



Deliverable 9.2
Executive Summary

*The business models,
cost, funding schemes,
stakeholders role*

Executive summary

The **objective** of Task 9.2 is to identify those business models and funding schemes for rail freight and passenger services, which are best suitable for ensuring the mobility vision for the horizon 2050 where electrified rail transport is to play the principal role in the EU. Since both terms - 'business model' and 'funding scheme' - are not clearly defined, the work starts with an analysis of various scientific approaches and, as a result, offers **definitions** to create a common understanding. Based on the findings of this exercise a business model shall consist of four inter-related key elements: the value proposition; the product; the value chain and the cost-revenue model. The term 'funding scheme' shall not be applied in the narrow meaning of providing aids to the rail sector. In contrast, it shall include all forms of financing activities related to rail services. The investigation both of future business models and required funding systems is carried out separately for freight and passenger traffic, also taking into account of **results of previous work packages**.

Innovative business models are considered key to accomplish the SPIDER PLUS vision. Stakeholders in the rail industry are called for delivering a specific benefit – the value proposition – to make a lot more customers than today using rail services instead of road or– in the case of passenger traffic – also air transport. They must care for an organisational set-up, the logistics and the right balance between own resources and suppliers to ensure competitive cost and quality of their services.

The **business models for rail freight transport** by 2050 relate to two principal production systems, which are considered suitable to match the requirements of shippers and logistics service providers and, at the same time, secure the competitive edge against through-road transport. Conventional block trains, operated as direct or co-loaded unit trains, mainly target at moving cargo by various types of wagons. Unaccompanied combined transport services rail/road (UCT) are deployed when there is not sufficient volume for the conventional production system or a more demanding service level is requested by market actors.

Whilst operations vary, the future business models are expected to have several elements in common, in particular:

- Logistics service providers (LSP) specializing in the relevant field of rail freight will become the central actors. In UCT, however, the "classical" operators may maintain a strong market position if they extend their scope of service towards the LSP-based business model;
- Rail service providers define their role more comprehensive than today. They are able to integrate all components of the supply chains for moving goods (wagonload) or load units (UCT) and provide the very extent of service requested by individual clients;
- The value proposition is to provide the most cost-efficient transport for the defined or targeted markets or goods;
- The principal levers of the cost-revenue models are economies of scale and the integration of the logistical value chain;
- The supply side of the value chain will see two rather new actors: specialized train operating companies and a central European rail infrastructure manager.

The new business models are anticipated to break ground in the period to 2030. Thus the intermediate step 2030 will largely resemble the 2050 vision due the following reasons. First, the EU rail freight sector will be fully liberalised and equal terms of competition will be established between modes. Second, owing to a continually tense price competition with road operations incumbent business models and production systems, which are not viable, are due to be suspended. Third, more capacities for rail freight services will be created in the European rail network to allow for the new business models.

As concerns the future **funding schemes for rail freight** it is expected that service providers will be requested to finance operations as well as investments into rolling stock and equipment by own resources entirely. This results from the principal assumption of this task that a regulatory framework will have been set up, which secures fair terms of competition and does not provide unjustified benefits or disadvantages for any mode of transport. Only investments into rail infrastructure are considered to be exempted from this rule. They will be undertaken either by authorities, like today, private investors or a combination of both. The operators of rail freight services will be charged for using the infrastructure according to the "user pays principle".

The rail passenger market is divided into two main areas: long distance transport; urban and regional transport. While both areas serve distinct customer segments and purposes it is central to understand that these services are complementary. The **business model for high speed rail** (HSR) is focused on the vital role of providing a competitive advantage in travel time on city-to-city connections. Effectively it must aim to cutting the market share from air travel and individual car mobility. To reach this target services will be more directly linking high attraction zones over an extended rail network. As historically grown, two concepts will remain. A tight knit network with linked cities across the entire grid of a country (e.g. Switzerland, Germany) served with medium to high speeds and on the other hand the dedicated HSR networks with radial, direct lines (e.g. Spain, Italy, France). With extension of these concepts, also towards the east, the passenger potential will be further captured. In order to meet the SPIDER PLUS 2050 target the railway must become a mass system of transport. It means that every segment of market shall be addressed with an appropriate product. The increase in track capacity due to the availability of new high speed lines (and resolution of bottlenecks), together with the availability of new concepts of train sets, allow the implementation of innovative business models in the rail sector, in particular for the high speed. High-speed rail (HSR) will be the backbone of the 2050 medium and long distance transport system.

Because the service offer of a seamless door-to-door journey is the key to shift high volumes of passengers to rail, the integration of **business models of public transport and passenger last mile services** offers the competitive edge against the contending modes. While even with high urbanisation levels across the EU the deficit of public transport cannot be covered through fare revenues, the transportation systems remain in public authority. Still, especially on high demand, high volume axis connecting city centres with high density housing, shopping and workplaces transport demand will increase. This leads to a surge in high capacity, rail based transport developments in the major urban areas. Expanding networks and links with other public city transport services lead to a supply of mobility covering the entire surface making individual car trips virtually obsolete. There are not many drastic changes to be expected influencing the production of the services. Technological advancements will increase the efficiency and capacity of systems but the business model of public transportation will remain within the boundaries seen in the large metropolitan regions of today. The productivity of public transport benefits from operational improvements. Automatic and driverless operations allow further increases in frequency to establish a higher capacity without major infrastructural investments. The key drivers for growth remain with the increase of network length and the optimisation of interchanges and interlinks for higher network effects.

The **funding for the public passenger services** is restrained mainly by the limited possibilities to fully liberalise the market due to the imbalanced cost and revenue outlook. This is not expected to change despite the introduction of elements of competition also in the regional and local railway market segment, through compulsory tendering within a general competition-for-the-market regulatory model, expected to generate an increase of quality and a decrease in production cost. In fact, the implementation of new services and a higher level of supply enhancing customer satisfaction is needed in order to enlarge the user base. Mainly three models are employed to support the funding for the increased demand for services in capacity and quality:

- Charges on road infrastructure users. In this category included are extra-tolls on highways, fuel tax, taxes on car ownership and access charges to particular sensitive areas, i.e. the city centres.
- Versement transport, a tax levied on the total gross salaries of all employees of companies which is used to finance the operating cost of the public transport system. The tax is justified as a toll to internalise the external impact of commuting for employees using road mobility, also representing their “costs” of lower congestion, accidents and travel time induced by commuters using the public transport system. On the other hand it can be seen as a tax paid by the companies that take advantage of a better and more competitive environment resulting from the complete and effective transport system.
- Especially for local rail the development of rolling stock companies (RoSCo) aides to better allocate entrepreneurial risks and to decrease investments. These companies bear all the investment for the procurement and maintenance, then rent the trains to the operating companies that will have to pay a certain payment for the service. This practice removes one of the biggest barriers to market accessibility in case of public tendering, allowing a higher competition and incentives to decrease operating costs.