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DEVELOPMENT OF RAILWAYS IN NEW MARKETING CONDITIONS

ABSTRACT

As a traffic system, railway is experiencing possibly the biggest organizational and systemic changes ever, in its long existence. It has always been under the patronage of the state. It has had privileged position on the transport market, and its losses were covered by the state. In comparing the railways as a public transport system and other transport systems, especially the road system, railways features significant innate advantages which should be used by stimulating traffic policy. This paper studies the future development of the railway from the transport aspect in the new conditions of the transport market, market liberalization on railway lines and the privatization process of the railway as transport service provider. It presents the basic characteristics of the railway which emphasise its advantages and drawbacks compared to other traffic systems. The characteristics of the transport market are presented, and the position of the railway in the given circumstances is analysed. The paper also analyses the political relation of the governments of some countries and EU towards traffic and favouring of individual systems.

KEY WORDS

railway, development, traffic standpoint

1. INTRODUCTION

The development of railways has to be considered from the perspective of internal condition of the railway of a railway authority and the external conditions within which the development is possible and required, such as the market, politics and general railway condition. Also, the possibilities and risks of future development are evaluated.

Railway is a transport system of public transit which needs to be market oriented regarding entrepreneurship, transportation and operation. However, regardless of the past the market effect of a certain entrepreneurial type and structure should be studied and responded to.

Line transit, as dominant form of public transit, leads to certain restrictions. Line transit is a service activity in traffic with defined routes, stops, order to stops and timetable, which can suit anyone according to traffic tariffs, include various individual requirements and exclude the compulsion of using individual transport.

2. BASIC CHARACTERISTICS OF RAILWAY

Apart from some exceptions, a subgroup of public line traffic are the rail systems. The characteristics of such systems include:

- accurate guidance of vehicles along a track without assistance of the train driving staff,
- the rails are not used by carriers of other modes of transport,
- possibility of forming various types and compositions of trains,
- stable rail network with rough nodes,
- expensive construction, operation and railway line maintenance,
- often not sufficiently loaded network,
- construction of major inter-dependent transport units with minimal requirements for train staff, large capacity in passenger and cargo traffic and high transport safety,
- very high technical and operation interdependence between the tracks, vehicle and propulsion,
- possibility of achieving high maximal speeds of up to about 500km/h,
- long-lasting, expensive instruments with limited possibility of changes during the exploitation life,
- substantial reduction of capacities when trains of different speeds operate on the same railway line.

Because of the movement of railway vehicles with steel wheels along steel rails, the rolling resistance is substantially lower compared to road vehicles so that the energy consumption per unit of carried cargo and unit of travelled path is much lower. However, because of the smaller coefficient of adhesion between the driving wheels and the rails, the railway vehicles have significantly limited possibility of managing ascents.

A significant characteristic for the future railway competitiveness is reflected in that it has a very widespread network, especially in the industrially developed countries of Europe and owns an infrastructure up to the very centres of big cities. Every other traffic system, which is not compatible with railway, has therefore big difficulties to achieve the same level of service on the traffic market.

Railway services are provided by companies, in which railway lines of normal tracks belong traditionally to states, and secondary and special lines are mainly in private ownership. Strict state regulations regarding personnel recruitment, method of purchase, supply and tariffs, which are compensated by subsequent coverage of deficit, rendered railway companies conservative. This creates difficulties in adjusting to the market competition compared to other modes of transport since railway was often protected as a market monopolist. In the transition to market operation a lot has changed. Old conditions are abandoned, and new occur in the global trend towards privatization and deregulation.

The separation of state relations acts undoubtedly useful. The orientation of railways to two circles of users; direct user of the passenger and cargo traffic service on the one hand and the service customer on the other hand, has started its run-up period. Understandably, the ventures for better market positioning, recognising the synergy effect of all the supply segments, have not been reflected everywhere, as e. g. shown by interregio-trains. Furthermore, the optimum has not been reached yet, primarily from the aspect of efficiency between the traditional subcontractor companies and the politically stimulated competition.

The most difficult seems to be the tendency to separate the railway infrastructure from the transport activity, although there are certain results in this sense. The accountancy and organization separation of infrastructure from traffic is obviously least good for major railways.

Two more topics important for entrepreneurial environment need to be noted. New suppliers regulation will increase due to global process of supply industry concentration. In railway companies, first of all in cargo traffic, there are still very different tendencies between complete transport service carrier (one-stop-shop) and pure carrier.

3. CHARACTERISTICS OF TRAFFIC MARKET

Traffic is often considered as equal to mobility. Mobility is, however, a general notion for movement, transition and change. When speaking of transport market, then one can say that other mobility components have great influence on traffic and its infrastructure.

In passenger traffic the costs are determined according to traffic purpose mainly according to the destination and route configuration and possible detours, i. e. special transport conditions. In cargo traffic, the non-unified economy and disparity in the set conditions and the conditions on the environment are significant.

Difficulties in changes of places are not measured any more by distances, except for slow traffic, as with pedestrians, but first of all by time, money and planning possibilities, such as reliability and punctuality. The mentioned difficulties are affected by traffic marginal conditions which are created by the total volume of traffic because of:

- global population growth,
- the growing concentration in the populated areas,
- increased exchange of goods, first of all semi-products and finished products in smaller shipments.

One should take into consideration very significant elements such as energy, and from the aspect of environmental impact, the smoothly flowing and quiet traffic. Physical traffic management can be significantly improved by remote control. Nevertheless, the traffic space is becoming more inadequate with every major investment. The market reacts to this with appropriate prices such as is the case also with energy. Only in rare cases is the distribution regulated, such as e. g. distribution of water and food in the times of crisis and the area for throughput traffic. This has no rational bases, and is reflected on the parking space management.

The price of using roads is still politically determined and limited, which causes:

- restriction of the capacity by congestions, and is reflected directly and negatively on the costs, time and reliability of transport,
- reduction of efficiency and increase of total traffic costs.

More precise pricing realized by including into calculation the quantified external costs and revenue is the most important rule for constant efficiency of the traffic market.

Supply and demand on the traffic market are reduced basically to the fact that the potential users will require optimal method for arriving to a destination, i. e. for the delivery of goods. This means that only the

transport product is paid for, and not the production problems and conditions of the service provider. For comparison the supply of railway and road transport is important.

The qualitative requirements of the transport demand are fully independent on the quantity of demand per relation and time interval. Regarding interdependence of the quality supply of public and individual transport this looks completely different (Figure 1). The advantage of the railways lies in the high transport demand. The basic problem in railway passenger and cargo transport is always door-to-door transport.

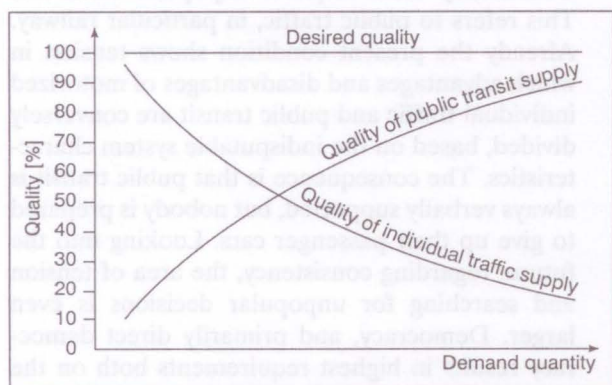


Figure 1 - Dependence of the quality of public and individual transport supply on the volume of demand

As an isolated system, railway is not competitive on the market, and even less so are some minor railway companies. On the market, only the total supply of public passenger transport is considered, which has to be "sold" to the potential customer as a whole from the aspect of marketing, tariff and supply (integrated transport chain), regardless of the company affiliation, transport means and propulsion form. Moreover, the fate is shared with slow traffic, and there is the necessary assumption of arriving to the stop.

Better usage of infrastructure needs to be under the condition of maintaining reliability. The assessments of market performance are often dubious, but nevertheless show unambiguous tendencies. Railway, which has systemic advantages for automation and management, can succeed on the market if it allows access to infrastructure and improves the supply.

Regarding the transport market and traffic load, it is clear that the service carriers with the emphasis on passenger traffic are restricted by performance. Public transit represents a typical product of internal and external connecting whose expenditure and income side are presented by defined conventions (Figure 2).

From the comparison of the railway and transport market it is obvious that railway has to be market oriented since the quantitative requirements of the transport market cannot be met by other transport service providers because of the environmental requirements.

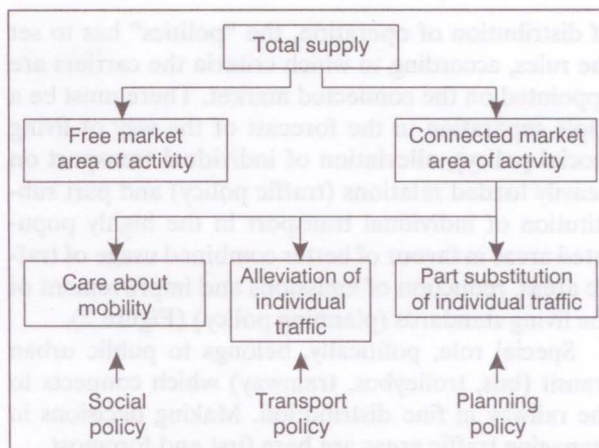


Figure 2 - Fields of operation of public transit

The development of transport and transport methods is distinguished per world regions.

In the USA the standard of living is growing practically parallel with the motorised individual traffic. This results in the development of cities that have been planned for motorized traffic, their physical extreme expansion and increase in the number of citizens.

In West Europe the standard of living and the motorization of individual traffic are growing partly simultaneously, but only after the industrialization-initiated growth of the cities and based on the existing developed network of railway and public suburban traffic which can be renewed and expanded. This provides good bases for further traffic development.

In the Third World the agglomerations grew into high density spaces, but without growth of general standard. The motorization of individual traffic is restricted to primarily cargo transport, which insures supply and creates minor pressure on urban traffic management. The main load of passenger transport is transmitted to the otherwise poor urban public transit and slow traffic (e. g. bicycles). The pressure of the growing number of passenger cars has been suddenly growing and threatening the big agglomerations.

4. POLITICAL RELATIONSHIP TO TRAFFIC

The political attitude towards traffic planning is often understated when speaking about the objective that is to be realized in the future. "Politics", i. e. respective authorized bodies according to the corresponding areas, are often interconnected in various ways with the public transit companies and even with the railways, although as operation customer, the owner with proper ownership strategy also as the supervision body. When considering in more detail the role of the body for appointing the carrier in the area

of distribution of operation, the "politics" has to set the rules, according to which criteria the carriers are appointed on the connected market. There must be a triple separation in the forecast of the way of living (social policy), alleviation of individual transport on heavily loaded relations (traffic policy) and part substitution of individual transport in the highly populated areas in favour of better combined usage of traffic areas, reduction of emissions and improvement of the living standards (planning policy) (Figure 2).

Special role, politically, belongs to public urban transit (bus, trolleybus, tramway) which connects to the railway in fine distribution. Making decisions in managing traffic areas are here first and foremost.

It should be emphasised that motorized individual traffic and public line traffic, fully objectively, follow completely different internal laws. This results in the basic rule that, in accordance with characteristics, the treating of public and individual transport on the mixed areas represents the basic task of traffic engineers, and not the political authorities. Only aware stimulation on the basis of quantified traffic and political objectives leads to the preference of public transit, where measurement on the basis of the number of passengers, rather than vehicles should be defined.

The decrease in traffic speed and reliability of line traffic renders the entire system of public transit not only unattractive and leads to loss of revenue, but also reduces productivity and increases the necessary inter-phases, which in turn affects the price. Therefore, clear and concrete political attitudes need to be given. Thus e. g. giving up of parking on lanes speak in favour of line traffic which is not disturbed by motorized individual traffic.

5. CONSISTENCY

The generally known notion of consistency means responsible attitude to all the resources of humanity including its knowledge, so that the present and future generations would have equal chances for a good life. Consistency is not an outlived notion, but rather has the highest significance precisely for railway in the tense area between the traffic market and politics. The bases lie in the fact that the railway is investment intensive and in any case long-lasting and renders partly irreversible the population density, economy and first of all preserved environment in its proper sense.

Speaking of railway, wide topics can be mentioned including:

- For the assessment of the future, greater importance lies on the aware attitude towards uncertainty and scope of action rather than accurate calculation of an actually false certainty. The models have been, per definition, simplified, abstracted presentations of complex reality and are based,

considering the future, on input numbers, whose uncertainty grows with the increase in the forecast period. Therefore, actual condition needs to be analysed and the future forecast on the basis of the study. This should then, as much as possible, result in designing of further development, and in the field of overlapping set the possible and reasonable main orientations constantly verified according to current plans. Direct measures are deduced from the main directions. This means also that all the measures have long-term effect and have no short-term practical effect.

- Consistency often requires unpopular decisions. This refers to public traffic, in particular railway. Already the present condition shows tension in which advantages and disadvantages of motorized individual traffic and public transit are conversely divided, based on the indisputable system characteristics. The consequence is that public transit is always verbally supported, but nobody is prepared to give up their passenger cars. Looking into the future, regarding consistency, the area of tension and searching for unpopular decisions is even larger. Democracy, and primarily direct democracy results in highest requirements both on the decision makers and certain institutions. The decision-making process for achieving harmony always has greater weight.
- Considering and dealing, actually and time-wise, with small systems supports a predetermined wrong development. This is reflected, in today's world tendency towards deregulation and privatization, very clearly also in the relation between the state and the transport policy. Here is railway, and primarily infrastructure with its systemic inertia towards changes, in a difficult position. It cannot and should not become a toy of short-term turmoil. Its value is based precisely on its long-term characteristics and under the valid frame conditions on the objective value, rather than stockholder value.
- Rich industrial countries can persist in continuing negotiations, whereas the developing countries are much more burdened by the accumulated current problems. Since the global burden of the future comes first of all from the industrial countries, the consistency becomes, therefore an obligation.

Railway as a transport system supports the principles of consistency. The extent to which it is in the position to do so, depends primarily on its environment, especially on marginal traffic conditions.

The problems can be considered for the European Union. The superior traffic policy of the European Union is given in the White Paper of 12 September 2001 entitled "European traffic policy until 2010".

On the contrary, in introducing or in comparing the political attitudes with effective negotiations there are adequate differences. The basis is found on the one side in the difficult-to-define smallest common denominator of the big and complex EU space, and on the other hand, in the specific situation of small countries, whose pioneer work is imposed in the sense of consistent policy.

6. CONCLUSION

The possible development of railways needs to be regarded from the perspective of internal condition of railways of a railway administration and external conditions that rule the traffic market, which result from the political relations and general condition on the railway. Further development of railway is moving towards market orientation and entrepreneurial activity of railway carriers on the transport market.

The essential advantage of the railways for its future competitiveness is reflected in the fact that it has a very widespread network, especially in the industrially developed countries of Europe and that it owns the infrastructure up to the very centres of big cities. Every other traffic system, which is not compatible with railways, has therefore big problems in order to achieve the same level of service on the transport market. In the reform of railways, the most difficult seems to be the separation of railway infrastructure from the traffic activity.

As an isolated system, railway is not competitive on the market, and even less so individual minor railway companies. On the market only the total supply of public passenger transport is considered, which has to be "sold" to potential customer as a whole from the aspect of marketing, tariff, and supply (integrated transport chain), regardless of the company affiliation, transport means and driving form. The common problem is the arrival to the stop, i. e. slow traffic which reduces the attractiveness of public transport.

Better usage of infrastructure should be under the condition of maintaining reliability. The assessments of market effect are often dubious, but nevertheless show unambiguous tendencies. Railway, which has systemic advantages for automation and management, can succeed on the market if it allows access to infrastructure and improves the supply.

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SAŽETAK

RAZVOJ ŽELJEZNICE U NOVIM OKOLNOSTIMA TRŽIŠNOG POSLOVANJA

Željeznica, kao prometni sustav, doživljava u svom dugom vijeku možda najveće organizacijske i sustavne promjene. Ona je uvijek bila pod okriljem države. Imala je privilegirani položaj na prometnom tržištu, a njezine gubitke pokrivala je država. U usporedbi željeznice kao javnog prijevoznog sustava i drugih prijevoznih sustava, naročito cestovnog, željeznica ima značajne prirodne prednosti koje bi trebalo koristiti poticajnom prometnom politikom. U ovom se radu obrađuje budući razvoj željeznice s prometnog gledišta u novim okolnostima prometnog tržišta, liberalizacije tržišta na željezničkim prugama i procesu privatizacije željeznice kao davatelja prijevozne usluge. Daju se osnovne značajke željeznice kroz koje se ističu njezine prednosti i nedostaci u odnosu na druge pometene sustave. Prikazane su značajke prometnog tržišta i analiziran položaj željeznice u danim okolnostima. Također je analiziran politički odnos vlasti pojedinih zemalja i EU prema prometu i favoriziranju pojedinih sustava.

KLJUČNE RIJEČI

željeznica, razvoj, prometno gledište

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