



FOREIGN EXPERIENCE AND MODELS IN THE DEVELOPMENT OF
RAILWAY TRANSPORT

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In the context of international globalization, the world—particularly the transport sector—is reaching new levels in both scale and quality. This process requires a comprehensive evaluation of the interconnections and mutual interests among all nations. The development of the global freight transport system demonstrates that transport remains a crucial factor in ensuring sustainable economic growth. In recent years, issues related to the development prospects of freight transportation through international transport corridors have become especially relevant, as this matter has been recognized as a continental priority for the future of international relations.

Swedish Model (Also applied in the United Kingdom, Finland, Denmark, the Netherlands, Norway, Spain, Portugal, Slovenia, Lithuania, and Sweden) In the Swedish model, railways are state-owned and managed by the National Railway Administration, while the Ministry of Transport and Communications is responsible for shaping railway policy. Railway lines extend into neighboring countries' territories. Sweden operates a 12-year railway investment program, which is reviewed every four years for updates and adjustments. A "Transport Policy Act" has been adopted to regulate the sector. The Railway Administration and the operating division function on a commercial basis. Responsibilities are clearly distributed among various entities, including managers of rolling stock, stations, public spaces around terminals, industrial railways, and manufacturing plants. The construction of high-speed railways carries significant political importance, and new railway service operators are allowed to enter the market to foster competition. State monopoly over railway operations has been limited (Wikipedia, "Rail Transport in Sweden"). Railway services in different regions are organized through a tender system. The CargoNet freight service operates nationwide, and rail tourism is well developed. Ticket orders and travel management are efficiently carried out via mobile applications. Sweden prioritizes transit-oriented development. In densely populated regions, railway projects are integrated into urban development models to enhance urbanization levels. Since 2023, train operation management has been gradually transitioning to a new digital system. Under the "Railway 2050 Strategy," Sweden plans to transfer 30% of freight from road to rail by 2030 and 50% by 2050.

Challenges of the Swedish Model

The separation of the railway company into two entities led to coordination and efficiency challenges. The involvement of private entrepreneurship complicated national economic planning. Investment attractiveness decreased, leading to structural imbalances. Full safety assurance became more difficult. Mobile network connectivity on trains remains unstable. Rail lines have not expanded proportionally to the growing number of trains. Insufficient investment in recent years has slowed railway reform. A lack of maintenance funding has resulted in a need for modernization and repair investments.

Advantages of the Swedish Model



1. High coverage and density of the railway network.
2. Experience with 3PL digital management systems.
3. Partial implementation of 4PL logistics elements.
4. Effective use of mobile applications for rail services.
5. High-speed rail construction recognized as a national political priority.

French Model (Also applied in France, Czech Republic, Estonia, Hungary, Slovenia, and Luxembourg) In France, a law on railway reform was adopted, and railway services are organized under a public-private partnership (PPP) framework. Private investors and concessionaires are permitted to participate. The management of the railways is divided into two main parts: administration and infrastructure operation. The national railway company functions on a self-financing basis, with service tariffs determined independently and competitively. All transport planning and supervision are carried out by the state, while private outsourcing companies participate in service provision. Railway operators use 3PL digital systems and are gradually transitioning to 4PL logistics management. Currently, all operators function as independent private enterprises ([Wilfert, 2015; Briginshaw, 2015; SNCF materials, www.sncf.com]). A railway safety inspection authority has been established, and non-tariff service categories have been opened for sale. Rail transport is actively used in tourism, and the European railway market is open, encouraging competition.

Challenges of the French Model High membership and access fees for operators entering the French and European railway markets. High costs for acquiring rolling stock. Lack of state-guaranteed mechanisms for bank loans. Shortage of skilled personnel (drivers, operators, workers). Low wage standards and irregular shift schedules have reduced job attractiveness. The enlargement of train carriages to accommodate wheelchairs and bicycles created compatibility issues with 1,300 stations, as platforms were not built to proper dimensions (reported by *Le Canard Enchaîné*). The division of management into separate infrastructure and operations entities caused coordination difficulties, prompting the French government to consider reintegrating the system.

Advantages of the French Model Railway services are implemented under public-private partnership (PPP) frameworks; for example, the high-speed TGV lines were built through such cooperation.

Special legislation supports reform implementation. In 1997, the RFF (Réseau Ferré de France) was established as an independent infrastructure manager

Clear distribution of management responsibilities: SNCF handles operations and services, while RFF manages infrastructure.

Service tariffs are competitively determined, enhancing efficiency and service quality. France's railway reforms have increased efficiency, accelerated technological innovation, and reduced state budget burdens by attracting private capital.

German Model (Also applied in Austria, Belgium, Italy, Latvia, Poland, and Greece) The German model is based on institutional separation between infrastructure and transport services. In 1994, Germany established the Deutsche Bahn AG holding company, which includes several independent subsidiaries:

DB Netz AG – Infrastructure management



DB Cargo AG – Freight transport

DB Fernverkehr AG – Long-distance passenger transport

DB Regio AG – Regional transport services

Key Features of the German Model

Infrastructure and transport services operate as separate legal entities, ensuring transparency. Each subsidiary maintains independent financial reporting. Joint-stock companies were created for intercity freight transportation. Private companies are allowed to use the railway network and provide their own services. Continuous modernization of infrastructure improves service quality through competition.

The German model effectively combines state oversight and market mechanisms, resulting in a competitive, efficient, and stable railway system that supports sustainable transport development.

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