Aligning supply chain management for efficiency and sustainability challenges – Take aways from the ADMIRAL project

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Highlights

- EU sustainability regulation is pushing logistics companies toward robust, auditable CO_2e data requiring closer supply-chain collaboration
- Harmonizing regulatory frameworks and implementation flexibility foster companies' adoption of sustainability measures
- ADMIRAL demonstrates how a neutrally operated digital multimodal marketplace can foster stakeholder collaboration and enable emission-aware purchasing
- Integrating sustainability reporting functionalities on top of forthcoming eFTI platforms reduces compliance costs for logistics companies and enhances operational efficiency
- Further support for logistics companies is required regarding easy access to accredited emissions data and harmonized CO_2e calculation tools.

Rethinking global challenges - Sustainability & Efficiency

EU regulation is gradually obliging companies to adopt sustainability monitoring and promoting emission calculation standards as part of a growing emphasis on sustainability goals.

Most recent regulation includes the EU Corporate Sustainability Reporting Directive (CSRD) requiring companies to include Scope 3 emissions occurring along the supply chain into their reporting which calls for closer collaboration between supply chain actors. Other EU regulation such as CountEmissionsEU push for a standardized approach to GHG emission calculation for transport services.

The logistics sector is a cornerstone of Europe's economy, but it faces growing pressure to reduce its environmental footprint. Establishing stronger collaboration with supply chain actors and an efficient emissions monitoring approach have thus become both a regulatory obligation, but also an opportunity to stay ahead in the competition, and re-shape internal and external processes for more efficiency and sustainability.

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CO_2e Reporting & Data Sharing – Challenges & Opportunities for Logistics Companies

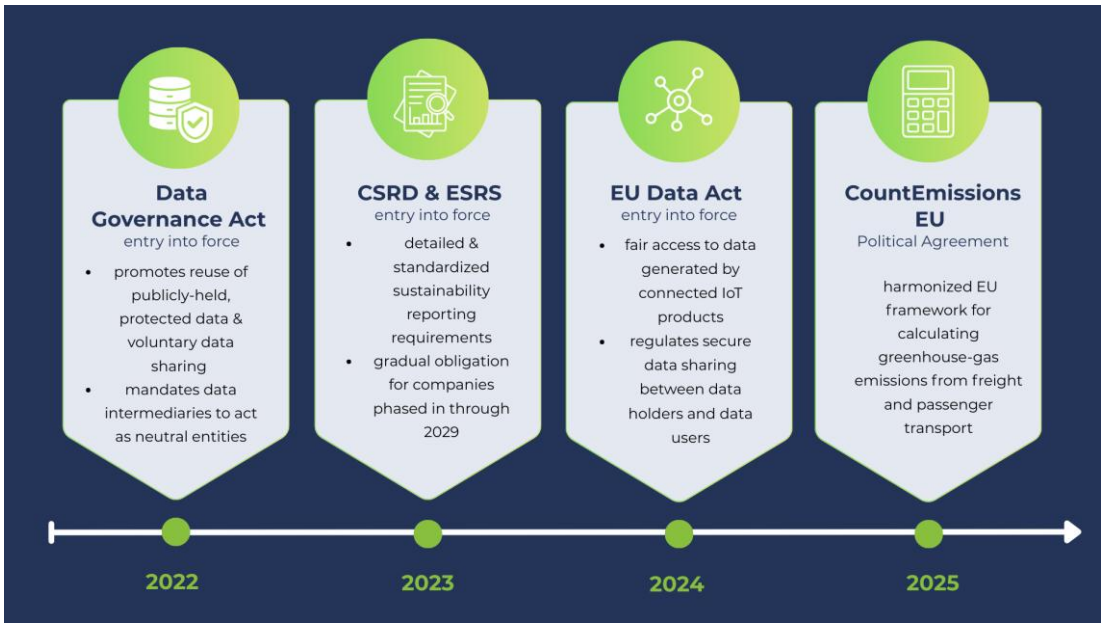

Figure 1 Regulation Timeline

While current regulation supports EU-wide transparency in emissions from transport and logistics, offers a standardized calculation approach to ensure comparability and data quality for transport services, and pushes for a safe sharing of emissions data, **the current challenges and needs persist:**

Figure 2 Challenges & Needs for Logistic Companies

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The **ADMIRAL project** answers these needs by building a digital multimodal marketplace connecting sellers and buyers of logistics services as well as developers and integrators of service solutions on a joint, trusted platform. The neutrally operated marketplace thereby simplifies stakeholder collaboration along the logistics supply chain, and enables the purchase of services based on price as well as emissions information which can be used for reporting. Thus, the marketplace opens up a trusted ecosystem where logistics services are exchanged and low-emission services are promoted.

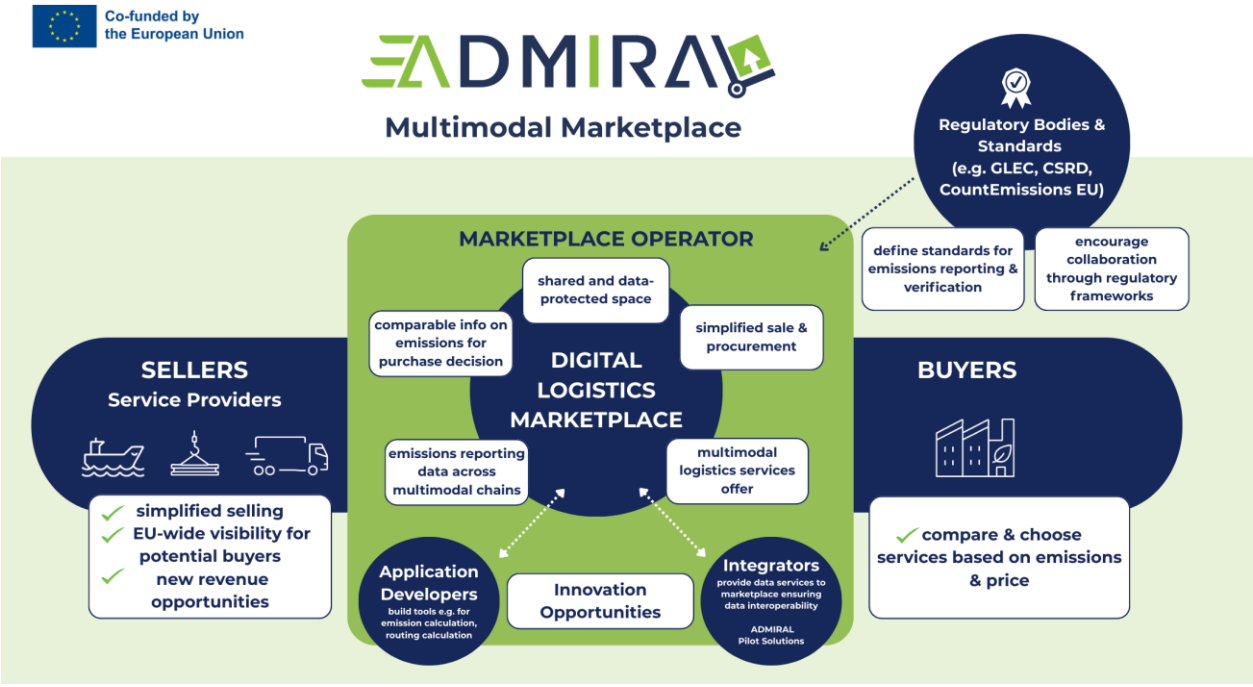

Figure 3 ADMIRAL Multimodal Marketplace

Policy Recommendations

From the project experiences of developing and testing the ADMIRAL multimodal marketplace for low-emission services including pilots' services, adapting the marketplace design to reflect identified success factors and lowering barriers faced by potential marketplace participants, and from in-depth analysis conducted on the alignment of sustainability KPIs with EU regulation on the one hand, and industry priorities on the other hand, the following policy recommendations offer a path towards greening logistics.

1 – Lay the regulatory foundation for encouraging bottom-up low emission efforts in line with industry priorities and needs

Actions proposed

- Offer regulatory certainty on support measures to aid companies, especially small and medium-sized enterprises, in implementing emissions reporting. In this regard, accelerating the **CountEmissionsEU framework** will provide clear and actionable guidelines for emission

calculation and data publishing which support the use of data deriving from services such as the ADMIRAL marketplace.

- Align prioritized industry KPIs related to sustainability with KPIs set by EU regulations ensuring that companies can remain competitive while fulfilling sustainability policy mandates. Ensure implementation flexibility to accommodate sustainability priorities of different stakeholder groups in the logistics sector.

Evidence from ADMIRAL

During the ADMIRAL timespan, regulations concerning emissions developed significantly (e.g. CSRD, ISO14083:2023, CountEmissionsEU introduced), which has enabled a common reference framework for companies to move forward with emissions management. Analysis of feedback from logistics stakeholders likewise points to the harmonizing impact of EU policies on sustainability priorities across EU regions, highlighting EU regulation as a driving force for a shared vision on green logistics by industry stakeholders across European regions (Castaño-Herrera et al.). Findings from studies conducted in ADMIRAL also emphasize the benefits of implementation flexibility in order to align EU regulation and logistics industry sustainability priorities.

However, logistics companies (especially SMEs) continue to struggle with implementing of EU emission regulation, and further support is still required, concerning e.g. easy and cost-efficient access to accredited emissions data and harmonized CO_2 calculation tools as default emissions data for different modes of transportation and emissions factors for different energy types remain scattered in different databases. This challenge has been repeatedly raised by logistics companies across I industry events and workshops[1].

Expected Impact

Approaching industry and EU regulation KPIs on sustainability is likely to motivate logistics companies to reduce GHG emissions in their business operations and strengthen the argument of becoming a forerunner through early adoption of sustainability KPIs. Providing support and regulatory certainty to companies strengthens this tendency, while role-sensitive policies can address the distinct incentives of infrastructure managers, logistics operators, cargo owners, and public authorities, reinforcing sustainability efforts while accounting for heterogeneous capacities and constraints across the EU.

2 –Support forerunner digital collaboration platforms that embed trust and transparency to foster CO_2e emission reduction and operational efficiency along the entire supply chain

Actions proposed

Support forerunner, scalable innovations such as digital collaboration platforms easing information exchange on Scope 1-Scope 3 emissions which:

[1] Many of these events/workshops were organized by LOGY, the Finnish logistics association.

- Are operated by a neutral 3rd party,

- Ensure data interoperability, modular participation and fair data governance,

- Have a special emphasis on engaging SMEs,

- Incorporate regular assessment of platform performance and adherence to most recent emission reporting and data sharing standards.

And thus, enable an effective approach to emission reduction along the entire supply chain fulfilling both efficiency and sustainability goals.

Evidence from ADMIRAL

Findings from ADMIRAL surveys highlight that technological innovations—such as digital logistics marketplaces, real-time monitoring tools, energy-efficient technologies, alternative fuels, and decision-support systems—are perceived as the most promising drivers of green logistics, yet adoption remains moderate. Collaborative mechanisms requiring multi-actor coordination show slower progress, underscoring the need for trust-building, transparency, and governance frameworks. ADMIRAL demonstrates that an integrated digital strategy can align stakeholder actions, optimise operations, and facilitate measurable CO_2 reductions across supply chains.

Expected Impact

Fostering collaborative digital platforms, e.g. in the frame of research projects allows for operational efficiency, emission reduction and enhanced energy performance in the logistics sector –specifically with regard to Scope 3 emissions –by triggering stakeholder collaboration through incentives in the form of data (e.g. CO_2e emissions reporting data) and cost transparency. At the same time, common barriers to platform collaboration can be addressed through a balanced and transparent governance structure and by ensuring a trusted data sharing space. Over time, such integrated approaches are expected to support a coherent, system-wide green logistics transition, strengthening the EU's ability to meet climate targets and advance sustainable transport networks.

3– Integrate future sustainability reporting functionalities at the top of forthcoming eFTI platforms

Actions proposed

Enable logistics companies to address emissions within the entire supply chain effectively by adding sustainability reporting functionalities to the eFTI data model and on top of forthcoming eFTI platforms.

Evidence from ADMIRAL

While the ADMIRAL project has not directly focused on eFTI platforms, project findings from bottom-up collaboration with logistics companies indicate that companies are inclined to develop solutions that extend or enhance their existing digital systems rather than adopting new ones if these require further

investment. As eFTI is expected to become a foundational and widely adopted system for freight data management in the EU, establishing interfaces with emissions calculation tools, would significantly improve operational efficiency, streamline monitoring processes and reduce compliance costs.

Expected Impact

While the eFTI Regulation is focused on digitalizing and thereby facilitating the exchange of regulatory transport information, its technical framework offers an opportunity to include sustainability performance indicators and standards into eFTI platform functionalities. This would contribute to data transparency, facilitate CO_2e data exchange and data-based monitoring of logistics companies' sustainability performance. The extension towards sustainability reporting functionalities thus has the potential to reinforce the push towards sustainability monitoring, stakeholder exchange, and reducing emissions along the supply chain with the added benefit of enhancing operational efficiency. Developing such sustainability dimensions of eFTI might also lead to similar evolutions in the underlying Multimodal Transport Reference Data Model (MMT RDM) of the UN/CEFACT.

This policy brief puts forward findings and recommendations based on insights gathered in the EU project ADMIRAL (Advanced multimodal marketplace for low emission and energy transportation) among others based on surveys, semi-structured interviews, and workshops with logistics companies as well as detailed analysis of EU sustainability regulation and logistics company sustainability reports.

A more detailed version of this policy brief is available here.

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