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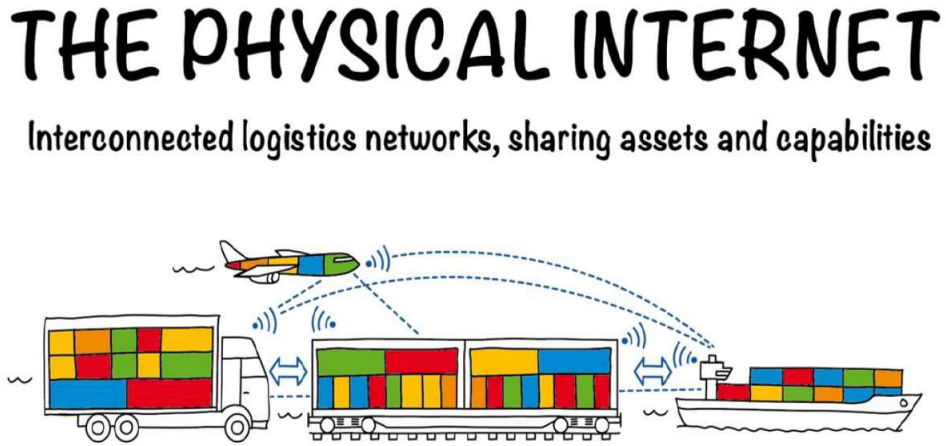
Industry lead logistics innovation for a more competitive and sustainable industry

Logistics Nodes towards the Physical Internet

Fernando Liesa

Secretary General
ALICE



Activities performed in the frame of SENSE *"Accelerating the Path Towards the Physical Internet".* The SENSE project has received funding from the European Union´s Horizon 2020 research and innovation Programme under grant agreement No. 769967

ALICE membership is bringing an holistic approach → All key logistics stakeholders represented!

Type of Organization	Members	EU/International Associations
Shippers & Retail	P&G, L'ORÉAL, proximus, Atlas Copco, HOFER, COLRUYTGROUP	ESC, cefic, ELUPEG, GS1
Logistics Service Providers, Courier and Postal operators & Freight Forwarders	Gebrüder Weiss, GEODIS, BORUSAN LOJİSTİK, FM LOGISTIC, Posteitaliane, Sesé, GRUBER LOGISTICS, LINEAS, MULTILOG, CHEP, TRI-VIZOR, CODOGNOTTO	CLECAT, UIRR, EALTH, ECG
Ports, Hubs, Intermodal terminals & Transport Infrastructure	Port of Rotterdam, Rijkswaterstaat, INTERPORTO BOLOGNA, HUTCHISONPORTS ECT ROTTERDAM, Port de Barcelona, valenciaport, De Vlaamse Waterweg, TRAFIKVERKET, JLL, ECO SLC, Puerto de Algeciras, duisport	FEPORT, European IWT Platform, INE, INLAND NAVIGATION EUROPE
Vehicle Manufacturers & Logistics operations, handling (modular units)	VOLVO, SCANIA, TEVVA, PONERA, LOGIFRUIT GREEN LOGISTICS	eucar
Information and Communication Technologies & Consultancy	VINTURAS, MARLO, SILENT SENSORS, algoWATT, UIRNet S.p.A., Green Router, ptsclas, PRODUCTBLOKS, everis, URBAN RADAR, log sea, Moving Innovation, BIMAR, interlogistics, TRAXENS, ITS Norway, RINA, NIXMOVE, New OPERA, DAC, GEA, VISMA, argus, mosaicfactory, LOGIT ONE, LastMile, inlecom, north, HACON, PTV GROUP, the mind of movement, TRANSPOREON, Delivering connections	ERTICO, LEAN & GREEN EUROPE
Regional & National Logistics Clusters & Associations	vnl VEREIN NETZWERK LOGISTIK, CLOSER, NOV@LOG, AirCargoBelgium, VIL EMPOWERING LOGISTICS, CESMAD BOHEMIA, Euralogistic, LIMOWA, CARA, EffizienzCluster LogistikRuhr, TKI DINALOG, logistop, POM	Smart Freight Centre
Research and technology Centers	Fraunhofer IML, Fraunhofer IFF, KLU, ICOOR, ZLC, Newcastle University, BIBA, ITENE, CATAPULT, ITL, TUDelft, TNO innovation for life, Amsterdam University of Applied Sciences, rijksuniversiteit groningen, RISE, TU/e, howest, XAMK, CERTH/HIT, Georgia Tech, Physical Internet Center, UCA, Molde University College	ectri, ELA, EUROPEAN LOGISTICS ASSOCIATION
European Technology Platforms /PPPs	WATERBORNE, ERRAC, ERTRAC, EFFRA a MANUFUTURE initiative, MANUFUTURE-EU	
Member States and innovation Funding*	Department for Transport, TÜBİTAK, TKI DINALOG, CDTI, Vlaanderen, THE GOVERNMENT OF THE GRAND DUCHY OF LUXEMBOURG, MINISTÈRE DE L'ÉCOLOGIE, DU DÉVELOPPEMENT DURABLE ET DE L'ÉNERGIE, bmvit, VINNOVA	

** Involved in ALICE Mirror Group*

The challenges in perspective: It is urgent to act!

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- We need to move fast to meet Climate Targets!
- Moving to greener assets and energy is not enough → ***too slow*** and ***unaffordable!***
- **Short term opportunity**?

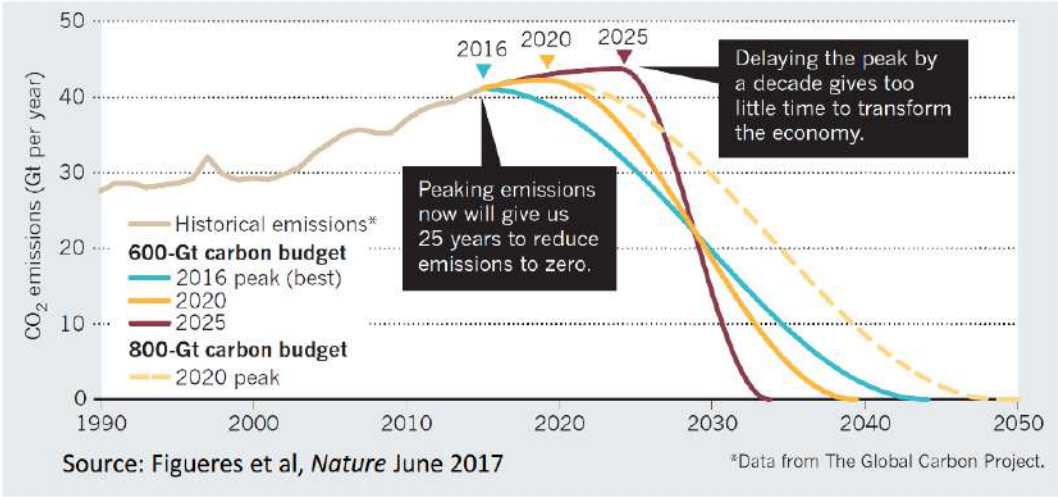
  Make extensive use of current **idle capacity and fully utilize assets and infrastructure** in all modes of transport

Pain points: empty trips in all modes, low load factors, not enough intermodality, **costly transhipment, overloaded vs unused infrastructure, congestion, too many yard/terminal movements,** few items delivered per stop, too many returns, too fast/dedicated inefficient deliveries…

Physical Internet: Addressing pain points to meet challenges effectively and make them affordable

Carbon Budgeting

Need to stay within tight carbon budgets to limit temperature rise to 1.5-2.0°C



https://bit.ly/2WGTINT

Need to embed concept of carbon budgeting into logistics decarbonisation strategies

Opening and connecting non-efficient networks
Access to interoperable resources and capabilities

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Towards zero emissions logistics 2050 Roadmap

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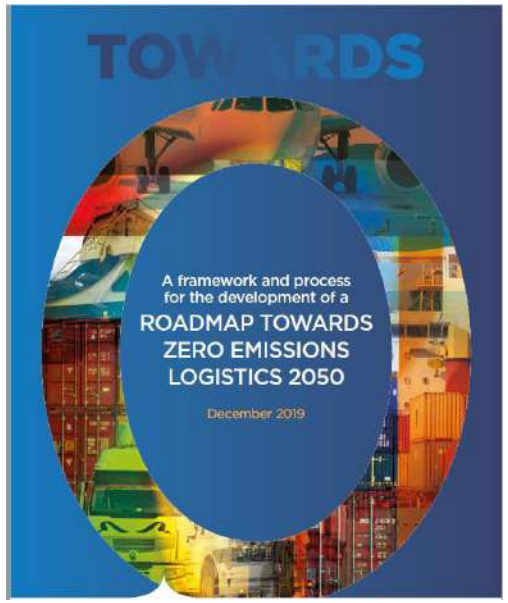

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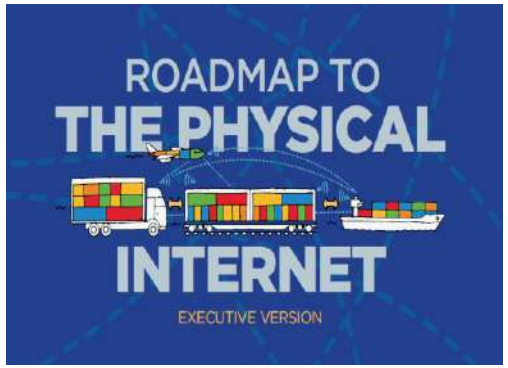

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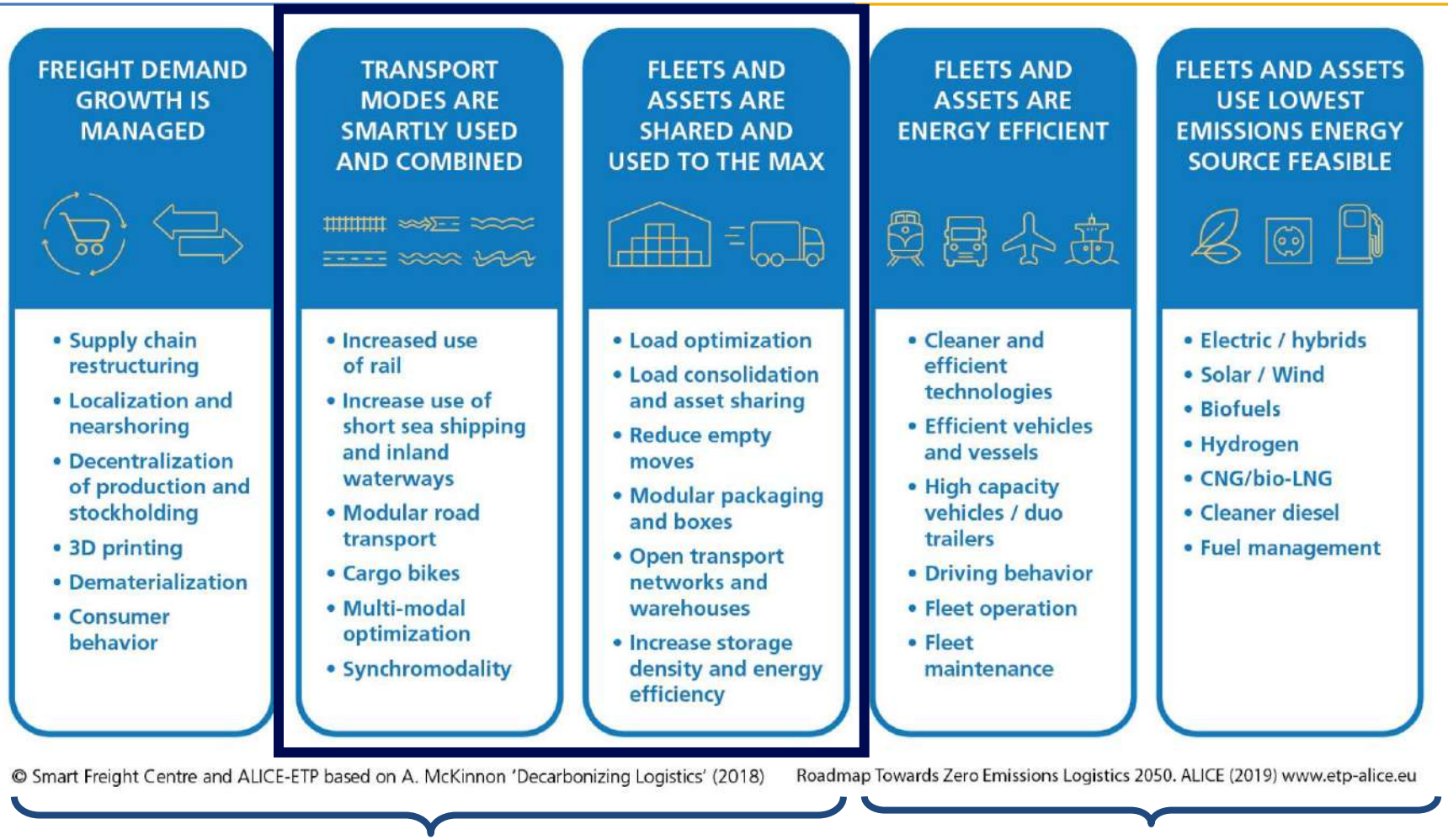

Additional focus needed

PI PHYSICAL INTERNET

Current focus

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What's the potential contribution of Physical Internet to reduce emissions?

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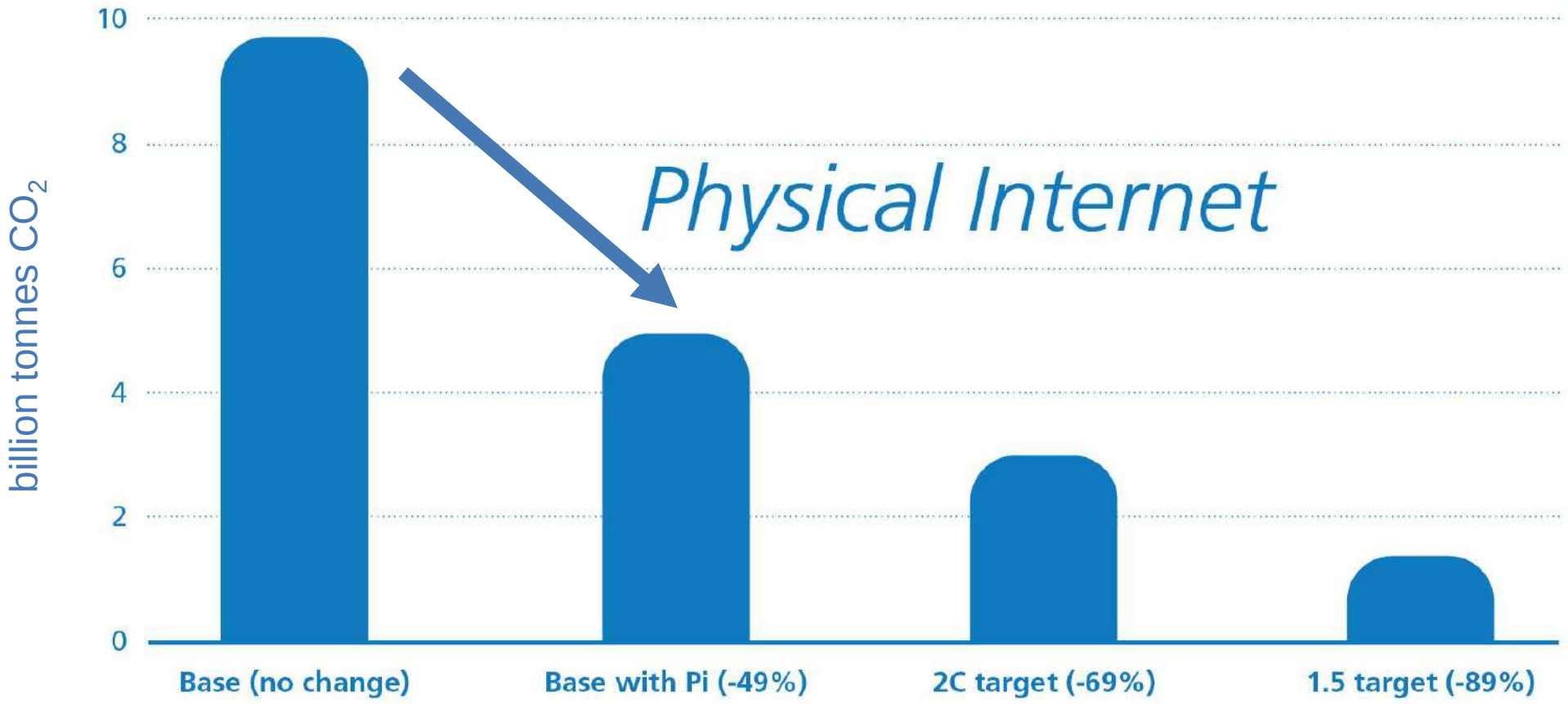
Scenarios for freight-transport emissions in Europe including Physical Internet (PI)



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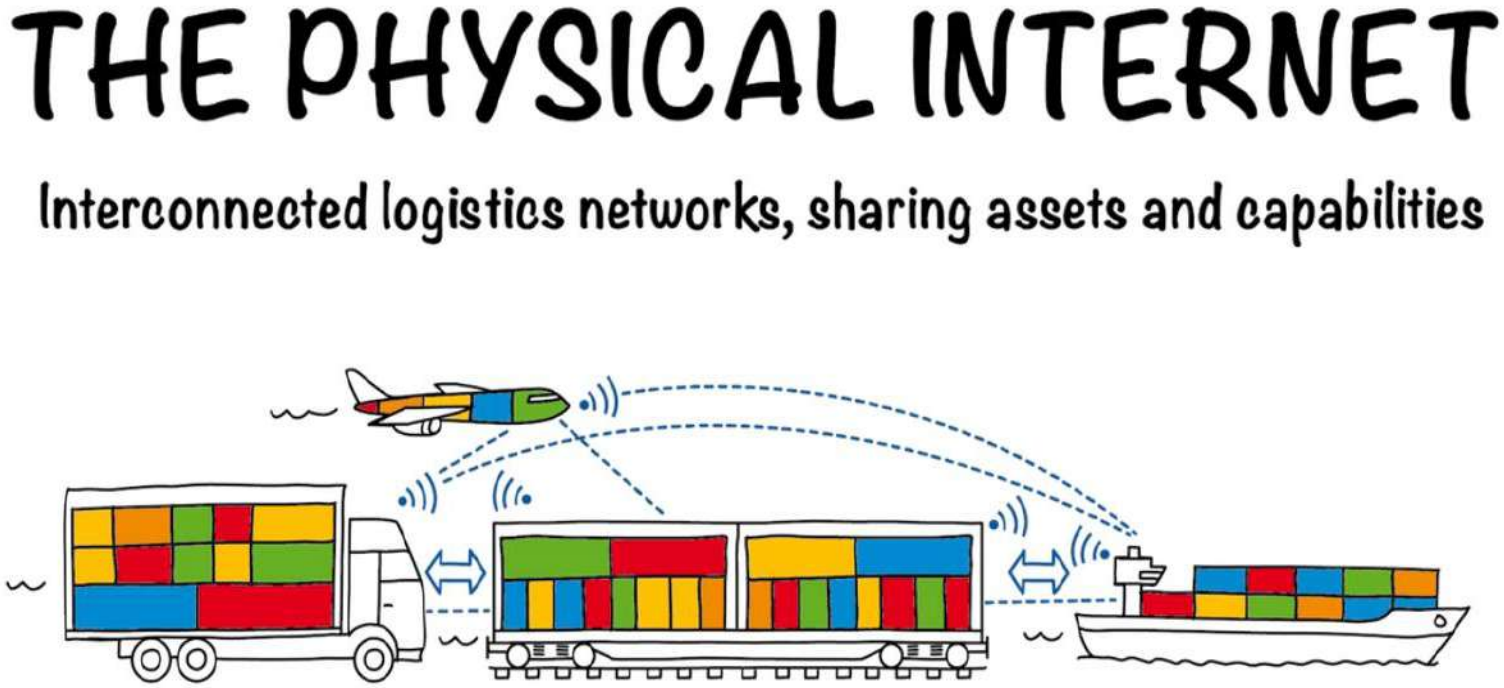
The Roadmap



Authors and main contributors

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Physical Internet Roadmap in a nutshell: What you will find

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2030-2040
Autonomous PI operations

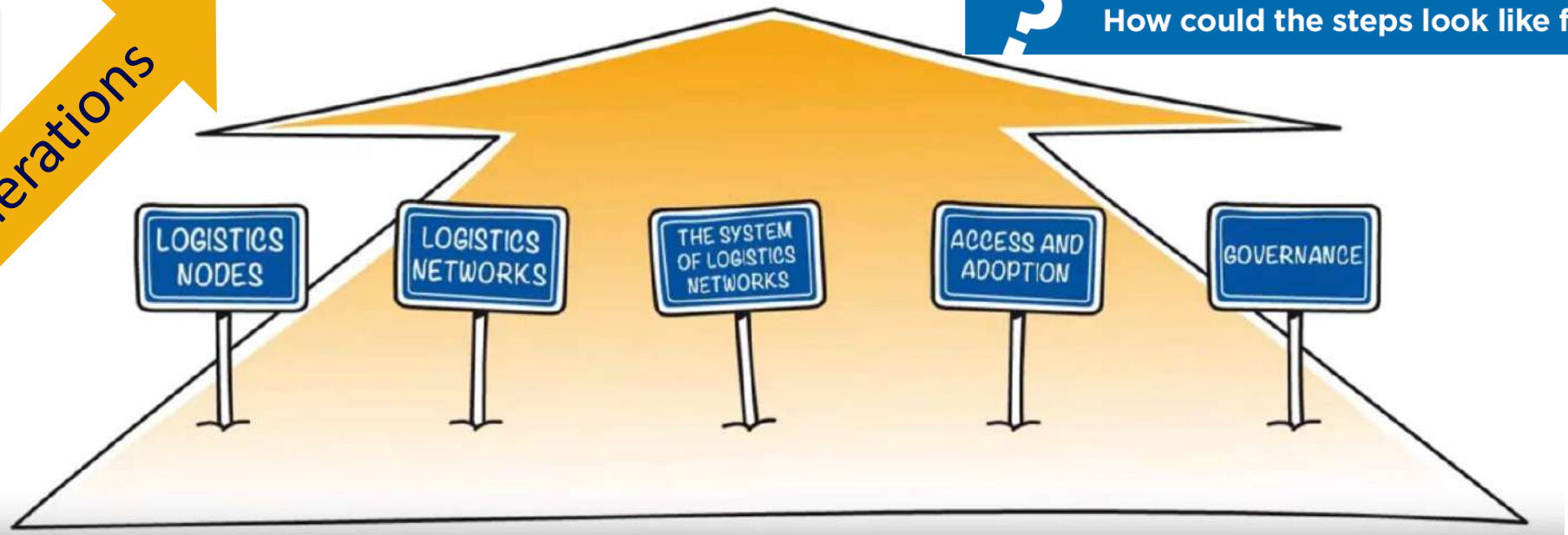
What do we want to achieve by 2030/2040?

2030

How could the steps look like for the next five years?

Concrete Benefits

Generations



2020

2015

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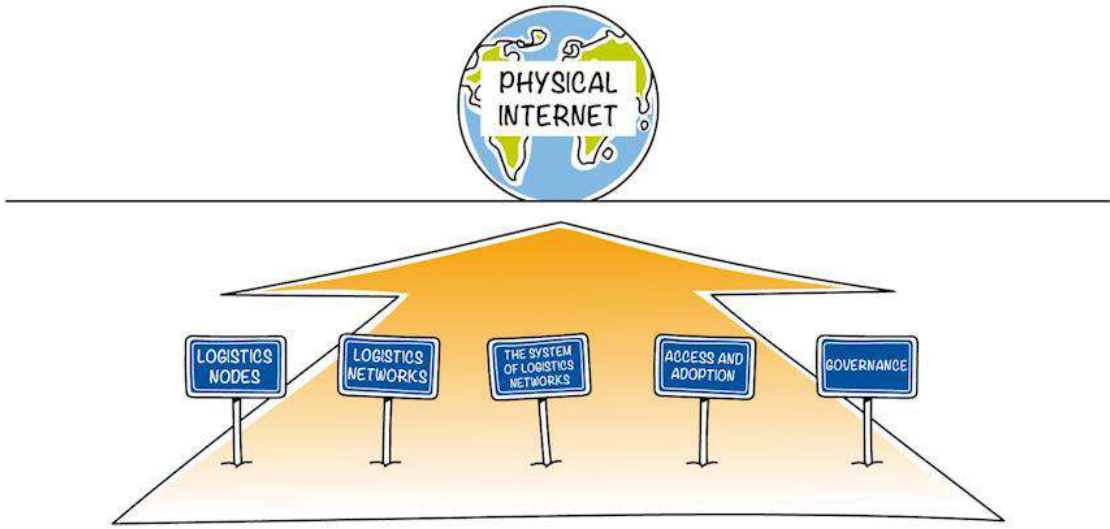
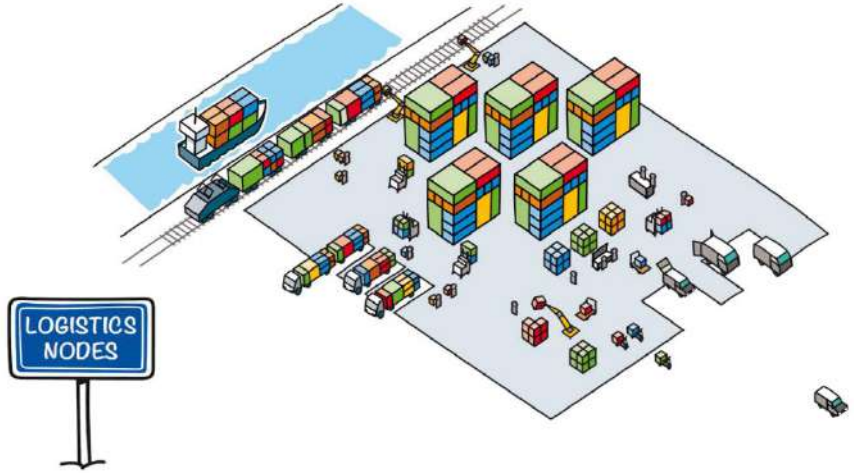
From Logistics Nodes to Physical Internet nodes

- Processes, services and operations are standardised across nodes → open access to stakeholders
- Services are visible, digitally accessible to companies
- Automated and connected processes and procedures
- Business models supporting autonomous interactions and provision of nodal services



Natural evolution of Port Community Systems in combination with other platforms/companies systems



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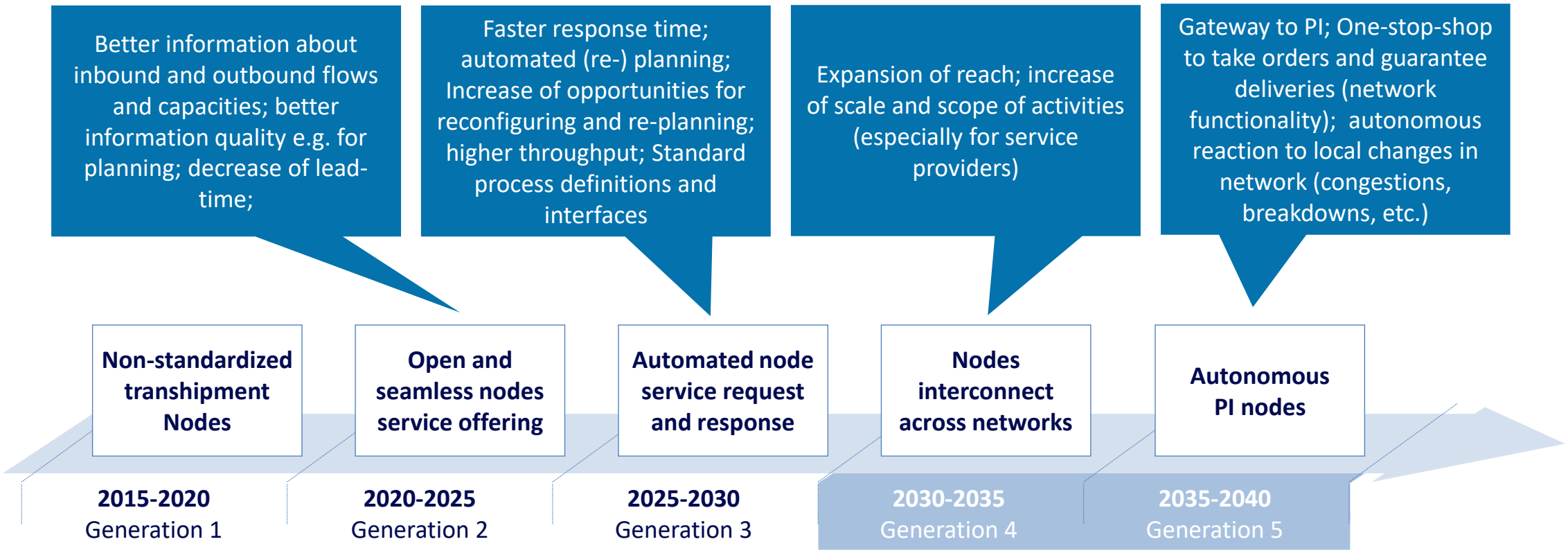
Concrete Benefits per Generations



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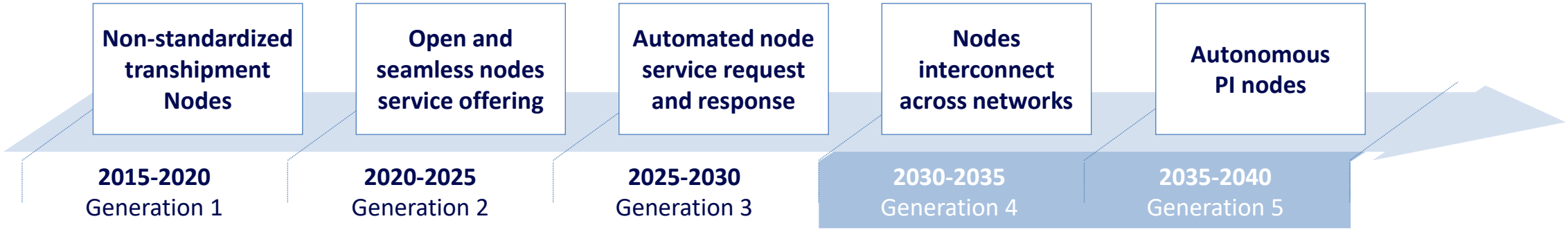
How could the steps look like for the next five years?



1. **Sharing of characteristics, capabilities, and services** of nodes to create visibility and accessibility for stakeholders, to realise ease of booking for cargo owners or service providers to services provided in the nodes, orchestrate operations involving multiple stakeholders. Definition and implementation of standard processes and interfaces.
2. Develop the framework and **implement the federated network of platforms concept at nodes level** (DTLF, IPCSA)
3. **Identification and definition of business models** for the collaboration and interconnection of nodes.

Trusted data sharing platforms around ports and nodes clusters

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SENSE Project Main Results

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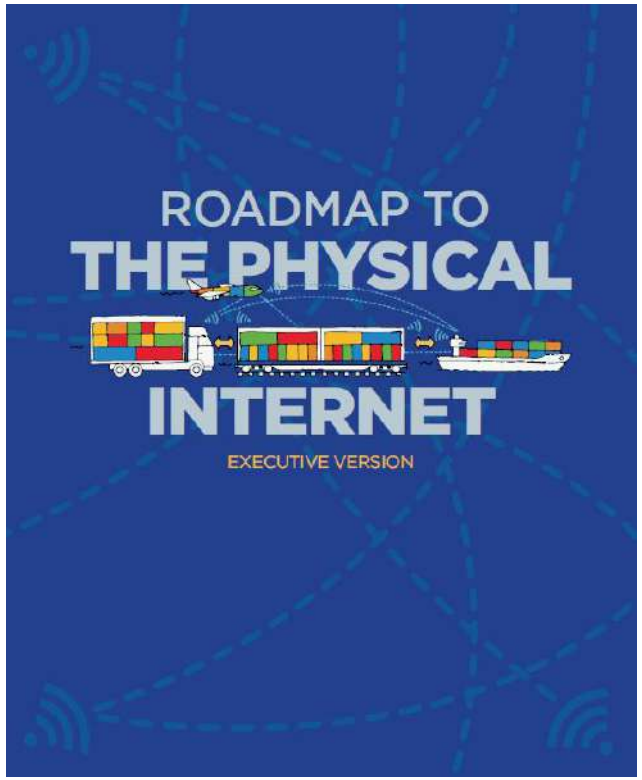

720+ users, 180+ connecting in the last 45 days

33 R&I projects, **30 Companies** and **18 funding**

RECOMMENDATIONS

Link to the document

The Quadruple Helix (Carayannis & Campbell, 2011) Roadmap Towards Zero Emissions Logistics 2050. ALICE (2019) www.etp-alice.eu

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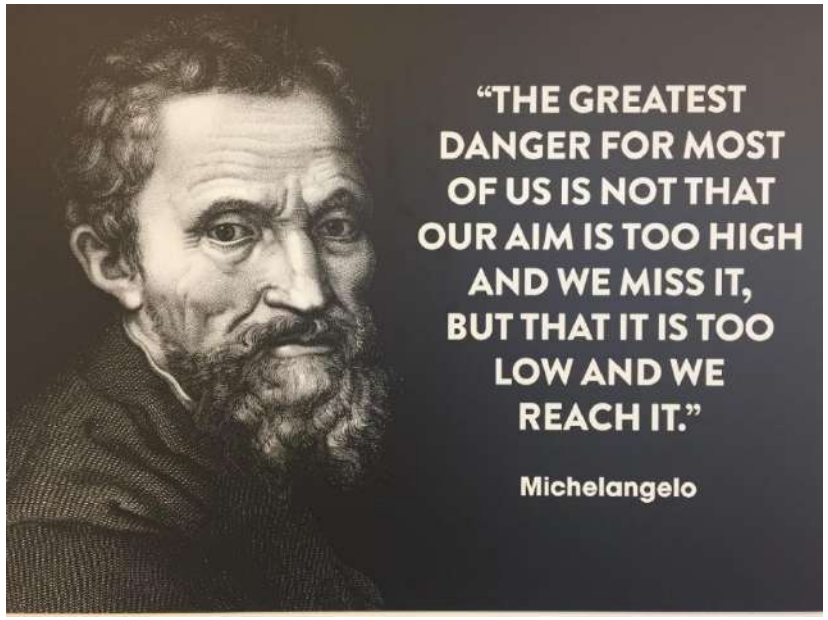

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Thank you!

The Best Way To Predict The Future Is To Create It!

Source: President Abraham Lincoln

If you want to go fast, go alone If you want to go far, go together

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