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0 Executive Summary

0.1 *Introduction and Background*

Many of the railways of the Central and Eastern European Countries (CEECs) are facing a growing crisis. As national economies grow stronger the competitive threat from other modes is increasing and the market share of rail is declining. At the same time, operating costs are increasing, resulting in worsening financial performance and growing subsidy needs.

This study, commissioned by the Phare Multi-Country Transport Programme (MCTP) of the European Union has examined means of improving the competitiveness of rail in the CEECs. The work reviewed the barriers to rail competitiveness and proposed measures and action plans for each railway as part of a process of increasing the attractiveness of rail services to freight shippers and passengers.

The study has included all 13 Phare countries as follows: Albania, Bosnia & Herzegovina, Bulgaria, Czech Republic, Estonia, FYR Macedonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia.

Passenger and freight markets and domestic and international services have been considered.

The consultants have carried out a series of visits to each of the 13 study railways, detailed operational and engineering and legal and regulatory questionnaires and a benchmarking exercise. Primary data on users' perceptions was also collected through a series of focus groups. Studies examining the socio-economic context and producing demand forecasts were also carried out.

0.2 *A Changing Market and External Pressures*

Many of the CEEC railways are facing fundamental problems both from within their own organisations and from their extended operating environments. Together, these pose serious questions over their continued financial survival and will place growing demands on government funds.

Many of the most visible problems faced by the railways are driven by changes in the external environment in which they operate, in particular by the economic conditions and market structure in the CEECs. These changes, summarised below, represent both an opportunity and a threat to the CEEC railways.

- Long term economic prospects within the CEECs appear good but will not provide a solution to the problems faced by the CEEC railways. Economic growth will bring increased competition from road and will expose existing inefficiencies, particularly in labour productivity. Labour productivity in the CEEC railways is around 1.5 times less than that found in the EU, even allowing for purchasing power differences. Structural changes in economies mean that transport growth is coming from sectors not traditionally served by rail.
- High levels of passenger and freight growth are unlikely in the short to medium term. Railways will have to work hard to maintain existing mode share and levels of income. Forecasts developed as part of this study and as part of the Phare MCTP study on Traffic Forecasts for the Pan-European Transport Corridors study support this view. In short, railways are unlikely to be able to market their way out of current problems.
- Demand for international rail passenger and freight services is forecast to grow. However, rail's market share is forecast to decline and growth in international markets is unlikely to offset the decline or stagnation in domestic markets. There are significant barriers to the development of international services. In particular, differences in technical standards, operating procedures and customs and administrative procedures remain, causing delays at border crossings. There is a lack of co-ordination between railways or a unitary body responsible for the marketing and selling of international rail freight services, causing delays and confusion to customers attempting to arrange the shipment of consignments.
- The change to a market orientated economy has given many rail customers a choice of mode and led to changes in needs and growth in expectations. Rail is currently failing to meet these needs and aspirations. Indeed, most railways do not even conduct research to ascertain their customers' needs. Without actions to address the issues raised by customers the CEEC railways risk becoming increasingly irrelevant to the populations they serve and the mode of last resort.

0.3

Adaptability and Efficiency

Whilst external problems are important, the greatest and most threatening barriers facing CEEC railways are internal. In order to examine these, the study developed an index of organisational adaptability.

The hypothesis is advanced that the **Adaptability** of a railway company is a function of the **Powers** and **Accountability** of the railway company. Both are necessary conditions. An organisation that does not have the power to

- withdraw from unprofitable market sectors;
- set the price of its products and services;
- change its organisational structure; and
- control its own organisation,

is unlikely to be able to adapt to changed circumstances. Even with sufficient power, it may not adapt unless it has reason and incentive to do so, i.e. it is accountable for its performance. The accountability of the railway also affects the adaptability of a railway company.

If we assume that 'power' and 'accountability' can be measured then an adaptability index can be defined as:

$$A = P \times C$$

where: A = an index of adaptability
 P = an index of power
 C = an index of accountability

Railways in the CEECs generally operate under more restrictive legal and regulatory frameworks than in the EU. An analysis of the powers and adaptability possessed by each of the railways found an average value for the power index of 0.36, which is significantly lower than that recorded for EU railways (0.62)¹. The CEEC railways have only limited power to manage their own operations and business and, therefore, respond to changing market conditions and expectations.

¹ Profitability of Rail Transport and Adaptability of Rail (PRORATA) prepared for DGVII of the European Commission, Halcrow Fox, February 1999

Without such powers any attempt to address customer issues and needs is likely to be cosmetic only. The railways face becoming increasingly un-competitive without changes to their regulatory environment.

The accountability index, i.e., the degree to which a railway is responsible for its performance, shows some surprisingly high scores for the CEEC railways. This suggests an attempt by many governments to focus railways on commercial issues. However, the low power index scores suggests that railways are not being provided with the power to implement commercial strategies. This represents a significant barrier to competitiveness and efficiency.

The accountability placed with railways needs to permeate all levels of the organisation with specific objectives and targets set. Individual managers need to be provided with the powers to make decisions and act to deliver the accountability placed with them.

A mathematical relationship has been derived between the economic efficiency and adaptability of the CEEC railways. This has been used to quantify the potential financial benefits from organisational and institutional reform.

The internal constraints to competitiveness were further explored by a major benchmarking exercise. Several benchmarking methods were used in order to identify and quantify degrees of efficiency. Figure E.1 summarises from three of the partial productivity measures defined, along with the total factor productivity and cost frontier analyses. One, notable, conclusion from the benchmarking is that operating cost savings of around €5 billion p.a. (purchasing power parity – PPP Exchange Rates) could be achieved if all CEEC railways achieved the levels of efficiency of the most efficient CEEC railway.

The worst is yet to come, as strengthening economies cause labour costs to accelerate. In some cases these could threaten the future viability of the railway concerned. Average labour costs in the CEEC railways are, on average, less than a third of those in the EU. The consultants estimate that increases in wages in the CEEC railways to average EU levels will result in increases in operating costs of between 2 and 4 times, equivalent to additional costs of €26 billion (PPP Exchange Rates) by 2020. Not only would this place additional financial burdens upon the railways but also upon governments as they faced increasing demands for subsidy and funding, to the detriment of economic policy and other social funding. Paradoxically it those railways in the economically strongest countries that are at greatest risk. The Czech Republic, Hungary, Poland, Slovak Republic and Slovenia are all economically strong countries but with railways that have poor, and declining cost efficiency.

Figure E.1 – Overall Ranking of Measures

Country	Code	Total Staff (Railway and non-Railway Staff)/ Gross Tonne km	Wagons freight tonne	Passenger coaches/ passenger km	TFP Total Cost	Cost Frontier Analysis
Bulgaria	BDZ	10	10	1	5	3
Czech Rep.	CD	7	8	6	7	4
FYR	CFARYM	11	11	11	6	7
Romania	CFR	8	9	2	9	10
Estonia	EVR	2	4	12	2	6
Albania	HSh	12	12	10	1	9
Latvia	LDZ	1	1	5	1	2
Lithuania	LG	3	3	7	3	1
Hungary	MAV	9	7	3	11	8
Poland	PKP	4	2	4	4	5
Slovenia	SZ	5	6	8	10	11
Bosnia & H.	ZBH/ZRS	1	1	1	1	1
Slovak Rep.	ZSR	6	5	9	8	12

Less Efficient					More Efficient
 Missing Data					

NB: Despite the different rankings given by each measure there is a high degree of correlation between the various measures of efficiency calculated. Full details are given in the Adaptability and Efficiency Report.

The CEEC railways cannot afford to be passive or reactive – market growth is unlikely in the short-term and infrastructure investment does not represent a sustainable solution to the problems faced by the railways. Do-nothing is not an option for any of the railways. The underlying problems facing the CEEC railways are organisational and institutional. They fundamentally remain high cost, production-orientated companies, operationally controlled and led, in increasingly competitive and dynamic markets. Action must be taken to address these fundamental issues in terms of organisational structure, relationships and objectives. To do otherwise risks addressing the symptoms rather than the cause.

0.4

Barriers to Competitiveness

Key barriers to competitiveness identified in the CEEC railways are as follows:

- Absence of comprehensive and definitive contract with government and the lack of powers given to managers. Railways need to have a clear understanding of what their role is to be and the objectives they must achieve. They must be given freedom to manage their operations and business to achieve these objectives. Accountability and powers need to be developed to individual managers throughout railways organisations.
- There is a general lack of commercial focus. Few, if any, of the railways appear to be communicating and listening to their customers to find out what services and products they require. There is little, if any, market research. The institutional framework does not encourage the railways to change their approach to customers.
- There is a lack of management information systems and business analysis and accounting processes. Managers do not have the information available to make decisions and manage their resources even if they have the power to do so. The full potential of this information will only be realised if the railway is structured to give managers the power to use it.
- Asset utilisation in many of the countries is poor in comparison with EU countries and as shown in the comparative efficiency analysis. This leads to higher than necessary costs and is related to the lack of appropriate management information and business evaluation and monitoring systems.
- There is over-manning and underemployment in many of the countries and in comparison with EU railways. This is related to the lack of appropriate management information systems but has a more fundamental link with the relationship with government and the limited commercial incentives and powers of the railway management.
- Rising labour costs pose a serious problem, to a large extent they have undermined the effect of staff reductions to date and will rapidly drive up costs as economies grow if railways fail to restructure.
- Collaboration between railways, and between railways and customs authorities, is poor, leading to lengthy border delays, unreliable international services and a general lack of customer confidence. There is a lack of standard operating procedures and technical standards and a unitary body responsible for the marketing and selling of international freight services between countries or along corridors.

- The quality of support infrastructure, particularly for international freight services, is poor. This extends from terminal facilities, through specialist wagons, to consignment tracking and administrative systems.
- There is a lack of investment, particularly in the Balkan countries. There is a need to ensure that investment is properly evaluated by the railways to have the maximum benefit. Failure to address many of the issues highlighted above will see fewer funds available for investment and continued decline in the service offered.
- Customers' expectations are rising both for passenger and freight as the CEEC economies develop and their populations are exposed to the influence of Western Europe. This is particularly true in the freight market where road haulage has become increasingly liberalised, with a large number of private firms entering the market with a subsequent improvement in price and service levels. Railways are failing to keep pace with these changing expectations.

The analysis and findings indicate that most of the railways continue to face major threats to their businesses and sustainability. The greatest threats and barriers appear not to be isolated, discrete operational or market problems, but comprise a mix of external, institutional and technical components. For example, a lack of commercial freedom within the organisation *and* a lack of business planning processes *and* a lack of management information systems and technology.

The complexity of the problems helps to explain why the situation continues to worsen in many countries, despite the considerable efforts to date. Furthermore, the study indicates that worse may be yet to come as costs continue to grow and revenues stagnate.

The consultants are convinced, therefore, that a 'holistic' approach to rail revival is required. That is, the measures and Actions Plans developed for each railway must address the complex interrelationships between barriers – they must embrace issues across the wider organisation, including strategic and institutional barriers, as well as providing discrete, remedial measures.

0.5

Action Plans

Based upon the analysis of the barriers to competitiveness and drawing upon examples of best practice from railways in the CEECs and western Europe and from other modes around 100 improvement measures have been identified. The measures are structured in such a way as to relate them to the families of measures used in constructing the power index. Therefore, the analysis of the power index can be used as a method of allocating measures to particular railways. The establishment of a mathematical relationship between adaptability and efficiency

enables the impact of the implementation of the measures to be quantified in terms of efficiency savings.

General points are as follows:

- Albania, Bosnia & Herzegovina and FYR Macedonia – it is recognised that there is a need to provide basic rehabilitation to railways to enable them to function and operate; and that external political difficulties impose a particular barrier to progress. However, the opportunity exists for a ‘clean sheet of paper’ approach to put into place appropriate institutions, organisation and procedures. Indeed, it can be argued that such measures are essential to ensure that the maximum benefit is gained from any infrastructure investment.

The approach adopted by the Baltic States, in creating three new organisations from the former Soviet Baltic Railway provides a good model here.

- Estonia, Latvia and Lithuania have generally made considerable progress in rail restructuring and reform, although each has followed a different approach. Therefore, the recommended measures for these countries have tended to concentrate on business management and operational issues rather than Government and reform measures. Finance and procurement measures feature prominently in all of these countries.
- • For the remainder of countries the focus is predominantly on Government/institutional and accountability measures. This is especially the case in the Czech Republic, Hungary, the Slovak Republic and Slovenia, where the effects of rising labour costs are likely to be felt the greatest. Exceptions are Poland and Romania, which have already undertaken considerable rail reform. In these countries the emphasis is more on providing business management and operational measures that will consolidate the reforms already made.
- International passenger and freight services are the one area where demand for rail is forecast to increase significantly by 2015. Even so, rail is still forecast to lose mode share, mainly to road but also to air in the case of passenger. Whilst there are specific barriers to international rail services, for example, border delays, different operating equipment and practices, poor quality rolling stock, these are not insurmountable. Of more fundamental importance is the fact that, in common with domestic services, most international rail services are production led and do not meet the needs and expectations of customers. The measures designed to change the CEEC railways from an operational control paradigm to a commercial control paradigm will also be of benefit to international services. There are particular opportunities for private sector

companies and operators to develop innovative services in the international freight sector.

- The EU has a clear role to play in providing encouragement that Directives regarding open access and charging are implemented and observed in the CEECs. This provides a basic framework for further institutional reforms. If open access is to be truly achieved and innovative international services developed, then a monitoring regime is required. The establishment of an European Rail Organisation System (EROS) in the EU could provide a model that could be extended to include the CEECs.

The measures proposed in the Action Plans work in two ways: (i) by facilitating change to a more adaptable, empowered and commercial organisation; and (ii) by short-term, smaller scale marketing and production measures that will generate benefits without necessarily undergoing major institutional reform.

Major efficiency savings are possible in the CEEC railways. Our estimates are that around €4 billion per annum (PPP Exchange Rates) could be saved by these railways if immediate action is undertaken to implement the measures in the Action Plans, all of which could create capital for investment. Even greater savings could occur in the longer term.

The majority of Action Plans focus on organisational and institutional issues. These address the deep-rooted causes of inefficiency. Naturally, investment will play a part in long-term solutions, but investment will only succeed if made within a progressive institutional environment. Several of the measures proposed here provide a process by which to target, prioritise and monitor investment.

0.6

A Way Forward

A common theme running throughout this study is that railways need to restructure if they are to increase economic efficiency and adapt to changing market conditions. This is fundamentally linked to the regulatory and institutional frameworks put in place by government. There are, however, restrictions on railways and distinct steps a railway must take if it is to progress with institutional and organisational reform. These relate to the method by which the railway is controlled by the government or its owner.

The implementation of railway privatisation would, in itself, lead to the introduction of many of the proposed improvement measures. However, it must also be recognised that rail commercialisation can be achieved under public ownership. Success in commercialisation requires a radical change to a business-led, commercial model of railway operations.

There are certain common features of the means by which the CEEC railways are controlled by government/owner. The control paradigm for the CEEC railways is typically centred around operational controls, rather than a commercial paradigm, centred around financial controls, business contracts and the competitive environment. The typical controls used by the government/owners of the CEEC railways are as follows:

- The operational budget (excluding Poland)
- Pricing passenger and/or freight traffic (excluding Estonia)
- The setting of the main organisation and the appointment of management below the Director General.

Important instruments for the commercial control paradigm or model include the following:

- An annual report fulfilling specific requirements.
- Business contracts including requests for social services.
- A long-term business plan co-ordinated with a long-term investment plan.

The requirements of the annual report include the need to be approved by an independent external auditor, contain an income statement, a balance sheet and a cash flow analysis etc. The financial results shown in the annual report should be in relation to profit and solidity targets.

These control instruments are often missing or poorly developed in the CEEC railways. Therefore, there is a need to develop and introduce the instruments of commercial control promptly as the instruments of operational control are phased out.

Traditional railway organisations typically include the railway safety function within their area of responsibility. This is acceptable for a railway within the traditional operational control paradigm. However, with the introduction of a commercial control paradigm and its emphasis on financial results and performance there is the potential for a conflict of interest between financial aspects and safety. Therefore, there is a need to organise the safety function outside both the operator and

infrastructure management. An independent safety and licensing authority needs to be established. Such a body can also act to ensure that incumbent operators do not discriminate against open access operators. Government needs to create a legal and regulatory framework that clearly establishes the roles and responsibilities for all parties within the rail industry, including responsibility for safety, and ensures that all operators are afforded equal treatment and status.

The control system that a government or owner imposes upon a railway is supported by internal control systems, i.e., management information systems. These will need to be developed or redesigned when the control paradigm is changed in order to provide the data needed for control. The internal control systems need to be designed to distribute the new control system throughout the organisation. This will involve the establishment of new commercial tools within the railway; for example, the production of audited annual reports and the development of cost allocation and business planning models.

The adoption of a commercial control paradigm not only requires new control instruments and internal controls but will also require a new organisational structure. The commercial control paradigm is based upon the idea that the railway, i.e., the Director General, has full responsibility for the financial result. In order to carry out this task the Director General must be in control of the development of the new control instruments, internal control systems and the new organisation. Given the scope and magnitude of the change involved moving from one control model to another it is to be expected that there will be considerable resistance, even among fellow railway managers. Therefore, the consultants consider that it is essential that the Director General be given the power to appoint and dismiss managers below him in the railway organisation and the power to select an appropriate organisational structure for the railway.

The steps required to bring about a change from an operational to a commercial control paradigm are shown in Figure E.2. Steps that must be undertaken by the government and those that must be undertaken by the railway are identified. It should be noted that the sequence of measures reflects the consultants assessment of the ideal order in which powers should be gained. It does not indicate their relative importance. In reality, the prioritisation of measures for a particular railway will be determined by the starting point.

Figure E.2 Changing the Control Structure of CEEC Railways

Step No	Government Measures	Railway Measures
1	Establish an Autonomous Railway Safety and Licensing Authority outside the railway	
2	Give the DG the power to choose the organisation of the railway and to appoint/dismiss the managers	
3		Develop the Organisational Structure; the Accounting system and the Annual Report
4	Separate Infrastructure/Train Operations	
5	Restructure the Financing of Train Operations and Infrastructure. Set Financial Goals.	
6		Develop Business Plans/Long Term Investment Plans
7	Give the DG Pricing Power for Passenger and Freight Traffic and Full Power Over Operations. Extend Power Over the Investment Budget	
8		Intensify Market Analysis and Product Development and Develop the Pricing System
9	Increase Accountability by replacing Social Service Obligations with Business Contracts	

Key steps to be undertaken by the government include promoting and undertaking the appropriate legal reform required to enable the commercial control model to function. This includes the establishment of an independent safety and licensing authority and the devolution of powers to the Director General and railway. These represent between framework measures.

General Accounting laws and practices have been put in place in all Phare countries and are no longer a barrier to commercial restructuring.

The key steps to be undertaken by the railway include the development of the internal procedures and processes for implementing and operating the new control model. An essential part of the process is to equip the railways with new commercial tools to replace operational control systems. This needs to embrace measures such as cost and resource allocation and business planning and evaluation models. These represent “within framework measures” which do not depend upon restructuring.

Ideally the process should be approached sequentially. For example, restructuring the financing of train operations and infrastructure will not be successful without giving the Director General the power to appoint staff. This will require the development of the organisational structure and accounting systems by the railway.

In practice, however, some of the steps may have to be taken in parallel. Particularly when the time required to implement a legislative programme and the urgency of the problems facing the railways are considered. The adaptability analysis has developed the concept of within framework measures, that is, those measures that can be achieved within a particular zone of adaptability. The railway measures in Figure E.2 can be begun to be implemented immediately in order to improve performance within the existing organisational framework of a railway. The immediate focus should be on providing the railways with the appropriate commercial tools to enable it to monitor and improve its performance.

Most of the major measures developed by the consultants to improve the competitiveness of railways in the CEECs, and reflected in the Action Plans and the process above, relate to organisational and institutional issues. They concern the framework for change and the creation of a commercial environment. The imposition of these measures is likely to require a top-down approach in order to create the impetus for change. The EU rail directives and other legislative requirements for accession can provide a catalyst for reform. However, during the course of the study the consultants were struck by the lack of a sense of urgency regarding the need for rail reform in, with a few notable exceptions, all the study countries. There is no room for complacency; as our analysis of the impact of rising labour costs has shown.

There is a clear role for the EU and other international bodies (Banks, Development Agencies, etc.) to play in promoting rail reform and generating a sense of urgency within national governments over the need to act. This may require a focus on national treasuries and finance ministries as the driving forces for change within each country, as well as the more obvious routes of the transport ministry and the railway itself.

Many of the within framework measures aimed at improving competitiveness, for example, development of new organisational structures and accounting systems and the development of business plans and product development, are best developed and implemented by the railways themselves, a bottom up approach from within the railway organisation. It is important that a railway 'owns' the particular solution if it is to be embraced and fully adopted rather be mere superficial compliance. This is not to ignore the need for an external top-down force to drive the need for change, as discussed earlier, but it does highlight the need for a partnership between the railways and governments and at times the EU. Governments, the EU and other international bodies need to drive the between framework measures that spur the railways into action whilst the particular form that action should take, the within framework measures, should as far as is possible be decided by the railways.

0.7

Next Steps

Recommended next steps are as follows:

- A series of workshops/seminars to publicise the study findings and to raise awareness of the nature and seriousness of the problems facing the CEEC railways. These should include the railways and government and include finance ministries in addition to transport ministries. The aim of these workshops should be to raise the sense of urgency within railways and government.
- The development and refinement of the measures and process laid out in this report into a common model/process of rail reform. Technical assistance packages can then be designed to assist railways through the process.
- The sharing of best practice through a series of workshops and seminars. The opportunities for secondments of managers between railways should be seriously considered.

Areas where the EU and international bodies have a particular role to play are as follows:

- Facilitating open access for international services, through the implementation and monitoring of EU rail Directives. The EC, along with other international agencies, should examine the establishment of an independent, international, body to regulate international rail operations.
- Funding for training programmes as part of redundancy and retrenchment packages.
- Linking Development Bank and Agency investment to progress in the implementation of restructuring and reform programmes.
- Raising general public awareness of the potential benefits from improved rail efficiency, in order to generate a greater sense of urgency.