

THE STRATEGIC ADAPTATION OF THE RAILWAY TRANSPORTING ENTERPRISES

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Introduction

Under current terms, each enterprise, no matter the nature of propriety, profile or dimension, must adapt to the requests of the market and the complex, dynamical and socio-economic environment and improve its economic-financial achievements and the ability to respond to the competition. Also, the enterprise works in a very hard to predict international dynamical and internal environment that endured multiple mutation lately: the globalization of the market, the emphasizing of technological and technical changes, the increasing of international competition, the variation of the request, and the limited character of the resources. In order for the enterprise to survive, the factory must have the ability to observe all these transformations, opportunities or constraints, to put good use the change and adjust to the exactingness of a continuous changing environment that supplies the necessary resources and that, in the same time may exercise stress, sometimes destructing.

1. Reason and goals in the strategic adjusting of the railway transportation

The transport is manly a service activity. So, the transport strategy must report to the way these services are made and in the way these services should develop to ensure a better movement and serve the economy of a country. In all advanced countries, the development of the railway transportation is justified by the unquestionable **advantages** of this system:

- energetic efficiency, the consummation of energy on the transportation unit is six times smaller than of the auto system and three times smaller than the naval system;

- the pollution of the environment, the volume of the polluted sent in the atmosphere factors on the transported unit is only 1/10 in comparison to the other means of transportation.

- the using of the field, the field needed to a railway track represents only 60% compared to the one necessary to a road with the same traffic capability;

- social involvement, the national coverage by the own transportation infrastructure, that creates the possibility of the Romanian citizen's displacement in any locality from the country, according to the long-expected plan, based to a known by the population preordained hourly graph through the schedule of train;

- the number of the accidents is the smallest of all the means of transportation – compared to the means of auto transport, the railway transport proved to be much safer;

- the long term strategy of the railway sector, for re-establishing the financial equilibrium, of modernizing and renewing the infrastructure is based on European management in the field, established by the European Committee. An increase in the gross income as anticipated in the following years in the Union will produce increases of traffic of goods and passengers in similar degree; starting from this premise, the current transport volumes will double in the next 20-40 years, based on the annual

installment of economic growth. The road transportation became the ruling mean of transportation in Europe and will continue to keep this status in the nearby future, even if the increase percentage will be better checked at the level of the Union than until the present day;

➤ in the next 25 years the Union wants that an important part of the new transportation requests be processed by the railway transport to avoid the collapse and to respond in an efficient manner to the instigations concerned by the ecological criteria, but also by the decreasing of the time lost in the congestions from the road traffic, especially because of the producer's pretensions to benefit from deliverances on logistic principles (just in time). In this meaning, the Union shoves the railway transportation system towards a gradual liberal, but in a fast rhythm, that in the next 25 years the European exclusive market of railway transportation be a reality. On this market the railway operators will compete, and only the most efficient and well-trained in terms of technical and commercial fields will survive. The railway transportation is indeed the strategic sector that depends the success of the effort of the restoring of the balance of the distribution of the requests on different means of transportation, especially for the goods. The balancing of this sector means competition between the proper railway companies

The main strategic goals of the administration of the railway infrastructure for the following period are:¹

- the promoting of a new management policy of the railway infrastructure, based on: the significant decrease of the upkeep repairs and investment related prices;

The acquiring of benefit by the rent of the inoperable infrastructure to private operators;

- the assurance of the interoperability with the European railway transportation system, by the alignment to its technical and operational parameters;

- the modernization of the pan-European corridors that cross Romania and the main railway stations;

- the rehabilitation of the railway infrastructure at the level of the traffic security designed parameters ;

- the coverage of the expense by marketing the transportation abilities;

- the usage in a large extent of the national manufacturing of marks at European standards;

- the increase of the efficiency of the maintenance activity of the infrastructure, by increasing the degree of mechanization of the works and work performance, leading to the decrease of prices;

- the application and the maintenance of a suitable quality system;

- the application of methods and marketing procedures concerning the commercialization of transport abilities;

- the promotion and support of railway scientific research;

- the starting of the studies to begin the achievement of the railway network of great speed Constanta-Bucharest-Curtici (the contact with Budapest), Bucharest-Vicsani (the relationship with Kiev, Moscow and Warsaw), coordinating the traffic from a small center of informational ordering.

The general strategic goal of the transport system is made-up by the sustaining of the reorganization and modernization of the railway transport network by ensuring safe transportation conditions in internal and international traffic that assures the connection of the localities from the country and of the isolated areas from the transport networks.

2. The strategic adaptation of the railway transportation enterprises – complications and perspectives of the integration in the Union

¹ The strategy of the modernizing and the renewal of the railway infrastructure in view of the assurance of the integration in the European Union.

The evolution of the European railways and the fast coupling of the Romanian railways to the international railway circuit allowed the establishment of the European railway transport corridors, where Romania is integrated. The international railway transport corridors have an important place in the international trade, especially for winning new opening markets. Romania, by its geographical position, represents an intersection area of the railway transport international thoroughfares that connects both the North from the South and West from the East of Europe. The last Pan-European transport Conference from Helsinki (June 23rd-June 25th 1997) established the ten corridors of transportation that cover Europe, facilitating the connections between different areas of it. Three of these corridors cross Romania (IV, VII and IX). The corridors IV and IX are of various patterns, also having railway constitution, and the VIIth passage is represented by the Danube. The Trans-European railway passage IV has on the Romanian sector a length of 880 km. From the Hungarian border to Constanta, it traverses Romania from North-West to South-East. In Romania, the railway constitution of Pan-European IVth Corridor has the main route: Curtici – Arad – Sighisoara – Brasov – Bucharest – Constanta, with a southern route Arad – Timisoara – Turnu-Severn – Craiova – Calafat. The Trans-European railway corridor IX has a length of 621 km on the Romanian sector. He is common, on the part Bucharest – Ploiesti Triaj branch on 56 km, with the route of the trans-European corridor IV. From the Bulgarian border to Ungheni, it covers Romania from South to North-East, the main localities that passes being: Giurgiu, Bucharest, Ploiesti, Buzau, Focsani, Marasesti, Adjud, Bacau, Roman, Pascani, Iasi, Ungheni. To frame the alleged railways in the international exactingness concerning railway circulation, the railways need to be brought to the technical and operational parameters, suitable for the unfurling of

traffic at European level by rehabilitation and modernization works.

3.1. Specific features of the Romanian railway transportation sector

The railway transport system represents an integrated system and its working, under conditions of financial equilibrium, imposes the insurance of a law, institutional and management frame that allow in a coherent way the tracking of this goal in all the components of the system. The Romanian railway system is organized based of an institutional and law frame that assumes the interaction of the following entities: the transportation market, the state, the railway infrastructure's administrator and the transport goods and passenger's operators² [2].

By the Decree No. 12 from July 8th 1998, concerning Romanian railway transport and the reorganization of the National Society of Romanian Railways, was created the law frame needed for the institutional separation of the exploiting and maintenance of the railway infrastructure from the activity of operating the railway transport services, according to the market economy criteria, according to the goals of the Union (EU 440/91) for the railway field, to prepare the Romanian railway transport system for the participation at the European transport market, after its liberalization.

The National Railway Company "NRC"- SA is the Romanian legal entity and has status of commercial stock society. The company took over the tradition of over 150 years of continuous activity for the public service of railway transport. The company has in concession the public railway infrastructure and the goods as a result

² The decision no. 817 for the approval of the Plan concerning the long term strategy of the railway sector in view of the re-establishing of the financial balance of the infrastructure administrator and in view of the modernizing and the renewal of the infrastructure, published in the Romania's Official Gazette no. 738 from August 15th, 2005

of the investments, developments and/or modernization of it. The railway infrastructure includes the **public railway infrastructure**, public property of the state, and the **private railway infrastructure**, the one that is in the private property. The public or private railway infrastructure of the state can or can't be connected to the trans-European railway infrastructure as follows:

◆*the interoperable railway infrastructure* – related to the national and international traffic, administrated according to the stipulations of the legislations concerning the railway transport operator's free access, and that develops according to the interoperable European adopted technical standards and are taken over in the Romanian legislation;

◆*the uninteroperable railway infrastructure* – related to the local traffic, connected or not to the interoperable railway infrastructure, and is administrated and develops based on internal specific settlements.

The main components of the railway infrastructure are:

- ◆10.821 km railway transport network, which 2.909 km double railway;
- ◆20.385 km tracks of unfolded network, in exploitation;

- ◆3.974,5 km of electrified tracks;
- ◆170 tunnels, on a length of 60.436 km;
- ◆18.170 bridges and footbridges;
- ◆1.058 circulation safety equipment;
- ◆modern optics fiber telecommunications network;
- ◆an own structure of railway information.

The railway infrastructure is currently in a difficult technical status because of important arrears concerning the accomplishment of the cycles of maintenance and repairs of the tracks, the installations and the buildings, and for the accomplishment of modernization works, arrears produced by the chronic absence of the necessary funds. Lately, as a result of the impossibility of providing the financial funds for the current repair works of the railway infrastructure, the ability of circulation was decreased and the total length of the network reduced to 20.385 km in 2007 compared to 21.030 km in 2001. The damage of the technical status of the railway infrastructure enforced the reducing of the circulation maximum speed of the trains of goods and passengers on current and direct tracks, the situation being shown in table no.1.

Table no.1. The length of the railway lines

Speed degree (km/h)	Year – The length of the current and direct railway lines (km)						
	2001	2002	2003	2004	2005	2006	2007
< 50	3682	3750	3825	3874	4124	4089	4283
51 - 80	5168	5180	5275	5287	5058	5048	5100
81 - 100	2716	2650	2556	2436	2395	2402	2540
101 - 120	2057	2014	1957	1889	1880	1870	1546
121 - 140	219	212	201	321	321	321	261

Source: National Company of Railway Lines "CFR"-SA, Statistical data

On the national railway network system there is, in evidence, a number of 18.170 of bridges and culverts, 170

tunnels and 11.473 km of embankments with the works of defence, consolidation, draining and protection referring to these.

From the total number of 18.170 bridges and culverts in evidence, a number of 3.235 (respectively 17,81%) have the life duration expired, and a number of 10.998 (60,53%), are due to repairs for bringing back into the initial functioning parameters. From the total number of 170 tunnels being into evidence, 67 (39%) are due to capital repairs. These suppose the ensemble of works, which realize the bringing back of the component elements of the railway to the initial parameters, for the assurance of the trains circulation in full safety conditions, with the established circulation speeds and weight.

On the entire network system there is a number of 1.054 dangerous points, of which 319 of first degree, and of these 119 are on backbones and main lines. They are due to the weak embankments areas or with increased risk of losing the stability because of meteorological phenomena, areas with falling rocks danger, works of art with technical problems. The elimination of dangerous points implies complex works for the security of which the expenses are high and there weren't allocated on time the necessary funds.

On the national railway network system, there is a big number of centralization and electrifying installations that, most of them have been exploited for more than 40 years. The maintaining into functioning of these installations (most of them with the normal functioning duration out of date) is done with repeated interventions, at high expenses, with the alternation of the regularity of the circulation of trains and with the entailing of high number of specialty tools and staff.

In the last years, there continued the process of degradation of the technical state of the public railway infrastructure because of the non-execution of the capital repairing works, according to the cycles stipulated by the in force norms. This state of fact appeared from the lack of financial resources, in the conditions in which the

elements of the public railway infrastructure had the normal functioning duration out of date or were due for capital repairs, in a percentage of approximately 50%. Because of the insufficiency of the annual budgetary allocated transfers, there couldn't be done works of capital repairs in a volume that assures the gradual reduction of the number and the weight of the elements of the public railway infrastructure due, for various years, to capital repairs or with the normal functioning duration out of date. The annual average necessary funds from the state budget, which assures the gradual reduction process of the number and the weight of the elements of the public railway infrastructure due for various years to capital repairs or with the normal functioning duration out of date for various years, in the purpose of the stopping of the degradation of the public railway infrastructure and the application of the strategy in the field of railway transportation stipulated in the Governing Programme 2005-2008, (the elimination of the dangerous points and the speed restrictions on the public railway infrastructure, the increase of the technical and commercial speed with minimum 20%) is of 500 million lei.

Nevertheless, in the last years (2000 - 2008), the allocated funds for the capital repairs works were, on an average, at the level of 14% of the substantiated necessary, and in the last three years, the allocated funds were even smaller, at the level of 6 - 11% from the necessary, with completely insufficient compared to the large number of elements of the public railway infrastructure due to capital repairs or with the normal functioning duration out of date.

The degradation state of the railway infrastructure was also emphasized by the calamities due to the floods in the years 2005 and 2006. During the year 2005 the public railway infrastructure was deeply affected in over 150 areas, representing embankments,

which were destroyed or the portent capacity of which was diminished, bridges and culverts deteriorated, clogged or even out of function (Putna Seacă, Grădiştea, Comăneşti, etc.), defence works destroyed or become improper to their given attributions. Part of the damaged objectives in the year 2005 were repaired or benefited of the initiation of works for the bringing back into minimum functioning parameters, which guarantee the safety of the circulation of trains. Because of the large number of damaged areas and of the fact that the precipitations and the atmospherical conditions at the end of the year 2005 didn't allow the realization and the maintaining of a sustained rhythm of the works, a part of the ones begun in the year 2005 weren't finished. During the year 2006 there appeared new phenomena with characteristics of natural calamities, which affected new areas and elements of the railway infrastructure, but also aggravations at some already weakened by the floods and the precipitations manifested in the year 2005. This situation made that, in the year 2006 at the lines remained closed from the year 2005 (Bucureşti Progresu – Giurgiu, Piatra Olt – Podu Olt), to add, for variable periods of time, the lines: Vânători – Odorhei, Dărmăneşti – Păltinoasa, Dolhasca – Fălticeni, Dorneşti – Nisipitu, and also other intervals of stations.

3.2. The costs of the strategic adaptation of the railway transportation enterprises

The national railway transportation system is insufficiently developed and of an uncorrespondingly quality, this affecting the quality, the safety and the travelling time from the departure point to the destination one, for persons and merchandise. That is why it is imposed the increase of the circulation speed on the railway, measure that needs, firstly, the bringing of the railway lines in exploitation at the projected

parameters, and also the assurance of the technical conditions for the circulation of the passengers trains and merchandise with increased speeds (160 kilometres per hour for the passengers trains, 120 kilometres per hour for the merchandise trains). Besides, we consider necessary the increase of the services quality for the railway transportation and the modernizing of the transportation means.

For the alignment of the transportation facilities offered to the operators at the European Union standards, the provided efforts were materialized in the following:

- ***The realization of the European railway transportation network in Romania.*** The transeuropean networks have an important role in the assurance of the free circulation of the passengers and the merchandises in the European Union, because they transport approximately half of the total number of merchandises and passengers. Their purpose is the reduction of the agglomeration on the important routes and they establish the priorities concerning the financial support for the infrastructure projects.

- ***The modernizing of the transeuropean corridors IV and IX.*** The corridor IV crosses Romania. It passes from Nuremberg through Prague, Vienna, Budapest, to Romania and then it separates in a Nordic ramification that leads to Constanţa and in a Southern ramification from Arad to Sofia, then it divides again in links to Salonic and respectively to Istanbul. In the analysed period there were developed actions that had as purpose: the elimination of the dangerous points and the speed restrictions on the public railway infrastructure, the increase of the technical and commercial speed with minimum 20 %, the developing of works on the corridor IV: Câmpina - Braşov, Bucureşti - Constanţa, Curtici – Arad - Simeria and of the road section Piteşti - Râmnicu Vâlcea;

- **The modernizing of the railway stations;**
- **The electronic centralization of the railway stations;**
- **The continuation of the electrification programme;**
- **The realization of the high-speed railway line Budapest - Bucharest - Constanța.**

The costs for the realization of the programmes of works and current repair at the lines and the works of art of the public railway infrastructure are

evaluated for the year 2008 at a total amount of 285 million lei.

Because of the uncorresponding state of the railway and of the works of art, of which ones have an age of over 100 years, for the guarantee of the safety of the circulation of trains, the only appropriate measure at the disposal of the hired personnel is the drastic reduction of the maximum circulation speeds through the introduction of speeding restrictions, the situation being presented in table number 2.

Table no. 2. The evolution of the speed restrictions in the period 2001-2007

Year	2001	2002	2003	2004	2005	2006	2007
Number of speed restrictions	245	186	238	224	359	506	373
Length of the restriction (km)	602	624	575	644	737	964	1.019
Average speed of the network system (km/h)	68,31	67,85	67,25	67,25	66,52	66,59	65,01

Source: National Company of Railway Lines "CFR"-SA, *Situation of the speed restrictions*

An important objective for following period, essential for the improvement of the image of railway transportations is the modernizing and the rehabilitation of the buildings of the railway stations. Thus, at the building in the big railway stations there will be works of modernizing the due installations, the equipping with modern installations for the informing of the travelling public, the endowing with proper furnishing and informatics and birotecs apparatus of last technological generation. In this sense, there was developed a project with external financing, destined to the maximization of the opportunities of incomes obtaining from rents and to the minimization of the maintenance and exploitation costs in five railway stations (Craiova, Timișoara, Cluj-Napoca, Iași and Constanța), in an amount of 24 million euros.

There was elaborated a modernizing strategy on medium and long term so that it can use the newest

technologies in the IT field. This allows a special mobility in the implementation of an interdisciplinary project concerning the information technology and telecommunications, demanded by the European Organism (The International Railway Union, The European Commission and The European Parliament) for the inter-operable railway infrastructure. In the last years, there was realized a **network of digital communications**, according to the European standards. The complexity and the homogeneity of the structure are the main characteristics of the global communications network, which comprises five main networks, each of them having modern technologies, which assure complete telecommunications services, flexibility and safety. This contains: the optical fiber cables network, the synchronic digital transmissions network, the ATM network, the synchronizing network, the ISDN commutation network.

Combining last hour technologies with special performances, the digital communications network has a guaranteed availability, dedicated capacities and secured services of remarkable quality. There were created the branches of telecommunications and informatics, thus forming the own nucleus of specialists who put into functioning and exploit the telecommunications networks and the informational systems. At the same time, the specialists are trained in the marketing field so that, in the near future, to extend their series of services to the beneficiaries outside the railway system. The special advantage of the railway telecommunications networks is given by the conditions imposed by the beneficiaries from the railway sphere, where the communications have decisional character, complete for the safety of the trains 'circulation and are secured.

In these conditions, it can be considered that the development of the railway transportation infrastructure represents a necessary condition for the successful implementation of the other development priorities of Romania for the next period, contributing to the increase of the mobility of persons and merchandises, to the integration of the regional growing poles in the transeuropean transportation network, to the fight against the isolation of the underdeveloped areas and, last but not least, to the development of the regional and local transportation infrastructure.

4.Conclusions

In conclusion, it can be said that the aimed general objective is the

assurance of the quality and the safety of the railway infrastructure. Through this there are created the necessary premises for the durable development of the economy and the improvement of the quality of life. The attaining of this kind of objective will contribute, directly, to the economical development of Romania through the positive impact of the re-launching of the short term demand and, indirectly, through the influence of the transportation offer on the structure of the costs at the economic agents, the integration of the Romanian economy in the World economy and the stimulation of the increase of the transfrontalier fluxes of persons and goods. The development of the transportation infrastructure plays an important role in the integration of the internal market and supports the emphasis of Romania's geographical positioning as transit area, at the crossroad of the various transeuropean corridors. Romania must take advantage of its geographical positioning through the attracting of investments in infrastructure and in services in the transportation field. The development of the transportation infrastructure will increase the accessibility of the less developed regions, both at the areas situated in the interior, and outside the country's borders, thus improving the flexibility of the labour force market and the economical competitiveness of the areas that take advantage from the development projects.

REFERENCES

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