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CONDITIONS OF A QUALITY PUBLIC RAILWAY SERVICE IN HUNGARY

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Abstract

A railway operator, in order to sustain its competitive power, has to dispose of an innovative and cost-effective service development strategy that provides the procurer with the best service available for the lowest claim of support. The basics of the effective fulfilment of this public service task are: introducing an attractive, supply-based schedule and on these foundations, a development programme. In Hungary – with the increasing mobility, the competition getting sharper in the transportation sector and the liberalization just around the corner – the effective use of state resources claimed by public transport systems and the competitiveness of the railway passenger transport are made possible only by laying on the regular interval timetable.

Keywords: public service, development strategy, regular interval timetable, mobility.

1. Introduction

The passenger transport market in Europe is still in explosive growth. For the railway transport – leaving individual transportation aside – the biggest competitors are the liberated aerial and vehicular transport. Only effectively operating public transport operators forced to survive in competitions will manage to suit the additional transport needs generated by the gradually increasing mobility. On the field of railway transportation, sustaining competitiveness in the coming decades – with ensuring sustainable mobility as the EU's central transport policy goal in view – will only be manageable with public service railway companies working on a liberated market.

The expected opening of the European railway passenger transport market and the preparations for liberalization affect Hungarian railway passenger transportation

too, therefore delineating a complex service development strategy suitable for public service railway passenger transportation shall be a must.

2. Necessity of Service Development

Although railway principles for opening railway market will help funding the bases for the railway operators to operate in market environment, only effective businesses with marketable services will be able to sustain competitiveness.

In order to be successful, railway operators need to work on an innovative, cost-effective multi-stage service development strategy that allows gradual improvement with differentiated service levels. For the railway transportation to keep its market niche with the ever-growing passenger claims, a considerable supply increase and the integration of public transport systems are a possible first step.

The public transportation is working decisively in a public service environment in which the operator has to guarantee the service system ordered by the customer with minimizing its costs and maximizing its income. Therefore, it would prove practical to make efforts so that railway passenger transport could be able to assure the best quality service with the least subsidy claims available and as such, offer a competitive solution for the customers.

3. Public Service in Railway Passenger Transport

In the 1960s, the role of the railway transportation has hugely decreased in the Western countries due to the explosive growth of mobility, the increasing rate of motorization and thus individual transportation. To enrich competitiveness, the proprietors of the railway companies – the states – initiated the review of operation and legal regulations. Results showed that competitiveness can be enhanced greatly by marketable viewpoint, allowing competition and creating transparent operative bodies. To reach the goals in reference with sustainable mobility, the state must play its very important part by partially financing public transportation.

3.1. Defining Public Service

Public service is a system of activities that (with given conditions) cannot be conducted on a business basis, that are fulfilling obligations, also using services derivated by citizenship rights to suffice common needs of society. Realizing this kind of service makes state intervention (obligation of the signature of a public service treaty) and using public funds necessary, and it is backed by sustainable development and on the long run, ecology and economy aspects too. To ensure public availability and traffic policy goals, the authorities (government/municipality) has to compensate reasonable costs not covered by income.

EU ordnances are regulating public service activities for transparent work and efficient use of state resources[1]. Furthermore, it is aimed that public service should be available among market conditions, in a competitive situation so that public transportation can be provided at the least cost.

The following requirements can usually be found in the public service treaties:

- Service volume: train density, seat capacity, timetable structure;
- Fare obligation: authorized prices, discounts, possible raise of fares;
- Quality requirements: passenger information, marketing, ensuring equal chances.

Public service obligations are refunded by direct payments to the operator railway companies. The level of compensation is assigned considering the costs joint to the services. The minimum term is 2-4 years, the maximum is 10-15 years, depending on the necessity of investments by operators. By default, public service treaties are to be tendered except for the cases when direct negotiations are available with one single operator [1].

3.2. European Customs

Passenger transport market is yet to be fully opened by European regulations: In the Third Railway Package, the European Committee suggests liberalization of international passenger transportation services. Although in some member states (United Kingdom, Germany and Sweden) national legislation made market-opening possible years ago, the process is mostly just starting. Certain member countries offer the possibility to tender the public service treaties, others stick to the process of direct negotiations. In the United Kingdom all public transport services are tendered. The results are 10 privately owned opertor, and legal obligation for public services to be tendered.

There are different solutions in the „measures" of the public service: several countries limit public service to local and regional size (e.g. Germany), others consider long-distance services to be public (UK). Generally we can say that in the smaller countries like Belgium, Holland, Denmark, Greece, every inland passenger transport service can be considered to be public service [2, 3].

[1] Regulation 1191/69 on action by Member States concerning the obligations inherent in the concept of public service in transport by rail, road and inland waterway, as amended by Regulation 1893/91.

4. Service Development Stages at an up-to-date Railway System

4.1. Gradual Service Development – Service Steps

European railway companies designed numerous development headings on the area of railway traffic. Western-European experiences show that – in the long run – only (those) strategic development programme that utilize service steps consciously, considering present status, service levels to be reached and necessary developments all together, can help to operate railway traffic efficiently.

To define the service steps, service quality and necessary resources, conditions must be pinned down first (who should do what, where, how, for how much: developing timetables, purchasing vehicles, renovating tracks, electrification, informatics development etc.). To allocate service steps, a common starting ground is needed. The development strategy primarily defines the starting position, the short-term strategy's main goal is to reach the maximum performance with the resources available.

Passenger transport operators giving public service can decide on taking on the next step together with the developer and the maintainer of the infrastructure, and they can lobby at the state to ensure the necessary resources. The strategy based on gradual development provides service quality on the long run and allows the state to allocate resources efficiently [4].

4.2. The Swiss Example

In Switzerland, after several, not very succesful service development programme, the regular interval timetable (Integrierter Taktfahrplan – ITF) got introduced in 1982. The ITF is an innovative public transportation system offering complex junction methods and great supply improvement, getting its backbone from railway traffic. The ITF has been created by efficient use of available resources and at unchanged track status. It means that the improvement was on the service step by reaching optimum efficiency. The Swiss model therefore put timetable in the center [5].

The integrated timetable, joint with transfer connection system, introduced with only the sources available pointed out the further service levels to be reached. Development was primarily necessary where the systen operation can be made more effective without harming the integrated connection system. The wheres and hows got assigned: which are the places where track reconstruction would be more effective, and which are those, where vehicle development, restructuring or even regulatory changes should have been put into effect.

In 1987, a long-term development strategy was written up using the experiences of the world's first ITF (see *Fig. 4.2*). From then, the network was only gradually improved, only where it was necessary, making it very cost-effective. Between 1982 and 1992, an extremely rational infrastructural investment was con-

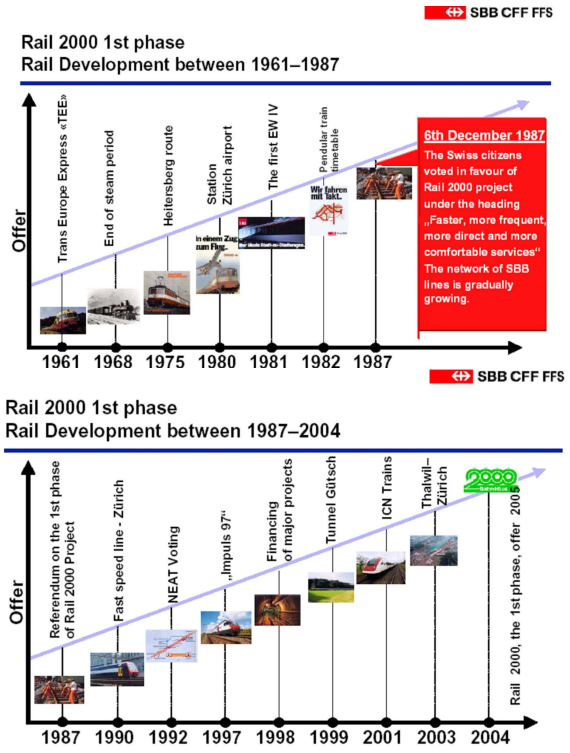

Fig. 1. Service steps – in the project Rail 2000

ducted at low cost. In 2004, using the synergy of mainly local improvements, a radical change was implemented in the basic structure of the timetable. Keeping the rules of ITF, service quality has been greatly enhanced. Reaching times have been reduced, more stations could be implemented without significant increase of the journey time [6].

In Switzerland the second phase of Project Rail 2000 is under work to reach even higher standards of service (see *Fig. 2*). This includes capacity increase of high-speed railway traffic, and railway infrastructure. The goal is to provide an infrastructural network that will be uniquely able to enhance the competitiveness of railway transportation. The long term planning stage, lasting until 2030, allows the government to implement the necessary funds into the budget [7].

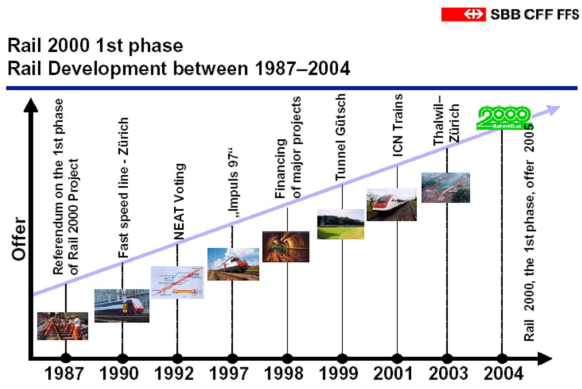

Fig. 2. Service steps – second phase of project Rail 2000

5. Decisive Role – the Timetable

5.1. Strategic Importance

Based on the presented Swiss, and further European models it can be safely said that the basis of improvements must be the timetable structure. The operator will define, and serve the timetable, marking a gateway towards the passengers, the customers.

ITF states that from present conditions, a regular interval timetable will be implemented at the railway for the first time, then for the other public transport methods too. The trains will leave the stations in equal periods of time, their numbers will grow significantly, thus the timetable will become transparent and predictable. Even the quality of connections between every layer of the public transportation (trains, coaches, ships etc.) can be improved. This brings us the improvement of the division of labour between said branches (modality mix). ITF is the link, the least common multiple between mobility, liberalization, public services and sustainable development (see *Fig. 3*) [8].

The structure does not mean significant increase of costs, neither at creating, nor implementation, nor operation. The main cause of that is that the structure is created by absolutely considering the present conditions (inside and outside), and that railway traffic has a strange specialty: low proportion of variable costs. Track use and other costs related to infrastructure, tariffs in relation with towing, amortization and maintenance of the vehicles and other inside railway costs can be identified as mainly fix parts of the cost, so implementing new supply would not cause huge increase.

The following pillars give the economical basis of the Swiss model:

- On vehicle-level, the proportion of variable costs is insignificant;
- In railway passenger transportation, the decrease of performance gives us smaller savings in marginal costs than the decrease of marginal incomes;

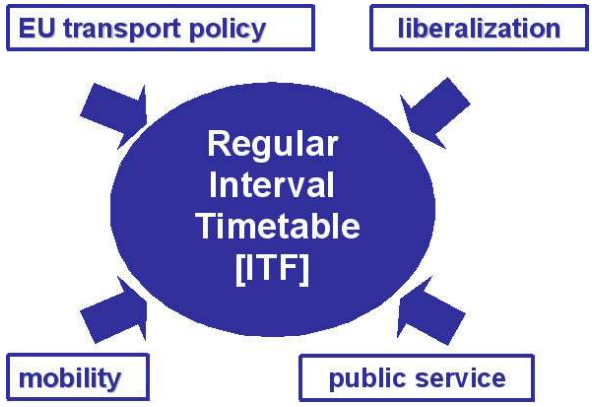

Fig. 3. Keyrole of ITF as keeping competitiveness in railway passenger transport

- In ITF, increasing the passenger transportation performance results in bigger marginal income than marginal costs.

5.2. Results

The new timetable structure resulted in a general increase of supply of 21% with only 4% increase of costs, without significant infrastructural investments. In twenty years, 40% more people used railway than before, in a country where individual transportation is not a matter of money. Realizing the first phase of programme Bahn 2000, as a result of the optimized cost-effective infrastructural investments, a new opportunity showed to expand supply once more in December 2004 (12% more trains), bringing an 8% increase of passenger number even in the first year [5].

6. ITF in Hungary

6.1. The Pilot Project

To improve competitiveness of the Hungarian railway, and increase the Budapest suburbs traffic availability, the Swiss ITF was implemented as a pilot project on the Budapest-Vác-Szob and the Budapest-Veresegyház-Vác lines. Results to date show that with ITF the two lines had a massive, 14% increase on passenger traffic, bringing a new category of passenger to the picture: one that has given up cars or coaches to travel by train, because of the reduced journey time and the increased train density [9].

6.2. *Going on*

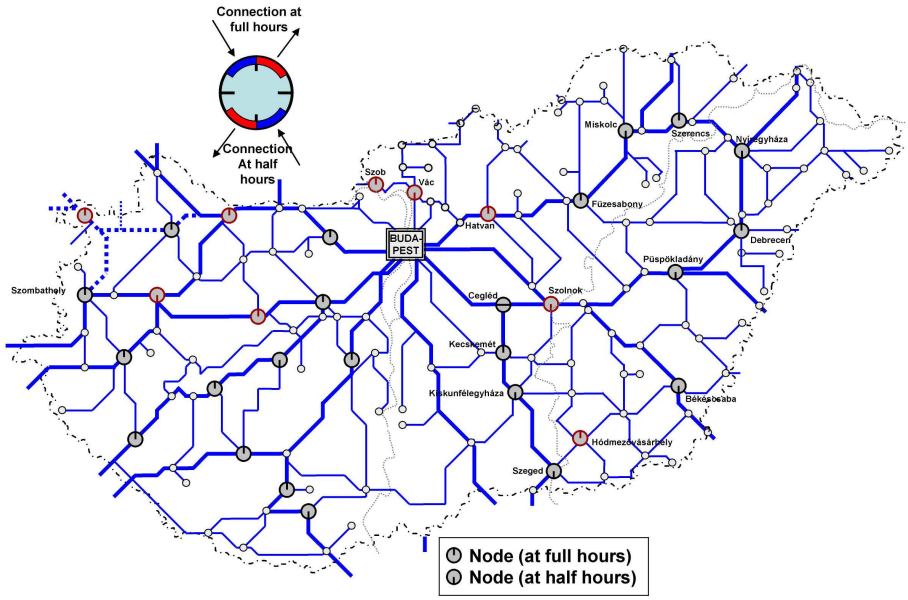

Fig. 4. Map of ITF-connections on Hungary

Because of the government's capacity and the nature of the resources coming from the EU, no large investments can be counted on. Beyond the corridors it is not real to raise the journey speed above 120 km/h, nor can the joint supply lines be improved into. The existing resources therefore must be used for the most important goals to achieve. Considering the Hungarian conditions, the best choice would be applying an ITF structrure competitive with the comfort of individual travel and speed. On *Fig. 4*, the backbone of the railway network and the nodes can be seen.

Improved timetables are resourceful for passengers, railway operators, maintainers, and supplyers too (see *Table 1*).

7. Suggestion on the Hungarian Railway Supply

The European practice, the presented strategies, and the results coming from ITF show inevitably the way for Hungarian railway passenger transport.

Table 1. Advantages provided by ITF

For the passengers • Increased train density, • Quick trains, • Reduced journey time, • Optimized connections, • Reduced reach time, • Transparent traffic system, • Predictable long distance transport, • All-time available suburbs transportation, • New connection system drastically reduces futile waiting time, • Smaller crowds on trains, • Increased mobility, • Elegance, simplicity.	***For the passenger transport operator*** • Dynamic increase in passenger numbers, • New members ont he market, • Optimally planned timetables, • Smaller crowds, • Marketable service, • Ability to attract capital, • Typed vehicles, easier maintenance. ***For an infrastructure manager:*** • Organized maintenances, • Attractive specific track tariffs, • Using the routines of the staff, • Harmonic infrastructure. ***For traction service provider*** • Optimal rounds, used-up vehicles, • Planned repairs, service gettng better, • Optimized round of staff. ***For a goods transporter*** • Catalogue plan, • Market niche at hand, • Plannable logistics, • Competitive prices.	**Effective strategic planning**

7.1. Economic Questions

Increasing supply is only rational until the marginal incomes exceed marginal costs. The additional income will significantly exceed the additional costs coming with the timetable improvement. Narrowing the supply (as done before) would not be successful, since the incomes were increasingly diminishing together with the performance. Implementing ITF can turn the tide and keep the market shares (see *Fig. 5*).

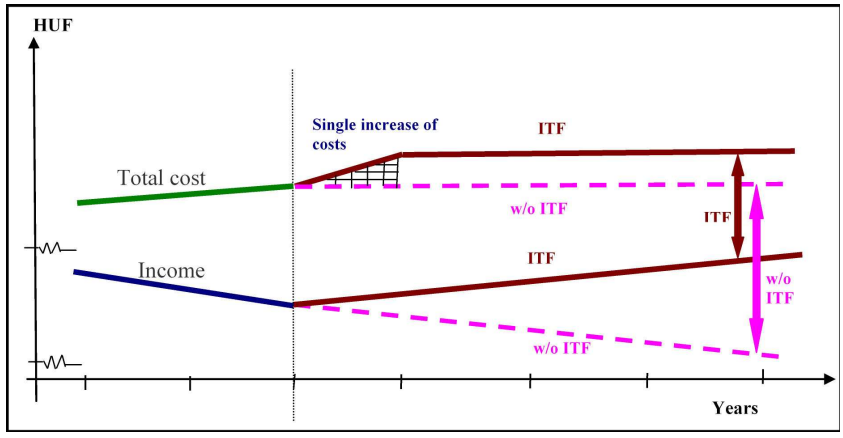

Fig. 5. The effect of supply-decreasing and supply-increasing strategies on costs and incomes

7.2. Quality public service – ITF

With a system of public services in the picture, a fundamental state policy would be efficiency. Therefore it is a rightful claim against the government so that the public transportation system should be organized opimally. Implementing ITF is suitable for the task, being a basis for the long-term common development strategy for railway operators, maintainers and the state as proprietor.

The public services will be hugely affected by mobility and flexibility and the quality of connections too. ITF means a great enhancement for the latter areas, as follows (see *Table 1*):

In order to fulfil the quantity claims totally, railway supply can be shaped with the base rhythm and peak time rhythm. On every line it is necessary to maintain a quality service, and stable periodicity. Furthermore, it is essential to take the additional trains' rhythm needed in the capital and other bigger cities into account (see *Table 2*).

Table 2. Quality and quantity parameters concerning ITF

Density	Quality	✓
Reliability		✓
Cleanness		
Crowds		✓
Feeling safe		
Staff behaviour		
Informing passengers		
Journey time		✓
Price		
Number of trains	Quantity	✓
Periodicity		✓
Seatkilometers		✓

Table 3. Simplified model to appoint train density

Type of line	Method of traffic	Base rhythm [min]	Peak time [min]
Main line	Long distance	120	60
	Regional	120	60
Secondary line	Regional	120	60
Suburban line	Suburban	30-60	10-15-30
	Regional	60	30

Based on European experiences (where every bit of public transportation is in public service hands), guarding over the competitiveness of the Hungarian railway transportation, it is suggested to call in the regional, the local, and the long-distance transportation too.

The Hungarian implementation of ITF brings quality public service for the passengers and the state, optimum efficiency for the operator, which can be used by the tools available. The further steps shall be vehicle improvement and infrastructural development based on the ITF's service development policy.

8. Conclusion

Hungarian railway passenger transportation needs to implement a development strategy in order to stay competitive. The introduction of ITF would bring cost-effective service development, quality public service, effective resource allocation, long-term developments. It can be the basis of a quality public transportation system, it can help to sustain mobility. It shows a quality jump giving safety for the next development steps.

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