Proposal to the European Commission

For the Development of the
Conceptual and Organisational Aspects of a
Community Rail Market Monitoring Scheme

Project Nr. TREN/E2/08-2000

Final Report
Submitted by

GIVENTIS
Bankastraat 99
2585 EJ The Hague
Netherlands

+ 31 70 352 0951 office
+31 70 352 1728 fax
rein.westra@giventis.com

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1. Introduction

GIVENTIS is pleased to submit to the European Commission its Final Report containing its proposals for the development of the conceptual and organisational aspects of a rail market monitoring system.

On 26 February 2001, the Council adopted three Directives under the rail infrastructure package, which came into force on the publication date of 15 March 2001 (Directives 2001/12, 2001/13 and 2001/14, published in OJ L75). In art. 10b (1) of Directive 91/440, as modified by Directive 2001/12, the Commission is requested to make the necessary arrangements to monitor 'technical and economical conditions and market developments of European rail transport' by 15 September 2001 at the latest.

This report contains the outlines of a proposal for the content, the structure and the set up of a Rail Market Monitoring Scheme (RMMS) that should enable the Commission to meet the requirements on the reports to the European Parliament and the Council as set out in art. 10b (4) of the said Directive.

This scheme shall monitor the use of the networks and the evolution of the framework conditions in the rail sector. It shall also ensure the active cooperation between the appropriate regulatory bodies of the Member States. To that end, the Commission shall closely involve representatives of the Member States and of the sectors concerned in its work, including users.

The Commission has set up a Working Group for the Rail Market Monitoring Scheme (RMMS) under the Regulatory & Advisory Committee provided for in the same Directive. In this Working Group, officials of the national Transport Ministries represent the Member States and stakeholders representing users, manufacturers and labour interests have been invited to make their representations.

In order to support this action the Commission decided to request the support of a consultant to help the Commission with the organisational and administrative aspects of the working group, and advise the Commission on the technical aspects.

GIVENTIS is pleased to be able to report on the activities it has undertaken in support of the Commission and has undertaken the following activities:

1. Conducted analysis the provisions of Directive 2001/12/EC and elaboration of a concept of how the Commission should comply with the monitoring obligation under art. 10b of the thus amended Directive 91/440/EEC.

2. Developed written proposals as to the basic parameters of such a monitoring scheme to include:

    a. The organisational structure

    b. The data and indicators to be used

    c. The types of appropriate analyses to be undertaken

    d. The modes of cooperation needed with Member States, and regulatory bodies, market actors, etc.

    e. The resources needed to conduct the monitoring

3. Specified the appropriate outputs of the scheme

4. Advised the European Commission on subjects related to the rail monitoring scheme raised by the working party

5. Provided organisational and administrative assistance to the European Commission related to the meetings of the working group and the regulatory committee.

According to art. 10b (4) of the modified Directive 91/440, the Commission shall report to the European Parliament and the Council on:

a) The evolution of the internal market in rail services;

b) The framework conditions;

c) The state of the Trans-European Rail Freight Network;

d) The utilisation of access rights;

e) Barriers to more effective rail services;

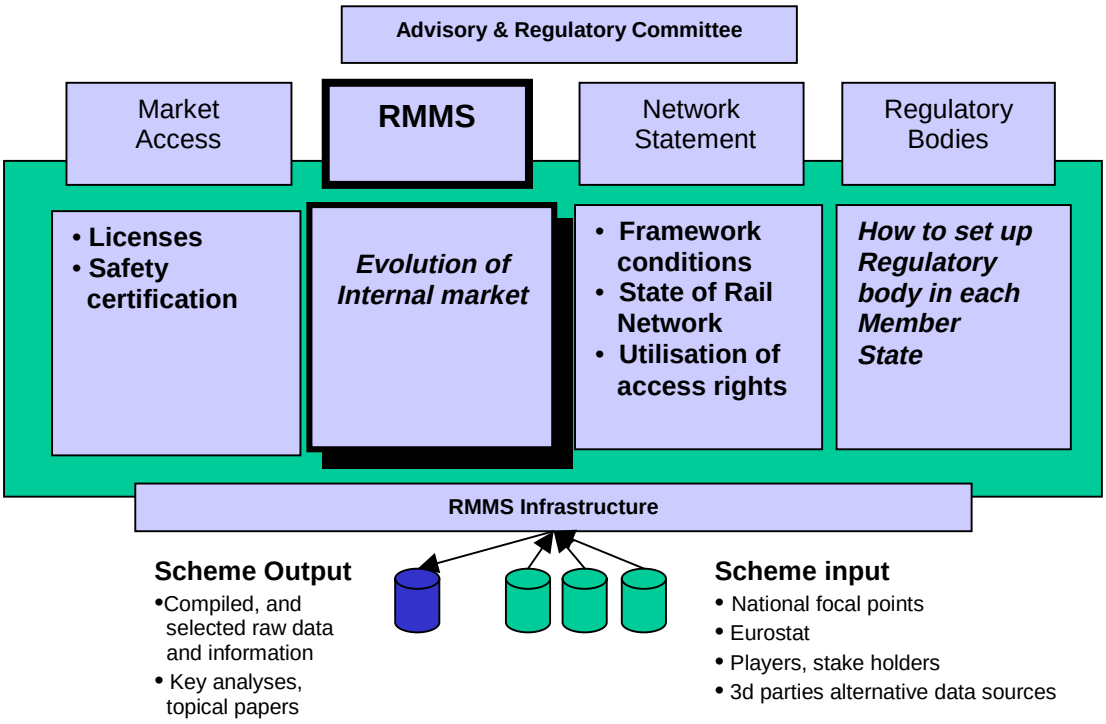
f) Infrastructure limitations;

g) The need for legislation.

The proposed RMMS is intended to provide the analytical basis for such reporting in the form of the various output products it will generate, supported by the input from Member States, as well as interested parties and Stake Holders.

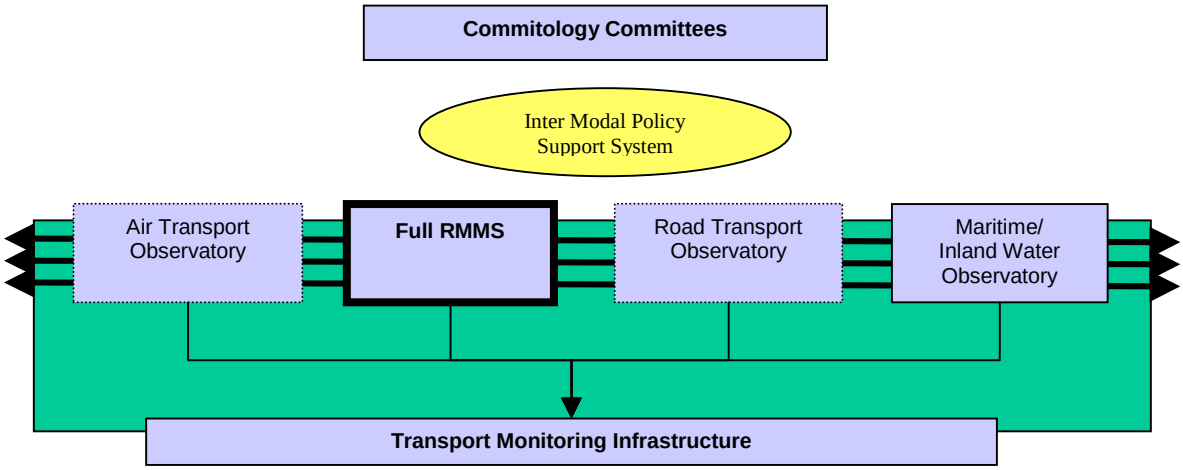
The RMMS is to be developed with the benefit of input from a Working Group along side other working groups equally working on aspects of the implementation of the package of railway Directives. These Working Groups cover the infrastructure, the access and the regulatory framework to be established. The results of these working groups are to be reported to the Advisory and Regulatory Committee established to assist the European Commission in this matter, and disseminated eventually in a common informational infrastructure.

THE WORKING GROUPS



Equally, Member States have requested that the rail market-monitoring scheme not work in isolation from such schemes that might already exist such as for inland waterways. Member States have also requested that the rail modality not be seen separately from other modalities such as road and air transportation, and that the monitoring scheme should eventually cover all these modalities including short sea transportation, so as to be able to monitor and see the effectiveness of the overall transportation policy.

THE RMMS IN THE CONTEXT OF OTHER MODES - POTENTIAL



Same organizational setup
Similar dimensions
Consistent data

2. Methodology

To address the critical questions posed and specified in the reporting requirements, the following, non-exhaustive list of questions have to be answered through the processes and end products to be produced by the RMMS:

a) ***Market evolution***: Is competition increasing? Are prices – and unit costs - going down? Is there a shift in the modal shift in favour of transport by rail? Is the market growing?

b) ***Framework conditions of the access to the network***: Have the Directives been implemented and how? What are the framework conditions of the rail market and has open access been achieved?

c) ***Technical condition of the TERFN***: What is the state of the TERFN, as indicated in the technical parts of the network statements?

d) ***The utilisation of access rights***: How are access rights allocated? Has open access attracted operators other than the incumbent ones? Are the load factors prohibitive? Are the available paths attractive? Are all these paths used? Does open access work in enabling new competition?

e) ***Barriers to more effective rail service***: What are the barriers to entry to the railway markets in relation to technical limitations of the network or restrictions to access to training facilities for other than national staff?

f) ***Infrastructure limitations***: How are bottlenecks addressed? What are investments, or planned investments, to reduce infrastructure limitations?

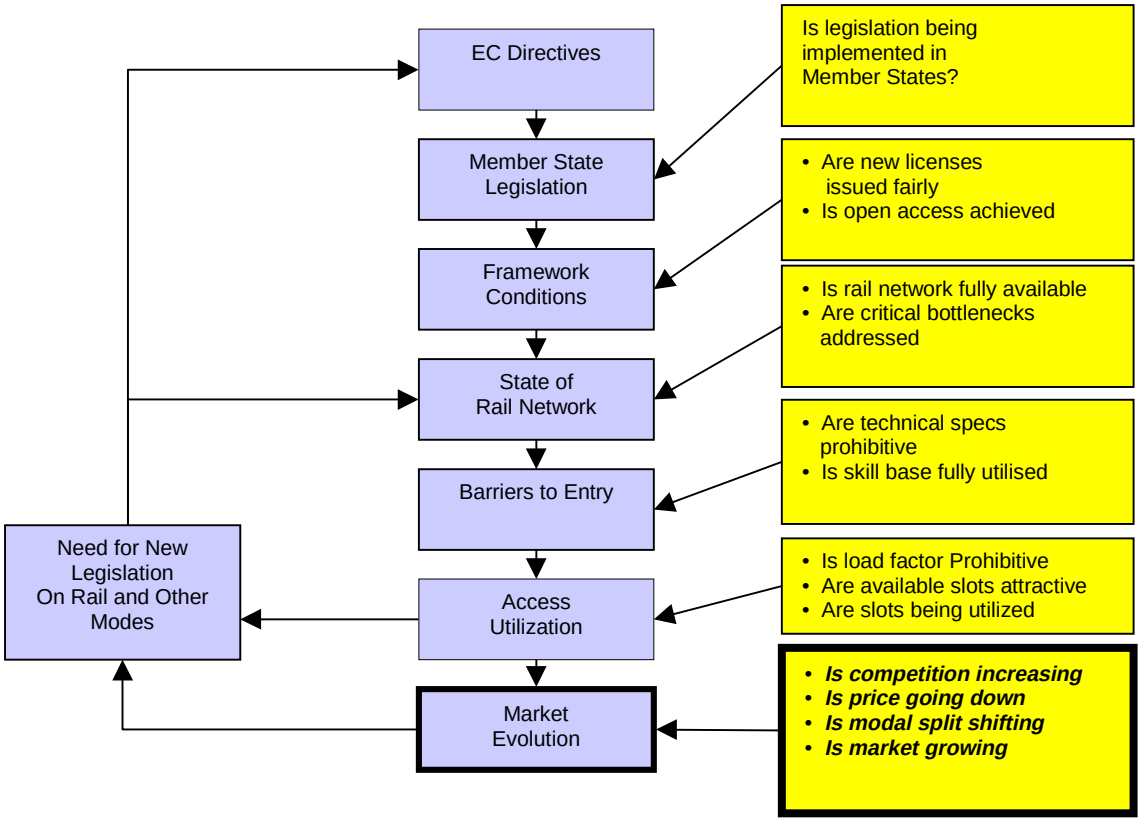
g) ***Is there a need for new legislation:*** On the basis of the market monitoring in relation to the goals set in the Directives, is the common transport policy effective and efficient?

On the basis of the information requirements mentioned above as well as the available data, GIVENTIS has elaborated a proposal for a Rail Market Monitoring Scheme (RMMS) which should enable the Commission and interested parties to monitor the implementation of the Directives in the Member States, monitor the evolution of the rail market and to analyse and to evaluate the Community rail policy.

Critical to the conception of the RMMS is the notion that it is a policy effectiveness evaluation process that should result in issue analysis and recommendations as to how the policy can or could be adjusted to achieve the stated policy goals.

Such a policy loop-back can engage the process at any level of implementation, be it at the Member State implementation or at the technical compatibility level, or at the level of the conditions for doing business being made unfavourable to new entrants.

THE POLICY EFFECTIVENESS ANALYSIS FRAMEWORK



The results of this monitoring and these analyses should be the basis for policy development and the development of new legislation, if necessary.

To that end, the RMMS should:

- Collect the relevant information from various official and unofficial sources
- Publish *relevant* statistics
- Publish or make known, *relevant* information
- Publish *integrated view* on the market in analyses and position papers

The information collecting should be at first practical, based on available data and sources and subsequently become more prescriptive, defining specific information needs, and approaching relevant parties to generate this data.

An informational infrastructure is therefore needed, which the RMMS will build, maintain, and operate. Such an informational infrastructure could consist of some key elements including a learning network of Member States and Stake Holders, as well as a document collection and dissemination system such as CIRCA, and a website with public and restricted access modes. Key comparisons will eventually also be useful – if they can be made – with such markets as the USA and Japan, which each have their own specific conditions and policies, and which can provide valuable lessons.

The RMMS has been designed based on the following assumptions:

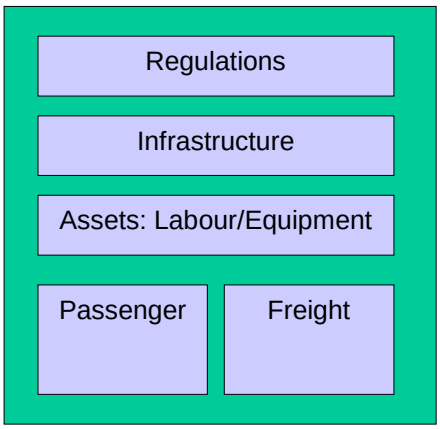
- The scope of the RMMS will be focused on markets in the first stage, but it will eventually include policy compliance, framework conditions, state of the rail network, even though the data collection is being designed through other Working Groups than the RMMS Working Group;
- There will be a single monitoring, data collection and disseminating infrastructure, which can be modelled on the inland waterway monitoring scheme, encompassing qualitative and quantitative aspects.

  The infrastructure will consist of a public section containing statistics, information and analysis, as well as a restricted access section that will be used by data suppliers for the provision of data and the dissemination of classified or confidential information;
- Wherever possible, existing data and data collecting infrastructures will be used and will be invited to feed the RMMS;

The RMMS is conceived above all as a shared analytical and learning network, which gathers input for analysis of data and information on rail market developments for policy evaluation and development, and which subsequently performs these analysis directly or indirectly. The results of these analyses are the principal output of the scheme

The scope of the RMMS will cover the direct functioning of the markets for passenger and freight services, as well as related aspects for infrastructure, and assets needed in terms of equipment and labour, and the regulatory framework under which they operate.

RMMS SCOPE: Aspects and Sources of Information



Sources of Data

Government: Fed/Regional/Local Regulators

Infrastructure Managers

Suppliers
Financing / Leasing companies
TOC's
Staff/Unions

TOC's
Intermodal Operators
Agents/ Forwarders
Shippers/Consignees
Customers

For each of these aspects we have inventoried available information and statistics, and specified analyses to be performed, and identified such analyses as might already be available from various sources. For each aspect therefore a focussed set of indicators has been developed as a basis for answering the key policy questions at hand, as described above.

Even as we make these recommendations, the situation both in the market and in the available data is fluid. New partnerships and new enterprises are formed continuously, and Member States implementation of existing Community Directives is progressing, and is allowing in some cases dramatic changes in the structure of the market.

At the same time the European Commission has proposed a major new Regulation on the development of railway market statistics. Currently, statistics are collected under Council Directive 80/1177 which only covers freight transport as performed by a specified list of then existing railway administrations.

The new Regulation sets out to define a set of common rules for transport statistics, covering annual and quarterly statistics on goods and passenger transport, covering the flows, and supplemental statistics on safety. The RMMS should make active use of such new sources of data, and should enable the effort to shift the focus on analysis rather than on gathering of information.

3. Freight Market

For each aspect of the Freight market, a focussed set of indicators has been developed as a basis for answering the key policy questions at hand, as described above, based on first available information, and subsequently on convictions as to the real requirements

For Freight Markets we have identified indicators to monitor the following aspects:

1) ***Transport Volume***, to indicate the size of the market, and analysed as to growth over time, and provided with forecasts and seasonal effects analysis;

2) ***Quality,*** objective measures, as well as subjective, as perceived by the user, and analysed as to improvement over time and as to the cost of non-performance;

3) ***Safety***, specifically for freight, and analysed as to the causes of accidents;

4) ***Price and price structures***, and analysed as to the degree and effect of subsidization;

5) ***Modal Split decisions***, also in relation to their relative economics and relative environmental impacts, and analysed also as to the factors influencing the choices made by users by segment;

6) ***Structure of the market*** in terms of the identification of actors, the nature and size of their activities on an individual level within the relevant segments being served.

For each of the indicators and analyses, an inventory of available data has been made and will continue to be on going, and the details thereof are available in the Appendix. The Appendix is truly a living document and a dynamic process, as Member States and Stake Holders develop new documents themselves that fit the requirements. Equally some examples of existing analyses and potential frameworks to be developed have been given so as to be able to scope the work and define the types of skills required to conduct the actual work.

It is intended that the Appendix become the model for the on-line data availability infrastructure: a structured and continuously evolving set of data and information as well as working papers and evolving drafts thereof for members of working groups on different aspects of the market as they will continue to do their work.

INDICATORS FREIGHT	Transport Volume	Quality	Safety	Price	Modal Split	Structure
Statistics	Traffic flows Types of transport O&D flows	On time performance Customer satisfaction	Number of accidents	Revenue per TKm	Volumes by mode	Number of actors Traffic, turnover, balances, per actor
Analyses	Corrected traffic flows to cover all actors Indices Forecasts Seasonal effects	On time performance index Causes of delays Cost of Non-quality	Index Causes of accidents specific to freight	Price Index Price structures Price supports and subsidies	Modal split choice analysis Relative economics Relative environmental impact	Relevant segments Market shares, per segment Capacity, load factors Corporate control, financial health, subsidies

Transport Volume

Transport Volume is monitored to indicate the size of the market, and analysed as to growth over time, and provided with forecasts and seasonal effects analysis

This is required so as to be able to answer the question whether or not the rail freight market is growing and hence whether the policies in place are being effective.

Statistics

Official statistics are available from Eurostat based on the Directive 80/1177/EEC stipulating that named national railway enterprises publish a specified set of statistics. While this is a useful starting point, it is clear that these statistics are no longer reliable in the sense that the enterprises named either do no longer exist, such as British Rail, or are no longer the sole enterprise operating. In Sweden and Denmark the named enterprises only cover 80% of the market, with significant new players having entered the market.

There are also unofficial statistics by country and by Principal Railway Enterprise (PRE) published by the UIC, with similar variables being available, but with similar shortcomings, in that not all enterprises are members of the UIC.

To a great extent, these shortcomings have been recognised and are being remedied by a new regulation already proposed to the Parliament and Council.

Analyses

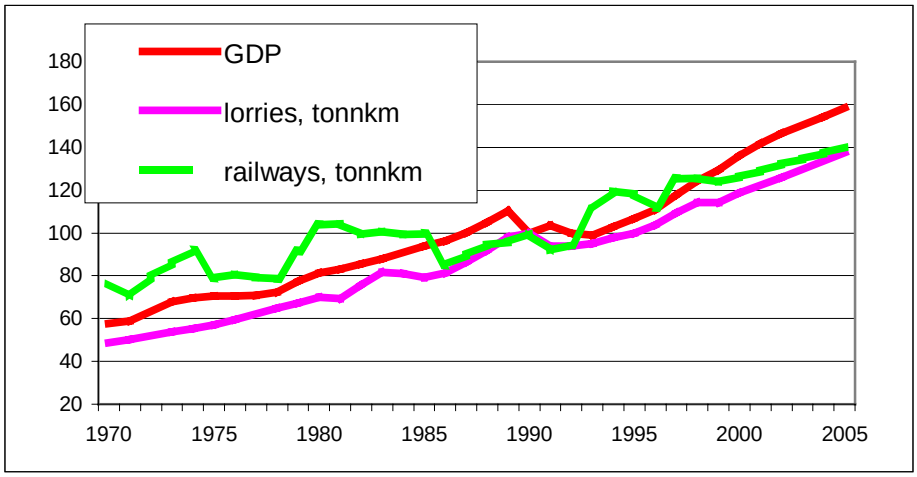
In light of the above the principal analysis to be conducted is to create a new set of corrected statistics on the size of the market.

This will be a matter of rebuilding the statistics from the ground up, in conjunction with an analysis of the structure of the market, meaning a listing of players (license holders) per Member State and obtaining some key statistics about them, such as the size of their traffic and/or revenue streams.

Indeed this combination of activities is recommended as the first priority, and can and should be commenced as soon as feasible.

Secondarily and at some point thereafter, this basic data can be the basis for developing forecasts and seasonal analysis. Finland has provided the Working Group with an example of the forecasting it performs.

Finland: Domestic freight transport between 1970-1999 and estimate for years 2000-2005 (index: 1990=100)



The RMMS will have to establish some agreed forecasting methods – based on existing methodologies developed by Member States - so as to make the estimates comparable across Member States and transparent as to the assumptions made.

Seasonal effects are important in that the peaks and valleys can be significant deviations from the average and can led to bottlenecks up to a year earlier than perhaps anticipated on the basis of averages only.

Quality

Quality is often defined as the degree to which a service meets expectations. Quality is therefore monitored in objective measures, as well as subjective, as perceived by the user, and analysed as to improvement over time and as to the cost of non-performance.

Statistics

The basic indicator is on-time performance, as that can be objectively measured, to be supplemented with information from customer satisfaction surveys, to be conducted by various possible candidates such as the UIC or ultimately by the European Commission itself.

Quality and the lack of it are deemed to be a major factor in the rail sector losing ground to the road haulage sector, precisely in those segments where rail should have a natural advantage.

Analyses

The analyses to be conducted are several. The most immediate and urgent is to be able to track the evolution of the quality over time. Now, to a large extent, quality is seen as a matter for the operator to publish or not as it deems fit from a commercial point of view. This cannot be forced easily, except as a matter of public service or conscience, and eventually as a matter of competitive advantage or necessity.

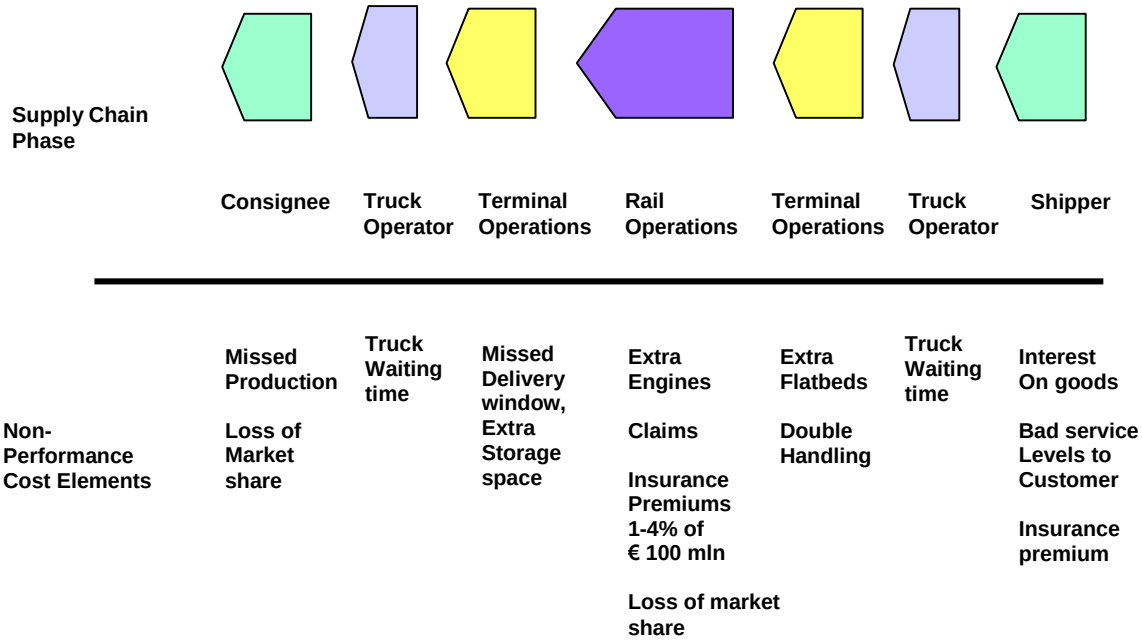
Equally important is to understand the causes of delays, and reference is made to the study performed by GIVENTIS for the UIRR on developing a quality strategy, and in which indeed the causes were analysed per phase of the transportation planning and execution process.

It was discovered that in some cases only 40% of trains were on time, and that the causes lay to a large extent with the operators due to a lack of engines and drivers, but equally in the lack of proper planning and coordination of activities between the various actors.

Another aspect analysed and recommended here is the cost of non-performance. For the UIRR members, the cost of non-performance was analysed as € 40 mln. per year.

The costs and causes of non-performance are indeed complex and multiple. A small delay at the beginning of the process can trigger major costs later on in the process for other parties to bear. A train arriving late means either the next train will be late or another engine has to be mobilised, as well as an extra set of wagons, and handling is duplicated as containers are first stored before being loaded on a waiting train.

COST OF NON-PERFORMANCE IN COMBINED TRANSPORT



Safety

Safety is an issue thus far seen as an operational public policy aspect for the entire industry, without distinction between freight services and passenger services.

We propose that safety be analysed for freight trains separately from passenger trains, not to make comparisons between the two types of services, but to track the progress of freight rail movements over time and to be able to effectuate improvements.

Statistics

Statistics are available on a combined basis for freight and passenger services, although some Member States indicate that - of course- specific data on freight trains are available on an internal and confidential basis. Also here the proposed new Regulation on railway statistics provides for improved information availability, with a specific table on the number of accidents involving dangerous goods.

Analysis

The basic analysis to be performed, when data is made available, is an index of safety over time as related to freight trains.

More importantly is to gather in a systematic manner the underlying causes to accidents in the freight sector, which of course carries a special responsibility when it concerns dangerous goods. We note care must be taken when interpreting such

statistics on freight to passenger services as they cannot be compared easily; each business has its own dynamics and cycles and hence their own statistical bias built in.

Price

Price and price structures are to be analysed as to transparency and as to the degree and effect of subsidization. In this respect, prices should be distinguished from tariffs, which are the published rates. Only negotiated prices can be taken as indicator of the development of the revenues for the railway operators and of the cost to the users.

Statistics

As the freight industry is largely a business-to-business sector based on private contracts encompassing many service elements, there are no official statistics available. Through the UIC membership some indicators are possible based on members' total revenue and members' total traffic, which gives an overall impression of price level over time. However, revenue will include many service elements, not just the traction, and not just the capacity provided, but also charges for handling, documentation, terminal services etc. These are the elements that go into the price. Various national rail customers' associations and institutions are following developments in this field and will be asked to support he RMMS.

Analyses

The analysis to be performed is primarily one to see if over time the price level of rail service is indeed going down. This would be a stimulus in competition with other modes, when and if indeed the quality and the service parameters are correct. Price alone will not be enough.

In addition, the transparency of the pricing is important so as to be able to know what one purchasing ahead of time. ***An investigation into price structures and service bundling will indicate the freedom shippers have to choose the composition of the service to match their own logistics configuration.***

Finally, it is increasingly important to understand the degree to which subsidy is applied either to the price or the cost of the rail operator, directly or indirectly through access charging. In an international, open market, such subsidies can cause market distortions, which may not be conducive to the goals of the Member States to create such an open market.

Modal Split

The underlying strategy of the European Commission is to achieve a better balance in the use of rail versus other modes of transport; in the case of freight, road haulage should be replaced to a larger extent by rail transport than has been achieved thus far. The Commissions White Paper published in September 2001 describes a preferred approach to achieving this goal, which *"…comprises a series of measures ranging from pricing to revitalising alternative modes of transport to road and targeted investment in the trans-European network. This integrated approach would allow the*

market shares of other modes to return to their 1998 levels and thus make for a shift of balance from 2010 onwards."[1]

Modal split decisions (i.e. what mode of transport is chosen, and why) will therefore be monitored, also in relation to their relative economics and relative environmental impacts, and analysed further as to all the other performance related factors influencing the choices made by users by segment.

Statistics

Most Member States publish official statistics on the modal split, also by commodity, so there is a fairly good basis on which to track progress along these lines. Also other parties such as UIC publish similar data. Eurostat also collects statistics on modal split, including a breakdown by commodity.

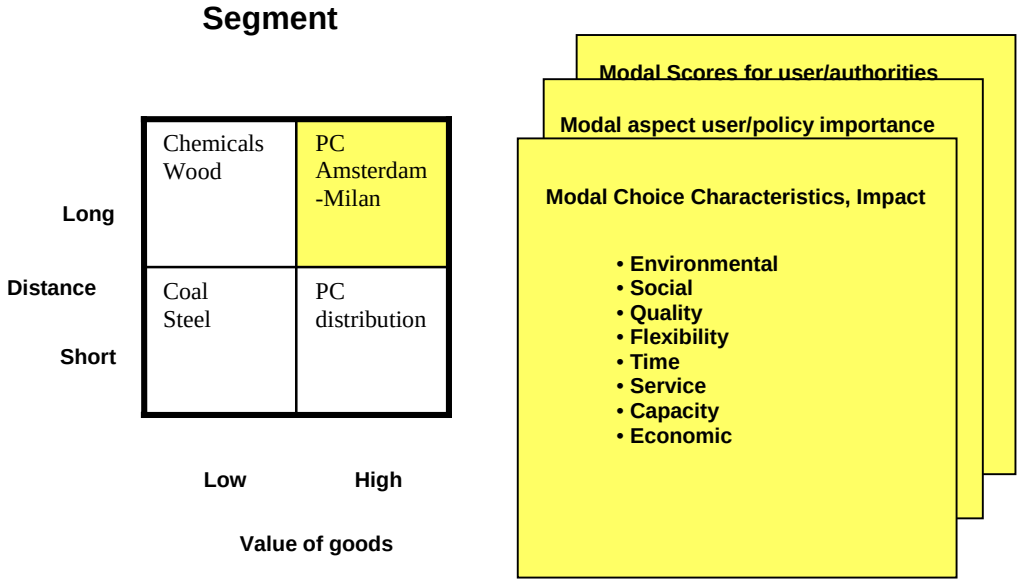
Analysis

The basic analysis to be conducted of course is progress over time as to modal split achieved, between the rail and road, as well as water borne modalities.

Subsequently, in order to understand the choices made by manufacturers, perhaps from another continent, it is important to analyse the relative economics of the decisions taken. Rail may take longer than truck in some cases, and in other cases may be faster – or could be faster if executed well.

Herein lies one of the most significant analyses to be performed, since besides the economics, there are many other dimensions along which choices are made, and those choices differ per segment being served.

MODAL CHOICE CRITERIA



[1] WHITE PAPER European transport policy for 2010: time to decide Brussels, 12/09/2001COM(2001) 370

Frameworks need to be built to fully understand demand side, i.e. the manufacturers' motivations for using or not using a certain mode of transport for a given segment of products or clients being served.

It is clear that for low value bulk goods like coals or steel, travelling a short distance that rail service is probably the cheapest and the most logistically logical, given also aspects such as the capacity required, and the relative low levels of flexibility needed.

Even for the longer distance, rail is the preferred mode for commodities like chemicals and wood, for cost and capacity reasons.

As to high value goods, such as PC's, travelling a short distance for purposes of distribution, clearly road services are needed, not on price, but on service, time, flexibility, and overall service quality.

The real battlefield should be where these high value or perishable goods are being transported over longer distances, say from Amsterdam to Milan. A good rail service takes 18 hours, and should beat road service on cost, on time, and on quality, particularly given road congestion, making arrival time uncertain. In reality the rail service takes much longer than 18 hours, for which reason road service still wins. ***This is the strategic battlefield where rail service can and should win, if the quality is restored to the service***.

The environmental impact is a highly complex problem not to be represented in a single indicator. A Dutch Government study has shown a good truck to be almost as clean as rail, under certain conditions. These are complex analyses, made even more complex when one has to calculate the effect of cheap imported electrical power generated by coal. The analysis has to be done, but probably outside the RMMS by specialised government and academic agencies.

Structure

The structure of the market has to be monitored in terms of the identification of actors, the nature and size of their activities on an individual level within the relevant segments being served.

It is in this arena where it becomes clear the RMMS is not a statistical exercise but a market-analytical policy development exercise. Very clear and close analysis must be performed as to which players are operating in which segments so as to see the evolution of the market, both in the behaviour of large players as well as in the emergence of small, new players, that do not even count in the statistics.

Statistics

There are no current statistics identifying traffic or turnover by player in a comprehensive manner. The new Regulation proposed to cover this need will do so only to cover some 98% of the total market whereas the total market is indeed required to be mapped out. Hence, a manual process is required to constitute a mapping out of the market in its various segments.

Analysis

The key analysis is to map out the market shares of the players in each of the relevant segments that can be identified, such as general bulk, long distance combined transport, short distance coal and steel and chemical transport associated with specific plants and ports.

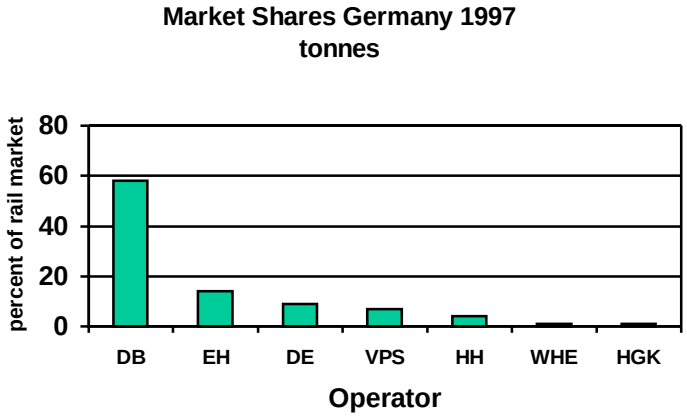
The analysis should cover further their capacity and load factors to anticipate where investment and new capacity will be needed.

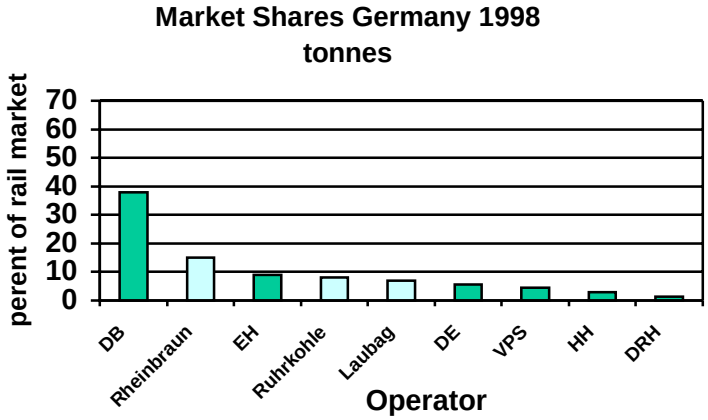
Careful analysis is also needed to see how the corporate control over the various players is evolving and further thought must be given as to the structure and nature of each segment.

For example we see the evolution of the rail sector in the German short distance, heavy coals and steel segments, where DB has lost market share, or has given up services, for others to perform.

As a result, DB has a total market share in Germany as measured in tonnes only, of less than 40%, whereas it had close to 60% a few years ago.

EVOLUTION OF MARKET SHARES – EXAMPLE GERMANY





Thus we see new names and new players operating in specific segments where in fact the competition occurs. Further close analyses must make clear the roles that players take on in various markets.

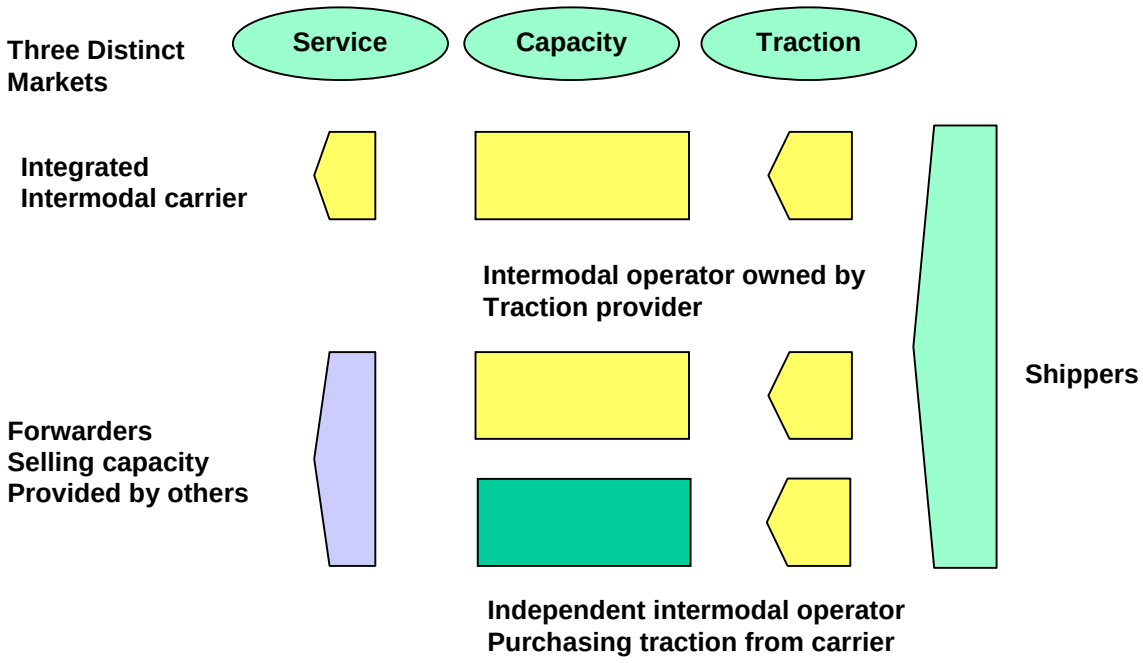
In the combined transport market, for instance, some players, generally the PRE's take on the role of provider of traction, provider of railway car capacity, and the role of marketer, selling this service directly to end users. But because they are also providing traction they are in direct competition with their own customer base, which is at the same time a captive customer, as most PRE's are the sole providers of such traction.

Such PRE's are often also providers of complete intermodal services to forwarders, again competing with the customers whom they provide with wagons.

In addition they are also often shareholders of such combined transport companies, whereby such companies are in a weak negotiating position when procuring the traction and the wagons.

Methodologically this means further that when it comes to estimating the revenues in this market it should include the revenues of the forwarder community selling the service, it should distinguish further the revenues earned by PRE's from selling traction and selling wagon capacity and from selling themselves these services to end users. No such data is available today.

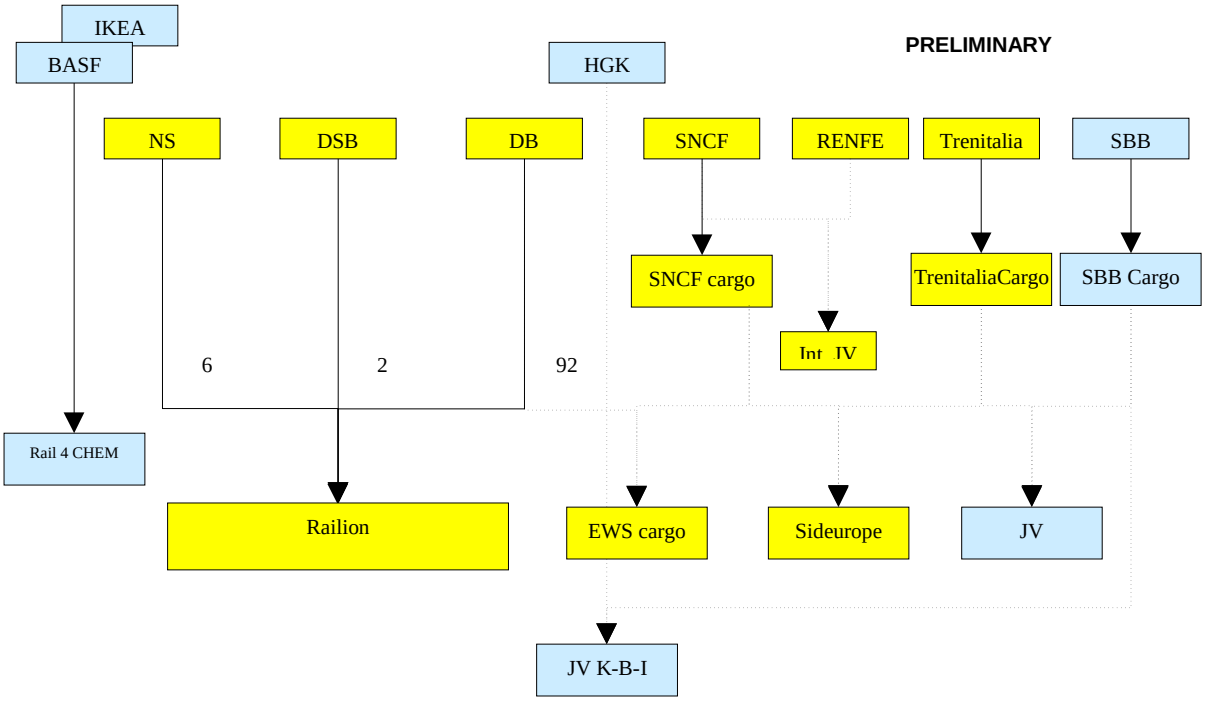
STRUCTURE AND ROLES OF COMBINED TRANSPORT MARKET



Further we see how the major operators today are forming alliances so as to be able to integrate their services better along key corridors and market. Here too we see the beginnings of new players emerging. We give here a preliminary version of an analysis that must indeed be performed quite exhaustively to fully understand the dynamics taking shape.

We see today how the traditional PRE's are well connected in cooperative alliances along their traditional corridors. We see also however new players emerging, particularly manufacturers such as BASF and IKEA, taking it upon themselves to establish rail services fro their own use, or shared use within a consortium of interested parties.

EVOLUTION OF ALLIANCES IN EUROPEAN RAIL FREIGHT SECTOR



It is clear that this will be a crucial high point of the analytical effort, so as to be able to report whether or not indeed the market is becoming more dynamic, and open, so as to allow new players to emerge and provide new innovative services at lower process and at higher quality, as a basis for influencing the modal choice analysis outcomes being pursued.

4. Passenger Market

For each aspect of the Passenger market - as for freight - a focussed set of indicators has been developed as a basis for answering the key policy questions at hand.

For Passenger Markets we have identified indicators similar to the freight market indicators to monitor the following aspects:

1) ***Transport Volume***, to indicate the size of the market, and analysed as to growth over time, and provided with forecasts and seasonal effects analysis, also per type of ticket and user;

2) ***Quality,*** objective measures, as well as subjective, as perceived by the user, and analysed as to improvement over time;

3) ***Safety***, also along new dimensions such as crime, and analysed as to the causes of accidents;

4) ***Price and price structures***, and analysed as to the degree and effect of subsidization;

5) ***Modal Split decisions***, also in relation to their relative user economics and relative environmental impacts, and analysed also as to the factors influencing the choices made by users by segment such as travel time;

6) ***Structure of the market*** in terms of the identification of actors, the nature and size of their activities on an individual level within the relevant segments being served.

As for freight, for each of the indicators and analyses, an inventory of available data has been made and will continue to be on going.

We will again here give examples of key analyses to be performed so as to be able to illustrate the market and policy issues to be explored by the RMMS in its task to monitor the market and its evolution.

In general, it can be said that the passenger market has a greater abundance of data available on price and on quality of service than the freight market, it being a public service rather than a private industrial service.

It is also a vastly more complex market with definitions blurring between city and regional light rail services, between regional and international services as are emerging between regions of different Member States. Also new and dedicated services like airport connectors are emerging, often as private operators, who sometimes have a significant impact on the overall market structure.

INDICATORS Passengers	Transport Volume	Quality	Safety	Price	Modal Split	Structure
Statistics	Traffic flows Types of traffic O&D flows	On time performance	Number of accidents	Revenue per PKm Price structures Subsidies, PSO compensation	Traffic by mode Average trip length	Number of actors Turnover, balances, per actor
Analyses	Corrected traffic flows to cover all actors Indices Forecasts Seasonal effects	On time performance index Causes of delays Customer satisfaction	Index Causes of accidents – international New safety dimensions – crime	Price indices Dependency on Subsidies	Modal split choice analysis Relative economics Relative environmental impact	Relevant segments Market shares, per segment Capacity, load factors Corporate control, Financial health, cost structures, subsidies

Transport Volume

Transport Volume will be monitored to indicate the size of the market, and analysed as to growth over time, and provided with forecasts and seasonal effects analysis, also per type of ticket and user.

Statistics

There are no official statistics as there are for freight in the sense of them having been made compulsory to report by Directive. The statistics are collected by questionnaire from Eurostat/ECMT/UNECE, and cover the PRE's along the main dimensions required. Again the new Regulation under discussion regarding rail transport statistics will provide in this need. Unofficial statistics are available extensively from the UIC.

Analysis

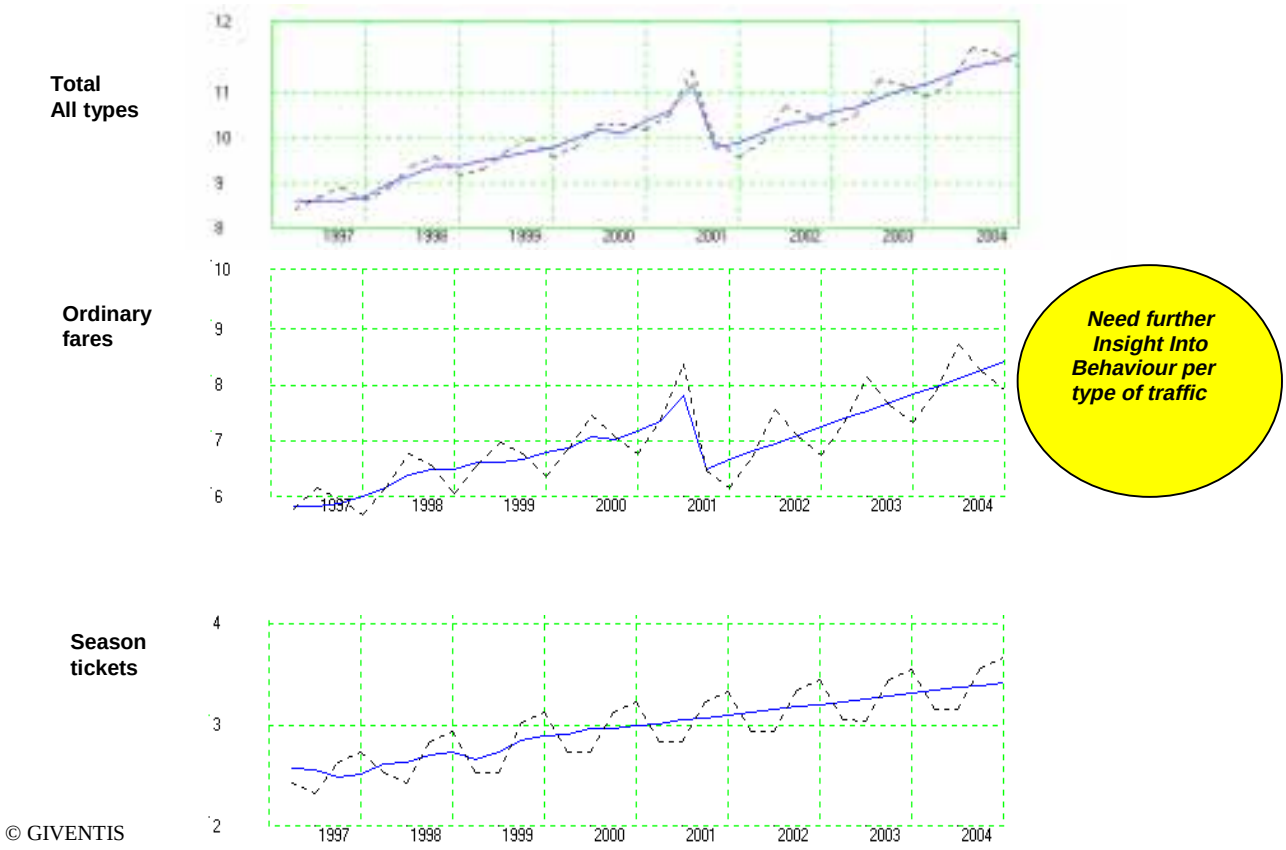
Again the first activity of the RMMS is to develop a comprehensive view of the market based on the reality on the ground as to actual operators present other than the PRE's.

Subsequently, analyses will be required to develop growth indices over time, and to develop forecasts based on methodologies to be developed and agreed on.

We have provided an example of the seasonal effects and hence the seasonally corrected data that can be obtained as a basis for developing a statistical type of forecast as developed by GIVENTIS.

SEASONAL ANALYSIS AND STATISTICAL EXTRAPOLATION – UK EXAMPLE

UK Passenger Rail Market
Passenger KM (bln) per Fiscal Quarter



Quality

Quality will be monitored through objective measures, as well as subjective, as perceived by the user, and analysed as to improvement over time, as is already being done by Member States.

Statistics

A key indicator of quality is on time performance, and this is being tracked in detail by a number of Member States as part of the PSO certification and contract management process.
We provide an example of the on-line data available from the UK Strategic Rail Authority who publishes performance by operator on a quarterly basis.

Table 2.1 **Public performance measure**
Percentage of trains arriving on time 1997-98 to 2000-01

	Long distance operators	London and SE operators	Regional operators	All operators	London & SE peak services
1997-98	81.7	89.6	90.6	89.7	86.9
1998-99	80.6	87.9	88.6	87.9	85.3
1999-00	83.7	87.1	89.1	87.8	85.1
2000-01	69.1	77.6	81.7	79.1	73.7
1997-98 Q1	84.6	91.9	92.3	91.8	90.8
Q2	82.3	90.5	91.0	90.4	89.0
Q3	78.1	84.8	88.0	86.0	79.9
Q4	81.9	91.2	91.5	91.0	87.8
1998-99 Q1	81.3	90.2	90.4	89.9	88.7
Q2	82.1	89.6	89.0	89.0	88.9
Q3	76.3	82.1	84.6	83.0	76.8
Q4	82.7	89.8	90.4	89.8	87.0
1999-00 Q1	85.0	93.1	91.5	92.0	89.9
Q2	84.3	90.6	90.4	90.2	89.3
Q3	79.7	78.1	84.0	80.8	74.4
Q4	86.1	86.9	90.3	88.4	86.8
2000-01 Q1	84.0	88.6	89.3	88.7	87.0
Q2	80.1	87.9	87.2	87.2	86.4
Q3[1]	47.9	57.7	70.9	63.1	50.0
Q4[1]	59.9	76.4	78.9	76.8	70.8
Percentage change 2000-01 Q4 on 1999-00 Q4	-30.4	-12.1	-12.6	-13.1	-18.4
Percentage change 2000-01 on 1999-00	-17.4	-10.9	-8.3	-10.0	-13.4

Such statistics are also provided by the PRE's or by the rail authorities in various other Member States and should also be available from each Member State's traffic manager.

Analysis

The key analyses to be performed centre around the tracking over time of the rail service quality achieved, by indices and by more qualitative tracking also of the shift in customer satisfaction.

A new dimension in this respect is the development of awareness of the crime factor in stations and trains affecting passengers feeling of safety and hence willingness to use rail as a mode of transport.

Some Member States are concerned by this aspect as a new and significant policy area to pursue in the promotion of rail as a mode.

Of further note is the use in the UK of a common customer satisfaction survey across all rail users and hence across all operators: perhaps it does deserve attention to consider as a model across Member States so as to enable consumer choice of operator and to enable cross operator and cross State learning processes.

CUSTOMER SATISFACTION SURVEY RESULTS – UK EXAMPLE

PPM results: Anglia Mainline

Within 5 mins	5-10	Within 10	10-15	15-20	Over 20	Cancelled	No Trains	Previous Year Within 10 mins	Year on Year Change +/-
54.3%	13.4%	**67.8%**	8.9%	5.2%	15.4%	1.8%	5,604	83.4%	-16

PPM results: Anglia Local

Within 5 mins	5-10	Within 10	10-15	15-20	Over 20	Cancelled	No Trains	Previous Year Within 5 mins	Year on Year Change +/-
83.8%	9.3%	92.0%	2.8%	1.3%	2.3%	1.6%	30753	91.8%	0

Mainline services suffered heavily from ESRs, especially between London and Colchester, throughout the period covered by 'On Track'. Services on local routes suffered from knock-on effects, with a series of broken connections.

National Passenger Survey results – spring 2001

Factor	% Satisfied or good	% Importance	% Dissatisfied or poor	TOC Type % Satisfied or good	National % Satisfied or good	Previous Wave % Satisfied or good	Spring 2000 % Satisfied or good
Overall opinion	71	12	17	77	69	66	68
Punctuality/reliability	53	13	33	65	58	76	83
Frequency of trains	72	10	18	75	69	76	82
Value for money	48	31	31	55	41	60	54
Info about train times/platforms	79	13	11	78	68	78	76
Upkeep and repair of train	61	20	18	69	59	66	73
Length of journey time	64	14	21	72	71	83	84
Amount of seats/standing space	74	16	9	73	61	70	83
Connections	58	24	18	62	65	72	69
Comfort of seats	67	22	11	64	55	62	72
Station ticket buying facilities	75	14	11	74	67	77	78
Appropriate environment to catch train	72	21	7	67	54	70	69

Complaints data

	Complaints per 100,000 passenger journeys	Complaints by source: Written	Pre-printed form	Telephone	Response performance to complaints: Within target	Within 20 working days
2001-2000	548	29%	69%	2%	46%	64%
1999-2000	476	27%	71%	2%	66%	82%

Safety

Safety will be monitored, also along new dimensions such as crime, and analysed as to the causes of accidents.

Statistics

Safety statistics, as has been discussed, are widely collected by Member States, and several public research centres and safety boards exist that have the express responsibility to investigate accidents.

Safety has already been mentioned in the customer satisfaction surveys to cover the degree of exposure to crime on or around stations or trains and should become part of the standard objective safety indicators to track.

Analysis

As a basic analysis again, an index or set of indices will be developed to track safety over time.

Causes of accidents need to be examined as they are by the various national safety boards, but need to be shared internationally as to the lessons learnt, particularly and obviously also with respect to international operations.

Such new dimensions as to safety in terms of crime need to be analysed and published so that travellers will see the risks beforehand and can make their choices accordingly. This will allow and encourage operators and officials to take the policy measures necessary to avoid customer defection due to the threat of crime, real or perceived.

Price

Price and price structures need to be monitored and analysed as to the trends, and the degree and effect of subsidization.

Statistics

There are of course huge amounts of data available as to specific prices of tickets as purchased by the public, but which will give little insight into the market.

Some sense of the level of the price is needed and is being provided by UIC data on the basis of total member revenues and total member passenger-km achieved.

Data is also being collected by the EC at DG TREN as to the amount and type of subsidy or support being given under various allowable PSO support regimes. It has become apparent that some € 35 bln. per annum of support is being given to the sector, along various lines and channels.

In addition, comparable data on rail ticket prices are already being collected in Member States and used in the calculation of the Community HICP (Harmonised Index of Consumer Prices). It may be possible to use these data to make specific price indices and comparisons for rail transport.

Analysis

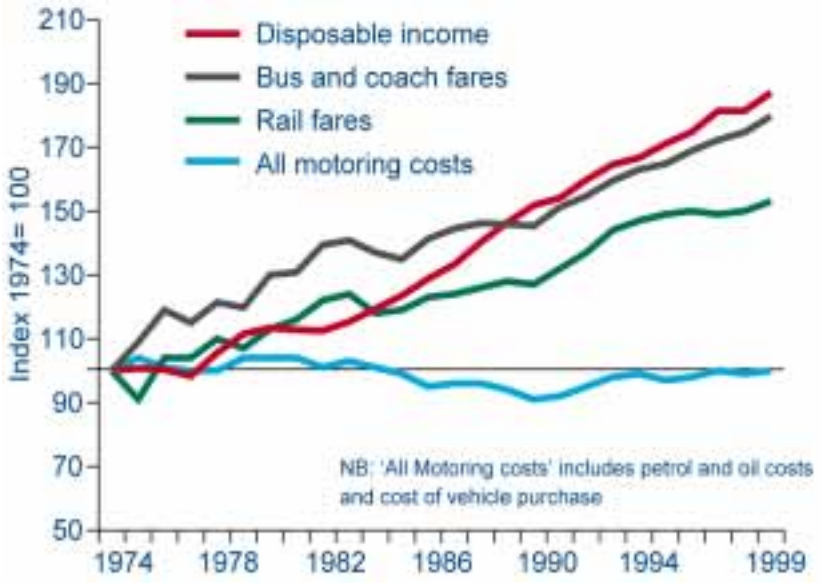
Key indices will be developed as to price developments over time, also in relation to the general price levels in Member State economies. For example, several Member States, including UK are developing a specific rail fares price index for this purpose.

Further, detailed analysis needs to be conducted as to the precise nature and effect of subsidies and supports, be they direct or in the form of PSO contracts and infrastructure price policies, and the degree of dependency of the operator on such supports.

We have examples of price indices from the UK and various other Member States. In several cases it was apparent that the cost of rail fares has gone up considerably.

INDEX FOR RAIL TRANSPORT COSTS – EXAMPLE UK

Real changes in the cost of transport and in disposable income



Equally significant is the publication in the UK of the amount of subsidy as received by each operator and analysed as to the percentage it represents in the revenues.

SUBSIDY RECEIVED – EXAMPLE UK

Island Line	3.6	1.9	69.7	52.8	53.7
Arriva Trains Merseyside	163.9	55.0	37.6	33.6	32.9
North Western Trains	517.6	161.4	33.9	32.3	28.8
Cardiff Railways	64.8	18	33.2	27.6	26.3
Arriva Trains Northern *	601.1	180.3	22.8	20.0	18.0
ScotRail*	1,139.2	225.4	20.4	19.0	17.5
Central Trains*	802.9	146.2	21.4	15.2	17.5
Wales and West	502.7	62.4	13.4	12.4	11.0
CrossCountry	1,493.8	86.8	7.4	5.8	5.4
c2c	473.2	24.9	5.6	5.3	5.0
Silverlink	610.1	30.6	6.5	5.0	4.7
Anglia Railways	453.5	23.6	6.8	5.2	3.8
Connex South Central	1,560.8	50.1	4.0	3.2	3.0
Great Western	1,491.5	48.6	3.9	3.3	2.9
West Coast Trains	2,124.0	58.1	3.4	2.8	2.7
Connex South Eastern	1,936.3	64.0	4.7	3.3	2.7
Thames Trains	583.2	16.0	4.6	2.7	2.5
Chiltern Railways	300.5	10.5	4.9	3.5	2.4
South West Trains	2,434.9	57.4	2.8	2.4	2.3
WAGN Railway	1,212.2	26.2	3.3	2.2	1.8
Great Eastern	1,100.3	9.8	1.4	0.8	0.9
Great North Eastern Railway	2,466.5	17.6	1.7	0.7	0.2
Midland Mainline	668.5	0.9	0.4	0.1	(0.1)
Thameslink	754.2	(17.6)	(0.9)	(2.3)	(3.2)
Gatwick Express	117.9	(10.3)	(6.1)	(8.7)	(10.0)
Total	**23,014.40**	**1347.8**			
Average subsidy per passenger mile (pence)		5.9	4.0	5.1	

Modal Split

Modal Split decisions are to be monitored, also in relation to their relative user economics and relative environmental impacts, and analysed also as to the factors influencing the choices made by users by segment such as travel time.

Statistics

Member State Ministries of Transport and their colleagues in national statistical bodies do publish substantial amounts of data on passenger modal choice.

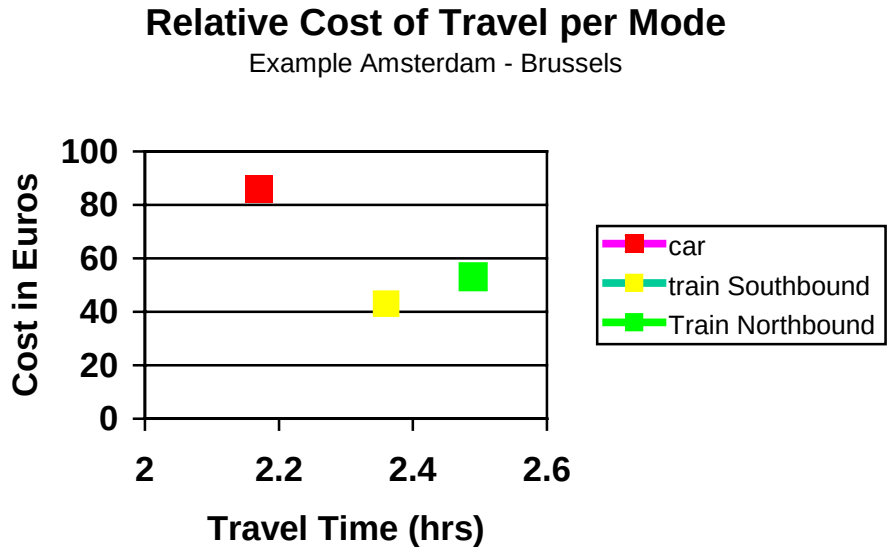
Traffic by mode is followed and for rail often, average trip length is available from various sources.

Analysis

Apart from tracking over time the shifts in modal choices being made, some key analyses are already being performed at the request of DG TREN as to the relative cost and time economics along a number of major corridors.

Some 70 corridors are being examined as to the time it takes to travel and the cost incurred.

RELATIVE USER COST AND TIME ECONOMICS



Source: OGM

On a full cost basis it becomes clear that use of the car is more expensive than the train along certain routes, and the intent is for consumers to be able access such comparisons on-line to make informed modal choices.

Structure

The structure of the market will be monitored in terms of the identification of actors, the nature and size of their activities on an individual level within the relevant segments being served.

Statistics

As for the freight market, the passenger market data has to be built up from basic information listing license holders and their roles in national, international, regional or local/metropolitan traffic.

Analysis

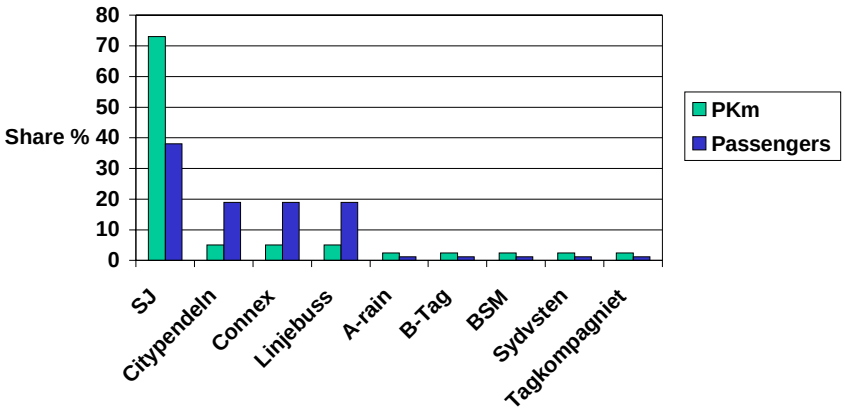
First, a definition of the relevant segments is to be developed so as to be able to categorise players and their activities.

This becomes the basis for being able to measure market shares of players within the relevant segments, and see their capacity share as indicator of growth potential.

The relationships between players must eventually become clear so as to see the nature of the control over the market as it evolves with the advent of new players.

We have seen in some markets such as Sweden that the traditional PRE (SJ) has lost considerable market share to a number of other players, albeit that on a national basis, it is still dominant. On a per segment basis such as individual metropolitan regions it is clear that SJ has lost even more market share, as measured typically, in passengers rather than Passenger-km.

MARKET SHARES – EXAMPLE SWEDEN



This illustrates clearly the need to develop intelligent market segmentations of various sorts depending on the situation and structure of the market.

POTENTIAL SEGMENTATION PASSENGER SERVICES

Scope of Service	Private	Public
National/ International		Main operators
Regional		Regional (light) rail services Main franchises UK
Local		City services, tramlines
Specialized	Tourist	Airport connector Oslo, Gatwick

Access to service

5. Assets – Equipment Market

As inputs into the two principal service markets, freight and passenger services, we have identified both equipment and labour markets to be examined as well. The principal reason behind this is to see what blockages might exist and what support might be necessary to the opening up also of the market for rail equipment, and what blockages there might exist from a labour point of view.

In the equipment market, these blockages exist in terms of access to market in light of long-standing relationships with national suppliers active in each Member State, as well as technical blockages and procedural costs associated with certification of equipment.

Hence, for the various assets required in terms of equipment, the following indicators were identified:

1. ***The Asset Base,*** in terms of size per type of equipment and analysed over time as to growth, and the relationship between assets available and those in maintenance and as to their life cycle costs;

2. ***The Investments*** made in both maintenance and new equipment and analysed as to the implied priorities, and the investments needed to achieve interoperability;

3. ***The Supplier Base*** in terms of the name and types of suppliers in the rail market and their production capacity, and analysed as to their market shares and investment capability, as well as to the size of the market;

4. ***The Access to Market of the Supplier Base***, and how this is organised in terms of equipment certification and how the maintenance market is structured, analysed further as to the degree of equipment standardisation achieved and the cost of non-standardisation as well as any barriers to entry as might exist in the maintenance market.

INDICATORS Equipment	Asset base	Investments	Supplier base	Access to markets
Statistics	Locomotives Railcars Passenger vehicles Freight wagons	Investments and maintenance in rolling stock	Suppliers, per type of equipment Production capacity	Equipment standards Certification procedures, and requirements Maintenance organisational arrangements
Analyses	Index of capacity Maintenance efficiency Life cycle costs	Relative implied priorities Investment required for interoperability Financing methods	Relative market and capacity shares per relevant market Supplier investment capacity Size of market, second hand market	Degree of equipment standardization Cost of non-standardization Cost of certification Formal barriers to tendering for maintenance

Asset Base

The asset base will be monitored in terms of size, per type of equipment and analysed over time as to growth, and the relationship between assets available and those in maintenance and as to their life cycle costs.

Statistics

Statistics on the asset base are available from various reliable sources such as Eurostat, based on the Eurostat/ECMT/UNECE common questionnaire, as well as from UIC, covering the main or principal railway enterprises (PRE's) as well as other operators that are members of UIC.

Analysis

The basic analysis to be conducted is to follow the size of the asset base over time. This is fairly basic from a technical point of view but also a challenge from a practical aspect as indeed there are many operators not covered by these statistics. ***This is critical as indeed the availability of wagons particularly for passengers and for some freight sectors has been seen as a key inhibitor to delivering good service. In this respect the effective use of the asset base will be affected by their efficient deployment, and the number of wagons loaded vs. wagons circulating empty will be pursued as part of a comprehensive analysis indicating the need for assets.***

A critical aspect through which available capacity may be improved is the optimisation of maintenance planning, in conjunction with life cycle costs optimisation, which is applied only sporadically.

Investments

The Investments made in both maintenance and new equipment will be monitored and analysed as to the implied priorities. Special attention will be paid to the investments needed to achieve interoperability.

Statistics

Data is available from various sources including Eurostat/ECMT/UNECE and UIC as well as individual operators and investment companies engaged in the financing of equipment.

Data is available as differentiated between investment and in maintenance costs, enabling further analysis as to the dynamics between investment and maintenance as suggested above.

Analysis

Indeed, a prime analysis to perform is to gain insight and begin a shared learning process among stake holders as to the relative implied priorities and policies between types of investments made, and hence in those to be made.

The priorities are to be seen between types of equipment and between equipment and maintenance, as discussed.

As interoperability becomes a key requirement for service improvement and asset deployability, the cost of achieving this will be significant, and hence the manner of achieving it will be critical to formulate also in terms of these costs. Clearly, common standards will lead to lower cost of interoperability and are being worked on.

Further, the financing of the investments made and to be made requires attention in the face of the development of new instruments allowing for sale and leaseback of large pools of assets.

Supplier Base

The supplier base is in itself an industry of major importance. UNIFE represents a major part of this industry and provides us with some highlights.

Not only as an industry in its own right, but as a major input into the rail service, it should be examined closely so as to see where assistance can be given so as to make it more efficient and effective in achieving the goals set out by the EU. In this respect, not only new equipment manufacturers but also second hand equipment suppliers and leasing companies, controlling large pools of assets, should be inventoried.

The Supplier Base will be monitored in terms of the name and types of suppliers in the rail market and their production capacity, and analysed as to their market shares and investment capability, as well as to the size of the market. The size of the market should be equal to the level of investments made, but could also include the market for light rail and tramline equipment.

Statistics

The types of indicators to be sought will include those typical for any market analysis:

- The identity of the suppliers, being the manufacturers, second hand dealers, and leasing companies, and their products and services, including maintenance
- Their production capacity for each of their products and services, so as to be matched with the predictable demand for new wagons and engines and services
- Their revenues, as indicator of the size of the market, as published in annual reports and industry analyses
- The revenue circulating in the second hand market, and the in- and outflow of equipment in this market

These data will be available from industry associations, although it is clear that in an industry where there are a limited number of manufacturers, confidentiality will limit the readiness with which the data can be freely used.

Analysis

As in any market analysis there are indeed some key aspects to be examined, over time, so as to see the dynamics evolving.

- Relative market shares (to the extent confidentiality will allow) for each relevant market and segment for engines, wagons and signalling equipment.
- Investment made by suppliers and investment capability of suppliers to create capacity into the future
- The relative strength of the second hand market in relation to the new-build market, also in relation to newly opened up eastern European markets.

Access to Markets

The equipment market will be monitored as to the access to markets enjoyed by the supplier base, and how this is organised in terms of equipment certification and how the maintenance market is structured.

The market will be analysed further as to the degree of equipment standardisation achieved and the cost of non-standardisation as well as any barriers to entry as might exist in the maintenance market.

Statistics

As to the types of indicators to be used to monitor access to markets, it is more a question of qualitative information than quantitative statistics, apart from the market share data – cross border – to be collected as specified above.

Basic information needed is the degree to which equipment is standardised across Member States and across operators, so as to enable manufacturers to produce equipment cheaply.

Further, the degree to which the certification procedure, per Member State and for the Member States collectively takes time, the more delays there will be in production and the higher the design and management costs will be.

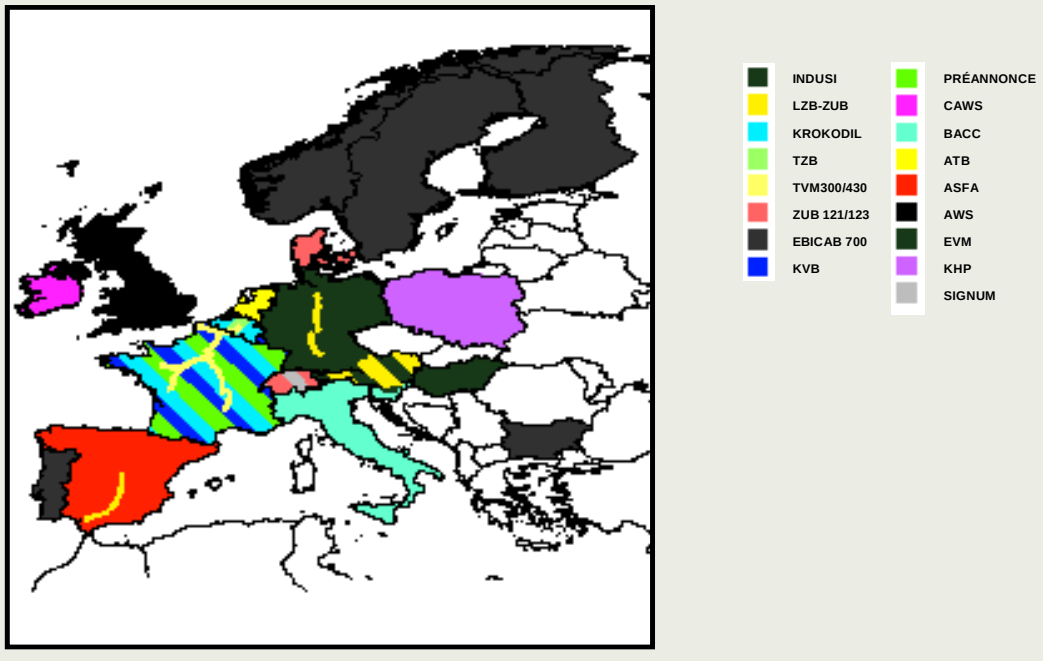
The manner by which maintenance of equipment is organised determines the degree to which this market is open to third parties, such as the manufacturers of the equipment.

Analysis

The access to markets by manufacturers will be analysed as to the degree of standardisation achieved and is likely to achieve under current plans. Critical is to understand the necessity of the variations in the standards, and their causes, as well as the cost of maintaining those differences. Only when you know the cost of non-standardisation can you decide whether the cost of standardisation – if any – are worth incurring.

It is clear that today, there exists a great deal of technical variability, as evidenced by a preliminary investigation performed by the Industry.

DIFFERENT SIGNALLING SYSTEMS IN EUROPE



Source: UNIFE

As represented by UNIFE, the association of the rail industry manufacturers in Europe, major changes are occurring due to open procurement, and increased operability due to mutual recognition of each other's standards and specifications.

There is also a rich market opportunity – in theory – for the manufacturers of equipment to enter the maintenance market for both track works and for equipment. As with the airline industry, where major manufacturers of engines are entering the aircraft and engine maintenance business, so too rail equipment manufacturers are interested in the railway equipment maintenance business. Per operator these arrangements may well differ today, as to the degree to which the operator has or is intending to outsource these services. There may be technical and legal barriers to such outsourcing having to do with technical and safety certification, and these barriers have to be understood.

6. Assets – Labour Market

As the railway sector is to an increasing degree subjected to international competitive pressures, the labour aspects become more and more critical to examine in detail.

This, not only from a quality and economic point of view, but also from a strategic effectiveness point of view. Good staff at all levels need to know they have (international) career opportunities in which to develop their skills as a basis for their motivation to deliver a good service that can compete and be profitable in its own right. Without such a positive view of labour as an asset, a source of value, and not only a cost centre to minimise, all renewal will likely fail.

Such a philosophy drives the nature of the market monitoring to be performed, and must be developed further as a basis for directing the analytical effort over time.

Thus, the Labour aspects as are relevant to the functioning of the rail market, also in relationship to other transportation markets, are defined as:

1) ***The Size of the Employment Base*** in terms of the number of employees per type of work and analysed as to the migration from direct to indirect employment;

2) ***The Working Conditions*** in terms of work and rest times, and worker behaviour monitored in terms of sick leave, days of strike experienced; pay levels, analysed also to develop key indices and changes in the structure of pay and changes in the organisation of work, also across different modes of transportation;

3) ***The Training Patterns*** and programs in place, in terms of requirements, capacity and mutual recognition of qualifications, analysed as to the degree of staff interoperability achieved, the persistence of blockages in the market that might inhibit the international and upward career perspectives of staff.

INDICATORS Labour	**Size of direct and indirect employment base**	**Working conditions**	**Training patterns**
Statistics	**Number of employees Per type of work**	**Work and rest time rules** **Sick leave** **Days strike** **Pay levels**	**Current requirements** **Training capacity** **Recognition of qualifications**
Analyses	**Staff turnover** **Migration to indirect**	**Indices for key aspects** **Changes in structure of pay** **Organisation of work and working conditions across modes**	**Degree of interoperability of staff** **Blockages to training access** **Staff upward and international mobility**

Size of Labour Market

The size of the employment base will be monitored in terms of the number of employees per type of work and analysed as to the migration from direct to indirect employment.

Statistics

There are plenty of statistics from official and unofficial sources regarding employment at PRE's in various functions, from direct operations to management and administration.

It will be difficult to get data on the rest of the operators, not PRE's, who might be small firms, or categorised as regional lines or light rail and tramlines, also engaged in the market.

Analysis

The key analysis is to be able to follow the size of the employment base even as it migrates from PRE's to the new structures into which personnel are moving as a result of the restructuring taking place.

British Rail for instance has been split up into 150 companies, now also working to some extent outside the rail sector.

Hence, comparisons between operators are not the purpose, but it is the purpose to understand the importance of the employment base in rail as an economic activity just like any other (commercial) activity.

Further, there is a certain dynamic within the total number of staff, and hence we analyse further the staff turnover in terms of:

- Natural retirement
- Voluntary departures
- Forced redundancies
- New hires
- Vacancies

Again, this is not done so much as to compare across operators, but if in general there are many forced redundancies in more than one operator, then that gives some indication of either the improved efficiency or a deteriorating economic condition, or some such dynamic, depending on the specifics of the firm in question.

A high turnover can also mean either a renewal of the staff, or a dissatisfaction of the staff with the working conditions: ***no one indicator should be seen as conclusive in itself without a full understanding of the context as created by the situation on the ground.***

Equally, migration into indirect employment can be measured as to the number of employees in the first line of outsourcing per main PRE per Member State examined.

This is a manual examination of the dynamics around each main operator by which process an understanding is obtained as to the dynamics of the company in question, also to be taken in the context of the liberalization and privatisation process in place.

Working Conditions

The working conditions will be monitored in terms of work and rest times, and worker behaviour monitored in terms of sick leave, days of strike experienced; pay levels, analysed also to develop key indices and changes in the structure of pay and changes in the organisation of work.

Statistics

No ready statistics are available for the railway sector, nor information on working conditions other than the specifics per operator or PRE in the labour contracts in place and in the legislation governing these aspects in general and in the transport sector in particular.

A railway and transportation situational inventory will need to be conducted in close cooperation with the social partners so as to capture the right dimensions in the modelling of the situation.

In general the following items need to inventoried:

- Work & rest time rules, across modes, so as to be able to compare relative flexibility and examine the issues and opportunities this might suggest

- Sick leave, and worker disability rates so as to see whether there is some structural problems in working conditions that might generate these illnesses and lost productivity, and avoid personal loss of career fulfilment

- Days strike, not as a stand-alone data point, but to be taken in conjunction with situational analysis and causes.

- Pay levels, and how they compare over time, and in relation to the economic health of the firm

Analysis

Clearly some basic indices are needed to track developments in terms outlined above to act as triggers for closer analysis of causes and issues.

Working conditions and the changes in the working conditions have to be analysed as firms enter into the private arena, and compete internationally, and compete with other modes.

Changes in pay levels and in pay structures will become significant, and may become competitive factors in cross border services.

Such changes in pay or the type of reward structure as may appear will emanate from changes in the organization of work both internally and externally.

In freight, major logistical improvements may be achieved by allowing trains to be offloaded at night, thus shaving peaks off the terminal schedules and reducing the costs levels of the rail service and improving its logistical effectiveness. This means both operator and consignee have to work at night and this will mean a different pay structure and level than if the work was done during normal "office hours".

When work is outsourced to private companies that may also work outside the railway sector, such as in construction, vastly different work scales and conditions may apply and have their influence on the conditions within competing operators.

Training Patterns

The training patterns and programs in place will be monitored, in terms of requirements, capacity and mutual recognition of qualifications. The training situation will be analysed as to the degree of staff interoperability achieved, the persistence of blockages in the market that might inhibit the international and upward career perspectives of staff.

Statistics

While there may be information available inside TOC's and with Labour Unions, no readily public data is available on the training situation.

What is needed is to sketch out the current situation in the following terms:

- The current training requirements, by Member State, by type of activity, and the resulting licensing
- The training capacity available in each Member State for each relevant type of training
- The recognition of qualifications by Member States of those licenses of other Member States

Analysis

There are some key issues to be addressed in the analytical process being proposed.

- The degree of interoperability of staff, today, and what that might be potentially, under adjusted requirements and mutual recognition regimes
- The blockages that might exist to gaining access to training by new operators, or by existing operators wanting to create services on the national network of a Member State or wishing to operate international services; blockages also to be examined is the possibility by new training entities to open up for business, and how their training will be recognized.

- The degree to which staff achieve a level of upward and international mobility in their careers, through training and through becoming internationally interoperable, and through recognition of their qualifications.

  The rail industry is one in which lends itself very well to a practical growth path of personnel, moving from the ranks up to migrate from roles as engine drivers to train managers, to route manager and to business unit manager. Deep layers of technical and practical knowledge and experience are necessary and can be obtained only on the job, but such progression does require training and recognition of qualifications internationally.

7. Infrastructure

The infrastructure management aspects are one of the most critical foundations of being able to implement the intended vertical separation, as basis for liberalisation of the market and being able to allow access to the infrastructure by multiple users.

This aspect is undergoing restructuring and is indeed topic of a separate Working Group operating under the leadership of DG TREN, precisely to develop infrastructure management frameworks and formulating common themes and approaches for formulating the required Network Statement.

The infrastructure will be monitored as per national network statement to be developed and published and shall be specifically monitored by:

1) ***The State of the Infrastructure*** in terms of the investments made in infrastructure and its maintenance, analysed as to the overall state of the network and the degree to which restrictions apply

2) ***The Capacity available*** on the network per segment and analysed as to the bottlenecks present and investments required

3) ***The Paths available*** and the price levels at which they are made available, and their current users, analysed as to their attractiveness to new players and hence the utilisation if such available paths

INDICATORS Infrastructure	State of Rail Network	Capacity	Paths
Statistics	Investments and maintenance in infrastructure Sources of investments by Member States – direct Indirect subsidy – marginal cost charging Network statements	Load factors per segment	Availability of paths per time frame Prices for paths per time frame "Owners" of paths, new path requests, acceptances and rejections, reasons
Analyses	State of track, terminals, siding Track KM with speed, gabarit restrictions	Repertory of Bottlenecks Investments required	Attractiveness of available paths Utilisation of paths

State of the Infrastructure

The State of the Infrastructure will be monitored in terms of the investments made in new and existing infrastructure and its maintenance, analysed as to the overall state of the network and the degree to which restrictions apply.

Statistics

There are available from the Eurostat/ECMT/UN-ECE ample statistics at least by PRE's on investments made in infrastructure and on maintenance of the infrastructure. With the establishments of national infrastructure managers, this information flow will shift and will become a joint rail authority and infrastructure manager responsibility to manage.

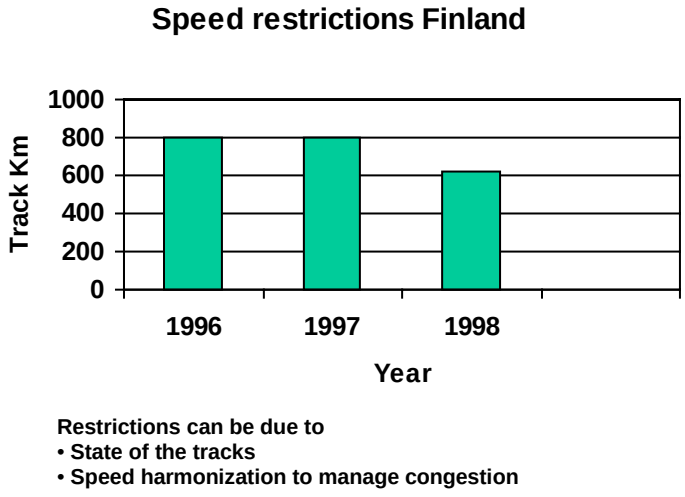
The analysis of the infrastructure is detailed technical work to be performed by the infrastructure managers and to be communicated as information available to the RMMS in the form of the Network Statements being prepared. At this time of reporting some 4 or 5 of the Member States have such a Network Statement available.

The European Commission itself publishes an annual report of the TENS as required, which will include the TERFN as well.

Analysis

The key analysis to be performed on a macro (RMMS) level is the state of the track, for which to be expressed in terms to be developed in the network statements

STATE OF THE TRACK – EXAMPLE FINLAND



Source: Ministry of Transport Finland

The European Commission is further commissioning a study to inventory the investments made by Member States and their infrastructure managers, and brought into relation with the technical status of the TEN in the year 2000.

Capacity

The available capacity on the network will be monitored, per segment and analysed as to the bottlenecks present and investments required.

Statistics

This is of course a primary task of the Member State's infrastructure manager, and information of this sort will be gathered by them, in close cooperation with the RMMS and the Commission as is being done today through the mechanism of the Working Groups, *which is in fact how the RMMS should continue to operate into the future.*

Analysis

The core analytical effort to be done, by Member States and then supplemented by the RMMS, is the development of a repertory of saturation levels and the development subsequently of what saturation levels represent capacity bottlenecks, and what further bottlenecks due to gabarit restrictions exist, and what investment is needed to address these over time, given the available forecast of traffic expectations into the future.

Paths

The Paths available and the price levels at which they are made available, and their current users will be monitored and analysed as to their attractiveness to new players and hence the utilisation if such available paths.

Statistics

At the Member State level, either at the rail authority and/or at the infrastructure manager level, detailed information will be available as to the paths defined and in use by the current operators, and hence also the ***paths not being used and available for new services or new entrants***. This is a complex concept and a specialised task of the Infrastructure Manager. Work is being done to redefine train paths in light of new GPS technologies available, and in light of new braking technology which would allow shorter braking paths, both of which could contribute to increasing the effective capacity of current infrastructures.

Member States have varying regimes in place for charging for the use of the infrastructure and operators have informed us that due to variations in pricing, routes are chosen which may be longer or less logical logistically speaking, but cheaper from a charges point of view. Such charging schemes have to be collected and compared.

An inventory is to be made of the current "owners" of the paths, and of the requests for new paths and the results of such requests along with the motivations therefore.

In addition, private infrastructure owners, particularly industrial users with their own railway sidings for their single wagonload flows, have specific routing needs and access requirements. Industrial user organisations such as UIP, UNICE and the European Shippers Council will be able and willing – so we are assured – to provide input.

Analysis

At the heart of the whole European Commission purpose of the RMMS is to see whether the policies in place actually result in more use of rail and more providers of rail services, meaning these providers will be wanting to obtain the paths necessary to provide these services.

Such paths will only be taken up for new services by existing and by new service providers if they are commercially and operationally viable and attractive. Hence a key analysis is to evaluate the attractiveness of such free paths as have been defined and hence to see the use being made of them by users and by operators, be they existing operators or new operators.

8. Regulatory Framework

The starting and ending point of the RMMS analytical framework being proposed is the regulatory framework being developed through the Directives being adopted.

Hence the evolution of the market is being driven by these policies and the results of such evolution will in turn drive new policy development itself.

The Regulatory Framework under which operators and other parties work, will be monitored as defined by:

1) ***The Implementation of the Directives***, through national legislation as evidenced by Member State representations, analysed as to the manner of implementation

2) ***The Regulatory Structure*** that is thus put in place and the regulatory model that emerges

3) ***The Market Organisation*** that results there from, through national legislation, per Member State as to the role and place of the operators in their respective legal and ownership structures

4) ***Licensing*** in terms of the types and nature of the licenses in place, the processes and procures to obtain them and the number and type of licenses outstanding, analysed ultimately to indicate the degree to which – as a result of reduced barriers to entry - market access is achieved.

INDICATORS Regulations	Implementation of Directives	Regulatory Structure	Market Organisation	Licensing
Statistics/ Information	National Legislation Member State representations	National Legislation National Regulation	National Legislation, National Regulations Legal ownership data Organisational charts, charters	Inventory of license types and terms Processes and procedures Licenses outstanding, requested and rejected, causes
Analyses	Degree and manner of implementation of each Directive	Regulatory models	Structure as in effect per Member State	Degree of market access achieved

Implementation of Directives

The Implementation of the Directives, through national legislation will be monitored as evidenced by Member State representations, analysed as to the manner of implementation

Statistics

To monitor the effective implementation of the adopted Directives by Member States, representations by the Member States will be sought, as is the case in any other communal policy implementation.

Such representations will concern the various aspects covered in the Directives under the “infrastructure package” as well as those having to do with other but related policy, such as PSO support, labour laws and safety regulations.

Analysis

Critical is to understand how each Member State is interpreting and applying the implementation on the Directives at hand, and how this translates into business conditions the ground.

The results of the analyses can be communicated in synopses as is being done in the Inland Water Observatory.

INLAND WATER OBSERVATORY – IMPLEMENTATION OF DIRECTIVES

At the time of reporting, a separate Working Group is operating under the auspices of the European Commission DG TREN on how to implement the Directives at hand and how to set up the regulatory framework to manage the development of the market into the future.

Again, this is an example of how the RMMS can function around specific aspects and topics, and indeed one can say the RMMS is already in operation in this respect.

Regulatory Structure

As just discussed, the regulatory structure in each Member State will emanate from the implementation of the Directives.

Hence the Regulatory Structure that is thus put in place and the regulatory model that emerges will be monitored as to its effectiveness.

The RMMS will develop frameworks by which to monitor and communicate the situation in Member States along some key dimensions. One dimension is the degree and manner in which vertical separation is achieved, referring to the split between services and infrastructures in accounts and subsequently in the institutional structures established. Currently this is being investigated by the EU in a separate working group.

Concerning infrastructure management there are a few models in place:

- Integrated in railway undertaking: B, L
- Infrastructure manager as separate company within railway undertaking: A, D, I, NL
- Separated infrastructure manager, private or public: DK, FIN, F, Pt, S
- Separated privatised infrastructure company: UK

Another dimension is the degree to which open access is made available and achieved, as opposed to national or regional franchise structures.

For instance, at the regional passenger rail transport level the situation shows many differences:

- Some countries have one or more regional railway undertaking other than the incumbent operator, where the contracts are sometimes awarded following a public tender (A, D, NL, Pt, UK)
- Some countries are planning to tender out regional rail passenger PSO contracts (DK, I)
- Some countries have one or more regional contracts with regional public authorities carried out by the incumbent operator (FIN, F, E)
- Some countries have no contracts or railway undertakings especially for regional rail passenger services (B, L)

Other dimensions will refer to the Public Service Offering (PSO) requirements and conditions in place.

Market Organisation

The Market Organisation that results from the structure in place, as implemented through national legislation, per Member State will be monitored as to the role and place of the operators in their respective legal and ownership structures.

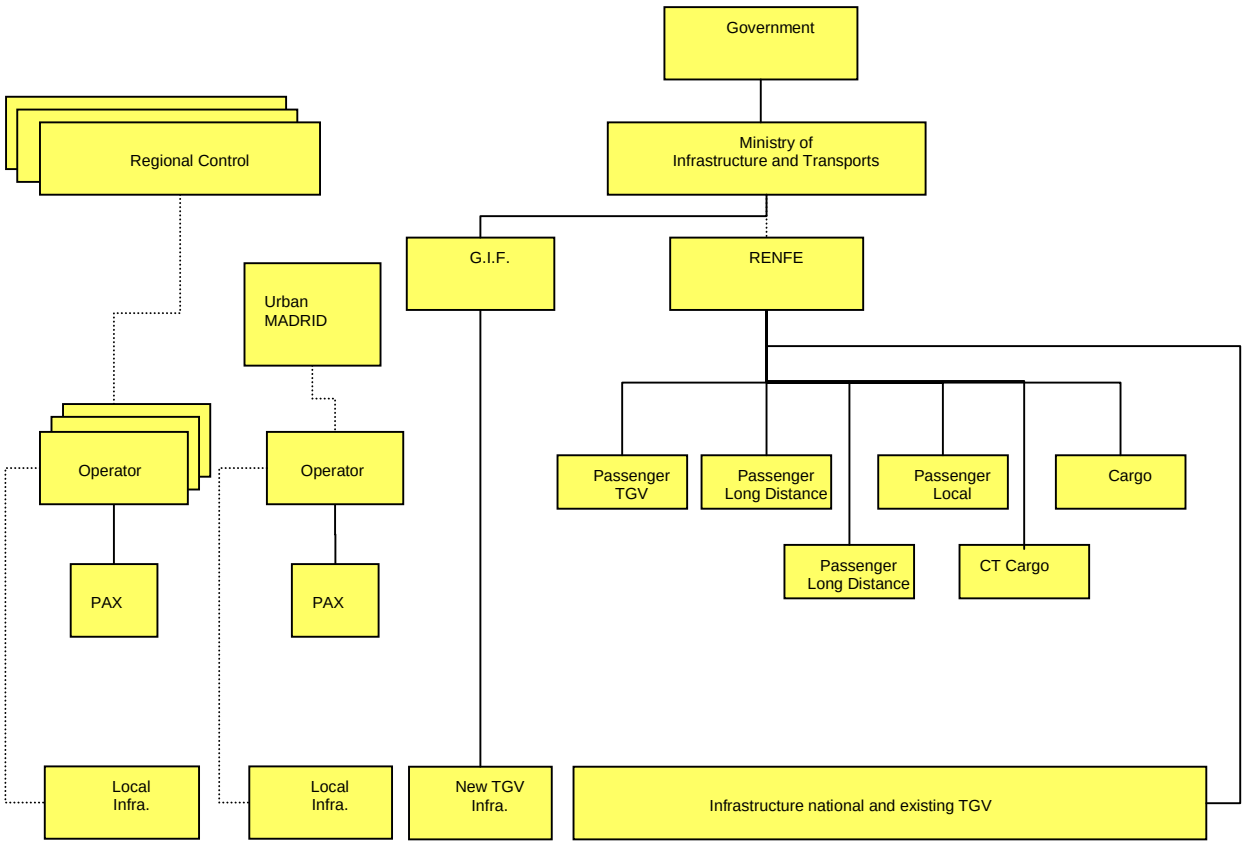
Statistics

Per Member State a qualitative intake will continue to take place so as to develop the models and adjust the models as the facts evolve in the market and in the legislation and restructuring that is today on-going.

Analysis

For each Member State and eventually across Member States as it concerns international operations (See freight) models will be built to represent the market organisation in place and what it implies as to the manner in which these markets are indeed evolving.

MARKET ORGANISATION - EXAMPLE SPAIN



Each Member State is today rapidly evolving into the new structures foreseen in the Directives, such that each model thus developed, as a representation of the situation, which may in fact be very much more complicated, will need to be updated continuously.

Licensing

Licensing, in terms of the types and nature of the licenses in place, the processes and procures to obtain them and the number and type of licenses outstanding will be monitored and analysed, ultimately, to indicate the degree to which market access is achieved

This is in the end the purpose of the entire regulatory package and the purpose of the RMMS to be able to effectively monitor: are there new players and new rights (through licenses) obtained by existing players to more effectively and more efficiently serve the market.

Statistics

An inventory will be made as to the types of licenses in existence, and how many of these are outstanding and to whom.

The process by which licenses are to be obtained per Member Sate will be inventoried and subsequently, the number of applications monitored, as well as those accepted and rejected and why.

Analysis

The ultimate analysis to be conducted therefore is a statement indicating the degree to which market access is achieved, as evidenced by the number and types of licensing players are able to obtain, and hence the types of new services available.

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This concludes the conceptual description of the RMMS framework. Throughout the project we have tested this framework by partially implementing it through the collection of real data and the performance of preliminary analyses as collated in the presentation materials used and known to the Commission and the Member State representatives. This presentation material is presented to the Commission as an Appendix to this Final Report. The Appendix should be seen as a living document, as a real operational start of the RMMS, as a repository for issues to be dealt with, and hence as a living agenda, to be formalised also through the end products of the RMMS.

9. RMMS End Products

The indicators described above are the heart of the RMMS, particularly in terms of the analyses to be produced and the conclusions to be drawn. This is intended to be a cross-institutional learning process involving the European Commission, Member States as well as Stake Holders.

These analyses will find their way into various end products to be produced by the RMMS on each of the key topics, culminating into eight key documents per year. These documents are likely by their nature to be first confidential internal to the Commission, and subsequently to be made public through the various dissemination infrastructures to be developed.

1) An ***Annual Market Evolution*** document, covering both the Freight and the Passenger markets comprehensively, containing also subdocuments

    a) A ***Price/Quality/Safety Report,*** in which indices and analyses as described in the chapters above are included, so as to be able to say whether these are improving or not, in general and per Member State, possibly including the results of standardised customer satisfaction surveys;

    b) A ***Modal Split Analysis*** indicating the perceived and desired shifts in modal choices made but also the motivations behind the choices, in specific topical analyses per type of traffic;

    c) A ***Market Size Analysis***, including an index and a forecast, by which it should become clear that the rail market is growing and by how much, serving also as indications of the success of the policy.

2) An ***Annual Rail Manufacturers' Conference Paper***, which should be the result of such a conference, to be preceded by specific work by the RMMS to define the issues in the market and preceded also by consultations with the rail manufacturers industry to inform the RMMS and to generate proposals;

3) An ***Annual Labour Conditions Report***, which will be the result of the analyses to be conducted by the RMMS and which will be supported by intensive dialogues with the social partners around the relevant issues

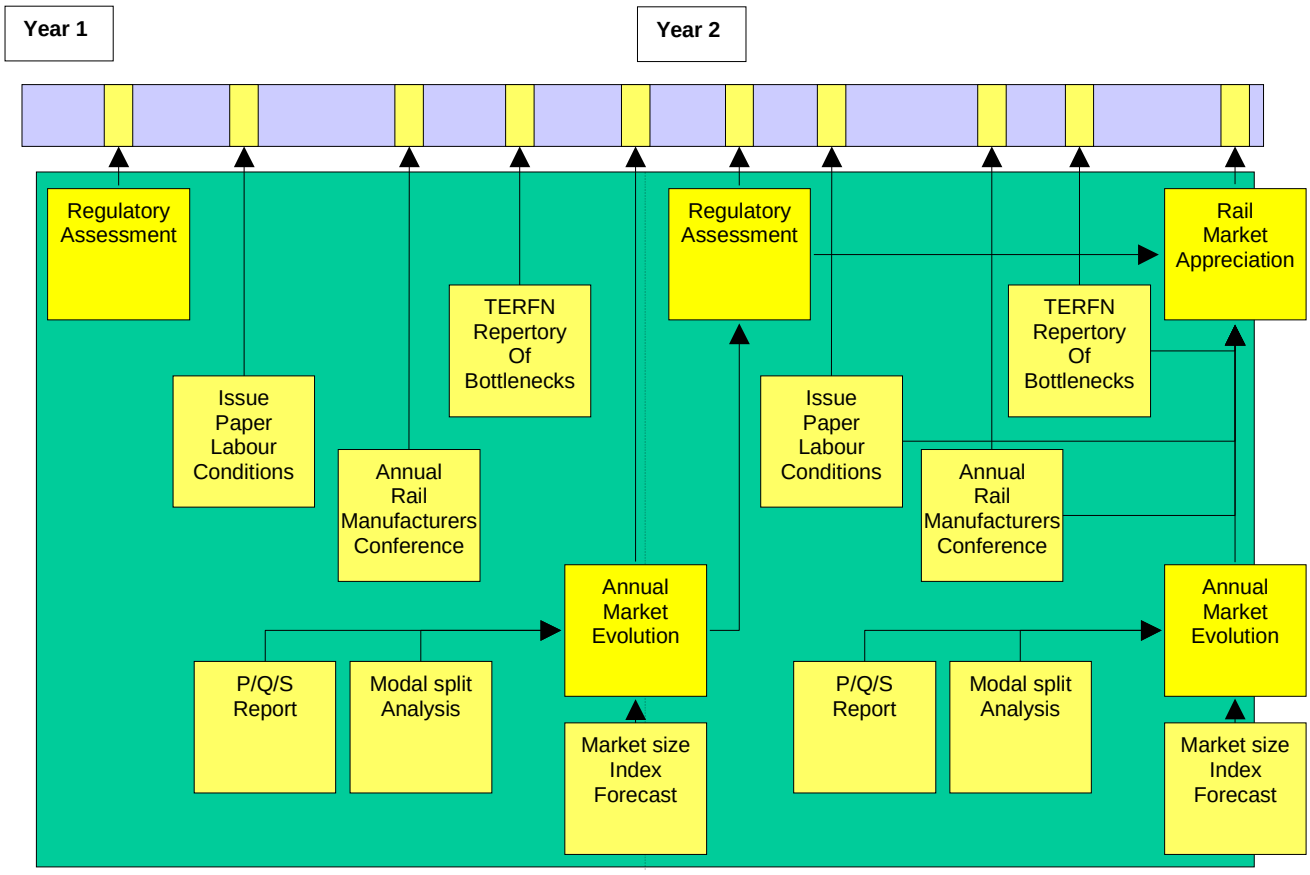
4) An ***Annual TERFN Repertory of Bottlenecks*** based on Member State Network Statements, and subsequent study and consultations between the infrastructure mangers and the RMMS to distil the critical issues and priorities to be addressed;

5) An ***Annual Regulatory Assessment***, which will be the first policy feed back loop to see if the regulatory framework is being implemented and how effective it is in practice

It is foreseen that every two years, a major document, The Rail Market Appreciation will be published encompassing all the above in a comprehensive evaluation of the market in the sense of the intent of the Commission and Member States as expressed in the Directives passed.

This rail Market Appreciation document forms the culmination of the RMMS analytical effort and all documents will serve as inputs into this effort, which will include specific policy recommendations so as to achieve the stated goals.

RMMS OUTPUT PRODUCTION SCHEDULE



Hence we will have a two-year reporting cycle in which all aspects are covered in depth. It will take two years for the parties to identify the right sources of data and to perform the analyses in proper depth and efficacy.

The first priority is to conduct per market – for both Freight and Passenger Markets – a market size and structure analyses, beginning with an exhaustive inventory of the players and their business scope and subsequently their business volume, as specified earlier. In formal terms this would mean an annual market Evolution document, with at first less emphasis on Price, Quality and Safety, or on Modal Split except as is readily available.

10. Organisation

The RMMS will have to be organised so as to be able to perform the analyses identified in an in-depth manner.

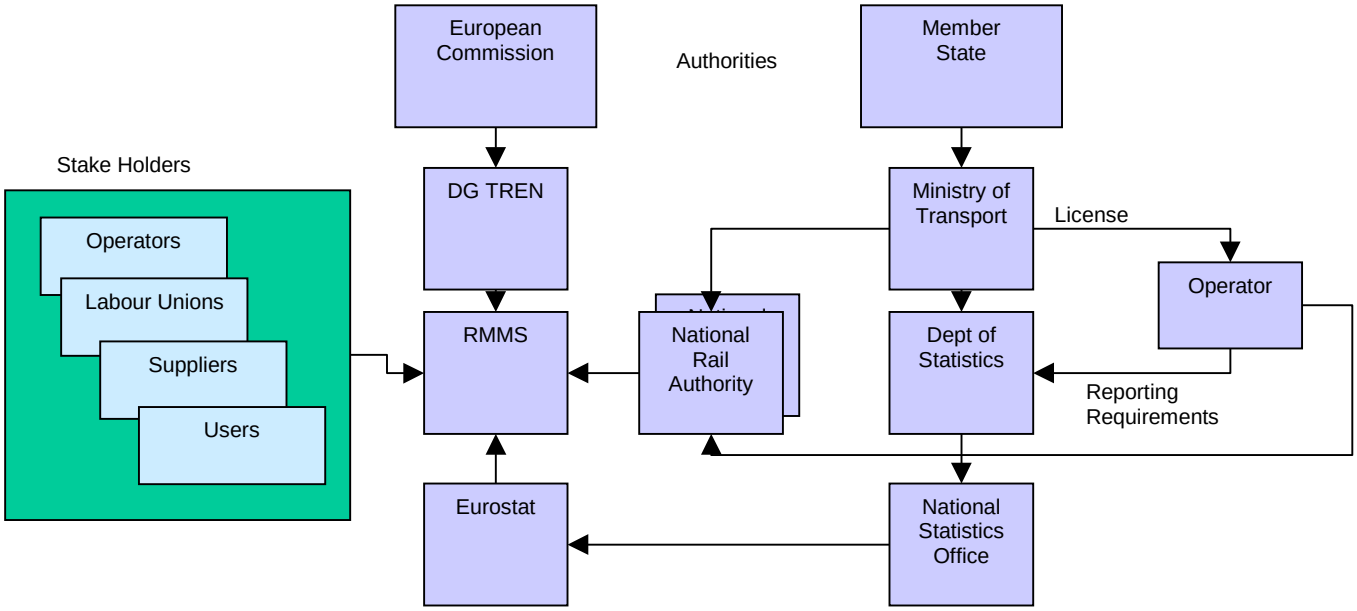
Hence a team of 4-6 strong experts are needed in the following disciplines:

1) A public policy and transportation business expert is needed to head up the effort
2) A rail technology expert
3) A transport economist
4) A statistical expert
5) A quantitative analysis expert
6) An information infrastructure specialist

To some extent these roles can be combined, allowing for some economies, but the basic work to be done should not be underestimated.

Equally the need to collaborate with Member States and stake holders must be emphasised at all levels.

COLLABORATION AROUND THE RMMS



The required collaboration will need to occur at various levels:

- The RMMS will interface closely with officials from Member States – as a continuation of the current Working Group – on the functioning, the methods and priorities of the RMMS.

- The Member States will ensure Eurostat receives the correct statistics as they become available and within a time frame so as to be useful for the reporting

purposes outlined, and within the context of the relevant regulation and Directives governing such reporting.

- The RMMS will create relations with Stake Holders in open and closed sessions for the debate on specific aspects of the market.

This will ensure both public and private channels of communication to the Commission for the purpose of coming to policy decisions regarding the rail market.

This is in fact at the heart of design, to ensure channels of communication, supported by analytical efforts, so as to shape and clarify the issues as they emerge from the functioning of the market.

An informational infrastructure is therefore needed, which the RMMS will build, maintain, and operate. Such an informational infrastructure could consist of some key elements including a learning network of Member States and Stake Holders, as well as a document collection and dissemination system such as CIRCA, and a website with public and restricted access modes.

CIRCA already exists and is operational in serving the various working groups and is adequate for dissemination of data to specific working group members.

A broader web-based solution will provide a more dynamic user-friendly access to public documents and analyses; the presentation format of the Appendix covering these same proceedings in fact serves as a structure for the building of a web-site for this purpose.

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GIVENTIS is thus pleased and proud to have thus served the Commission in the effort to strengthen the common European rail market and develop a common understanding of these issues, and above all, of the opportunities to be grasped and the benefits to be shared.

The challenge is – we are aware – considerable, and we emphasise as we have done in our verbal representations, that at stake is the proper issue analysis, to be supported by data and information, as well as by personal contacts within the network we have established during the course of the process of formulating these requirements.

At stake is the realisation of the potential of a modern rail sector in Europe, which can and does serve customers in a manner that meets certain specific journey and trip requirements in an economically justifiable manner. The challenge is to do so in the future when the requirements will be more stringent and the economic justification criteria tighter.

The RMMS can be a significant catalyst – as this project has shown – in mobilising the Member States of the European Union to act in a coordinated and focussed manner to create the conditions necessary for the railway enterprises in Europe to evolve into a competitive and effective industry, meeting the needs of its future clients and customers efficiently.