

# How to save wagonload freight

**VIABILITY** What kind of a future is there for single wagonload freight in Europe — is continuing shrinkage the only option, or can optimising the system deliver a prosperous future?



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Single wagonload traffic is an important segment within the rail freight sector, but for major operators it has been in decline for many years, falling from 40% to 33% of rail freight (Fig 1).

There are several reasons:

- Most growth in freight transport volume is across borders, where wagonload suffers from significant weaknesses compared to block trains or road transport. Wagonload does not run to a timetable with fixed arrival times, and on routes where running times vary considerably this can be unattractive to customers.
- Freight operators have significantly reduced their wagonload networks, driven by economic pressures; DB Schenker ran up losses of hundreds of millions of euros in Germany before launching the Mora C programme, which consolidated the network and led to a significant reduction in wagonload volume.
- Pricing has also contributed to the shift of volume from wagonload to block trains and intermodal. The charge per wagon in block trains is usually much lower than for a single wagon movement, even if block trains are collected from private sidings and assembled wagon by wagon over several days.

There are considerable differences in the wagonload share between European countries. It is obvious that if current trends continue then wagonload volumes will decline even further, especially in countries where the current share is still comparatively high. The ongoing economic crisis



has exacerbated this situation. Further loss of wagonload volume will be difficult for the operators to handle, as the system has limited flexibility and cutting costs is difficult.

There have been numerous projects aimed at increasing wagonload efficiency and profitability. But in most cases break-even has not yet been reached, and the economic situation means that freight operators currently seem to be drifting even further from this goal. It is therefore understandable that some operators are considering whether to cut back or even abandon their wagonload networks.

But there are opportunities to improve performance which have not been exploited, and these should be thoroughly examined and implemented before further cuts are made.

## Efficiency and customer service

There are three elements to wagonload: the main haul, shunting, and short runs to the customer's sidings. Numerous trunk haul optimisation approaches have been pursued, with a particular focus on making better use of locomotives and drivers. These have brought significant productivity and efficiency gains. Yards and the serving of local areas have also been analysed and restructured, though we still see great potential for improvement.

**Green Cargo has implemented a rigorous time analysis of its marshalling yard use, leading to many being closed at weekends when much less traffic is handled.**

The authors analysed the efficiency of a number of European marshalling yards, and we found differences of up to 50%, even between modern facilities.

It became apparent that a number of measures could only be implemented in conjunction with changes to the entire wagonload network. For example, changes in yard operating hours, adjusting the time and location of movements or abandoning inspection of incoming wagons hinge on changes to the basic structures and conditions at both national and international levels.

Local trip workings have rarely been subject to such analysis. Nevertheless, time optimisation and increased capacity utilisation still hold potential. Outsourcing these services to local railway companies is a possible route to cutting costs, because small private railways are often less cost-intensive, closer to the customer and offer higher flexibility. DB Schenker Rail is in the vanguard of this in Germany, undertaking joint ventures with smaller operators.

## Optimise the network

Wagonload operations have high fixed costs, especially for infrastructure such as marshalling yards where the cost of provision is not directly

related to traffic volume. Even before the economic crisis, several national railways had large numbers of yards operating below capacity.

Thus the question arises whether costs per unit can be improved by diverting traffic to fewer but more modern facilities. DB Schenker has already progressed in this direction with the 200X project, which concentrated its wagonload network on a few large marshalling yards. This brought an increase in the frequency of connections and reduced the risk of delays, with the longer distances covered more than compensated for by the reduction in fixed costs.

Time-related adjustments can make a further contribution to cost reduction. Green Cargo of Sweden found it was handling significantly less traffic at weekends, and so closed selected marshalling yards on those days with all traffic being processed at a very limited number of yards.

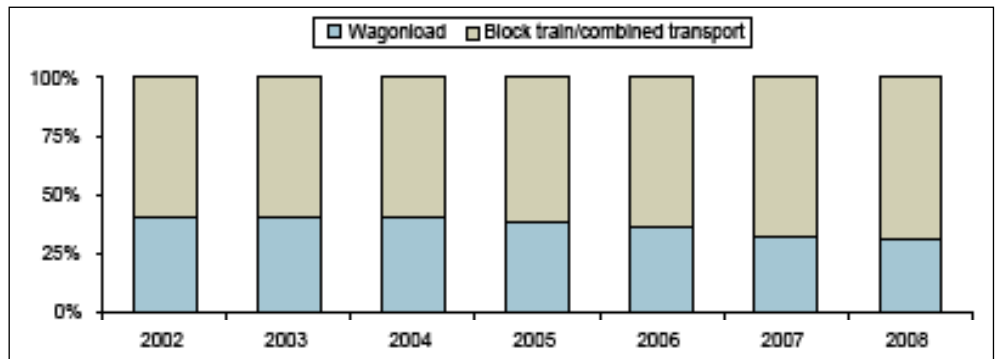


There is extensive interdependency between different national railways, and international links are a major weakness. Therefore national approaches should be accompanied by cross-border optimisation and network design on a pan-European level, including the position and capacity of marshalling yards.

### Increase wagon utilisation

There is further potential for improving the utilisation of wagons and shunting locomotives, although key indicators are hard to determine. Nevertheless, it is known that average distances covered by freight wagons are only a fraction of those clocked up by a lorries. There are exceptions, with vans used within the automotive industry reaching up to 80 000 km a year, but typical wagon usage is considerably lower.

Wagon management and utilisation was historically of minor importance to operators, or restricted to specialist



**Fig 1. Wagonload traffic continues to lose market share to block trains across Europe.**

wagons with high capital costs or in demand. Wagons were abroad and out of reach for much of the time, and so the development of wagon management hardly seemed worthwhile. But with the introduction of the General Contract of Use for Wagons regulations, responsibility has shifted back to the owner, and therefore comprehensive wagon management tools are needed.

Another problem affecting productivity is the comparatively long loading and unloading times at customer sites, where wagons can often spend days between arrival and departure.

It is often argued that most wagons are fully amortised and therefore incur few costs, but although this may be true for capital costs, maintenance and failure risk increase with age, and the fleet still has to be renewed someday.

### Transparency and service quality

After price, transit time and punctuality are the most important criteria for customers. But these are significant weaknesses for wagonload, in particular on international routes, and railways lose traffic as a result.

With few exceptions most railways in Europe operate a 'black-box' network. There are often no fixed train allocations and target arrival times for single wagons, only pre-defined routes. Hence there are no binding transit times or punctuality obligations. For many types of goods or production systems the quality of service currently on offer from rail is usually inadequate, and time-sensitive goods have to use block or intermodal trains — if rail is chosen at all.

As a first step, wagonload operators need to provide much better transparency and significantly firmer planning. A flexible booking system could be a start. This is not about booking wagons onto trains, which requires major logistical effort in marshalling yards, but more about having

early volume estimates to adjust capacity, and to identify disruption such as missed connections which would enable a timely response and customer notification.

Green Cargo developed Bravo, a planning system for booking wagons into trains. This enables early identification of bottlenecks and low utilisation, and a version was sold to NS Cargo, proving that such systems can and do work.

The problems are greater for international traffic, which is currently characterised by inadequate data exchange. Even if information is available at a national level, this is often not the case on international flows because there is a lack of links between production systems. These weak points explain why wagonload has a much lower share of international traffic than block trains.

Rail operators should make a concerted effort to develop a European solution, perhaps as part of TAF TSI. Such an IT system could be fed with data from the national systems. The main advantage would be in the centralised availability of wagon bookings and running information, allowing for timely resource adjustment and clients to be kept up to date with the status of their shipment. This would significantly increase transparency and facilitate more precise planning.

### Flexible pricing

Most incumbent operators still base wagonload pricing on tariff-km and the type of consignment, with factors such as capacity utilisation, revenue maximisation or market development hardly considered.

Our studies have shown that there is still significant potential to increase revenue and cut production costs through price incentives. Additional price parameters could be integrated into the general charging structure, such as time of booking,



SBB is one of the founder members of the pan-European X-rail alliance to promote wagonload traffic.

capacity utilisation and strategic market development.

An important precondition for international adoption of such systems is that operators must be free to set their own prices. Rates agreed between national operators deprive the customer of flexibility, prevent true

## Improving wagonload

- Increase the efficiency of marshalling yards and customer services
- Optimise network structures and transport flows
- Increase wagon utilisation
- Transparency and service quality
- Flexible pricing
- Increase European co-operation

price competition between different operators and lead to a protracted pricing process. Wagonload operators should consider a medium-term shift to market-oriented prices.

## European co-operation

Co-operation at a European level will be one of the deciding factors in the success of wagonload services, as most operators will still depend on their partners to penetrate foreign markets.

While it is tempting to see European legislation as the answer, operators themselves can work on aspects that will make a significant contribution. The Xrail alliance is a step in the right direction. The focus should be:

- installation of a joint system of timetables, transfers and marshalling yards;
- a central IT system for recording bookings and shipping information to reduce paperwork. This would cross-link the existing production systems to enable timely and automatic exchange of relevant shipment and wagon data;
- standardisation and rationalisation of processes and operating

regulations to reduce or even eliminate the effort expended on crossing borders.

## Wagonload can be saved

Wagonload is a complex business facing major challenges. Despite investment in modern equipment most railways are still losing money, and are considering further reduction or even complete abolition of their wagonload businesses. However, this would have a considerable negative impact on the entire European rail industry.

We believe that there are significant opportunities to improve the performance of wagonload, including operating and shunting processes, national and international network-wide optimisation, and development of pricing structures. The potential for cutting costs and boosting revenue is so great that profitable wagonload operation seems quite feasible. We would like to see more operators working together to exploit the potential of a pan-European wagonload network, which could provide the basis for significant growth in transport volumes. [↗](#)