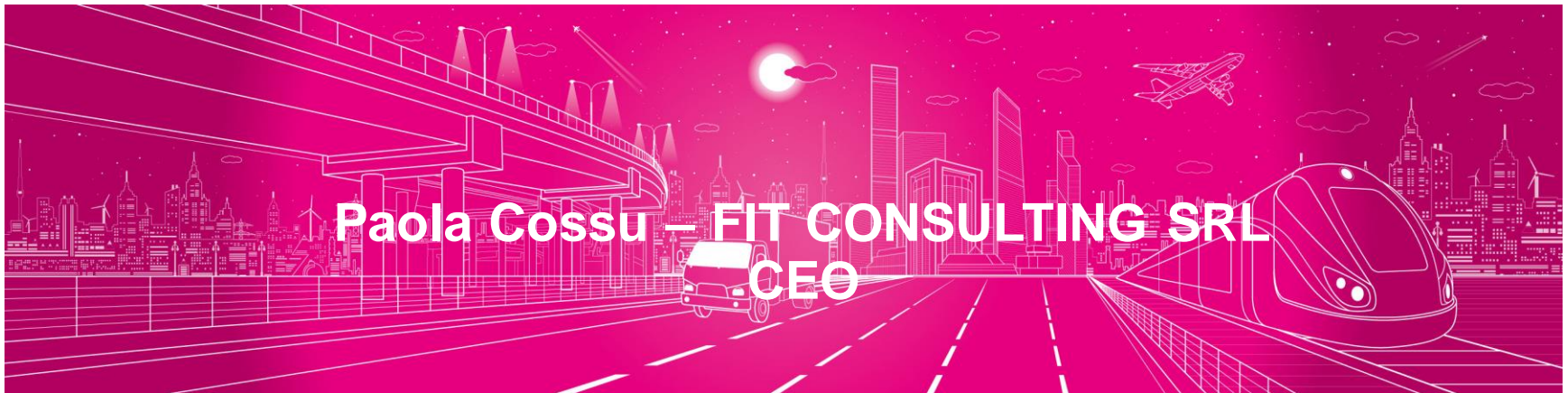




The new setting and prospects of the urban freight market: the contribution of ALICE to decarbonization of European cities



The need for collaboration between cities and industry in urban logistics

- **Concentration:** Every week until 2050, one million people will be added to the world's cities. The increasing number of vehicle and emerging transport needs is harming quality of life.

Collaborative transportation systems have become an increasingly popular practice due to the crisis.

BUT

It still requires further actions to achieve climate-neutral cities and efficient logistics.

- **Internet penetration** growth in Europe is increasing with an estimation of 90% of individuals being connected in 2019.
- **New disruptive trends, technologies and models** are transforming urban logistics patterns (e-commerce, crowd-economy, autonomous vehicles)



Extremely demanding consumers: «whim logistics»



"Once you saw an iPhone, you realised that it is the future. I believe the first time a neighbour of yours orders his bottle of wine that he forgot for dinner and he gets it in 15 minutes, that's it, you want it." Yariv Bash, the founder of Flytrex - drones

Some interesting truths.....



B2C IN THE UK, GERMANY,
AND FRANCE EXCEEDS

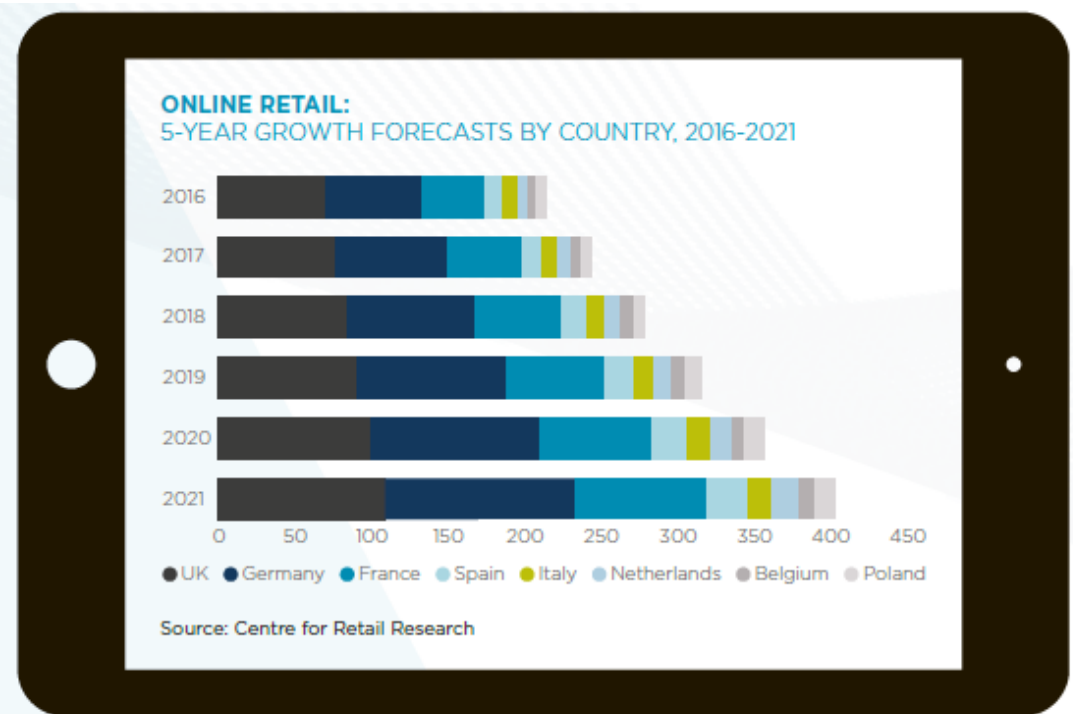
50%

OF THE MARKET

ONLINE SALES ACROSS
EUROPE EXPECTED TO RISE BY



94% BY 2021



Some interesting truths.....

“Customers are always going to want more selection, faster delivery speed, and lower costs,” he added. “We believe that lower costs include lowering the costs to the environment we all live and work in every day.” **Dave Clark, Amazon**

Consumers habits move towards on-demand solutions that satisfy needs for faster delivery (“whim logistics”), causing pressure on existing logistics system. “Business as usual” is business no more.

*Amazon has built a **huge logistics operation to get more goods to customers’ homes in less and less time.** As it moves to **reduce its reliance on legacy carriers**, the retailer has created a **network of contractors across the country** that allows the company to expand and shrink the delivery force as needed, while avoiding the costs of taking on permanent employees.*

Some interesting truths

CHANGE IN THE LAST MILE MODEL

**Major actors subcontracted
last mile to consumers**



**New models
completely reverse the logic**



Source : Aurélien Rouauet/Neoma Business School

L'ORÉAL
OPERATIONS

E-commerce is an opportunity

A consumer shopping by car (5km from home) adds to the Product 50% of the CO2 footprint of the transport supply chain till the supermarket shelf....

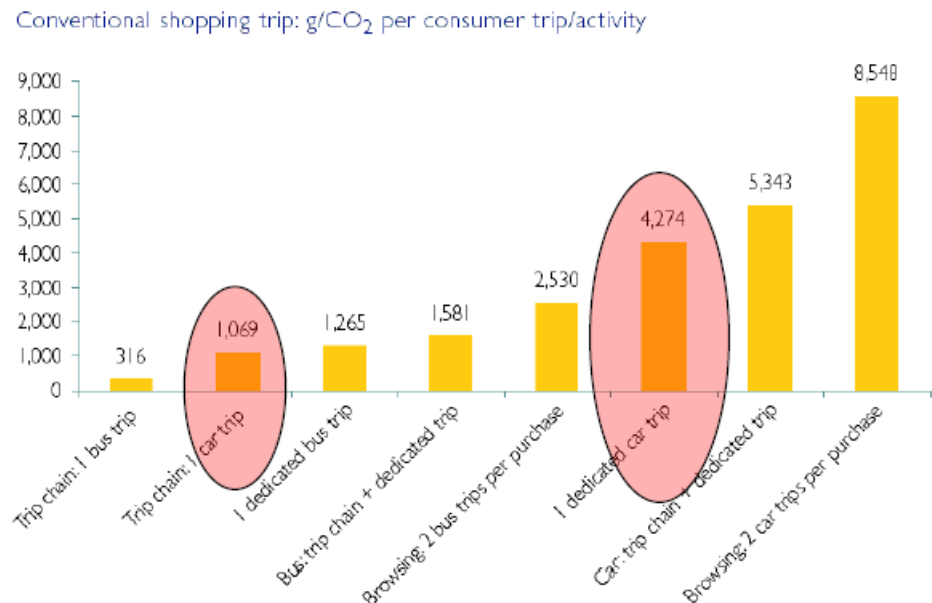


Figure 1 Source: EDWARDS AND MCKINNON, Shopping trip or home delivery: which has the smaller carbon footprint? Logistics Research Centre, Heriot-Watt University.



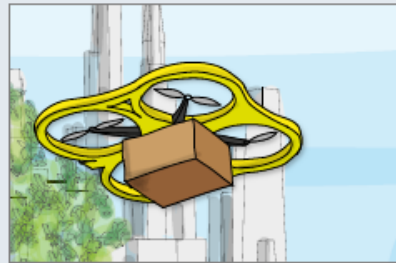
Some delivery models (Mc Kinsley)

Identified delivery models

We thoroughly investigated the start-up scene¹ and scanned for new technologies², which led us to identify seven operational models:



Today's model. A dedicated delivery person employed by the parcel delivery service provider picks up the parcels at a consolidation point, e.g., delivery base, and delivers them directly to the recipients. Large vans are typically used as delivery vehicles.



Drones. Autonomous aircrafts, e.g., copters or vertically starting planes, carry parcels (up to 15 kg) to their destination along the most direct route and at relatively high average speed. Like droids and AGVs, they too need to be supervised. We believe that one supervisor per roughly eight drones is a reasonable assumption.



Bike couriers. Couriers employed by the parcel service provider deliver a small number of parcels by bike. Today, this is often seen in point-to-point delivery, especially for B2B documents and prepared food.



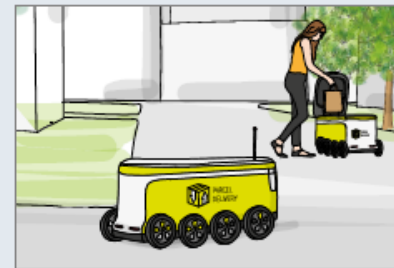
Semiautonomous ground vehicles. A delivery person is still required, but could theoretically use the driving time more efficiently to take care of sorting or smaller administrative tasks, e.g., scanning or announcing arrival while the vehicle does the driving. These advantages need to compensate for higher investment costs, as autonomous ground vehicles are likely to be more expensive than regular cars or vans, at least initially. However, the delivery person will likely not be allowed to move freely while the vehicle drives, limiting the tasks that can be performed in transit. We find it difficult to see how the savings in terms of streamlined administrative tasks can compensate for the higher investment cost.



Crowdsourcing. Any member who has signed up as a driver to the crowdsourcing network can choose to complete a specific delivery order. The advantage of this model is its flexibility in supply, especially in covering peaks and troughs, the multi-purpose use of certain assets such as cars, as well as the low investment requirements for parcel companies. Furthermore, some companies hope to create synergies beyond regular parcel delivery, e.g., with taxi services.



Autonomous ground vehicles (AGVs) with lockers. AGVs deliver parcels without any human intervention. Customers are notified of the exact arrival time. Upon arrival at their door, customers are asked to pick up the parcel from the specified locker mounted on the van or truck – picture a mobile parcel locker. Granted, such vehicles would need to be supervised. We assume that a central supervisor could manage roughly eight to ten AGVs.



Droids. Small autonomous vehicles, only slightly larger than a regular parcel, deliver parcels to the doorstep. These vehicles are relatively slow at 5 to 10 km/h and use the sidewalk rather than the street to reach their destination. Such droids also need to be supervised, but due to their size and low speed, developers currently believe that a single supervisor could manage 50 to 100 of them.

Get ready for a world where autonomous vehicles deliver 80 percent of parcels! (Mc Kinsley)

AGVs with parcel lockers will dominate regular parcel delivery as well as time-window and same-day delivery in urban areas

Drones will deliver all time-window and same-day items in rural areas

If droids do not become significantly cheaper, bike couriers are likely to be the best delivery form for instant delivery in urban areas

Traditional delivery is still unmatched for high-drop-factor B2B and e-grocery

Crowdsourcing will only play a minor role in the future of the last mile



Load efficiency is tough if you stay alone



**Full, but only 25% of
weight limit**



**60% empty, but at
weight limit**

This is bad for
both
profitability and
environment

But.. It is not that easy



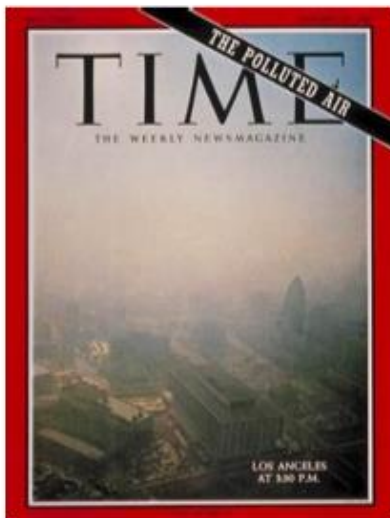
LOTS OF RESPONSES FEELS LIKE WE'RE LOST ?



Its' now time to (re) act...

A CALL FOR ACTION ON URBAN LOGISTICS

90% OF WW POPULATION BREATHE POLLUTED AIR



alice

Alliance for
Logistics Innovation
through Collaboration
in Europe

Physical

An
open
Topic

The
Economist



Internet



The physical internet

A survey of logistics | June 17th 2006

“I want to fill the empty space!”

(Alain Baeyens - Director Logistics / [Solvay](#))



- Current research evidences that translating the working principles of the Digital Internet into the routing of freight, has huge potentials to be the **real game-changer**.
- **Physical Internet (PI)** is hub-to-hub freight movements concept based on an open network rather than directly moving from origin to destination. From ownership and exclusivity to commodity/service (like the Internet already did)
- In PI Parcels will be moving in an automatic way and each part of the network is working in efficiency and in a sustainable manner.

ALICE

aims to substantially contribute to call for action in bringing efficiency to urban logistics and find paths to meet environmental challenges making them less onerous to meet and deliver concrete results in the next 10 years.

ALICE: the ETP on Logistics



Officially launched in Brussels in June 2013.

European transport and research policies increasingly recognize the importance of logistics for the economy and the sustainability of transport.

ALICE mission is to develop a comprehensive strategy for research, innovation and market deployment of logistics and supply chain management innovation in Europe.

ALICE is based on the recognition of the need for an overarching view on logistics and supply chain planning and control, in which shippers and logistics service providers closely collaborate to reach efficient logistics and supply chain operations.

The ALICE Thematic Group on Urban Logistics vision is to achieve full integration of freight flows in cities operations and activities that allow citizens to access the goods they require and at the same time supporting sustainable development in cities and to contribute to “Sustainable access to goods and service for people”.

¹³
“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”

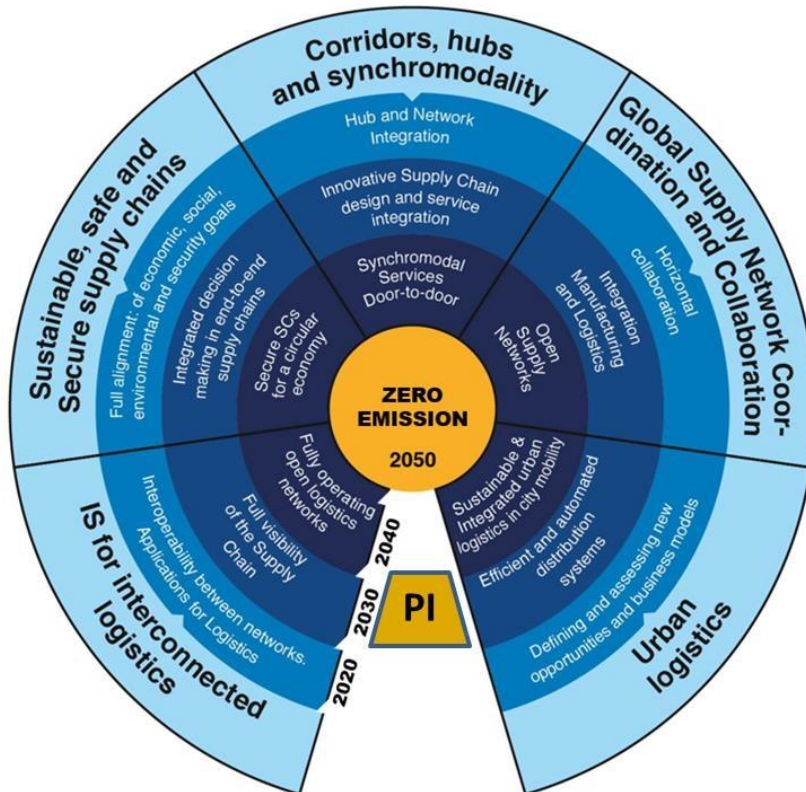


ALICE: the ETP on Logistics - Members

ALICE membership per type of organization		
Type of Organization	Members	EU/International Associations
Shippers & Retail		
Logistics Service Providers, Courier and Postal operators & Freight Forwarders		
Ports, Hubs, Intermodal terminals & Transport Infrastructure		
Vehicle Manufacturers & Logistics operations, handling (modular units)		
Information and Communication Technologies & Consultancy		
Regional & National Logistics Clusters & Associations		
Research and technology Centers		
European Technology Platforms / PPPs		
Member States and innovation Funding*		

* Involved in ALICE Mirror Group

ALICE Roadmap



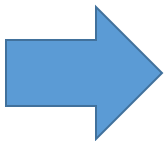
ALICE VISION is to realize PI by 2030 to pave the way to Zero Emissions by 2050

Physical Internet will bring efficiency and sustainability to Logistics. It cannot fully solve the Decarbonization Challenge, but it will make it less onerous to meet.

And can deliver results in the critical next 10 years

Combining Physical Internet (2040)
and Zero Logistics Emissions (2050)

Roadmaps



- Prepare a roadmap *“Towards Zero Emissions Logistics”*

- Prepare a detailed roadmap *“Towards the Physical Internet”*

“Transport is shared responsibility between EU and Member States and urban mobility is essentially a local responsibility; however local authorities should not be left alone” (EU Commission).

Therefore ALICE Urban Logistics team works basing on the following principles:

- **Fill empty spaces** in cities supported by effective governance model
- **Cooperation, trust and quality partnership** replacing ownership and exclusivity
- **Costs for logistics** optimised, transparent and recognised
- **E-commerce** seen as opportunity and not as a problem. Responsible behaviour and cultural change from individuals are fundamental.
- **Moving goods and not vehicles**
- *“SUMP’s are an opportunity for cities to include their voices regarding the future of urban mobility and propose necessary actions”* (EU Commission): **people and goods mobility proportionately considered and integrated in plans**
- **Continuation of innovation** and market uptake of new business models

SENSE PROJECT: Accelerating the Path Towards Physical Internet

Results from a simulation experiment with top retailers Carrefour and Casino in France and their 100 top suppliers moving from actual practice to a “**Physical Internet Model**” showed a potential economic benefit of 32%, a 60% reduction of greenhouse gas emissions and a potential of 50% of volume shifted from road to rail.



SENSE aims to increase the level of understanding of PI concept and the opportunities that brings to transport and logistics. By **building stronger and wider support of industry, public bodies and research worlds** towards the PI we may reach consensus and enable coordinated strategic public and private investments in research and innovation embracing Physical Internet that could lead us to a new much more efficient and sustainable paradigm.

Accelerating the Path Towards Physical Internet – SENSE (funded by the European Commission – Horizon 2020 in 2017) - strategic objective is to accelerate the path towards the Physical Internet (PI), so advanced pilot implementations of the PI concept are well functioning and extended in industry practice by 2030, and hence contributing to at least 30 % reduction in congestion, emissions and energy consumption.

SENSE PROJECT: Accelerating the Path Towards Physical Internet

IPIC 2019

Industry, research and public bodies engagement

Alice & external organizations and networks

Input, consensus and wide - support building

Physical Internet Development
Monitoring

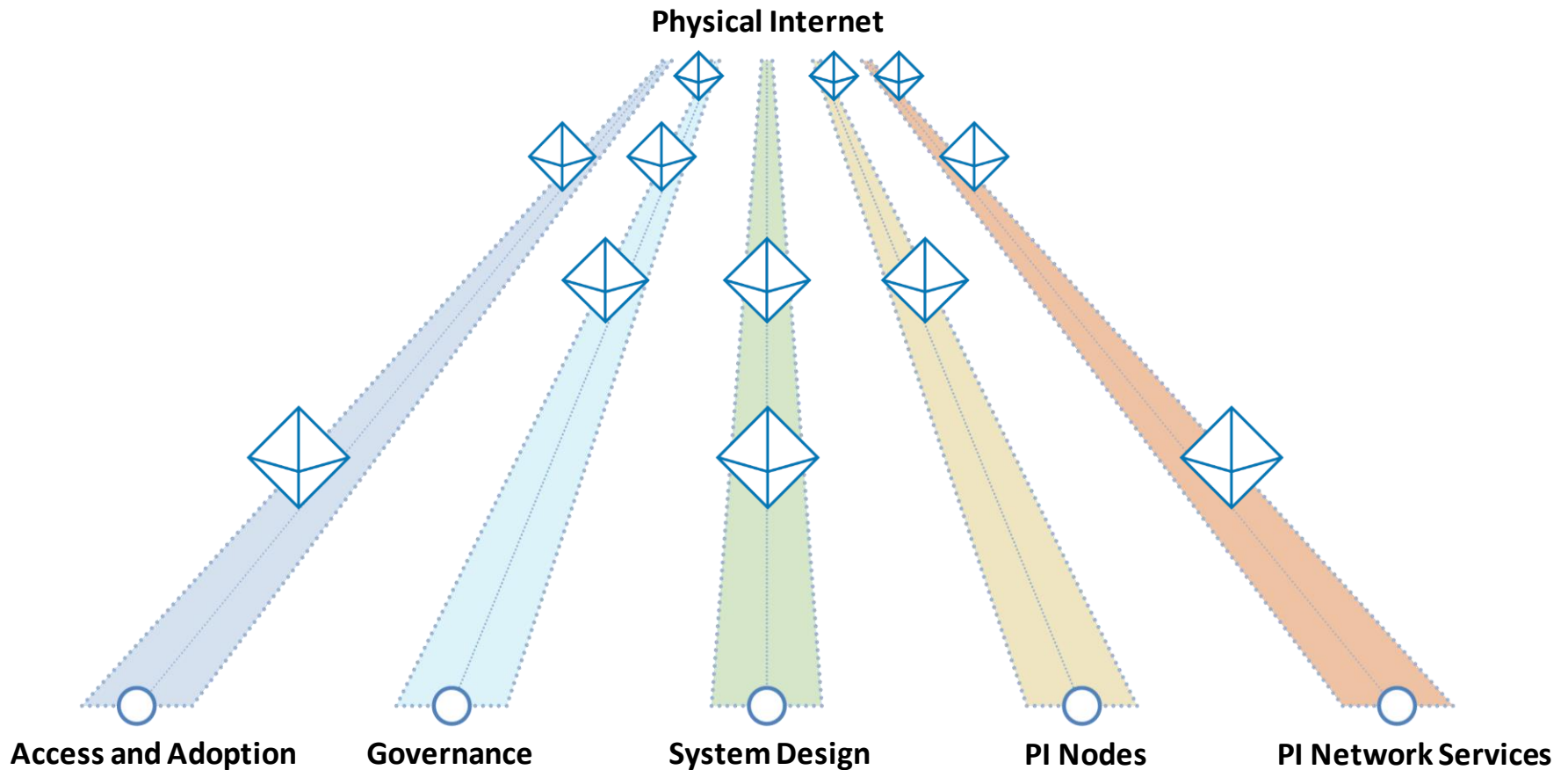
PI Knowledge Platform and
PI Development Monitoring Methodology

Detailed Roadmap
Towards Physical Internet

SENSE Major Outcomes:

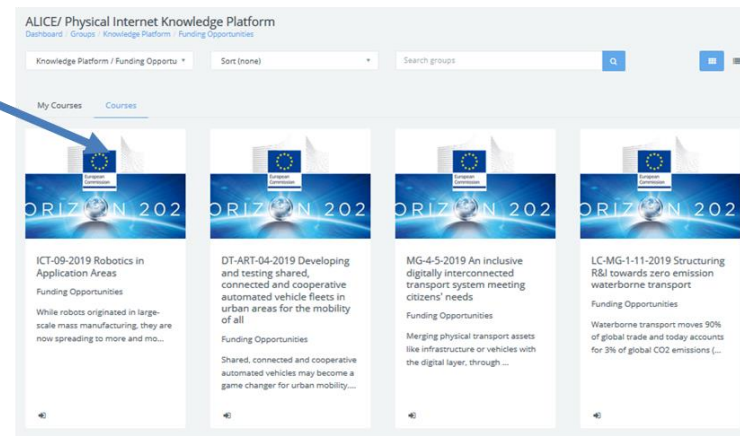
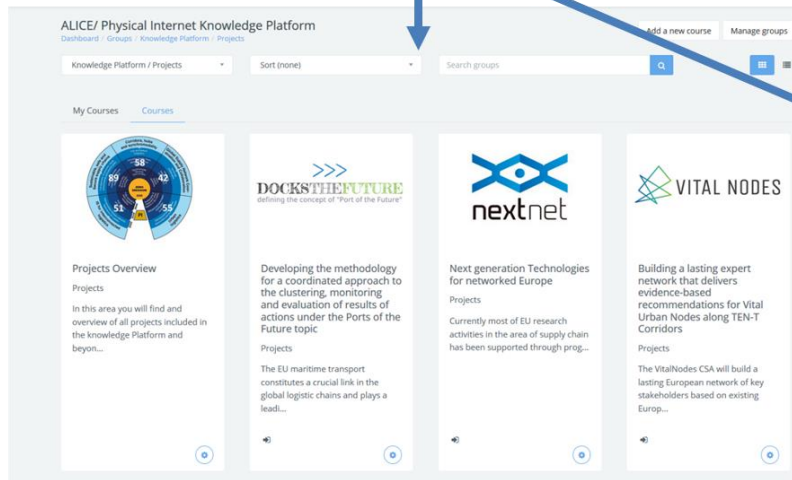
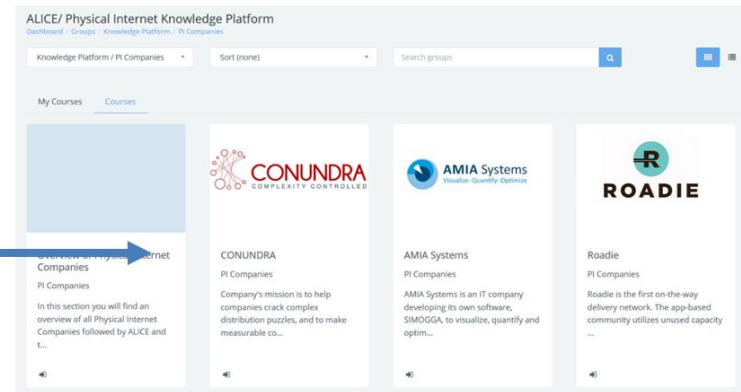
- Wide Industry and public bodies consensus and support on Physical Internet vision and roadmap
- Strong methodology to monitor, assess and review Physical Internet implementation Status
- Reference Knowledge Platform on Physical Internet: Market, Projects and Programs
- Better alignment on regional, member states and EU Programs supporting Physical Internet
- Reinforced International Physical Internet Community.

Five areas for PI development including generations



SENSE PROJECT: The knowledge platform

Knowledge Platform [\(link\)](#)

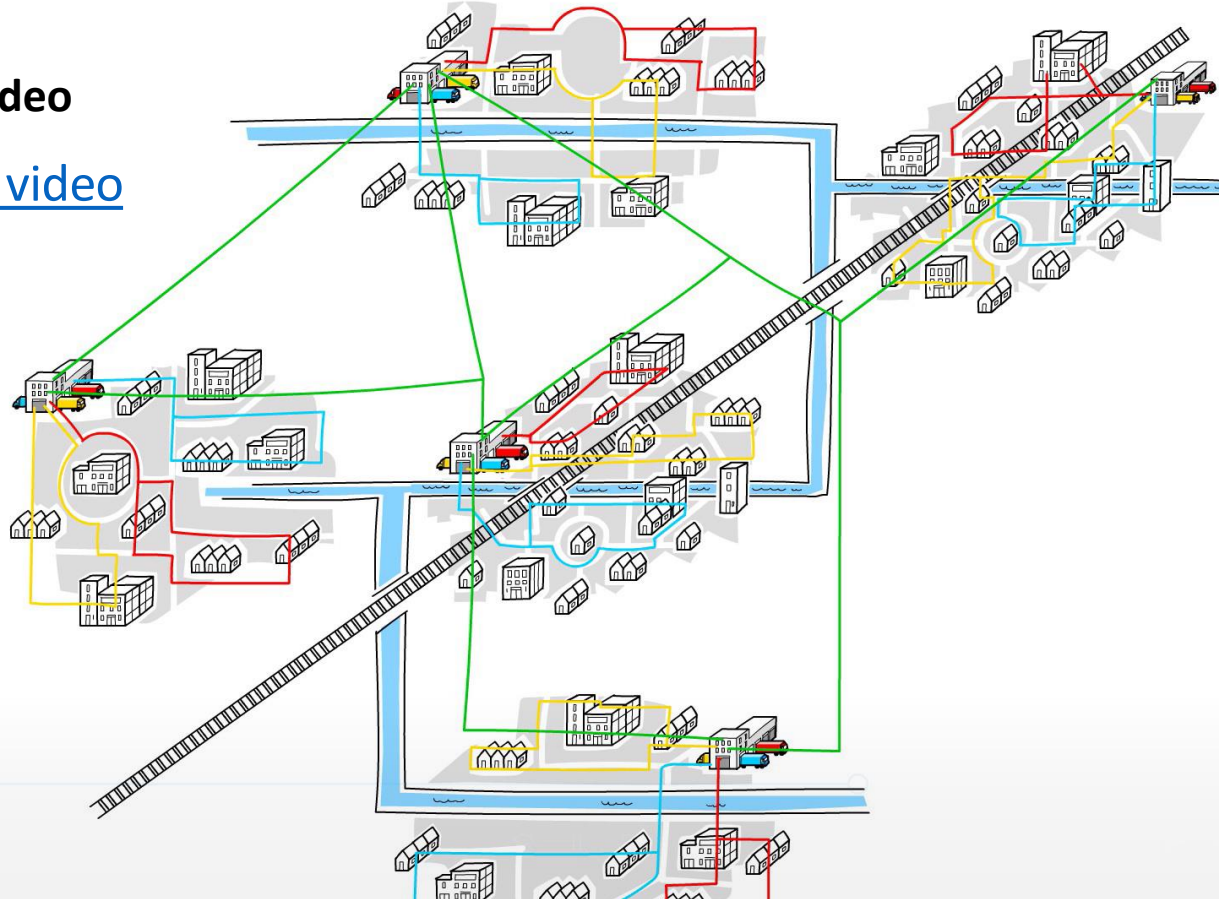


This is the Physical Internet Social Knowledge Platform powered by [ALICE](#) with the support of the European Commission H2020 funded project SENSE.

Physical Internet for sustainable city logistics and beyond

New Video

[Link to the video](#)



ALICE-POLIS Strategic dialogue between cities and industries on urban freight solutions

Strong collaboration between cities and industry will pave the way for lively and sustainable cities

© Thursday, May 16th, 2019



On May 15th, the urban freight and logistics dialogue group of **POLIS** and **ALICE** conveyed its second meeting in Brussels.

The vision of this group is to lead transformation in cities so urban freight and logistics is proactively responding to the pollution, congestion, safety and environmental challenges. **The objective** is to ensure a robust strategic industry & cities dialogue to share practices and facilitate collaboration models between cities and industry to prioritize topics and accelerate deployment of solutions towards cleaner and sustainable urban freight transport. This is in the wake of the 2011 White paper of Transport of the European Commission which established the target to reach **CO2-free city logistics in major urban areas in 2030**.

Since the launching of the group in November 2018, member cities and industries have shared previous and current

Lead transformation in cities so urban freight and logistics is proactively responding to the pollution, congestion, safety and environmental challenges.

Ensure a robust strategic industry & cities dialogue to share practices and facilitate collaboration models between cities and industry to prioritize topics and accelerate deployment of solutions towards cleaner and sustainable urban freight transport.

ALICE-POLIS Strategic dialogue between cities and industries on urban freight solutions



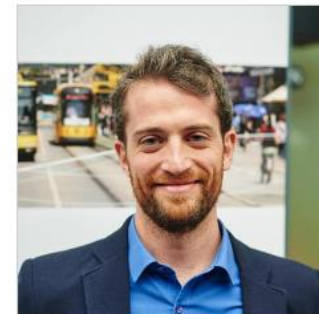
Approach

1. **Compilation of urban logistics cases** explored in the past and still running. *Learning and remaining needs highlights.*
2. **Identification and consensus building on measures and solutions** reaching scale for implementation. Develop scalable model description, and the basis of needed collaboration for implementation.
3. **Provide direction** local initiatives and Industry as a whole, to Horizon Europe Program and other national and European initiatives.

Involved Cities & Regions through POLIS:

Large Cities	Medium / Small Cities	Regions
1. Amsterdam	12. Bilbao	19. Arnhem Nijmegen City Region
2. Brussels Mobility	13. Ghent	20. Flanders MOW
3. Budapest (BKK)	14. La Rochelle	21. Ile-de-France
4. Dresden	15. Leuven	22. Manchester (TfGM)
5. Dublin City Council	16. Liège	23. Province of Noord-Brabant
6. Gothenburg	17. Helmond	
7. London (TfL)	18. Southampton	
8. Madrid		
9. Paris		
10. Rome		

Type of Organization	Members
Shippers & Retail	P&G L'ORÉAL proxximus COLRUYTGROUP
Logistics Service Providers, Courier and Postal operators & Freight Forwarders	Gebürder Weiss GEODIS FM LOGISTIC Posteitaliane
Vehicle Manufacturers	VOLVO MAN SCANIA TEVVA
Information and Communication Technologies	PTV GROUP the mind of movement



Giacomo Lozzi
POLIS NETWORK
Coordinator Urban Freight

Fernando Liesa
ALICE
Secretary General

www.polisnetwork.eu/freight
glozzi@polisnetwork.eu
Phone: +32 2 5005686

www.etp-alice.eu
fliesa@etp-alice.eu
Phone: +32 470257625

[More information](#)



*Use your capacity,
share your assets..*

*In Space...
..and Time*



Contact: cossu@fitconsulting.it

grazie.

www.fitconsulting.it

www.etp-logistics.eu

