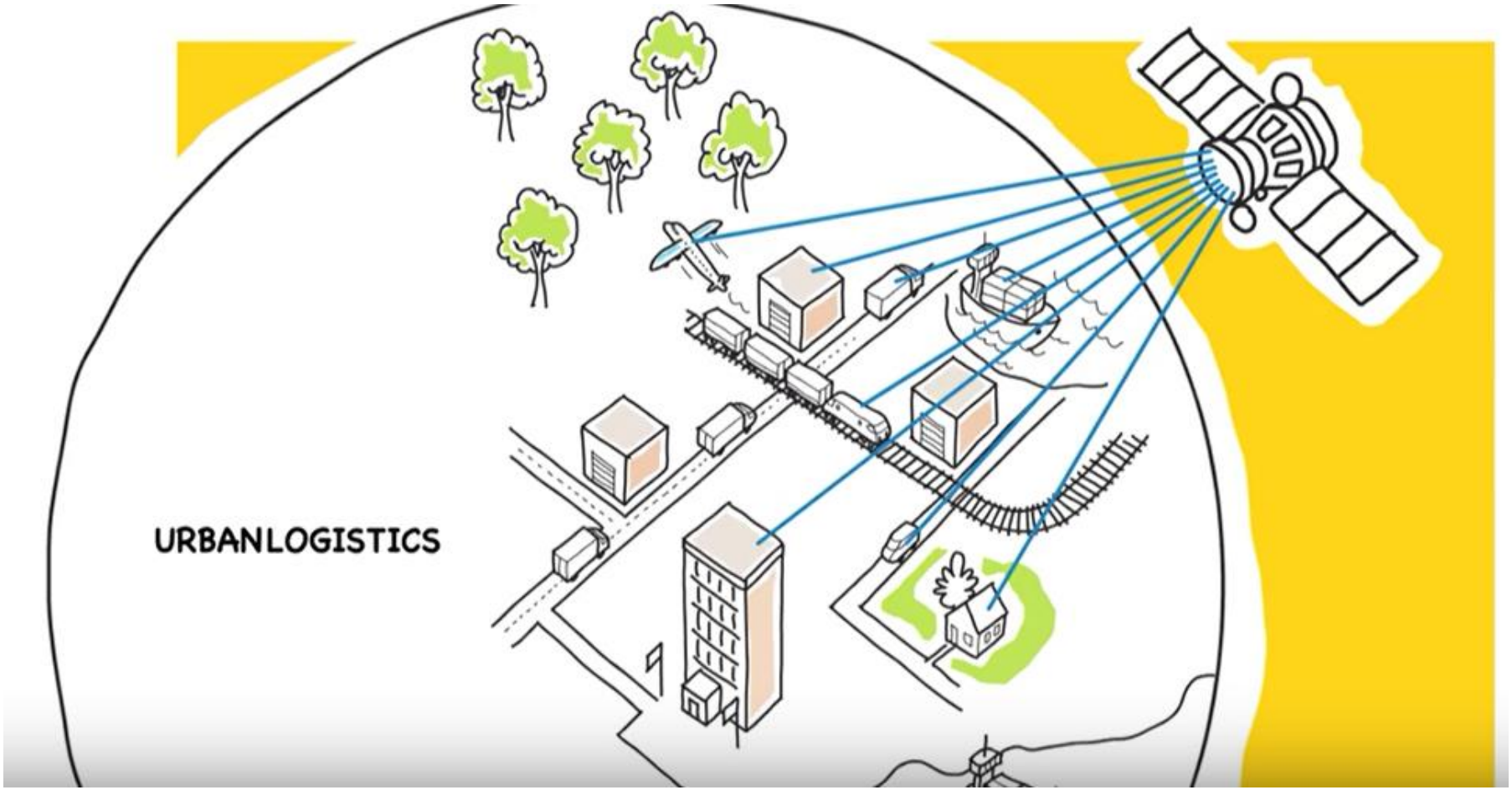

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Additional Information

The following documents can be found on ALICE Web (www.etp-alice.eu):

- ALICE Executive Summary and Mission Statement (link)
- ALICE Terms of Reference (link)
- Who is who in ALICE, Steering Group Membership (link)
- ALICE input for HORIZON 2020 2014-2015 calls (link)
- ALICE input for HORIZON 2020 2016-2017 calls (link)
- ALICE Research & innovation Roadmaps (link)

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What are the European Technology Platforms, ETPs?

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*"European Technology Platforms (ETPs) are industry-led stakeholder fora that develop short to long-term research and innovation agendas and roadmaps for action at EU and national level to be supported by both private and public funding"**

www.ec.europa.eu/etp

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What are the European Technology Platforms, ETPs?

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- There are 38 ETPs, covering the most important technological areas

- They connect thousands of European companies, knowledge institutes and policy makers and have facilitated the development of a common vision and research agenda for each of the 38 technology fields they represent

- **The ETP research agendas have helped the European Commission to take industry's needs into account when shaping the Framework/HORIZON 2020 Programme (52 Billion € 2007-2013/ 70 Billion € 2014-2020)**

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Current individual (38) European Technology Platforms, ETPs

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ALICE: recognized in July 2013 as an Official ETP

www.ec.europa.eu/etp

Bio-based economy	Energy	Environment	ICT	Production and processes	Transport
EATIP	Biofuels	WssTP	ARTEMIS	ECTP	ACARE
ETPGAH	EU PV TP		ENIAC	ESTEP	**ALICE**
FABRE TP	TP OCEAN		EPoSS	EuMaT	ERRAC
Food for Life	RHC		ETP4HPC	FTC	ERTRAC
Forest-based	SmartGrids		euRobotics	Manufuture	Waterborne
Plants	SNETP		NEM	Nanomedicine	
TP Organics	TPWind		NESSI	SMR	
	ZEP		Networld 2020	SusChem	
			Photonics 21		

Cross-cutting ETP Initiatives

Nanofutures

Industrial Safety

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Logistics innovation for a more competitive and sustainable industry

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