The Rail Journey to 2020

Facts, figures and trends that will define the future of European passenger rail

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Foreword

Towards 2020 - A clear view of the future of rail travel

Currently we can witness a global renaissance of rail travel but the next seven years will be critical for the European rail industry. With increased competition, liberalisation, and the traveller of today demanding more from the travel experience than ever before, rail companies need a clear and honest view of the opportunities, challenges and threats that lie ahead.

It is true that today is a mixed picture. While the European rail passenger industry is experiencing a steady growth in passenger numbers and has a strong history of pioneering technological innovations, the rail market remains incredibly fragmented, particularly beyond national borders. We are seeing traditional national operators still dominating their respective markets with domestic trips accounting for the majority of rail travel.

But we believe the industry is changing and that the change will happen over the next years. We foresee a number of factors emerging that promise to transform this picture, creating opportunities for rail companies to grow.

Change is exciting but with change comes unpredictability. In this report we wanted to give the most comprehensive and authoritative view of the evolution of cross-border passenger rail travel. We wanted to provide scenarios and recommendations about how rail providers can effectively compete in tomorrow's market.

In the report, *The Rail Journey to 2020: Facts, figures and trends that will define the future of European passenger rail*, we focus on specific factors that will shape the rail market in Europe over the next seven years. These factors help to create a new profile of opportunities and challenges for rail providers. It is worth noting that this study differs to previous reports in that it is based on authoritative data and best practice modelling techniques and also outlines a baseline scenario, built around the trends, to size the business potential for passenger rail in 2020. It is the latest in a series of Amadeus industry reports which include *Back on Track* and *The Changing Face of Rail Travel*.

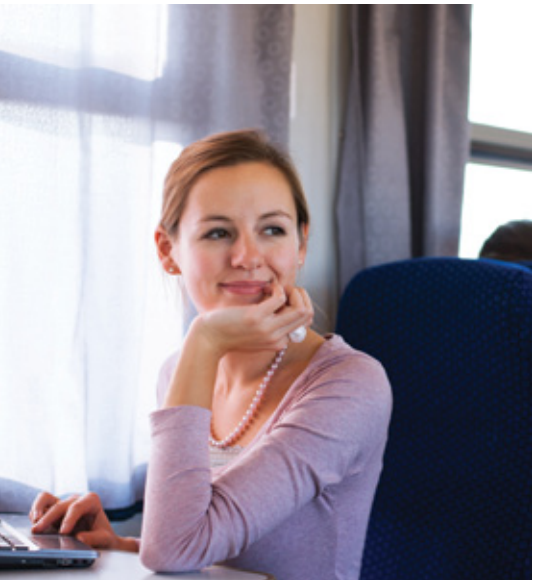
Here at Amadeus, we want to embrace what we believe is a rail renaissance and work with the industry to deliver a true, cross-border, seamless door-to-door experience for the traveller.

As always, this report is not a definitive view of the future. Instead, we want to provoke thoughtful discussion around the factors and trends most likely to shape travel from now until 2020.

Thomas Drexler
Director, Amadeus Rail

1 Executive summary

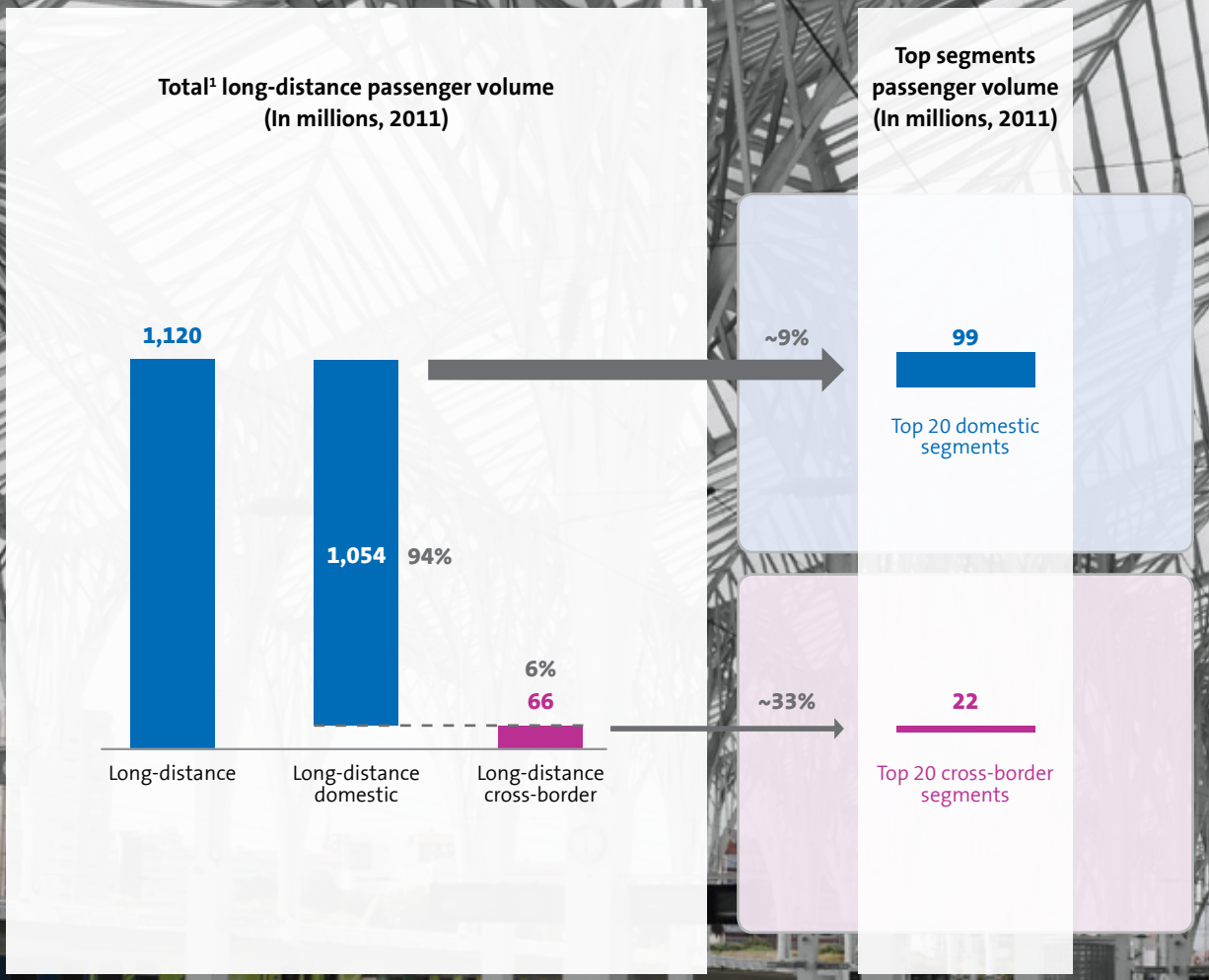
The Rail Journey to 2020: Facts, figures and trends that will define the future of European passenger rail



- **A look ahead to seven critical years for the European rail industry:** *The Rail Journey to 2020* aims to give the most comprehensive and authoritative view on the evolution of cross-border passenger rail travel through the period, informed by robust data and best practice modelling.
- **The picture today, the paradox of European rail:** The European passenger rail industry, particularly in Western Europe, is at the forefront of rail technology and experiencing steady growth in passenger numbers. However, it is not fully prepared to profit from market opportunities today or leverage the trends that will transform the industry landscape tomorrow.
- *The Rail Journey to 2020* identifies a major opportunity for rail operators and European governments striving to improve the efficiency of the continent's travel system: cross-border passenger rail. **In 2011, cross-border represented just 6 per cent of long-distance passenger numbers** *(see figure 1).*
- The report outlines key trends that will shape the evolution of the passenger rail industry, and its relationships with other modal providers. The report also outlines a baseline scenario, built around these trends, to size the business potential for passenger rail in 2020.
- Published during the consultation period for the EU's white paper *Roadmap to a Single European Transport Area*, *The Rail Journey to 2020* aims to inform the debate on how seamless cross-border rail services across Europe can become a reality.
- *The Rail Journey to 2020* concludes with comments on how passenger rail operators can take advantage of the trends transforming the industry landscape, and position themselves to benefit from opportunities that currently lie beyond their borders. Key insights include:
  - **The customer becomes No. 1:** Intensifying competition will drive greater customer-focus
  - **The best co-operators will win:** With other rail providers, other modes of transport and with booking systems
  - **Cooperation will extend across borders:** All kinds of borders, not just national frontiers. After all, travellers don't see borders, only their destination
  - **Successful players will exploit personal devices:** Such as smartphones to inspire and inform travellers
- Regional distribution could be the key to unlock the potential for European cross-border passenger rail growth. A common platform provides a model that passenger rail operators – and, crucially, their intermodal partners and third party booking systems – can plug in to. Amadeus is working with rail companies and their partners to enable them to thrive in Europe's newly competitive, cross-border environment.

Fig. 1

Top 20[2] segments' share of long-distance rail traffic



1 Scope is limited to 20 countries (AT, BE, CH, CZ, DE, ES, FI, FR, GB, HU, IE, IT, NL, NO, PL, RU, SE, SK, TR, UA)

2 Includes top 20 domestic rail segments + top 20 cross-border rail segments in the selected scope. Segments are defined as city pairs or legs

3 Moscow-StPetersburg segment is excluded from this modal split assessment as no relevant road traffic information is available for this segment

Source: Steer Davies Gleave report, air and rail operators websites, Airconomy, press releases

2 The Rail Journey to 2020: Facts, figures and trends that will define the future of European passenger rail

Section one: Introduction

The next seven years will pose an opportunity to tap into new sources of revenue

The period from today until 2020 will see a convergence of factors that will transform the environment, bringing opportunities for passenger rail operators to open new sources of revenue growth from cross-border services.

In a previous Amadeus report - *The Changing Face of Rail Travel* (June 2011) – we looked forward to a global renaissance in rail travel. Our follow up publication - *Back on Track* (October 2011) - argued that the rail industry should consider adopting the concept of an outsourced community platform to drive modernisation. Here, we focus on specific factors that will shape the rail market in Europe through the next seven years.

The Rail Journey to 2020 assesses the business potential for cross-border rail travel in Europe. The report will outline the key trends – at industry and at the wider macro level – to provide the most comprehensive view on the market's evolution, based on authoritative data and best practice modelling techniques.

From today until 2020: a rail renaissance

The Rail Journey to 2020 deliberately focuses on the period to 2020: these years will see the passenger rail industry in Europe impacted by an unprecedented coincidence of factors: some relating to structural change, others arising from opportunities created by infrastructural investments and technology.

Today, as the report shows, Europe's passenger rail industry is largely fragmented. The industry is structured around national operators, with domestic trips accounting for the majority of passenger volumes. Cross-border travel accounts for just 6 per cent of long-distance passenger volumes *(see figure 1)*.

Over the next seven years, a number of factors will emerge that promise to transform this picture, creating opportunities for passenger rail operators to grow cross-border passenger volumes and revenues.

These factors will transform possibilities – but also mean that passenger rail operators face a new and unfamiliar business environment. With deregulation, the entry of new competitors and new opportunities for multimodal integration, the world of 2020 will look very different to the world of 2013.

Change is exciting – but it also brings unpredictability, particularly against the background of wider economic uncertainty across Europe. The report therefore uses modelling to define a baseline scenario for the cross-border passenger rail market in 2020.

The Rail Journey to 2020 concludes with recommendations on how passenger rail providers, in cooperation (with each other, and with other modes of transport) can prepare to compete in the new competitive cross-border environment.

Scope and definition of terms

The report focuses on 20 European countries, which together account for 95 per cent of total European passenger-kilometers. These are: Austria, Belgium, the Czech Republic, Finland, France, Germany, Hungary, Italy, the Netherlands, Norway, Poland, the Republic of Ireland, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and Ukraine.

Four of these countries (France, Germany, the United Kingdom and Russia) together account for around 60 per cent of European rail passenger volume *(see figure 2)*.

- **Long-distance passenger** rail is here defined as trips longer than 100 kilometers in length, including both intercity and high-speed services
- **Short-distance rail** refers to passenger rail journeys of less than 100 kilometers excluding metropolitan and light rail services
- **High-speed lines** are here defined as rail lines which offer speeds in excess of 200kph

For more on the modelling used to create the scenario depicted in this report, please refer to the *Methodology & Notes* section.

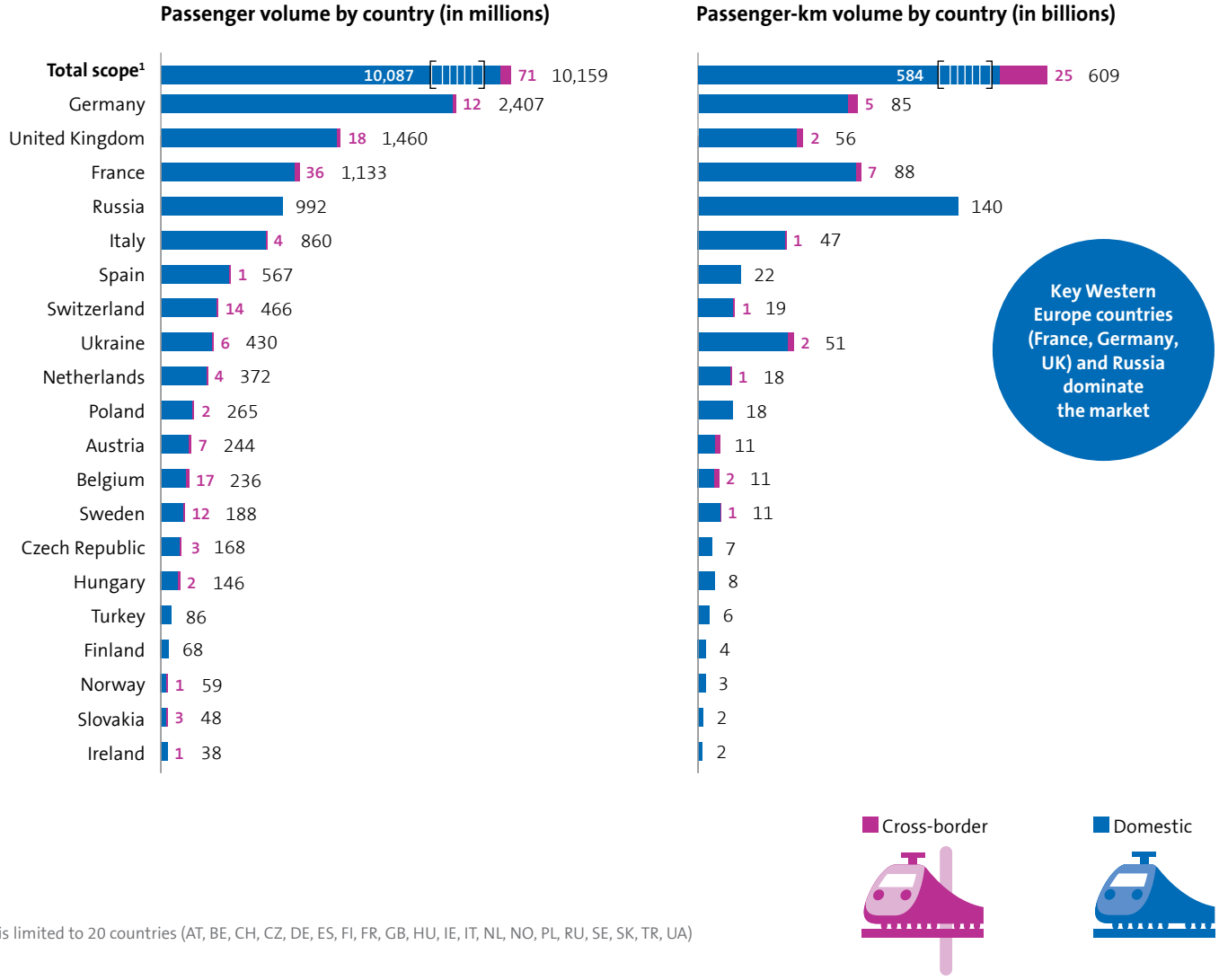
Amadeus Rail

Amadeus is one of the world's leading providers of travel technology to the rail industry. Rail is a strategic priority for Amadeus, with over 230 rail specialists in five competence sectors, located across the globe (Nice, Bad Homburg, Sydney, Toronto, Madrid).

Over 100 rail providers are distributed by Amadeus solutions. Amadeus customers include SNCF, Deutsche Bahn, Eurostar, Trenitalia, SJ and Thalys.

Fig. 2

Passenger rail market by country, 2011



1 Scope is limited to 20 countries (AT, BE, CH, CZ, DE, ES, FI, FR, GB, HU, IE, IT, NL, NO, PL, RU, SE, SK, TR, UA)

Section two: The market today - fragmentation still reigns

European passenger rail is an industry of paradoxes: Europe's operators lead the world in rail technology. At the same time, the industry is fragmented along national borders.

Europe was the birthplace of the railway. The world's first intercity rail service ran between Liverpool and Manchester in 1830. In the same decade, intercity services began operations across the continent.

Ever since, European rail operators have remained on the technological leading edge when it comes to infrastructure and rolling stock, pioneering innovations that have brought ever improving levels of comfort and speed to new generations of passengers. As an industry, Europe's rail operators have a history of innovation that extends back 180 years.

At the same time – and despite the integration of Europe's economy (within the EU footprint) and the rising competitive challenge on cross-border travel from air and car - Europe's passenger rail industry remains fragmented. Traditional national operators dominate their respective markets, and the numbers suggest their focus is overwhelmingly domestic. Domestic rail travel accounts for 96 per cent of overall passenger kilometers in Europe, while a startling 99 per cent of overall rail passenger volume is domestic *(see figure 4)*.

When the focus is narrowed to long-distance, the data reveals that cross-border rail trips account for 6 per cent of total long-distance passenger volumes *(see figure 1)*. High-speed represents some 30 per cent of long-distance trips *(see figure 10)*. The following sections offer more detail on the state of the market today.

Passenger demand: steady growth in passenger volumes

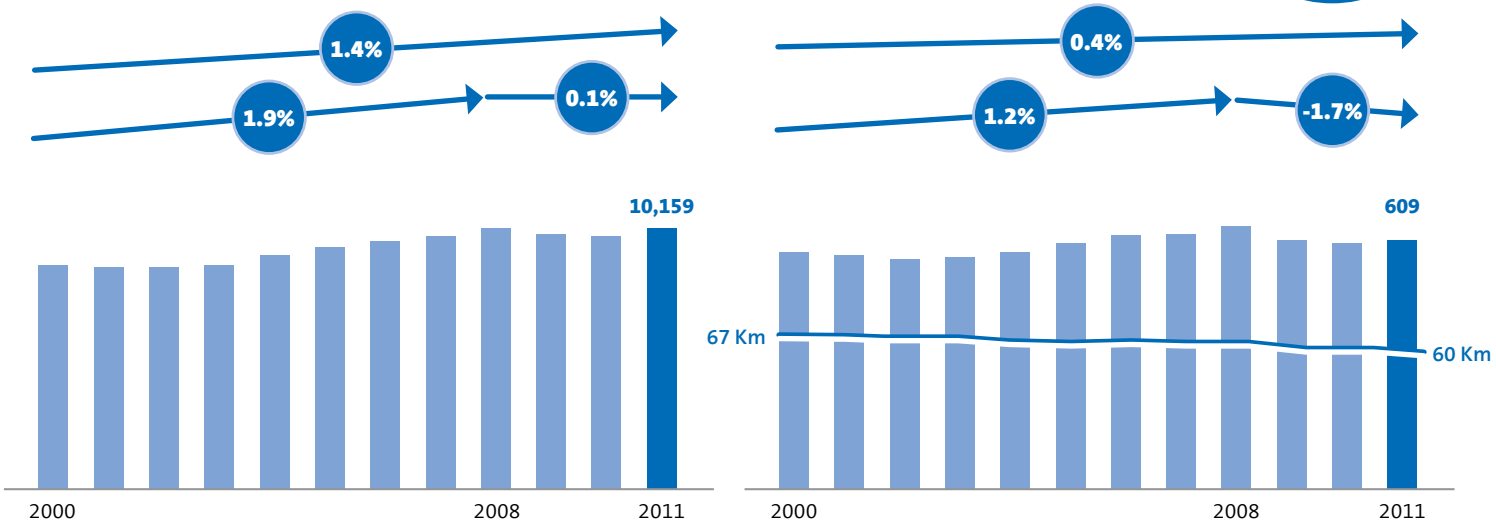
Demand for passenger rail services has grown steadily in Europe, maintaining its growth trend even through the economic crisis. Passenger volumes dropped slightly in 2009 and 2010, before recovering in 2011. The overall growth rate for passenger rail volume between 2000 and 2011 was around 1.4 per cent.

However, while passenger volume has been growing steadily, the number of passenger kilometers remained relatively flat, at 0.4 per cent *(see figure 3)*.

Fig. 3

Passenger rail market evolution 2000-2011[1]

1.4% steady growth of passenger demand over the last ten years



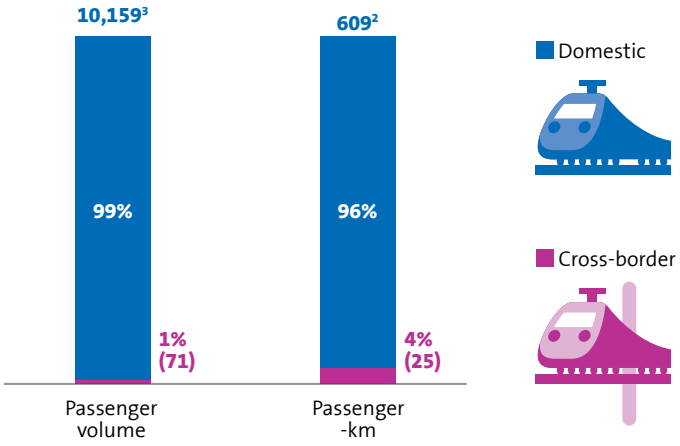
1 Scope is limited to 20 countries (AT, BE, CH, CZ, DE, ES, FI, FR, GB, HU, IE, IT, NL, NO, PL, RU, SE, SK, TR, UA)

% Annual growth rate (average)

Fig. 4

Passenger rail market sizing, 2011[1]

Domestic and cross-border share of total market (Passenger-volume in millions, passenger-km in billions)



Average segment distance

The market is almost fully driven by domestic traffic

1 Scope is limited to 20 countries (AT, BE, CH, CZ, DE, ES, FI, FR, GB, HU, IE, IT, NL, NO, PL, RU, SE, SK, TR, UA)

2 Rail transport statistics are reported on the basis of the 'territoriality principle': each reporting country reports the loading/embarkation, unloading/disembarkation and movements of passengers that take place in their national territory (Eurostat)

3 Total passengers volume (PAX) has been corrected to avoid double counting of cross-border passengers

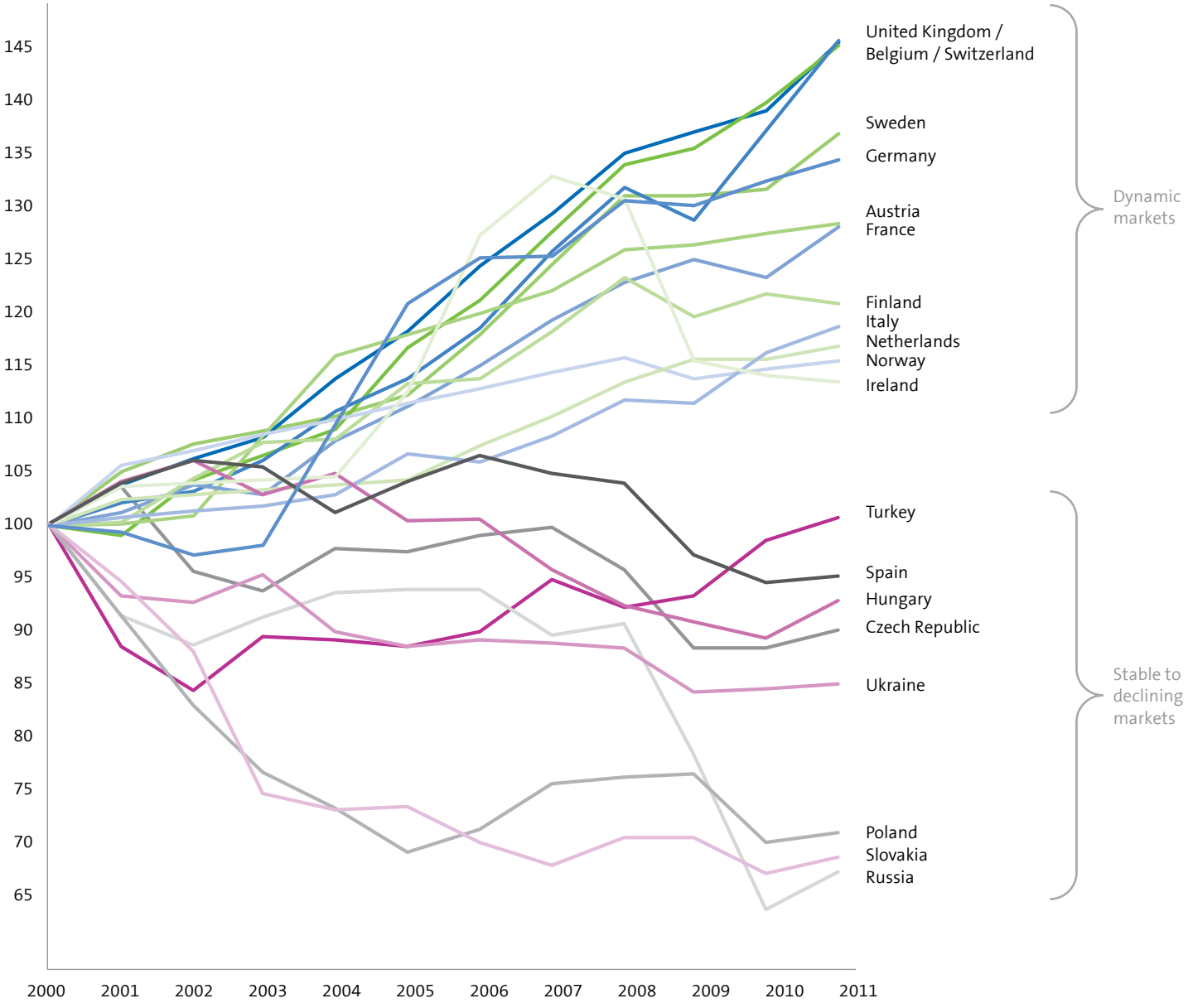
Country-by-country: divergent passenger growth

Looking at the demand picture on a country basis reveals a diverse picture. In the last two years Belgium, Sweden, Switzerland and the UK have experienced something of a boom in rail passenger volumes and passenger kilometers travelled.

The economic crisis had a negative impact on passenger growth in many European countries from 2008 to 2010. Although the effects of this continue to be felt, there is some good news: the rate of decline has stabilised in some markets, as in the case of the Republic of Ireland, and in some others has even reversed - since 2010 Russia, Poland, Hungary and Spain have experienced a healthy rebound in total rail passenger volumes *(see figure 5)*.

Fig. 5

Rail market evolution by country, 2000-2011 (In terms of passenger-segments, base 100 in 2000)



Trip length: short-distance predominates today, but long-distance passenger demand is growing

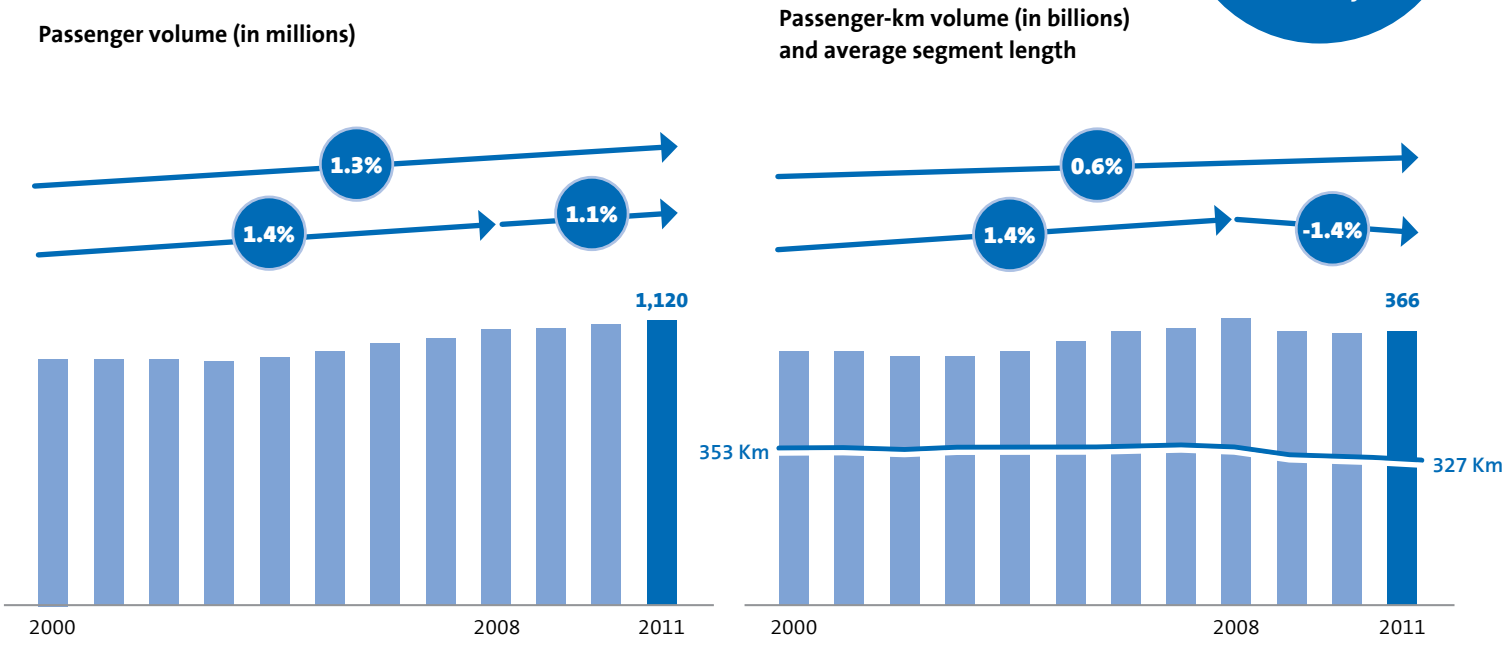
Overall, short-distance rail travel currently accounts for around 90 per cent of total passenger volume across Europe, however it acccounts for 60 per cent when looking at passenger-kilometers. That said, long-distance rail travel is undergoing slow but steady growth of some 1.3 per cent over the last decade and over the past four years it has been increasing more strongly than short-distance travel *(see figure 6)*.

Analysed on a country-by-country basis, a heterogeneous picture emerges. In France, for example, long-distance accounts for 17 per cent of rail passenger trips. This can be attributed to France's centralised economy, and the relative accessibility of high-speed rail travel in the country. Neighbouring Germany, however, with its geographically distributed GDP – and well-developed short-distance (suburban S-Bahn) rail network - sees long-distance make up just 5 per cent of total trips within scope *(see figures 7 and 8)*.

Fig. 6

Long-distance passenger rail market evolution 2000-2011[1]

1.3%
steady growth of passenger demand for long-distance over the last ten years

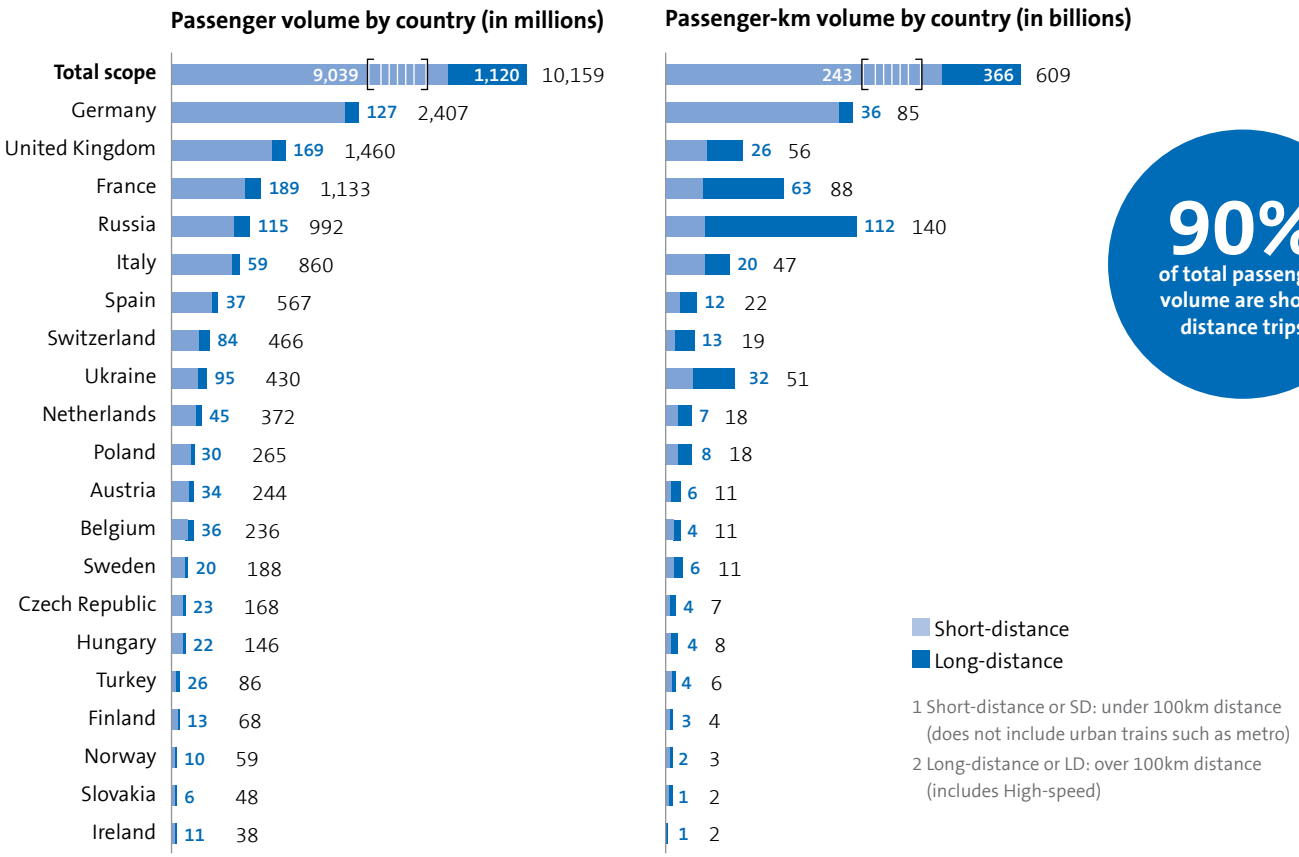


1 Scope is limited to 20 countries (AT, BE, CH, CZ, DE, ES, FI, FR, GB, HU, IE, IT, NL, NO, PL, RU, SE, SK, TR, UA)

% Annual growth rate (average)

Fig. 7

Short-[1] vs. long-[2] distance market by country in 2011

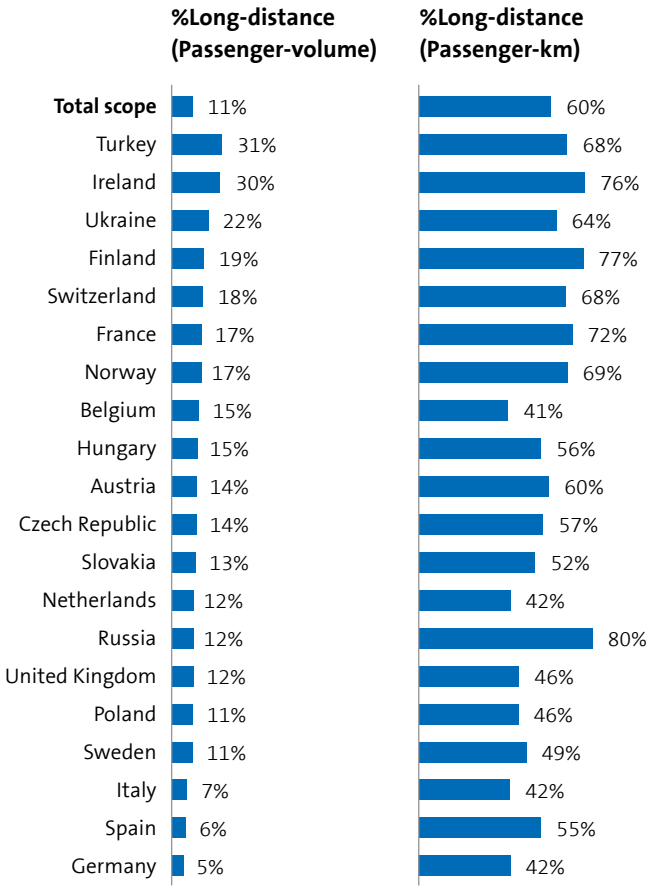


90%
of total passenger volume are short-distance trips

1 Short-distance or SD: under 100km distance (does not include urban trains such as metro)
2 Long-distance or LD: over 100km distance (includes High-speed)

Fig. 8

Share of long-distance in total market by country



A global picture of rail versus other modes: the car is still king but rail is catching up

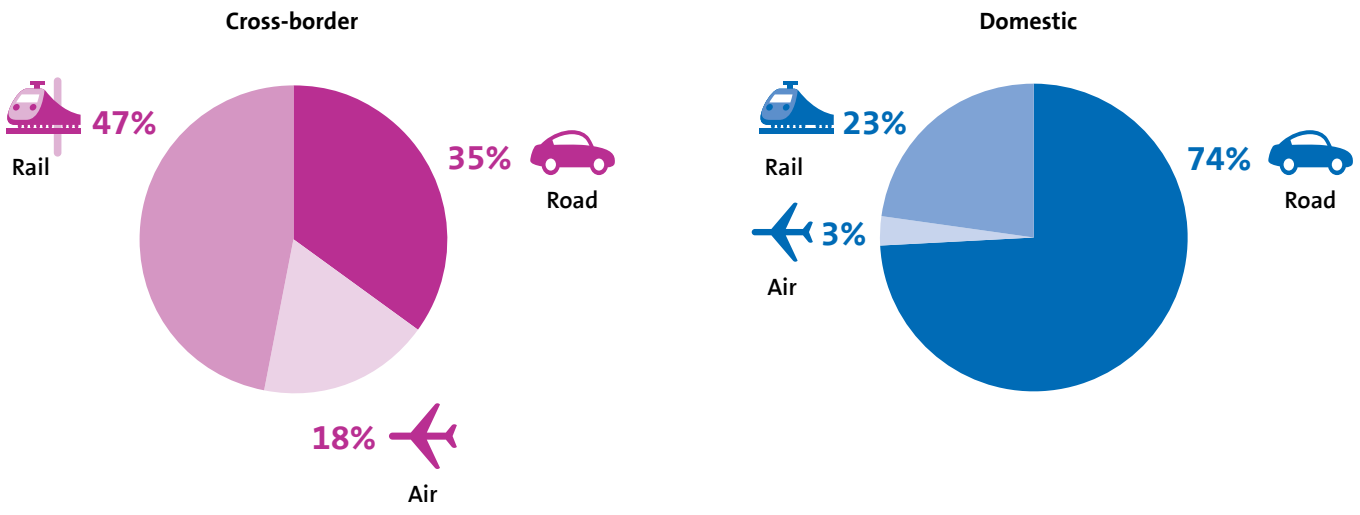
Europe's top 20 rail segments represented 11 per cent of the 1.1 billion long-distance rail passenger trips made in 2011 *(see figure 9)*. Looking solely at the top 20 segments, travel between domestic city pairs accounted for 82 per cent, and cross-border city pairs for 18 per cent of the trips.

Looking at the domestic competitive landscape – with rail compared with air and car on the top 20 segments – rail accounted for 23 per cent of passenger trips in 2011. For this kind of travel, the car is king and accounts for 74 per cent of trips. Air accounts for only 3 per cent.

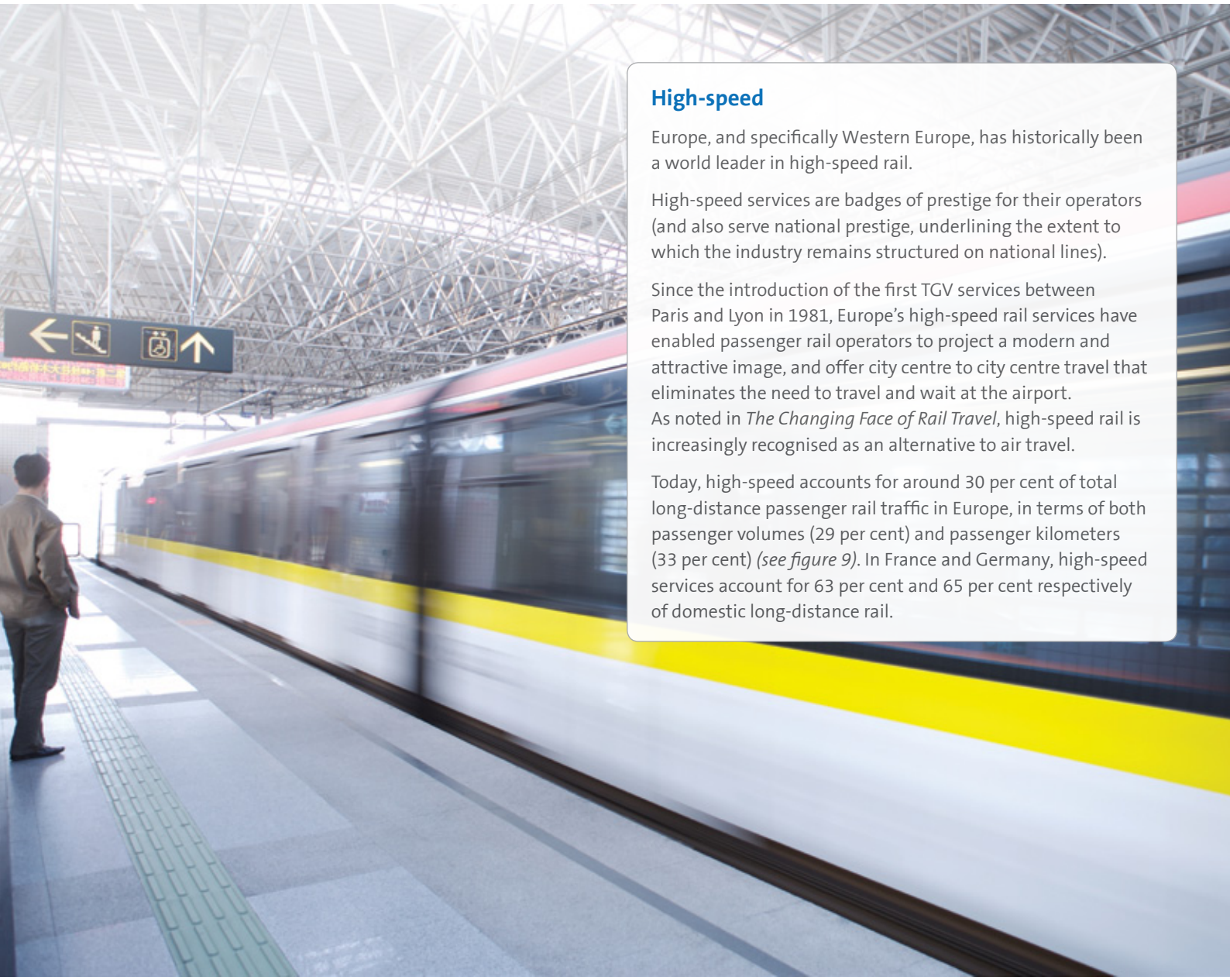
Fig. 9

Rail versus road versus air on Europe's top 20 rail segments[1]

Estimated competitive landscape, 2011



1 Segments are defined as city pairs (O&Ds) or legs



High-speed

Europe, and specifically Western Europe, has historically been a world leader in high-speed rail.

High-speed services are badges of prestige for their operators (and also serve national prestige, underlining the extent to which the industry remains structured on national lines).

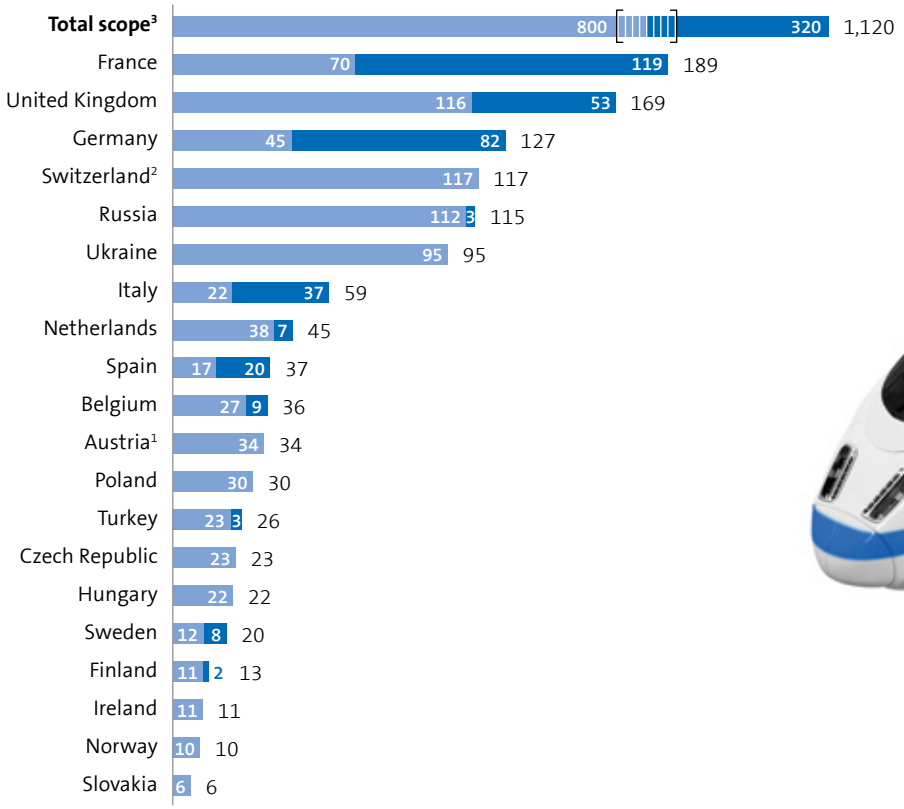
Since the introduction of the first TGV services between Paris and Lyon in 1981, Europe's high-speed rail services have enabled passenger rail operators to project a modern and attractive image, and offer city centre to city centre travel that eliminates the need to travel and wait at the airport. As noted in *The Changing Face of Rail Travel*, high-speed rail is increasingly recognised as an alternative to air travel.

Today, high-speed accounts for around 30 per cent of total long-distance passenger rail traffic in Europe, in terms of both passenger volumes (29 per cent) and passenger kilometers (33 per cent) *(see figure 9)*. In France and Germany, high-speed services account for 63 per cent and 65 per cent respectively of domestic long-distance rail.

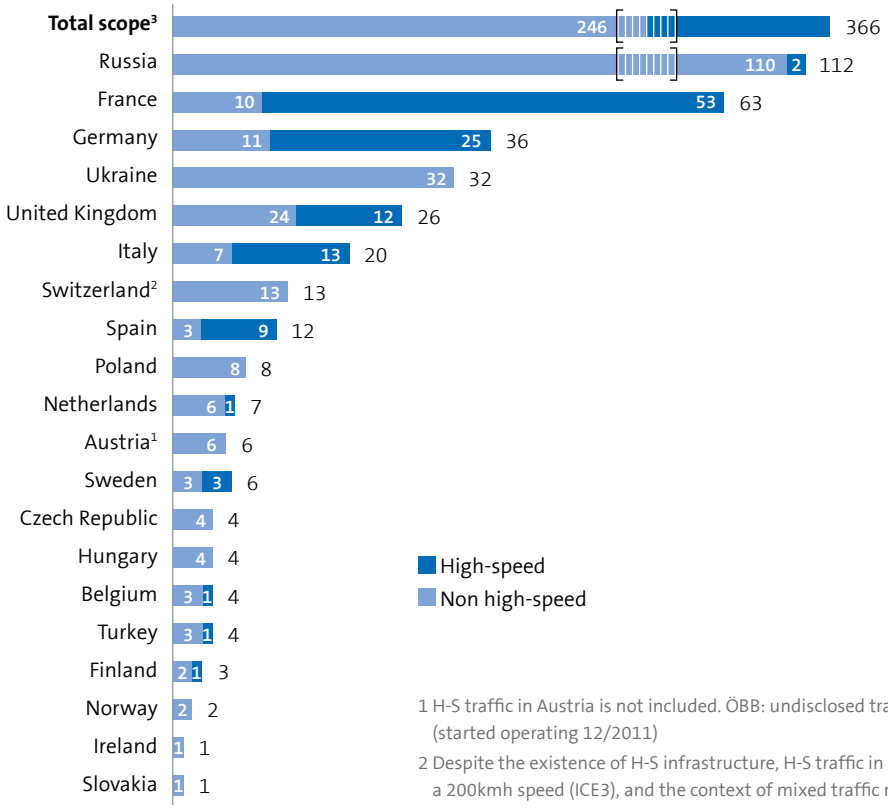
Fig. 10

High-speed in long-distance traffic by country, 2011

Passenger volume in long-distance rail by country (in millions)



Passenger-km volume by country (in billions)



1 H-S traffic in Austria is not included. ÖBB: undisclosed traffic data. Westbahn: no data for 2011 available (started operating 12/2011)

2 Despite the existence of H-S infrastructure, H-S traffic in Switzerland is considered null as only a few trains can reach a 200kmh speed (ICE3), and the context of mixed traffic means harmonised circulation speeds for capacity reasons

3 Six key factors of change that will transform the rail industry

The period to 2020 will see a combination of business, regulatory and macro trends transform the industry environment

Some of the trends identified apply specifically to the passenger rail industry. Others are more general, providing a strong business case for greater levels of intermodal cooperation. Together, these trends are creating a new profile of opportunities and challenges for passenger rail providers, and form the basis for the potential business scenario included in this report.

- Liberalisation
- New market entrants
- Completion of new high-speed lines
- New hubs
- Air-Rail and Rail-Rail Cooperation
- Railways' costs

Additionally, this section also examines trends in ticketing and distribution. Developments here will be key for rail operators to take advantage of emerging cross-border opportunities, strengthen their competitive position and deliver the seamless experience travellers have grown accustomed to in other transport modes.

1. Liberalisation

Since 2001, the European Union (EU) has driven progressive liberalisation of the European market for rail, consistent with its vision to create a single European market for rail.

Liberalisation of EU railways is proceeding on a stage-by-stage (or 'package') basis: the most recent and third package, adopted in October 2007, introduced open access rights for cross-border rail passenger services. This was implemented in 2010.

Details of the fourth and final package were published in early 2013. This package foresees the opening up of domestic passenger services to new entrants and services from 2019.

As noted in *The Changing Face of Rail Travel*, the introduction of a "true internal market for rail services" will have profound implications for rail companies. A key provision is complete structural separation. Already the case in the UK, where the 1997 deregulation introduced the separation of track and train, most European markets are still dominated by incumbent rail operators.

Insight

Liberalisation is expected to bring more operators into Europe's rail markets, offering more choice to rail passengers. However, early trends indicate that this is fragmenting services on some long-distance routes because operators regard other players on the route as 'competitors'.

2. New entrants

Structural separation, along with the EU's wider drive to spur competition on domestic and cross-border rail, will pave the way for new market entrants. These companies will pose an unfamiliar challenge to operators who have long enjoyed dominance in their home markets.

However, few companies have disclosed their intentions to invest in passenger rail operations. The potential impact of new entrants on the rail market therefore seems limited in the period from now until 2015. Beyond this, the lead-time needed to procure rolling stock and the level of investment required is likely to limit market moves.

Insight

Competition is expected to be driven mainly by incumbent passenger rail operators expanding their operations abroad.

3. Completion of new high-speed lines

As noted, Europe is a leader in high-speed rail travel. In the longer term, the EU has ambitions to see "a European high-speed network triple the length of the existing high-speed rail network by 2030" (*Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system*, March 2011).

There has been notable expansion in high-speed routes in recent years, particularly in Italy and Spain. Looking forward, an additional 5,000 kilometers of new high-speed lines are to be laid by 2020.

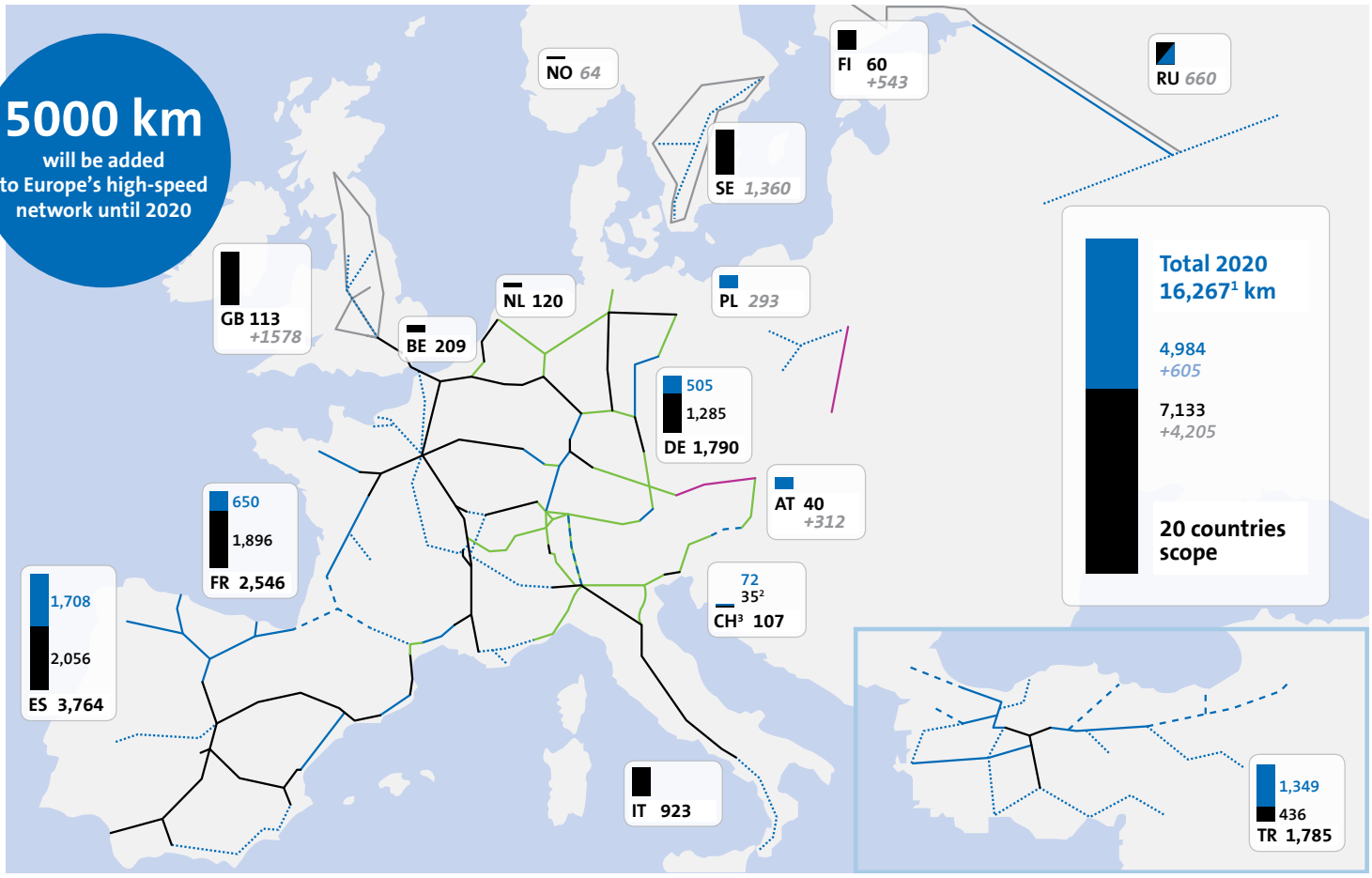
Spain, France and Germany will continue to lead the investment in high-speed networks. Over the period, Russia is to complete its first native high-speed line, between Moscow and St Petersburg.

Insight

High-speed rail is a proven asset, winning passengers to rail and providing a competitive challenge to air on domestic and cross-border city pairs. In Europe, major cities are often less than 700km apart: which corresponds to a trip length of less than 3 hours via high-speed rail. Continued expansion of the high-speed network, in line with current projections, will allow rail to leverage this competitive time advantage and significantly spur cross-border passenger volumes.

Fig. 11

European high-speed network 2013-2020



High-speed lines operational in 2020

High-speed lines operational in 2013

***Native* high-speed lines (operational speed: 250 to 320 km/h)**

- Existing native high-speed network in 2013
- Future high-speed lines opening before 2020
- High-speed projects opening in the early 2020s
- Expected future high-speed developments (>2025)
- **XX** *Native* high-speed line length

Regular lines upgraded for high-speed (operational speed: 200 to 250 km/h)

- Existing upgraded lines in 2013
- Upgraded lines operational before 2020
- Other regular train lines
- *XX* Upgraded high-speed line length

1 Corrected total as Russian project aims to replace an existing upgraded high-speed line

2 Mattstetten–Rothrist line (2004) between Bern and Olten is not included in H-S track length as a new line allowing a 200kmh speed is not considered as H-S by UIC

3 Despite the existence of H-S infrastructure, H-S traffic in Switzerland is considered null as only a few trains can reach a 200kmh speed in a context of slow mixed traffic

Source: Infrastructure operators, press releases

4. New hubs

The EU wants to establish an efficient trans-European transport network through its TEN-T programme (Trans-European Transport Network). The focus is on reducing congestion and improving connections across Europe's core network, with increased multimodality a key objective.

Today, demand exceeds capacity at many of Europe's core airports. By 2020, congestion is predicted to exceed capacity at these airports for all or part of the day. Only 14 airports[1] are today connected to long-distance or high-speed rail services *(see figure 12)*.

Under TEN-T, the EU aims to support the introduction of multimodal hubs at 37 key airports by 2030.

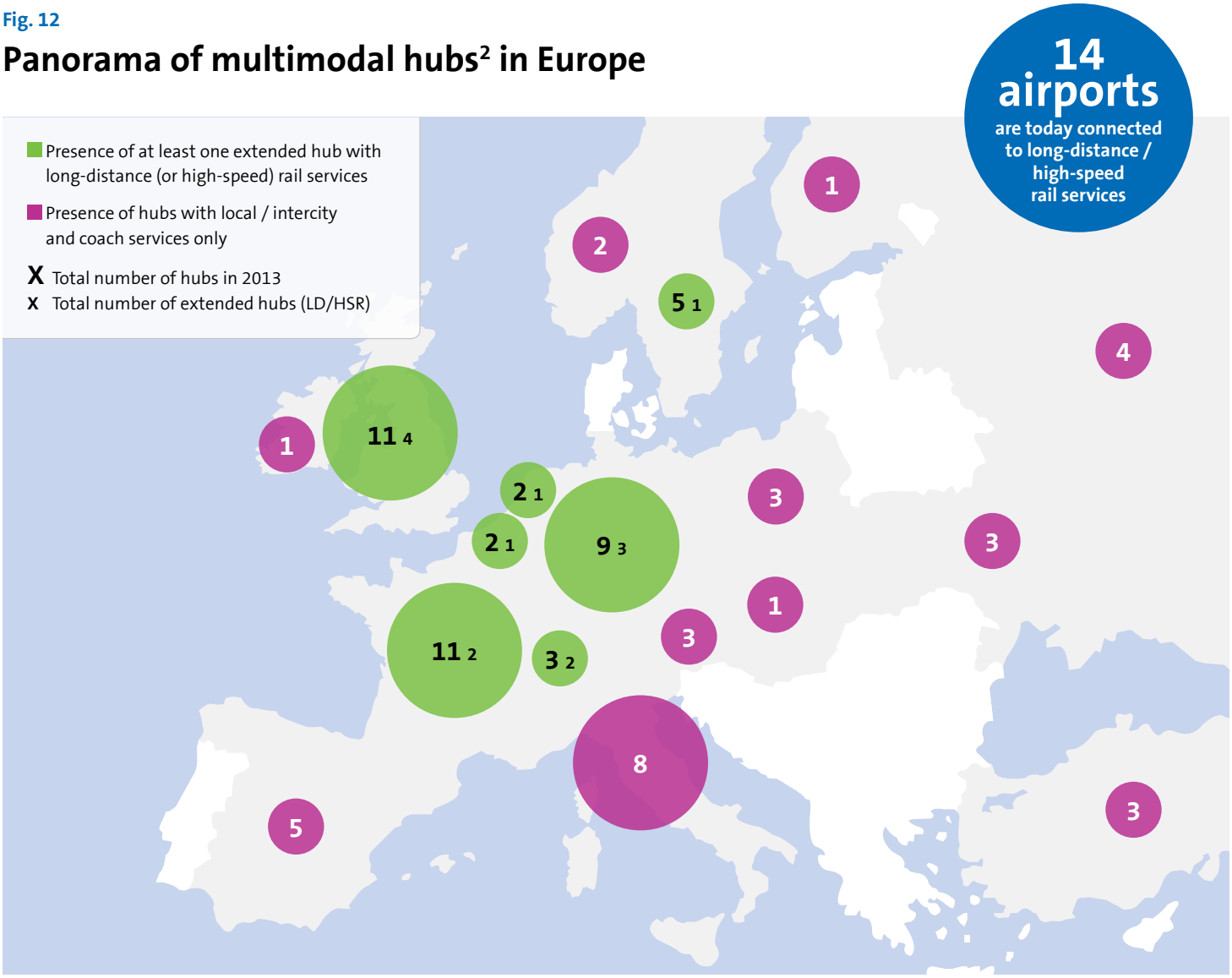
Insight

The EU believes enhanced multimodality is the key to unlocking Europe's congested transport network. This will provide passenger growth opportunities for rail operators, through competition (with air on city pairs) and cooperation (see next section).

1 BE: Brussels
CH: Zurich, Geneva
DE: Dusseldorf, Köln-Bonn, Frankfurt
FR: Paris Roissy CDG, Lyon Saint-Exupery
GB: Gatwick, Stansted, Manchester, Birmingham
NL: Amsterdam Schipol
SE: Stockholm Arlanda

Fig. 12

Panorama of multimodal hubs[2] in Europe



2 Multimodal hub: the train station is within the airport.

Source: European Commission, airports' websites

5. Air-Rail and Rail-Rail Cooperation

The expansion of multimodal hubs is a key enabler for greater air-rail cooperation. Already, where multimodal hubs are present, passenger rail providers and air carriers are developing cooperative relationships.

For cross-border passenger rail, traffic is mainly operated by a series of joint ventures, dedicated (usually, but not exclusively) to high-speed rail services.

The main forms of cooperation currently operating are described in the tables below. The scenario for 2020 is based on these models.

Insight

Greater levels of cooperation – both air-rail and rail-rail – are key to delivering the kind of seamless passenger experiences that will drive up passenger volumes.

Fig. 13

Cooperation between railways

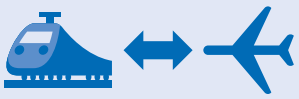
Agreements between operators take up to four different forms

Cooperation type	Cooperation mode	Definition	Examples
Commercial agreement	Retailing	• A railway retails another railway's services, for trips that imply no connection with its own trains	• SNCB Europe sells DB tickets (e.g., Brussels-Köln on ICE) • Renfe sells Elipsos tickets
	Light interlining	• A railway sells a unique ticket for a trip that includes one self-operated leg and at least one connection and a second leg operated by another company • There is no checked-through luggage service	• SNCB Europe sells tickets for Antwerp-Berlin trip that includes a leg (Antwerp-Brussels) operated by SNCB, a leg (Brussels-Köln) operated by Thalys and a leg (Köln-Berlin) operated by DB • SBB sells tickets including SBB legs and ICE (DB) legs
Business Venture	Joint operations	• Two companies operate jointly a specific segment with their rolling stock • Timetables are jointly defined, ticket retail is shared and a co-brand can be used for the service	• FYRA is jointly operated by High-Speed Alliance (NS HIspeed and KLM JV) and SNCB
	Joint venture	• A joint venture owned by two operators is dedicated to passenger transport on specific routes	• Eurostar is a Joint Venture owned by SNCF, SNCB and L&CR • Thalys is a Joint Venture owned by SNCF, SNCB and DB • TGV Lyria is a Joint Venture owned by SNCB and SBB

Fig. 14

Cooperation between airlines and railways

Agreements between operators take up to five different forms



Cooperation type	Cooperation mode	Definition	Examples					
			Brand	Airline	Hub / airport	Railway	Stations	Retail channel
Commercial agreement	*Light* interlining	• An airline sells a unique ticket for a trip that **includes one cross-border self-operated leg and a connection to a second leg operated by a railway** • There is no checked-through luggage service	Flyrail	SAS	any	SJ	any	Dedicated website[3]
	Light interlining + codesharing	• Same conditions as *light* interlining • **In addition, the rail leg is identified by the airline's brand code (even if rolling stock often carries the railway's brand)**	TGV Air	11 airlines	CDG	SNCF	20 TGV stations	Airline
			AIRail	LH	FRA	DB	Köln, Bonn, Stuttgart	LH
			AirTrain[1]	Swiss	Zurich	SBB	Basel	Swiss
	Full interlining + codesharing	• Same conditions as *light* interlining+codesharing • **In addition, there is a checked-through luggage service**	Air + Train	AF	CDG	SNCF	Brussels, (Strasbourg[2])	AF
	Retail	• An airline sells **generic tickets for non-bookable trains**, to be used just before/after an international flight	Rail&Fly	Many	15 airports	DB	any	Airlines + partner TOs
Business Venture	Joint venture	• Joint Venture	High-Speed Alliance (NS Hispeed – KLM joint venture), operating FYRA jointly with SNCB					

1 SBB and Swiss offer an independent end-to-end luggage service but it is not synchronised with AirTrain passengers' movements

2 Service will begin in April 2013

3 Flyrail.se has been closed down as of December 17, 2012. Combined purchase of air and train is available on SJ/SAS websites soon

Ticketing and distribution: a more joined-up approach

In today's connected world, with information available across a broad range of devices, travellers expect to be able to access up-to-date information about their travel choices wherever they are. The air industry is a case in point: here, global distribution is enabling airlines to deliver seamless end-to-end experiences.

As noted by industry contributors to *The Changing Face of Rail Travel*, "railways think in a very nationalistic way with regard to distribution – and every national distribution system is different". The practical implication for travellers is that they need to use multiple websites to plan, book and buy cross-border travel. As cross-border travel increases, this experience will become increasingly complex.

Things are changing. The European Commission is moving to introduce greater interoperability on ticketing and information between passenger rail providers via TAP TSI (*Telematic Applications for Passenger Services – Technical Specification for Interoperability*). Due for implementation by 2016, TAP TSI aims to provide a more 'joined-up' passenger information and ticketing system across the EU.

These moves are welcome, and will underpin greater cooperation and support better customer experiences. But they will still mean that the rail industry lags behind other modes of transport, and particularly air when it comes to the distribution and marketing of its services in the newly competitive and cross-border environment.

6. Railways' costs

The cost base for passenger rail providers is one of the factors used to define a baseline scenario for cross-border rail.

In the period covered by *The Rail Journey to 2020*, the chief impact on railways' costs will be external and relate to economic conditions. In the event of a general economic slump, the cost base for railway operators is assumed to grow. Otherwise, the model assumes that costs will remain static.

Longer term and beyond the scope of this report, structural changes driven by liberalisation are likely to alter the cost base as rail operators seek efficiencies and leverage their scale.

Insight

As cost bases expand, rail companies won't be able to rely upon external economic factors to improve growth and profitability. Instead, it will be necessary to innovate and develop new services, becoming more customer-centric in the process.

4 2020 scenario for cross-border rail business

The basis for this scenario is the six shaping criteria for 2020

1. **Liberalisation**
2. **New market entrants**
3. **Completion of new high-speed lines**
4. **New hubs**
5. **Air-Rail and Rail-Rail cooperation**
6. **Railways' costs**

The scenario below outlines the expected 'state-of-the-nation' and business potential of the European rail industry in 2020, given the various developments in and status of the criteria listed above at this date.

Baseline scenario

This scenario provides a baseline picture of the business potential of the European rail industry in 2020, if developments in the six key criteria progress as currently anticipated.

In this baseline scenario, it is assumed that the European rail industry sees new entrants until 2020, in line with the stated objectives of such companies. This scenario also assumes that planned new high-speed rail lines are completed in the timeframe currently estimated, and that new hubs are also developed. The business potential for rail by 2020, as per this scenario, depends upon liberalisation, both domestic and international, coming into effect in 'real' terms by 2016, with rail companies moving to capitalise on the opportunities it presents. Whilst this scenario does not anticipate significant growth in cooperation between different rail companies, or between rail companies and airlines, it does assume that rail companies' costs do not increase sharply.

Given the impact of the criteria detailed above, over the period 2011-2020, we can expect to see a total increase in long-distance passenger volume of 21 per cent, that is, a compound annual growth rate of approximately 2.2 per cent across the geographical scope of this study. The proportion of long-distance passenger volume accounted for by high-speed rail will increase from 28.6 per cent of all traffic in 2011 (320 million passengers out of a total of 1.120 million long-distance passengers), to over a third – 33.9 per cent - of all long-distance traffic in 2020 (461 million passengers out of a total of 1.358 million). In contrast, whilst non-high-speed, long-distance rail travel will continue to grow – accounting for 897 million passengers in 2020, up from 800 million in 2011 – the proportion of long-distance passengers it accounts for will decrease from 71.4 per cent in 2011, to 66.1 per cent in 2020.

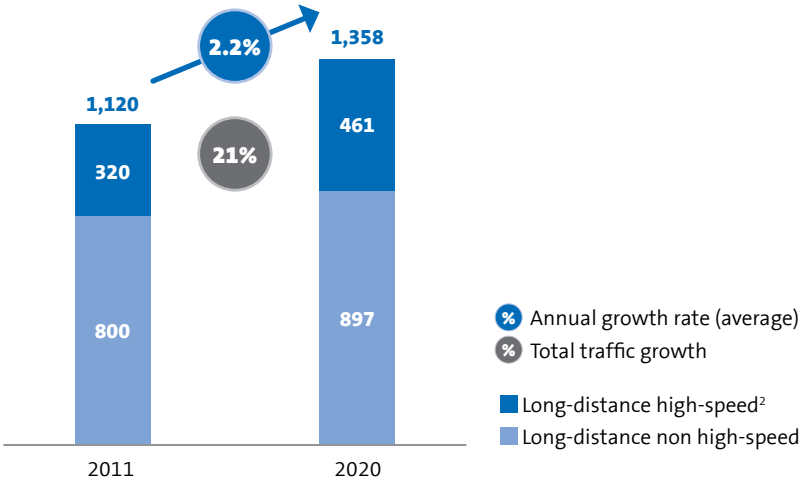
If cooperation between rail companies, and between rail companies and airlines, increases and improves further by 2020 than anticipated in this scenario, the potential increase in long-distance passenger volume would be higher still: in this baseline scenario, 1,358 million passengers are forecast by 2020; however, with increased cooperation, this number could reach 1,389 million – a further 31 million passengers.

The new traffic foreseen in the baseline scenario (that is, a total of 1,358 million long-distance passengers by 2020) will not only include an organic increase in traffic on existing rail lines across Europe, but will also be driven by infrastructure expansion projects such as new high-speed lines and multimodal hubs. A changing competitive landscape will also contribute to growth, with some of this increase in traffic driven by new entrants to the market.

Fig. 15

2020 Long-distance passenger rail market: baseline scenario

Total[1] long-distance passenger volume (Passenger-volume in millions)



1 Scope is limited to 20 countries (AT, BE, CH, CZ, DE, ES, FI, FR, GB, HU, IE, IT, NL, NO, PL, RU, SE, SK, TR, UA)

2 H-S traffic in Austria is not included. ÖBB: undisclosed traffic data. Westbahn: no data for 2011 available (started operating 12/2011)

Source: Amadeus analysis

The anticipated growth in passenger volume until 2020 is driven by four key markets in particular: the United Kingdom; France; Switzerland; and Germany. These four markets represent over 70 per cent of the total growth over the period. The United Kingdom will be the market contributing the greatest proportion of this increase (70 million passengers), whilst Switzerland will see the greatest rate of growth with a 4.6 per cent annual growth rate.

Retail channels for rail will also see a shift towards indirect distribution in the period to 2020, by which date indirect distribution (incorporating indirect offline, online travel sellers and self-booking tools) will account for 18 per cent of all booking value, with the direct channel (online and offline) representing 82 per cent of booking value. This is a shift in favour of indirect distribution, which accounted for 12 per cent of total booking value in 2011 against the direct channel's 88 per cent share.

This shift towards the indirect channel will prove particularly important in realising the opportunity posed by increased cooperation between rail companies, which, as outlined above, could increase long-distance rail passenger volumes by an additional 31 million by 2020, if cooperation increases more rapidly than envisaged in the baseline scenario. For the most part, rail companies currently distribute individually, especially via direct distribution channels. However, indirect distribution will offer them the opportunity to partner and cooperate more effectively with other railways, and will thus give rail companies greater visibility in additional distribution channels.

5 Conclusion

Passenger rail providers will face a very different world in 2020: the next seven years will transform their industry and the wider environment. The results will be unpredictable and far-reaching. The evolution of the European telecoms industry, after deregulation, provides clues for how rail could develop.

Deregulation of telecoms brought deep structural change. For the continent's traditional Postal, Telegraph and Telephone (PTT) operators, protected for decades from competition and guarded like national assets, this was a major challenge: a challenge in commercial, technological and, above all, cultural terms.

For the most part, these companies rose to the challenge. Former national (and nationalised) champions such as Spain's Telefónica, France Télécom and Deutsche Telekom transformed themselves into global players, with strong and diversified businesses. Freed to expand and act commercially, and under new competitive pressures, these companies refocused themselves on growth through the customer.

Newly-competitive, the telecoms operators also understood it was in their shared interests – and the interest of their customers – to cooperate on key areas like standards and roaming.

Passenger rail providers will find themselves facing similar – and just as far-reaching – challenges as they come to terms with new competitive pressures, increase their focus on the traveller experience, and seek to grow customer relationships.

As seen in the telecoms sector – and as the six key factors previously detailed in this report indicate - rail providers will need to cooperate: with each other, and with other players such as airlines. On a given cross-border journey, different operators must learn how to 'share' the same passenger in order to deliver seamless customer experiences.

Insights

Drawing on the research and analysis, *The Rail Journey to 2020* offers the following comments on the evolution of passenger rail in Europe.

- **The customer becomes No. 1:** More intense competition, between rail operators and between transport modes will drive greater customer focus as individual players attempt to deepen their differentiation and build customer relationships. However, on cross-border routes, no one operator will own the customer: they will need to learn how to share.

- **The best cooperators will win:** Competition will be more intense but rail providers will need to become extremely adept at cooperation to deliver for the rail passengers of 2020. There is a long history of cooperation between rail providers in Europe, stretching back to the nineteenth century. Improved rail-rail cooperation is key to quality and greater service frequency.

  However, to deliver the quality of experience travellers expect, and which will allow them to benefit from increased cross-border rail travel, rail providers will need to cooperate at a much deeper and more integrated level.

- **Cooperation will extend across borders:** Not just national frontiers, but commercial, industry and organisational borders too. Delivering seamless end-to-end traveller experiences, across providers, different modes, and technology platforms is a new kind of challenge for rail providers. The challenge will be cultural, as much as commercial and technological.

- **Successful players will exploit the platforms at hand to inspire and inform travellers:** Today, rail providers are investing in improved customer booking and ticketing, leveraging personal devices like mobile phones and tablets. Mobile ticketing is offered by most passenger rail operators across Europe and NFC (Near Field Communications) solutions are being deployed by providers in many countries *(see figure 16)*. However, without a deeper level of integration – and one which goes across borders – these solutions will work separately. Instead of improving the traveller experience, they could make it more complex and frustrating.

The key here is integration: there is a clear need for a solution that can plug into all the various booking systems and rail providers' systems; with the intelligence to book and integrate a through-journey on any given route and compare different operators and that can compare different prices operating on the same route. Only this level of 'joined up' integration will enable providers to deliver the kind of simple and seamless experience that travellers expect.

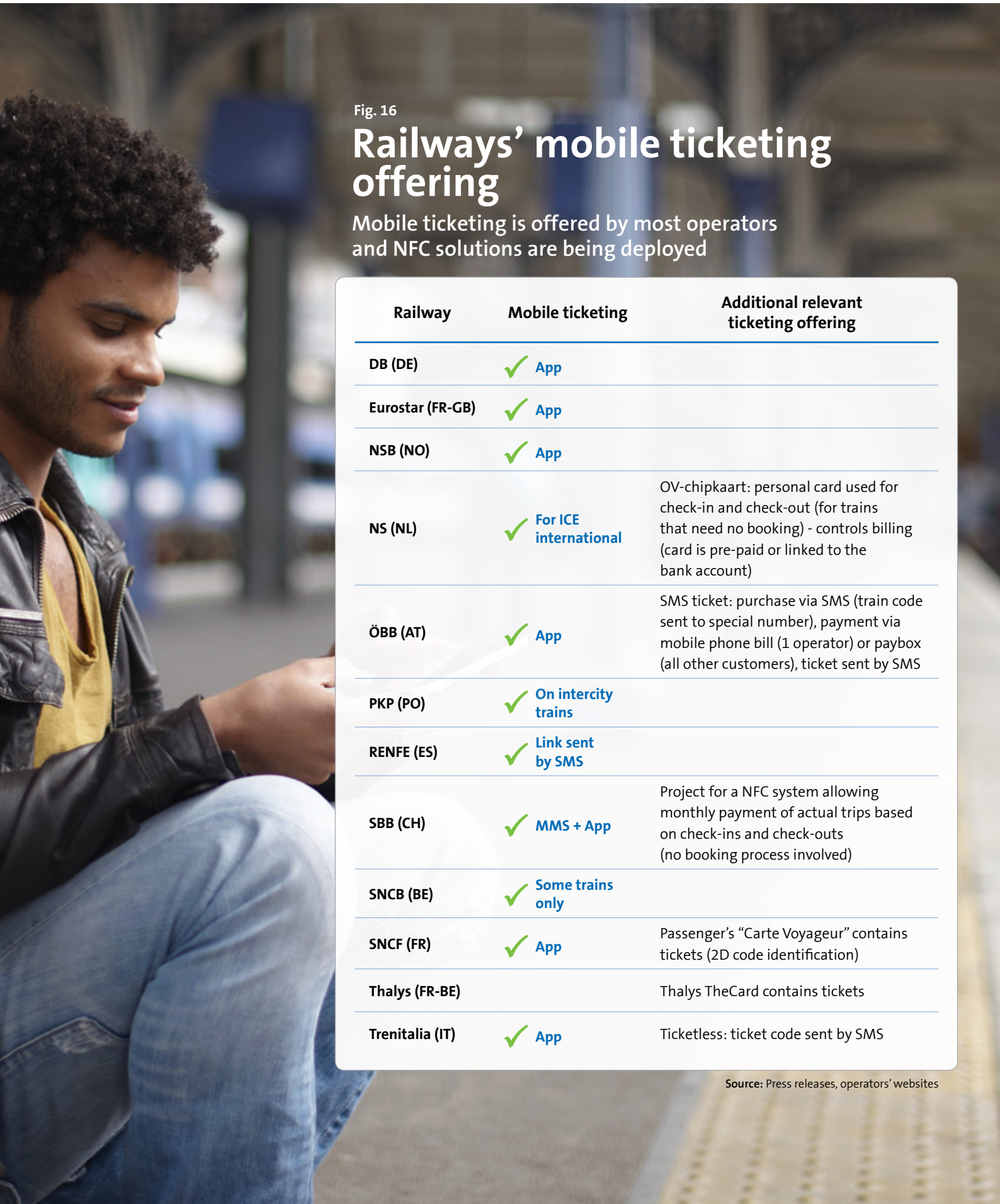


Fig. 16

Railways' mobile ticketing offering

Mobile ticketing is offered by most operators and NFC solutions are being deployed

Railway	Mobile ticketing	Additional relevant ticketing offering
DB (DE)	✓ App	
Eurostar (FR-GB)	✓ App	
NSB (NO)	✓ App	
NS (NL)	✓ For ICE international	OV-chipkaart: personal card used for check-in and check-out (for trains that need no booking) - controls billing (card is pre-paid or linked to the bank account)
ÖBB (AT)	✓ App	SMS ticket: purchase via SMS (train code sent to special number), payment via mobile phone bill (1 operator) or paybox (all other customers), ticket sent by SMS
PKP (PO)	✓ On intercity trains	
RENFE (ES)	✓ Link sent by SMS	
SBB (CH)	✓ MMS + App	Project for a NFC system allowing monthly payment of actual trips based on check-ins and check-outs (no booking process involved)
SNCB (BE)	✓ Some trains only	
SNCF (FR)	✓ App	Passenger's "Carte Voyageur" contains tickets (2D code identification)
Thalys (FR-BE)		Thalys TheCard contains tickets
Trenitalia (IT)	✓ App	Ticketless: ticket code sent by SMS

Source: Press releases, operators' websites

Methodology and notes

Amadeus combined an extensive data research and compilation with a large set of traffic modeling tools and techniques.

Long-distance traffic models were based on correlation between long-distance rail share of total traffic, national population densities, rail densities and geographical organization of rail industry in the territories in scope. These models were completed by multi-criteria analyses used to determine modal split and traffic levels along the main rail segments in Europe.

2020 scenarios were based on predictive traffic assessment models, taking into account all relevant criteria impacting traffic levels, including market- and infrastructure-related factors and organic growth coefficients based on historical correlation between rail traffic growth and economic growth.

The research and analysis was carried out by Amadeus Rail between July and December 2012.

Definitions

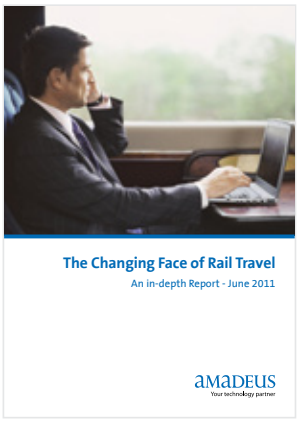
Passenger-volume or PAX:
a single traveller consuming a single rail travel segment between two main stations

Passenger-kilometers or PKM:
PAX x average segment distance =
total distance travelled by passengers

Segments are defined as city pairs (O&Ds) or legs

Sources

- Data from over 100 national railways, pan-European industry and government agencies
- *Air and Rail Competition and Complementarity.* Steer Davies Gleave (2006)
- *Potential Business for International Rail Travel across Europe, Product Portfolio Strategy*, Amadeus (September 2012)
- *The Changing Face of Rail Travel*, Amadeus (June 2011)



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