4 Transport and Logistics

Transport and logistics encompass the movement of people, goods, and data across physical and digital networks. The sector integrates various modes (road, rail, maritime, air, and pipelines) with supporting infrastructure such as terminals, warehouses, distribution centres, and information systems. It is foundational to economic activity, supply chain resilience, and territorial cohesion.

Many services operate across borders, with varying degrees of market liberalisation and regulatory harmonisation. Public-private collaboration is common, particularly in infrastructure, safety oversight, and mobility planning.

The sector's critical nature makes it highly sensitive to disruption, whether due to strikes, fuel price volatility, cyberattacks, or geopolitical conflict. Its environmental impact is also significant, especially in freight and aviation.

4.1 GRC in Transport

Governance in transport organisations must coordinate infrastructure maintenance, service reliability, safety management, regulatory compliance, and customer service. Asset-heavy operations require long-term planning and lifecycle governance, while service operators balance punctuality, cost-efficiency, and user satisfaction.

Risk management is multidimensional:

- **Operational risk** includes accidents, delays, and mechanical failure.
- **Cyber risk** affects control systems, booking platforms, and supply chain software.
- **Regulatory risk** stems from evolving standards on emissions, data sharing, and worker rights.
- **Geopolitical and environmental risks** affect cross-border freight and just-in-time logistics.

Compliance obligations are extensive: vehicle certification, safety audits, emission controls, transport licensing, customs and security procedures, labour regulation, and increasingly, digital platform transparency. etc. Data protection, particularly for passenger travel and e-commerce logistics, is governed by frameworks such as the **GDPR**.

4.2 Digital Systems and Interoperability

Transport and logistics are increasingly dependent on digital coordination. Key systems include:

- **Traffic and fleet management systems** for real-time routing and monitoring.
- **Logistics management platforms** for inventory visibility and delivery scheduling.
- **Passenger information systems**, ticketing, and journey planning tools.
- **Port, rail, and airport management systems**, integrating multiple actors.
- **IoT and telematics** for vehicle performance and cargo tracking.

4.3 European and International Contexts

In the **European Union**, transport policy aims to promote cross-border integration, sustainability, and digital transformation. Key frameworks include:

- **TEN-T (Trans-European Transport Network)**: Strategic infrastructure investment across member states.
- **EU Mobility Package**: Rules on driving time, cabotage, and posting of workers in road transport.
- **Single European Sky**: Aviation integration initiative to streamline air traffic management.
- **eFTI Regulation**: Framework for electronic freight transport information exchange.
- **Sustainable and Smart Mobility Strategy**: Outlines decarbonisation, automation, and data-sharing goals.

Internationally, standards and cooperation are set through:

- **ICAO** (International Civil Aviation Organization) and **IMO** (International Maritime Organization) for safety.
- **UNECE** (United Nations Economic Commission for Europe) for cross-border transport regulation.
- **WCO** (World Customs Organization) for harmonisation of customs and trade data exchange.
- **ISO** standards for logistics, asset management, and transport safety.

While technical and safety regulations converge internationally, market models, public ownership, digital maturity, and data governance vary across jurisdictions.

4.4 Subdomains and Strategic Challenges

Transport and logistics include distinct subdomains:

- **Urban Mobility** – Includes public transport, micro-mobility, and traffic management; shaped by city governance and user experience.
- **Freight and Distribution** – Involves intermodal transport, last-mile delivery, and warehouse optimisation[4].
- **Passenger Transport** – Includes aviation, rail, and bus; governed by scheduling, safety, and consumer rights.
- **Postal and Courier Services** – Rapidly evolving due to e-commerce and requiring IT-intensive logistics.
- **Infrastructure Management** – Airports, ports, rail networks; governed by asset maintenance and access rights.

Strategic issues include electrification, automation (e.g., autonomous vehicles, drones), platform integration, congestion, environmental impact, and preparedness for shocks. The rise of data-driven logistics and platform intermediaries (e.g., ride-hailing, freight marketplaces) also challenges traditional governance models.

4.5 A Few Keywords…

- **Logistics Management System (LMS)** – Software supporting order fulfilment and distribution tracking.
- **Fleet Telematics** – Technology enabling remote vehicle monitoring and performance analytics.
- **eFTI** – EU Regulation for digital freight data exchange.
- **Intermodality** – Integration of transport modes to improve efficiency and sustainability.
- **GDPR** – Governs passenger data processing in travel and logistics platforms.
- **Mobility-as-a-Service (MaaS)** – Digital integration of transport services into a single offering.
- **Single Window** – International customs facilitation system for cross-border trade data submission[5].

[4] https://www.wsj.com/business/logistics/fedex-tackles-the-ultimate-logistics-challenge-getting-rid-of-duplicate-trucks-0103c0fc?mod=djem10point

[5] https://en.wikipedia.org/wiki/Single-window_system