Meeting the needs of regional train travelers: a comparison of four regions in Europe

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Abstract

Regional train services are largely organized at the regional level in Europe, but the objectives, strategies and implementation details vary widely from one country to another. This paper relies on a comparison exercise performed within the evaluation of the Rhône-Alps Region’s train policy, comparing four regions in four European countries, all responsible for organizing and financing regional passenger train services: the metropolitan region of Barcelona in Spain, the Rhine-Ruhr area in Germany, the Canton of Zurich in Switzerland, and the Rhône-Alps region in France. It shows how strategic and tactical decisions taken on transport issues are shaped by local and national contexts. How do the authorities get value for money from the train operators? And how do they meet the needs of the regional travellers? The comparison shows that good results (in terms of satisfaction of passenger and policy makers, and of value for money) can be obtained by the application of a regime of competition for the market, as well as through direct negotiation without any competition. However, the way in which the system is implemented is vital for its success in both cases.

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1. Introduction

Over the last decade, more and more regional governments in Europe have become responsible for organising and financing regional passenger train services, which in many cases was a national responsibility before. Among the objectives they are trying to achieve, two are particularly important:
- making regional train travel as attractive as possible, especially to attract car users to regional trains;
- to obtain such train services for the lowest cost to the public budget.

In its evaluation of ten years of responsibility of organising and funding its regional train services, the Rhône-Alps Region in France asked our team how regions with similar tasks in other European countries were performing (Euréval, 2013). To this effect, a comparison was made with three other regions in three different countries (Baanders, 2013):
- the Metropolitan Region of Barcelona in Spain,
- the Rhine-Ruhr area in Germany,
- the Canton of Zurich in Switzerland.

Comparing Rhône-Alps against other regions that were seen as ‘success stories’ was a way to understand how other authorities had answered the problems identified by the evaluation, and therefore contribute to translate strategic recommendations into ‘proposals for concrete actions’ (Pitarelli and Monnier, 2000). This approach, though less comprehensive than recommended benchmarking practices in a technical setting (e.g. World Bank, 2011), was more suited to the needs of the Région Rhône-Alpes and better complemented the other instruments of the evaluation.

Following the two objectives mentioned above, the two main questions for the comparison were:
- What measures are taken by these regions to meet the needs of the regional travellers?
- How are they ensuring to obtain value for money from the passenger train operators?

These are also the main questions for this paper.

The second question is important for the regional authorities, as it is in most cases not possible to operate regional trains at a profit, and compensation for the operators, who have a public service obligation (PSO), is necessary. This is the case in all four countries studied. For this, there are basically two alternatives:
- Direct negotiation with the train operators to obtain low costs and PSO compensations. This requires an insight by the regional authority into the cost structure of the operator, which in many cases is a source for tension.
- Organising competition ‘for the market’ between train operators. This makes it easier to chose the most advantageous offer from the operators for a given contract period, but it has an important transaction cost. The other form of competition used in public transport is competition ‘in the market’, but this can only be used when there is no PSO compensation involved.

Both alternatives are found in the regions studied.

Sections 2 to 4 of this paper describe each of the four regions: its institutional and political setting, its regional train network, and its strategy for meeting the needs of the travellers. Following the thinking developed in the ‘Thredbo series’ of conferences on competition and ownership in public transport, we distinguish here three levels of decision making in public transport (Macário, 2001):
- the strategic level: definition of mobility policy reflecting the needs of the citizens, which is usually performed by the political authorities,
- the tactical level: design of the transport system and defining the respective policies by translating strategic goals into operational specifications,
- the operational level: production and consumption of transport services.
In this paper, we are mainly looking at the strategic and tactical levels. Section 5 compares the four regions and offers an analysis of the differences. Section 6 offers some conclusions.

2. The regions studied

Some geographical and political (institutional) characteristics of the four regions studied are presented in table 1.

<table>
<thead>
<tr>
<th>Region</th>
<th>Metropolitan Barcelona</th>
<th>Rhine-Ruhr area</th>
<th>Canton Zurich</th>
<th>Rhône-Alps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is part of …</td>
<td>Generalitat de Catalunya (autonomous community), Spain</td>
<td>Nordrhein-Westfalen (NRW), Germany</td>
<td>Switzerland</td>
<td>France</td>
</tr>
<tr>
<td>Local government organisation</td>
<td>164 municipalities (municipis)</td>
<td>19 cities (Städte) and 5 Kreise (*)</td>
<td>171 municipalities (Gemeinde)</td>
<td>8 departments and 2,874 municipalities (communes)</td>
</tr>
<tr>
<td>Area (km²)</td>
<td>3,236</td>
<td>7,300</td>
<td>1,729</td>
<td>44,000</td>
</tr>
<tr>
<td>Most important cities (population in 1,000 inhabitants)</td>
<td>Barcelona (1,619), l’Hospitalet de Llobregat (259), Badalona (219), Terrassa (213) and Sabadell (207)</td>
<td>Düsseldorf (590), Essen (573), Duisburg (488), Bochum (374), Dortmund (581) and Wuppertal (349)</td>
<td>Zurich city (377) and Winterthur (103)</td>
<td>Lyon (1,280), Grenoble (399) and St-Étienne (388) (*)</td>
</tr>
</tbody>
</table>

(*) The Land NRW is divided in cities and Kreise. A Kreis (circle) is a group of smaller municipalities (Gemeinde). The larger cities, which are not part of a Kreis (Kreisfreie Städte), have the same functions of a Kreis as well as those of a municipality.

(**) Figures for all municipalities in the urban area.

An important characteristic of the Swiss political institutions which is often overlooked in descriptions of the Swiss public transport system, is the ‘concordance democracy’. In this system, all main political parties are represented in the governments at the three levels. At the cantonal level, the government members are elected directly, so all elected parties except the very smallest are represented in it, and there are no important opposition parties as they are known in other countries. As it is in many cases easy for the population (i.e. any opposition movement) to start a referendum on policy decisions, all parties have an interest to formulate policies that satisfy as large a part of the population as possible. Moreover, for some types of legislation a referendum is mandatory. More than in any other European country, this requires a spirit of cooperation and compromise involving all parties (Morandi, 2005). This is reflected in the governance of public transport in Switzerland.

Tables 2 - 5 present an overview of the characteristics of each of the public transport authorities, their governance, competencies and tasks. In these tables, PT stands for public transport and PSO for public service obligation.
### Table 2. Metropolitan Barcelona: governance and competencies of the public transport authority

<table>
<thead>
<tr>
<th>Name of authority</th>
<th>ATM, Autoritat del Transport Metropolità</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of creation</td>
<td>1997</td>
</tr>
<tr>
<td>Composition and governance</td>
<td>Dedicated agency grouping all governments (regional, municipal) responsible for PT (all modes).</td>
</tr>
</tbody>
</table>
| Tasks and competencies | • Planning of PT infrastructure.  
                                  • Planning of all PT services.  
                                  • Concluding ‘programme contracts’ with the operators and preparing financial agreements with all authorities.  
                                  • Managing an integrated fare system for all PT.  
                                  • Communication with the public.  
                                  • Preparation of a mobility master plan for sustainable development of all transports. |
| Annual budget for PSO compensation | € 732 million for all PT modes (2011): 25% from Spanish government, 46% from Catalan government, 28% from municipalities |

### Table 3. Rhine-Ruhr area: governance and competencies of the public transport authority

<table>
<thead>
<tr>
<th>Name of authority</th>
<th>VRR, Verkehrsverbund Rhein-Ruhr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of creation</td>
<td>Responsible for regional train services since 1996 (created in 1980). The federated state of NRW has recently reorganised the public transport authorities in its territory, reducing the number to three, one of which is the VRR (2008).</td>
</tr>
<tr>
<td>Composition and governance</td>
<td>Dedicated agency grouping all local governments (cities, Kreise) responsible for PT (all modes).</td>
</tr>
</tbody>
</table>
| Tasks and competencies | • Planning, contracting, financing of regional train services.  
                                  • Coordination of all PT services.  
                                  • Managing an integrated fare system for all PT.  
                                  • Financing the other forms of public transport via the cities and Kreise which are sometimes owner of a local PT operator.  
                                  • Authorising infrastructure development.  
                                  • Communication with the public. |
| Annual budget for PSO compensation | € 382 million for all PT modes (2011), from federal government, via NRW government. This excludes contribution from local governments. |

### Table 4. Canton Zurich: governance and competencies of the public transport authority

<table>
<thead>
<tr>
<th>Name of authority</th>
<th>ZVV, Zürcher Verkehrsverbund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of creation</td>
<td>1990</td>
</tr>
<tr>
<td>Composition and governance</td>
<td>Dedicated agency grouping all governments (federal state, canton, municipalities) plus federal railway operator SBB/CFF/FFS. Governance is reflecting the Swiss concordance democracy.</td>
</tr>
</tbody>
</table>
| Tasks and competencies | • Planning, contracting, financing of all PT services in canton, partly delegated via MVU companies (*).  
                                  • Managing an integrated fare system for all PT.  
                                  • Communication with the public. |
| Annual budget for PSO compensation | CHF 352 million (€ 288 million) for all PT modes (2011). Sources (apart from passenger revenues, 49%):  
                                 Cantons (19%), municipalities (19%), other revenues and third parties (13%). |

(*) Part of the work of managing the operators is delegated by contract to eight of the operating companies, which have the role of “company responsible for the market” (MVU, marktverantwortliches Unternehmen) in each of eight sectors. Apart from some exceptions, the MVU provides a part of the transport in its sector itself and contracts the rest to other companies.
Table 5. Rhône-Alps Region: governance and competencies of the public transport authority

<table>
<thead>
<tr>
<th>Name of authority</th>
<th>RRA, Région Rhône-Alpes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of creation</td>
<td>Responsible for regional train services since 2002 (created in 1982 as the second of four government levels).</td>
</tr>
<tr>
<td>Composition and governance</td>
<td>Part of the Regional administration; governance by the elected Regional Council. Is the second of the four directly elected levels of government in France. There are 44 PT in the Region, but it is not in RRA’s competence to group or coordinate them</td>
</tr>
<tr>
<td>Tasks and competencies</td>
<td>Planning, contracting, financing of all regional train services and coach services that run between departments (TER network, Transports Express Régionaux).</td>
</tr>
<tr>
<td></td>
<td>Train services can only be contracted to the national railway operator SNCF.</td>
</tr>
<tr>
<td></td>
<td>Communication with the public.</td>
</tr>
<tr>
<td></td>
<td>Preparation of a mobility master plan for sustainable development of all transport.</td>
</tr>
<tr>
<td>Annual budget for PSO compensation</td>
<td>€ 525 million (2010), for regional train and coach services (total regional budget, including PSO compensation).</td>
</tr>
</tbody>
</table>

3. Characteristics of the regional train networks and services

3.1. Metropolitan Barcelona

There are two passenger train operators in the RMB area:
- the national railway company Renfe Operadora, owned by the Spanish government, which operates the suburban train system Rodalies de Catalunya and other train services,
- the Catalan government railway company, which also operates suburban services.

Apart from these, the ATM also directs and finances the metro, bus and tram services in the agglomeration of Barcelona and the bus services in the other cities and the rest of the metropolitan region.

The Rodalies train services are run on the national Iberian (wide) gauge network, and share this with the trains for longer distances and the freight trains. The train paths are allocated by the national rail infrastructure authority ADIF (Administrador de Infraestructuras Ferroviarias), a public agency of the national ministry responsible for transport. There are six Rodalies services, numbered R1 … R8, most of them traversing Barcelona. Total network length is 456 km, with 109 stations. In 2011, 106 million passengers were transported and the supply was 106 million vehicle-kilometres.

The FGC train services operate on two different networks, one with standard gauge tracks (4 train services, numbered S1, …) and the other with narrow (metric) gauge tracks (7 train services, numbered S4, … and R5, …). The first network also operates three metro services within Barcelona (L6–L8) and has very high frequencies on its trunk line: up to 32 trains per hour per direction. The FGC network has a length of 144 km and 74 stations. In 2011 the number of passengers was 80.6 million and 33.3 million vehicle-kilometres were produced. The FGC is a vertically integrated company, which owns and manages its own infrastructure. Because of the gauge difference, there are no links to the ADIF/Renfe network.

Both Rodalies (Renfe) and FGC apply clock-face scheduling, the system according to which trains leave and arrive at the same number of minutes past each hour.

3.2. Rhine-Ruhr area

There are three categories of regional train service in the Land NRW, as in many other parts of Germany:
- S-Bahn: suburban services which, at the same time, play a role in urban transport. These have short distances between stops, intervals of 20 minutes (30 in the evenings), an average speed of >50 km/h, air-conditioning, toilets on certain routes.
RB or Regionalbahn (regional rail), offering links between all stations outside the S-Bahn network. These have intervals of 30, 60 or 120 minutes, an average speed of >60 km/h, air-conditioning, toilets.

RE or Regional-Express (regional express), offering fast links between the different centres of the region. These have intervals of 60 or 120 minutes, an average speed of >75 km/h, air-conditioning, toilets.

There are 10 S-Bahn services (designated S1…S28), 21 RB services (RB27…RB91) and 14 RE services (RE1…RE17) (situation 2012). These routes also have a name. The numbering is decided at the level of NRW, to avoid confusion between trains from neighbouring regions. The S-Bahn trains delivered 18.4 million train-km in 2010, the RB trains 9.6 million and the RE trains 13.8 million (total 41.8 million train-km). All trains use the national rail network, which is also used by long distance passenger and freight trains. The paths are allocated by the track authority DB Netz, an affiliate of the national railway company DB, which is obliged to treat all train operators in a neutral way, permitting the co-existence of different operators on the lines and in the stations. It is supervised by a federal government agency. A number of RB and RE services run into the territory of other authorities, in which case these authorities cooperate in concluding the contracts with the operators and the financing. This cooperation also exists with Dutch provincial authorities for the RB services serving cities in the Netherlands (one existing and one in preparation).

3.3. Kanton Zurich

In international professional circles, the public transport system of the Zurich region is reputed for its very high quality. The modal share for the purposes of home to work and home to education, as measured in traveller-kilometres, is 49% for the private car and 43% for public transport (2010). The former share is very low and the latter very high, taking into account the area and the population of the region, and compared to the regional averages in other countries. User satisfaction surveys confirm this: the overall level of satisfaction is high in Switzerland and the Zurich Canton is among the highest (Schad et al., 2009).

The train services for short and medium distances are organised in the S-Bahn system, created in 1990. This has served as an example for similar networks elsewhere in the country. The S-Bahn consists of 28 routes, operated by six rail companies and numbered S2 … S55. The network is 380 km long, serves 171 stations and transports 3 million passenger-kilometres per year (2011). Plans for a metro (U-Bahn) in the city of Zurich were defeated by referendums in 1960 and 1962, and the S-Bahn also has an urban role. Most of the S-Bahn consists of regular heavy rail rolling stock and infrastructure, but four services are on lighter constructions, two of which use narrow gauge tracks, including one running partly on the Zurich urban tram network. This variation results from the policy to use as much existing infrastructure as possible, and makes the system rather different from the German S-Bahn networks. All services have clock-face scheduling, with in principle two trains per hour calling at all stations, but the frequencies are higher where several services run together. With the long distance trains using the same infrastructure, and the Zurich HB main station also being the hub of the national InterCity network, capacity is tight and scheduling is complex. Use of the S-Bahn is still growing; between 1990 and 2011 it grew by over 150% to 3,026 million passenger-kilometres per year.

All rail companies in Switzerland are vertically integrated (they own and manage their infrastructure) and have a long term concession from the federal government to operate their lines. This means there is no competition for concessions and the ZVV cannot choose between rail operators. Competition for public service contracts is only possible for bus services and this is gradually being introduced.

3.4. Rhône-Alps Region

Since the adoption by the Regional Council of the Regional masterplan for transport services (Conseil Régional Rhône-Alpes, 2008), two types of regional transport services are offered:

- “City network” services aim at linking the region’s main urban areas with fast, reliable and frequent (at least one train per hour) train services. City network trains start operating early in the morning until late in the evening;
“Local services” include most suburban services and aim at meeting commuting needs. They also include countryside or touristic trains. Local services are mostly calling at all stations, and sometimes mix train and coach services depending on the time of the day, or are exclusively performed by coach.

These TER services coexist with the national railway’s (SNCF) long distance services (e.g. high-speed TGV trains from and to Paris, which stop at Lyon and end in Saint-Étienne or Grenoble). All trains use the national rail network, on which paths are allocated by the national track authority, RFF (Réseaux Ferré de France). There are currently more than 40 train and coach routes available in Rhône-Alpes. In 2010, the TER network delivered 28 million train-kilometres and 10 million coach-kilometres.

4. Strategies for meeting the need of the users

4.1. Metropolitan Barcelona

At the strategic level, the authority ATM prepares the mobility master plan (PDM), which is approved by the Generalitat. The most recent version is 2008-2012 and the version 2013-2018 is currently being prepared. The objectives regarding public transport include: to promote the transfer from the private car to more sustainable modes, and to adapt the services to the changing mobility patterns, caused i.a. by a continuing dispersion of jobs and dwellings. It proposes improvements to the quality of the train services (train frequency and capacity, more operating hours per day), new routes, improvements for intermodality and for accessibility.

At the tactical level, the ATM determines the public transport services to be provided, based on this PDM and other plans like the infrastructure master plan (PDI). These are then translated into ‘programme contracts’, which the ATM concludes with the operators Renfe Operadora and FGC. This is accompanied by a monitoring system, which relies on mystery guests and other instruments.

The relationship with the national railway company has undergone an important change recently. Until 2009, the Renfe train services were organised and financed by the national government, which determined the services and covered the deficits. Since 2010, the Generalitat and the ATM define the services (routes, time tables, etc.) and since 2011 they cover the PSO compensations. This decentralisation of powers is the first of its kind in Spain. However, the negotiation powers of the ATM are limited, as the price announced by Renfe is not negotiable. ATM can only set the fines that apply if the targets in the contract are not met. The ATM is aiming for more transparency in the costs of the Rodalies Renfe services, route by route. At the time of the decentralisation, the Generalitat asked for a regional office to be set up by Renfe in Barcelona, but this has not happened.

Nevertheless, the fact that the services and timetables are no longer decided in Madrid is considered in the region to be an important advantage. It has allowed the rethinking of a number of routes, the increase of the frequencies early and late in the day and at weekends, the improvement of the service to passengers (which was considered unsatisfactory) and of the public address systems. Renfe is renewing its rolling stock, resulting in improved comfort and capacity (double stock coaches). The new brand name of Rodalies (a Catalan word instead of the Spanish Cercanías) was also introduced at this point. The punctuality of the train services is still unsatisfactory. This is mainly due to the insufficient quality of the infrastructure, managed by ADIF, which is fully controlled by the Spanish government.

The law which gave the powers to Catalonia has a clause allowing introducing competition for the Rodalies contract. But there is presently no political will to use this clause. European Regulation (EC) 1370/2007 on public service obligations allows a number of exceptions to the rule that public transport services should be tendered, for a transition period ending in December 2019 (European Commission, 2007). It is not clear how this future situation will be met by the Generalitat.

Negotiation with the FGC is easier for the ATM, as this company is owned by the Generalitat and the company is more transparent in its data. The ATM estimates that the value for money is generally better in the case of the FGC.
4.2. Rhine-Ruhr area

Looking first at the strategic level, the strategy of the authority VRR to meet the needs of travellers, while ensuring a good value for the public money spent, consists of two steps:

- definition of the train services to be offered,
- competitive tendering for the operation of these services.

In the first step, a Nahverkehrsplan (NVP, short and medium distance transport plan) is elaborated and approved at the political level of the VRR. Based on scenarios for the relevant developments (demography, economy, public finance, environment…), it leads to the definition of the train network and its characteristics (infrastructure, fares, frequencies, passenger information, security, …).

In the second step, public service contracts are competitively tendered for individual S-Bahn, RB and RE services or groups of services. This competition ‘for the market’ has been introduced in a gradual, carefully managed way:

- 1999: first competitive tendering for a service (not a heavily used one), and a second one in 2002. Analysis of the experience.
- 2003: direct award of a contract for operation to the incumbent operator, the national railway company DB, stipulating that all services will gradually be awarded through competition, until 2019. DB will operate each service until then, but is allowed to enter the competition for the new contracts. Start of tendering of services in small lots, for 15-year contracts, according to a published schedule. Use of the acquired experience for each subsequent tender.
- 2008: legal conflict between VRR and DB, because the VRR was not satisfied with DB performance on the services still under the 2003 contract. Settlement out of court in 2011.

VRR also introduced in this process a number of innovations to support the new competition model:

- Development from the start of a fare system which is independent from the operators (valid for all forms of public transport and including a system of revenue redistribution by the VRR), and of marketing by the VRR.
- Development from the start of a monitoring system of operator performance which is independent from the operators.
- A new finance model for rolling stock, levelling the playing field for new contracts between DB and the other competitors (see below).

This process is taking over 20 years to complete. The year 2019 will coincide with the end of the transition period in which the direct award of public service contracts is still permitted under some conditions by the relevant EU regulations.

In 2012, 26 services were still operating under the directly awarded contract with DB, and 19 were already running under tendered contracts, including 3 that were won by DB. Apart from DB, the operators in 2012 were: NordWestBahn (in majority owned by Veolia), Abellio (NS), Prignitzer Eisenbahn (in majority owned by FS), Eurobahn (Keolis) and Rheinisch Bergische Eisenbahn (Veolia). These operating companies are part of German, French, Dutch and Italian state owned groups and a French private group. A new entrant appeared in 2013: the British private group National Express.

According to the VRR, this market strategy for competition gives very positive results at the tactical and operational level. The advantages largely outweigh the transaction costs. The strategy will therefore be continued. The passenger satisfaction is significantly higher than before and the costs for the VRR and the taxpayer are lower. The annual Qualitätsbericht (quality report) notes that the services awarded under competition score much higher in passenger satisfaction than those that are still in the directly awarded DB contract. The DB services awarded under competition also score higher than the other DB services. This quality report is based on an extensive monitoring system, which has a long list of detailed criteria. Comparisons between the operators are published in the report. The contracts have bonus-malus clauses linked to the operator’s performance. The monitoring system includes professional inspectors (Profitester, reporting on criteria like functioning of the equipment, cleanliness, public address announcements, train staff behaviour), traveller satisfaction surveys, mystery client surveys (testing the station staff: waiting times for windows and desks, competence in dealing with problems…), data from the operators
(punctuality measured in minutes without a threshold, cancelling of services, irregular composition of trains...) being randomly checked by the inspectors. There is also an annual report on station quality, produced in a similar way.

In 2009, the VRR introduced a financing model for rolling stock that aims to level the playing field between DB (which, as a state-owned company, has access to cheaper loans) and its competitors. According to this model, the operator proposes to buy the rolling stock in his bid and if this is successful, the VRR (which as a public entity also has access to cheap loans) will buy it and lease it back to the operator for the duration of the contract. Each prospective operator may or may not include the model in his proposal. In practice, up to now, the DB does not use the model, but the others do. At the end of the contract, the VRR can lease the stock (which has a much longer life than the contracts) to the next successful bidder. This model also means that the VRR does not have to develop in-house the expertise needed to buy rolling stock. The successful bidder will have to work with the stock for 15 years and will use his know-how for this. The VRR only has to hire consultancy services to inspect the quality of the maintenance by the operator. Some public transport authorities in Germany developed their own expertise in buying rolling stock, but the VRR model is now being studied by others.

Apart from the question of rolling stock expertise, the authorities see the need to have expertise in-house at the tactical level in a number of fields, to make them independent from the operator’s know-how. This is organised at the level of the Land NRW (see section 5.6).

4.3. Canton Zurich

At the strategic level, the cantonal parliament (Kantonsrat) decides the budgets and the medium- and long-term strategy for public transport and its fares. A five-year strategic document is published annually. In this document, external factors and public transport supply are analysed and targets are set for all public transports and per mode. The objectives for the strategy 2012–2016 are:

- meeting the expected growth in demand (+25% for 2008–2016),
- adapting the supply where there are bottlenecks and an adaptation of the network if possible,
- maintaining user satisfaction at the current high level of 76%, despite the growth in patronage,
- varying the deficits compensation in line with cost developments, and setting the fares accordingly,
- increasing the energy efficiency.

The ZVV manages an integrated fare system for all public transport in its area. But even if the ZVV area is larger than the Canton, it does not entirely cover the Zurich labour market. Therefore, in co-operation with the neighbouring public transport authorities, the ZVV has created a fare system for trips across its borders. This ‘Z-Pass’ was originally only available in the form of season tickets, but since December 2012 there are also tickets for occasional use.

The strategy takes into account the integrated transport plans that have been adopted in five agglomerations in the Canton. An important element is a proactive land use policy, aiming at an increase in urban density instead of sprawling developments, one of the intended effects being a better competitive position for public transport vis-à-vis the private car. This policy is laid down in agreements between the Canton and the municipalities. Improvements in the railway infrastructure will make new train services possible in 2016. These are notably a new tunnel under the city centre of Zurich (the Weinberg tunnel) that will allow new transversal connexions (Durchmesserlinie), and improvements in the Zurich – Winterthur corridor.

At the tactical level, a ‘controlling system’ guides the decisions, from the translation of the strategic targets to implementation and monitoring of service delivery. A performance index for each operator (Index Fahrleistung) is published bi-annually. This index aggregates several indicators: punctuality (measured in minutes, without a threshold), staff quality, trip comfort, cleanliness, security, quality of the information in case of disruptions, quality of the information at stations and stops. Satisfaction surveys and mystery-guest tests are part of the monitoring system. They are also the basis for the bonus-malus system in the contract concluded between the SBB and the ZVV.
As indicated already, the ZVV has delegated some tasks at the tactical level to the MVU companies. The spirit of cooperation of the political concordance system is visible in the relationships between the ZVV, the MVU companies and the others. This is especially the case for the vertically integrated rail companies, which own their lines and have long-term federal concessions to operate them. This means that they are legally certain of their position and that there is no threat of competition for their market or for their public service contracts. This allows ZVV to require that companies provide all their operating data (including cost data), which ZVV uses to negotiate and obtain the best value for money (to do this, ZVV uses a benchmarking system it has developed). The same applies to the negotiations between the MVU companies and the other operators in their sector. Contractors are willing to provide such transparency because they are not threatened by competition. The exception is in the bus market, however, where such long-term concessions do not exist and competition for public service contracts of limited duration is currently being introduced.

It should also be noted that, because of the high passenger satisfaction, the electorate and the authorities are willing to pay for high quality public transport. As many Swiss experts put it: “The Swiss love their trains”. There are indications that in comparison to other countries, public transport in Switzerland is relatively expensive, but the recent budgetary problems have led to a stronger pressure on the operators to save costs. In the absence of competition for the contracts, cost savings and efficiency increases are constant elements in the negotiations.

4.4. Rhône-Alps Region

When the regional governments in France took over at the beginning of the 2000s, the frequency and quality of regional train services was very low by all standards, and ill-adapted to the needs of commuters. As in all French regions except the Paris region (Île-de-France), the last 15 years have been for Rhône-Alps a period of learning how to become a public transport authority.

At the strategic level, the Regional Council is responsible for the overall design of the service. As a public transport authority, it should:
- define the overall expected transport service (frequency, expected quality of the service) and its objectives (the main one being to support modal shift from cars to public transport); this is done in mobility master plan for sustainable transport (Schéma Régional des Services de Transport, Conseil Régional Rhône-Alpes, 2008);
- describe its expectations in two documents: a schéma de desserte (transport service plan), and a schéma de service aux voyageurs (passenger service plan).

At the tactical level, the Regional Council directly negotiates with the train operator SNCF. Because competition is not allowed for train services, only the SNCF can make a proposal. The result is a contract which is re-negotiated every five years or so. This net-cost contract specifies the services to be operated by the SNCF, the expected quality of service, and the amount to be paid by the Region. The performance of the SNCF is monitored with contractual indicators collected and analysed by the SNCF, and a financial bonus or malus is dependent on the results. The fact that the SNCF has a financial interest in the monitoring results is an issue, as the Region has no means to check their accuracy. In some cases, the SNCF refused to provide an indicator, sometimes claiming that their monitoring system was not adapted to it, and sometimes without any explanation. E.g., the number of passengers impacted by delayed trains per month was only given once (in 2010), although it is required by contract since 2007.

The Regional Council also funds rolling stock renewal (either by grants or leasing operations; 40 trains were bought by the Region and leased to the operator in 2008), as well as infrastructure upgrades.

From the beginning, the regional government followed a supply strategy: “More trains, more relevant to the needs of users, and with a better service, will attract travellers beyond those who do not have a choice”. And this was successful: the 2013 evaluation of the regional transport policy showed a 150% increase in patronage since 1992 (50% since 2002) measured in passenger-kilometres, as well as strong evidence of a modal shift from cars to train for commuters to the largest urban centres (Euréval, 2013). The deployment of this strategy is therefore a story of how the relationship between the Regional Council and the SNCF evolved.

During the first stage, three main aspects have shaped the relationship. First, the Region created a genuine transport department in its organisation. Contrary to most regions, Rhône-Alps did not hire SNCF employees, but
developed its own expertise. This helped the Region affirm quite clearly its own objectives as early as 2002, and develop original solutions to reach them. Secondly, the SNCF created Regional offices dedicated to the implementation of the TER service. This move gave the Region someone to speak to, and also obliged the SNCF to take a regional view on its operations. Thirdly, the SNCF initiated a contractual relationship with the regions based on profit-sharing (when the results are beyond expectations, both the contractor and operator benefit from it) and bonus-malus quality control.

During this period (which roughly covers the first half of the 2000s), the service improved quickly, thanks to the Regional Council’s impetus and SNCF’s good will. However, from 2005, with the prospect of future competition in train services in mind, the SNCF gradually adopted a less collaborative and more defensive approach to its relationship with the Region. At the same time, the Regional Council, galvanised by the success of its policy, raised its expectations in terms of service and quality in the 2007 convention. This led to initial difficulties in the implementation of new schedules, the SNCF complaining about unrealistic expectations given the state of the network. The Region was not happy with the lack of improvement of the quality of service, especially punctuality. In 2010, a one-month strike led to a penalty on service quality so high that the SNCF contested it. In the end, it was agreed that the sum would be reinvested in infrastructure improvements.

Given the large number of public transport authorities in the region, integration of fares and services requires a lot of negotiation. Since 2005, the Regional Council has taken initiatives for a common fare and ticketing system. The Regional Council also took initiatives for intermodal platforms and multimodal travel information. Some local public transport authorities also coordinate their services with the train timetable, but this is not the case for all. Plus, it is a one-way coordination: when the Region changes its timetable, other authorities cannot always adapt in time, leading to interruptions in the transportation chain.

Clock-face scheduling was generalised in Rhône-Alps in 2007. During the negotiations, the SNCF at first resisted pressure from the Regional Council, arguing that it was too difficult to implement, but finally gave in and implemented it. This paved the way for a similar action in most other French regions.

Since 2004, a comité de ligne has been set up for each train route. These committees are chaired by a Regional elected representative and bring together the Region, SNCF and infrastructure manager RFF, as well as other technical officers as needed, and on the other hand local elected politicians, travellers’ associations, other NGOs and (sometimes) simple travellers. At first, these committees were a huge improvement as they allowed direct communication between these stakeholders. Since then, time slowly dulled the enthusiasm and several flaws have appeared, the main one being that the Region became a target for complaints related to the operation of the train service (under SNCF responsibility) or the infrastructure (under RFF or State responsibility). Moreover, these user’s committees have no decision power, which led to frustration among stakeholders.

In recent years, the Regional Council has identified its chronic lack of knowledge of the passenger needs as a serious issue for the improvement of its services. This was partly resolved in 2013 by a large scale regional household mobility survey.

Competition for train services is still impossible legally, but the next contract, due in 2014, will be the last one in the current legislative framework, due to the European regulations that allow exceptions to the rule that public service contracts should be tendered, until 2019 (European Commission, 2007). The Regional Council has started experimenting with competition for the coach routes, apparently with success. The future ability to delegate train services to another public or private operator is considered with mixed feelings within the Region, some expecting dramatic changes in the cost and quality of services (positive or negative, depending on the political position), while others are fearing the social consequences of competition that may durably alter the positive outcomes seen in the last years.

5. A comparison between the four regions

5.1. The institutional and political setting

Three of the four public transport authorities are competent for all public transport in their region: regional train and bus services, urban metro, tram, trolleybus and bus services and also some other techniques, including several forms of cable systems. The exception is the regional authority in Rhône-Alps, which is only responsible for the
regional trains and coach services. While the other three are able to control most of the travel chain, the arrangements needed for the interchanges must be negotiated in Rhône-Alps with each of the other 43 public transport authorities, and depend on the good will of all parties.

5.2. The role of the different levels of government

In all four cases, local governments (i.e. those below the regional level) have an influence on the decisions made by the regional authority, although these differ widely, as described in the previous sections. In the Barcelona region, the Rhine-Ruhr area and Zurich Canton, separate agencies have been formed, owned by the regional and the local authorities in various combinations. In the Rhône-Alps Region this is more complicated. Although a separate ‘transport’ department was created in the organisation of the Regional Council, there is no separate agency.

In the case of the Rhine-Ruhr area, the Zurich Canton and the Rhône-Alps Region, there are regional train services which go into other territories. In such cases, a cross-border co-operation with neighbouring regions is practiced. In Rhône-Alps, the region has been recently stepping in this area of intervention to maintain service while SNCF is progressively abolishing loss-making interregional trains.

5.3. Fare integration

Three of the four public transport authorities manage an integrated fare system for all modes of public transport, except the long distance trains. In those cases, there is no financial penalty for the passenger who needs to make an interchange. The authorities use a zone system to graduate the fares according to distance, but unlike e.g. London or Paris, the zones are not concentric. The fourth authority, the Rhône-Alps Region, only has a number of season tickets for the train plus connecting modes as integrated fares.

The natural territory for an integrated fare system is that of the labour market. In the Rhine-Ruhr area and the Zurich Canton, the labour market is larger than the authority’s territory, as opposed to Rhône-Alps and Metropolitan Barcelona. The VRR offers season tickets that are valid beyond its tariff area, in co-operation with neighbouring authorities. The ZVV does the same thing, but also for tickets for occasional use.

5.4. Timetable coordination and clock-face scheduling

In all four regions, timetable coordination is facilitated by clock-face scheduling. In Switzerland, it was applied nation-wide in 1982 and in the federated state of NRW it was generalised in 1998. In France, there had been isolated schemes from the 1990s, but Rhône-Alps was the first region to generalise it, in 2007. At first, the SNCF resisted this type of scheduling, but Rhône-Alps example was since followed by many other regions in France.

5.5. Controlling cost and quality

Among the four cases studied, two very much contrasting approaches can be found. These are: in the Rhine-Ruhr area, a systematic introduction of competition for contracts of limited duration for the operation of the regional train services; in the Zurich Canton, a direct negotiation for contracts with the incumbent operators in a climate of co-operation and cost transparency. This contrast is related, of course, to very different institutional and political contexts in both countries and regions. It is noteworthy, however, that both authorities intend to continue these policies and that the politicians in both cases appear to be satisfied with the outcome and do not consider a change of policies. In this way, both approaches can be considered as successful.

In the past, most public transport companies in Europe were certain of their legal position. They had a long-term concession and their costs were generally covered by the revenues. But when public transport became a structurally loss-making activity (in many cases in the 1960s-70s, but in some cases earlier) the operators became dependent on subsidies from the authorities. This situation naturally led to the demand from the latter for transparency of the operators’ costs. This transparency was given in many cases, albeit often reluctantly. When for various reasons contracts were introduced, later known as ‘public service contracts’, the operators were faced with competition or the prospect of it. As a reaction, they started to consider cost and other data as commercial secrets and the
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transparency for the subsidising authorities disappeared. In a system of competition, the authorities do not have to
know the costs to be able to select the best offer, and this is fully used in the Rhine-Ruhr region.

It should be noted that the Rhine-Ruhr region’s authority VRR has started this process cautiously (see section 4.2) and that the process will only be finalised in 2019, corresponding with the deadline in the relevant EU regulation (European Commission, 2007). The VRR states that the transaction costs are clearly compensated by the advantages of the competition. The PSO compensation requirement is lower and the passenger satisfaction higher than on the services that are still in the direct award contract of 2003/2011 with DB. This is even the case for the services that DB has won under competition.

The approach of the Zurich Canton is possible because the costs of the publicly owned operating companies are transparent for the public transport authority, even if the latter is not the owner of the companies. This situation results from the absence of competition for public service contracts and the spirit of co-operation related to the concordance democracy system. The operators enjoy long term concessions for the exclusive right to operate on their lines from the federal government and the other authorities cannot change this. Nevertheless, the ZVV is constantly pressuring the operators for more efficiency.

These contrasting cases have in common that they both use an extensive system to monitor service delivery, but which is independent from the operators. In the Rhine-Ruhr area, the VRR publishes the non-financial monitoring results in an annual ‘quality report’ on the operator’s performance (Qualitäts-bericht) and on the station quality (Stationsbericht). The first of these shows in detail the performance on a large number of criteria, for each of the 45 services, indicating the name of the operator for each. This also allows comparison between the operators. The monitoring is based on mandatory reports form the operators, data from professional quality inspectors, from passenger satisfaction surveys and from tests of the staff by mystery clients.

In the Zurich Canton, the data provided by the operators allow the ZVV and the ‘MVU’ companies (responsible for managing other companies) to check if the performance of the operators is conforming to the contract conditions. The criteria are comparable to those of the VRR. There are also passenger satisfaction surveys and tests by mystery clients. A performance index of each operator (Index Fahrleistung) is published bi-annually.

The other two regions have a less clear-cut position and also appear to be less satisfied. In the Barcelona region, the authority ATM recently obtained a certain amount of control over the Rodalies de Catalunya (the regional services of the national railway operator Renfe). This allowed the ATM to improve the timetables, but only Renfe can provide these services and ATM does not have much influence on the quality, even if it is aiming for more transparency of the costs. Introducing competition for these routes is not on the regional political agenda, even if the possibility was opened by the law that regulated the transfer of powers from the national government to the region. It is not known how this will change in 2019, when tendering of the Renfe services becomes mandatory (European Commission, 2007). The ATM is more satisfied with the performance of the FGC, the company directly owned by the regional government.

In the Rhône-Alps region, a transition can be seen. From 1999 to the mid-2000s, the Region and the SNCF were working together to improve services, and this was only possible because the SNCF was willing to share a fair amount of information. But from the mid-2000s, the prospect for the railway company of competition in the future led to a change in its behaviour. The SNCF has become reluctant to share information that it considers critical to its business, and some of the indicators required under the 2007 contract are not provided at all. Moreover, SNCF monitors its own services for the Region. All of this explains that the Region feels it cannot play its role correctly. It intends to introduce new provisions in the 2014 contract, to improve its monitoring capacity and prepare the future introduction of competition. Currently, however, French law does not allow introducing competition for train services, and therefore the Region can only experiment with coach-only routes, making the step-by-step approach of the VRR impossible.

5.6. In-house expertise of the authorities

In all four cases, assuming the role of authority for the train services has been a learning experience for the authorities. An important question is how much of the many types of expertise that were originally developed within the railway companies should be available for the authorities in-house, so as to make them independent from the
operators and give them negotiation power. The clearest answer to this can be seen in the case of Rhine-Ruhr, where the Land NRW has created five ‘competence centres’ (Kompetenzcenter) to serve its three public transport authorities. These cover the fields of marketing, clock-face scheduling, passenger information, electronic payments management, and security. The expertise for rolling stock is left with the operators, the rolling stock finance model making this possible despite the fact that the authority owns part of it.

The need for in-house expertise is of course different in each of the cases, as it depends on their responsibilities and how they work. In the Swiss climate of co-operation and cost transparency, the need for this is much less, as there is less need for counter-expertise. In Spain and France, it is harder to strike the right balance of competences, as counter-expertise is needed but technical details and cost structure remain in the operator’s hands.

5.7. Coordination between transport and land use policies

In all four regions, it is acknowledged that the interaction between transport and land use are an important factor in mode choice. Land use patterns influence the role that public transport can play in meeting the needs of the population. The strategic documents of the four authorities indicate this, but they have no direct influence on land use patterns, as this is the responsibility of the regional and municipal governments.

The Rhône-Alps Region introduced a linkage between land use and transport in 2008, but the consequences of this linkage are still unclear. There is for instance concern that the current train services give a very good access for remote suburbanites to their jobs in city centres, reducing road congestion but probably stimulating urban sprawl with no appropriate local land use policy (and no influence of the Region on this).

The Zurich Canton on the other hand has a more proactive policy. Authorisations for urban development are not given for locations without good public transport services. An increase in urban density rather than construction outside the cities, should give public transport a better position in its competition with the car. Agreements between the Canton and the municipalities have been concluded to that effect.

5.8. Comparing performance

When there are several operators, the public transport authority is able to compare performances and to identify the areas for efficiency gains. This possibility is notably used in the Rhine-Ruhr area and the Zurich Canton. In the Rhine-Ruhr area, the introduction of competition for contracts per train service (or group of services) allows comparing the different offers. This is not only possible at the moment of the tendering, but also during the period of operation between the services and the operators. The monitoring system is used for this. In the Zurich Canton, the ZVV has set up a benchmarking system to compare the performance between the operators.

5.9. Ease of understanding the services offered

In most cases the understanding by the user of the services offered is made easy by the identification of the services and the clock-face timetables.

A method to increase the legibility of the transport services, used in urban transport since more than a century, is the numbering of the routes, with numbers, letters, combinations of both, colors and names. But railways rarely use this technique. Three of the four regions studied have introduced this when they took over the responsibility for the train services.

In the Barcelona region, the suburban and regional train services of FGC and Renfe are numbered S1, S2, … (FGC), R1, R2, … (Renfe and FGC). S stands for Suburbano and R for Rodalies (the Catalan name for what in the rest of Spain is called Cercanias). The R services are over longer distances than the S services. The designation S-Bahn in Germany for urban / suburban train services dates from before WW II, the S standing for Schnellbahn (rapid rail). This was also the case in the Rhine-Ruhr area before the VRR took over. The longer suburban routes are now identified as RB (Regionalbahn) and RE (Regional Express). This gives three categories of services, and the users can easily identify them by the letters and numbers: S1 … S28, RB27 … RB91, RE1 … RE17. Since the creation of the S-Bahn in the Zurich region in 1990, the routes are labelled S1 … S55. This numbering is applied to the services of all railway companies and to some light rail services on narrow gauge lines. In the Rhône-Alps
Region, the trains are only identified for the public by their origin and destination. Since the rationalisation in 2007, most trains are either express or all station trains, but there are exceptions. The SNCF, like other railway companies, have always used numbers for individual trains for internal purposes, but this is not helpful for the users. Very recently, “commercial numbering” was introduced in timetables and on the TER website, but these are not widely communicated and not shown on the trains or the platform signs.

Clock-face scheduling also facilitates the understanding by the users of the service (see section 5.4).

5.10. Dialogue with the users

There are two different approaches to the communication with the travellers. Rhône-Alps makes extensive use of user’s committees, but with mixed success, as already explained. The other regions do not have such committees and rely principally on the passenger satisfaction surveys to learn the wishes of the users.

In the Barcelona region, there is no organised dialogue with the users, but from time to time there are protest movements against aspects of the services. These do not lead, however, to the constitution of permanent associations of train users. In the Rhine-Ruhr region, the associations of train users are consulted on the VRR’s transport plan NVP (Nahverkehrsplan) which is the basis for the tendering process, and on new timetables, but not on the tendering process or the operations. The system of “station godparents” (Bahnhofspaten) and “line scouts” (Linien Scouts), benevolent frequent travellers who report their quality observations to the VRR (not to the operators), can be seen as part of the dialogue. In the Zurich Canton, citizen initiatives (Bürgerinitiative) and referendums are an important aspect of the Swiss democracy at all levels (federal, cantonal, municipal) and the authorities are always aware of this in their decision processes. The municipalities have an important say in the definition of the transport supply in the 12 ‘regional conferences’ that discuss the timetables and services

6. Conclusions

In this study, a comparison was made between four regions in four European countries that are responsible for organising and financing regional passenger train services. The regions were: the metropolitan region of Barcelona in Spain, the Rhine-Ruhr area in Germany, the Canton of Zurich in Switzerland, and the Rhône-Alps region in France. In line with the two main questions of this paper (meeting the needs of the users and obtaining value for money from the operators) we offer the following conclusions from this comparison.

There are large differences in organisation and tasks between all four regions, reflecting the differences in the institutional and political settings. But in most cases, a separate agency (governed by the regional government and the municipalities) was formed to organise the regional train services. The case of Rhône-Alps is the exception, where a dedicated department in the regional government organisation was created. It is also the only of the four which only controls the train services and has to negotiate the coordination and integration with the lower level public authorities, which are public transport authorities for the other modes. In the other cases, the public transport authority controls all public transport modes, although for purely urban services the municipality also keeps some degree of control.

6.1. Meeting the needs of regional travellers

In three cases (Barcelona, Rhine-Ruhr, Zurich), there is a fully integrated fare system for all public transport modes and operators, managed by the public transport authority. The case of Rhône-Alps only offers a number of season tickets that are valid on train services plus some connecting services.

All regions except Rhône-Alpes use a system of letters and numbers to make understanding of the different train services by the travelling public easy, in the way metro, tram and bus networks have been doing this for over a century. Curiously, this is not customary in most train networks in Europe, although Germany has a long tradition on this point for suburban trains. All regions have also introduced clock-face scheduling, although some train operators were first reluctant.

Passenger satisfaction is in all cases part of the contracts between the regional authority and the operator(s) and is accompanied by bonus-malus arrangements. In the case of Rhine-Ruhr and Zurich, this is monitored by the regional
authority, independently from the operator. Rhône-Alps is planning to introduce independent monitoring. Passenger satisfaction is higher in Zurich and Rhine-Ruhr than in the other two cases, although for Rhine-Ruhr, metropolitan Barcelona and Rhône-Alpes, it can be said to have much improved over the previous situation, when the central government was responsible for these train services. Rhône-Alps is the only region that organises a direct dialogue with users and other stakeholders, in its users’ committees, albeit with mixed results.

6.2. Controlling the costs and the quality of the services

For controlling the costs and the quality of the services, there are two contrasting approaches: in the Rhine-Ruhr area, a systematic introduction of competition for contracts of limited duration for the operation of the regional train services; in the Zurich Canton, a direct negotiation for contracts with the incumbent operators in a climate of cooperation and cost transparency. This contrast is related, of course, to the very different institutional and political contexts in both countries and regions. It is noteworthy however that both authorities intend to continue these policies and that the politicians in both cases appear to be satisfied with the outcome and do not consider to change their course. By that criterion, both approaches can be considered a success.

In the Zurich Canton the rail operators are certain of their legal status in the long term; there is no prospect of competition. This, and the Swiss political system of concordance democracy, explains why the operators’ costs and other data are transparent for the authority and there is a lasting spirit of cooperation.

The Rhine-Ruhr area is in the process of introducing competition for the market for the whole regional train network. This is done in a carefully designed way, in relatively small steps, train service by train service, using the experience gained from one tendering process in the design of next one. The whole process will take over twenty years and be completed by 2019, coinciding with the limit set by the European regulation on public service contracts. The question for what expertise the authority should be independent from the operators has been thought through carefully, and five ‘competence centres’ have been created, with experts working for the three public transport authorities in the federated state of NRW. The fact that this policy is maintained for a period of over 20 years, despite changes in legislature majorities, is indicative of its political support.

In the case of Rhône-Alps, the operator was relatively transparent at the start of the process, but this changed completely when the prospect of competition arose. This confirms the need for legal certainty for the operators in order to give transparency in their data.

Our conclusion is that it cannot be said of the approaches with competition or with direct negotiation, that the one is better than the other. The other two cases, which have direct negotiation, show that the difference is in the way each is implemented.

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