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**CHANGE IN MANAGEMENT SYSTEM  
IN THE PUBLIC SECTOR ILLUSTRATED  
WITH THE EXAMPLE OF THE RAILWAY  
INFRASTRUCTURE IN POLAND**

**Summary:** Management in the public sector considerably differs from the measures applied in the private sector. Fundamentally, this is attributable to different scopes of tasks fulfilled by these two categories of economic entities – largely stemming from the fact that activities of the state while simultaneously performing its functions are not geared towards generating profit.

Nevertheless, with the economic growth and the impact exercised by the globalising economy triggering a shift in the role played by the state in economic governance, tendencies to leverage certain experiences from the private sector in the public management move to the foreground. The objective of the paper is to demonstrate the change in the manner in which public tasks are managed in Poland as illustrated by the case of railways, and to show a new system which, given the considerable universalism of solutions employed, may set the pattern for other states (specifically in Central and Eastern Europe) which went through a similar transformation process. The point of reference for the specific management system elements addressed in the paper is also the second edition of the EU Transport Scoreboard issued by the European Commission which compares Member States performance in 29 transport-related categories.

**Keywords:** management, public, infrastructure, transport, railway, transformation.

**Introduction**

Management in the public sector considerably differs from the measures applied in the private sector. Fundamentally, this is attributable to different scopes of tasks fulfilled by these two categories of economic entities – largely

stemming from the fact that activities of the state while simultaneously performing its functions are not geared towards generating profit.

Nevertheless, with the economic growth and the impact exercised by the globalising economy triggering a shift in the role played by the state in economic governance, tendencies to leverage certain experiences from the private sector in the public management move to the foreground. On one hand, we deal with the focus placed on the client by the administration while simultaneously exposing quality, new technologies and effective work organisation, and on the other hand, with the implemented concept of new public management manifested in management by objectives and handing over public sector management into professional managers, thereby prompting public organisational units to function while taking into account market needs. These tendencies are increasingly robust, notably in the context of the allocation function of the state within, which there is currently a quest for such institutional and legal solutions that make it possible to distinguish property rights to specific resources among diverse communities and institutions, in a bid to prevent waste of resources when ownership is uncontrolled. Moreover, a distinguishing aspect of the new management style is the application of numerous types of comparative analyses, among which is benchmarking, which both helps to determine the current standing of the given country as compared to other states, and makes it possible to illustrate the results of measures launched over time.

The objective of the paper is to demonstrate the change in the manner in which public tasks are managed in Poland as illustrated by the case of railways, and to show a new system which, given the considerable universalism of solutions employed, may set the pattern for other states (specifically in Central and Eastern Europe) which went through a similar transformation process. The point of reference for the specific management system elements addressed in the paper is also the second edition of the EU Transport Scoreboard issued by the European Commission on the 20<sup>th</sup> November 2015 which compares Member States performance in 29 transport-related categories [www 1]. At this point it is worth highlighting that even though Poland occupies a distant position, which results from, among other reasons, the well-established position and quality of railway infrastructure in the countries of the “old Union”, growth has been reported in most areas as compared to the previous survey. Moreover, given the fact that the modernisation process is continual, it is assumed that the effects produced by the measures taken will become increasingly evident in subsequent editions of the ranking.

## **1. Management structure**

Poland has been adapting to the most effective functioning under free market conditions for 25 years. The process of transformations occurring in the social and economic sphere is driven by many external forces, among which is the need to meet increasingly new challenges in the environment as well as internal circumstances triggered by changing needs of the economy and society. These shifts affect the structure of the state tasks and the manner in which they are executed. At this point it should be noted that following 1989 the political and economic collaboration with the countries across Western Europe was gradually established and bolstered, and the economy was attuned to the accession to the European Union (EU). Whilst in the wake of the Polish accession to the EU, these changes increasingly align the economy to the UE legislation and its development strategy.

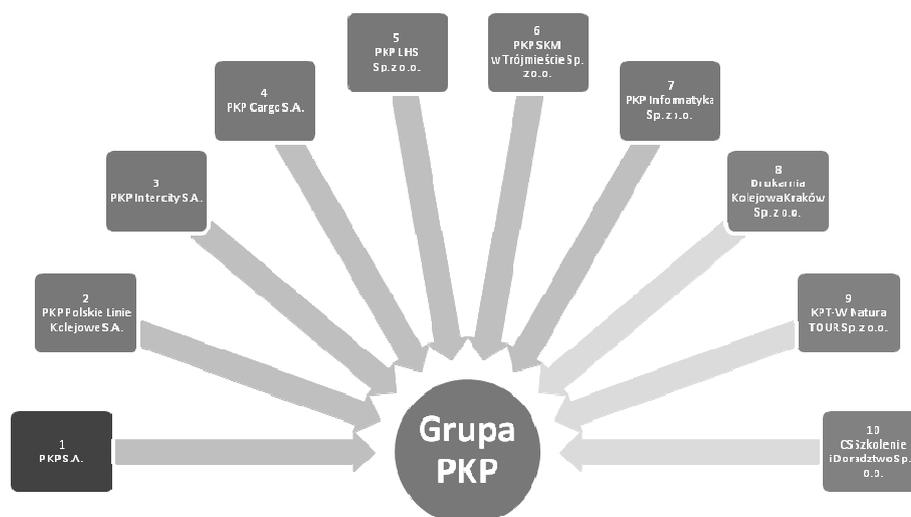
Similarly to other industries, profound changes emerged in the rail industry. As shown in the EU transport score table, the Polish rail market for both freight and passengers currently reveals a high level of market opening, thereby scoring among top performers in the EU. Recently, the degree of competition has also increased [www 2].

The attainment of such values was made possible due to the persistent execution of modernisation processes of the railway industry. Their beginnings should be traced to the need to satisfy fundamental rules entrenched in the pre-accession treaty intended to tailor the Polish economy and legal system to the requirements of the Europe Agreement. Then Poland embarked on the fulfilment of tasks that facilitated the implementation of the provisions set in the first railway package. In 2000 the Act on Commercialisation, Restructuring and Privatisation of the State Enterprise “Polskie Koleje Państwowe” was endorsed. As a result of the enactment of the foregoing act, the previous state enterprise transformed into the company Polskie Koleje Państwowe Spółka Akcyjna (PKP S.A.) where the State Treasury became its sole shareholder. The overruling goals of the act was to launch intense activities towards PKP S.A. designed to: modify the organisation structure (organisational restructuring), restore financial liquidity (financial restructuring), adjust material and staff resources to the scale of operations carried out (material and employment restructuring).

The changes effected sought to separate the railway transport operations from the management of railway lines. Moreover, the ownership structure was altered through the establishment of independent business entities within specific business areas of the former enterprise (though retaining the state control). These

entities were equipped with the property items essential to carry out activities in conditions of free market so that they could operate without “traditional” accumulation of debts for the railway. It was also stipulated that the abovementioned debt assumed by PKP S.A. after the state enterprise liquidated and restructuring costs will be paid by the sale of shares in companies set up on the basis of that enterprise’s property and by administering the assets unnecessary for their functioning. The commercialisation act (...) that implemented these transformations also assumed the option to privatise PKO S.A. by selling shares in this company owned by the State Treasury, or acquiring shares by third parties through an increase in its share capital. After all, the restructuring program involved such modelling relationships in the Polish railway as an industry branch and its legal and economic environment so as to raise capital that could help to stabilise the share of budgetary resources at a guaranteed level that will ensure a necessary standard for inter-regional rail passenger transport while fully compensating losses in revenues resulting from allowances granted for the whole passenger traffic. Moreover, the assumption to open legal possibilities to allocate funds held by local governments in agglomeration and regional traffic was adopted.

Due to the organisational restructuring PKP S.A. set up the companies: those strictly related to rail transport and those carrying out other operations, based on which the Group PKP was formed (its composition also included companies acquired by commercialisation of the state enterprise *Polskie Koleje Państwowe*). The principal task of the companies comprising the Group PKP revolved around shaping the rail market in Poland in an effort to boost the competitiveness of rail transport – through effective management and modernisation of rail infrastructure, as well as through improving the quality of passenger rail services. Whereas the remaining companies that provided services in other fields were expected to effectively administer the assets left by the former State Enterprise “*Polskie Koleje Państwowe*”, not directly connected with operating rail passenger and freight transport. Essentially, the relevant minister responsible for transport conducts supervision over operations performed by: PKP S.A. – a parent company in the Group PKP, and PKP PLK S.A. – an administrator of the state rail infrastructure whose operations determine the functioning of rail transport companies. Figure 1 illustrates the companies comprising the Group PKP. Numbers 1-7 mark the companies charged with management and modernisation of rail infrastructure, whereas numbers 8-10 indicate the companies that render services in other fields, not concerned with rail passenger and freight transport.



**Fig. 1.** Companies constituting the Group PKP

Source: Own study.

The development of privatisation processes was simultaneously the key force determining the structure of stakeholders in the Polish rail market. Today, rail industry stakeholders in Poland may be separated into two groups, i.e. infrastructure administrator and the carriers. At this point, it should be underlined that 93% of railway lines with a length of almost 20,000 km continues to be administered by the largest infrastructure administrator in the market – PKP Polskie Linie Kolejowe S.A., and this is the only company that administers railway lines of national significance which by the end of 2013 accounted for almost 62% of all tracks operated. Alongside PLK S.A., by the end of 2013 the operations involving management of railway lines infrastructure were executed by 9 other enterprises (their share in the market stood at 7% in total). Principally, rail passenger transport in Poland in 2012 was carried out by 10 carriers. The primary ones include a major carrier providing transport services between provinces on a national scale as well as international services, i.e. PKP Intercity, and a company Przewozy Regionalne operating throughout the country. The services of the latter carrier are mostly provided on the order of marshals in specific provinces who over recent times have increasingly established companies, delivering transport services, they oversee such as e.g. Koleje Śląskie. The company that stands out among carriers as providing collective public transport services is a private carrier Arriva RP that won tenders to operate transport in the Kujawsko-Pomorskie Province. While freight transport services are rendered by

several dozens of carriers. Considerable attention should be given to two companies from the Group PKP, i.e. PKP Cargo – the largest operator in the rail freight market in Poland, with more than 60% share in the market by the freight operations executed, and PKP Linia Hutnicza Szerokotorowa (an operators with less than 7% share in the market of freight operations performed) which provides its services in southern Poland over 400 km of railway comprised of 1520mm gauge which directly connects with Eastern Europe and Asia through Ukraine, thus being at the same time the westward extent for tracks with that gauge into Europe from Asia.

Another stage for the development of rail management system in Poland was application of so-called PSC contracts (Public Service Contract) towards organisers and operators of the public collective transport. The measure seeks to ensure the delivery of public collective transport services in a specific area, that is making available the regular carriage of persons performed to specific timetables and along the specific communication routes, communication routes or communication network. PSC contracts entitle and oblige an operator to provide specific services related to public utility transport. Meanwhile, an organiser while granting particular privileges to the carrier in the PSC contract (benefits such as: compensation), at the same time obliges it to provide certain services. The conclusion of the contract is supposed to guarantee public transport over the whole area subject to the relevant body, and not only on the most profitable routes. Such contracts are concluded in Poland by the State Treasury with PKP Intercity S.A. (with regard to international transport services and transport services across provinces) and PKP Przewozy Regionalne sp. z o.o. (with regard to international transport services). It should be noted that when taking into account PSC contracts conducted with province governments, the primary entity that carries out regional passenger transport is currently PKP Przewozy Regionalne (since 2004 these services are commissioned by province governments that have an obligation to subsidize this sphere of operations), nevertheless the share of companies set up by province marshals increasingly soars (such as e.g. Koleje Dolnośląskie).

## **2. Rail infrastructure financing in the context of effects produced**

The modernisation of the management system in the rail infrastructure in Poland is reflected in the issues concerned with its financing. The change involved the departure from the model of financing railway from solely public funds, through opening up and then gradually enhancing opportunities to utilise fund streams other than public ones (such as e.g. funds coming from rail sector

stakeholders, financial institutions, private investors), as well as entailing the connection between expenditure aspects with introduction of clear and well-defined rules and standards for gauging effectiveness of activities, which is also consistent with the trend occurred in the EU. At present, the state supports the administrator of the rail infrastructure through ensuring direct financing for investment ventures on one hand, and on the other hand somehow “purchases” services under the PSC contracts. However, each stream of monetary resources is linked to the application of effectiveness elements.

Direct financing of railway investments in Poland was embraced under the Multiannual Rail Investments Program up till 2015 (MRIP), i.e. program approved by the Council of Ministers by the resolution as well as under the so-called “maintenance agreement”. The MRIP leverages the option of solutions applied in Polish legislature, thus specifying the material and financial scope of railway investments projected, encompassing all investments carried out with the use of financial resources held by the relevant minister in charge of transport. An overriding objective of the MRIP is to increase availability and enhance the quality of rail transport by the administrator of national, public rail infrastructure in an attempt to meet the needs of carriers and passengers, consignors and recipients of goods carried by rail. The accomplishment of this aim is expected to strengthen safety and comfort of journeys, as well as increasing the number of passengers handled and stepping up the volume of freight capacity carried by rail. On top of that, nine specific objectives were formulated with regard to particular aspects of quality and availability of railway transport as well as improvements in systems of planning and investment management, design of the tool for monitoring and safeguarding stable financing. At this juncture it is worthwhile highlighting that when the National Rail Program till 2023 was adopted by the Council of Ministers – i.e. as of 15 September 2015, this program with respect to the draft perspective EU 2014-2020 and phase projects replaced the Annual Rail Investments Program.

The program is financed from the national budget in Poland within a spending limit granted for a specific year for the relevant budget section. Allocation of public funds to the infrastructure administrator is closely linked to specific tangible effects delivered. Specific investment tasks have defined material scopes as well as material and qualitative indicators for each year of implementation.

Material and qualitative indicators for the whole program expected to be achieved by the end of 2015 were provided in Table 1 and 2, while the programme indicators constitute the sum of indicators defined for specific projects (with regard to construction, modernisation, recovery or revitalisation).

**Table 1.** Material indicators anticipated as program outcome

Indicator	Meas unit	Size	
		As at 31.12.201	Covered by the program 2013–2015
<b>Length of railway lines</b> including those of national significance	km	<b>19 187</b> 11 497	<b>2 305</b> 2 111
<b>Length of railway running tracks and main tracks</b> including those on lines with national significance	km	<b>27 764</b> 19 496	<b>3 586</b> 3 379
<b>Length of tracks in total</b>	km	<b>37 128</b>	<b>3 818</b>
<b>Number of engineering structures</b> including those on lines with national significance	item	<b>25 736</b> 14 812	<b>2 385</b> 2 203
<b>Number of intersections</b> including two-level ones	item	<b>18 971</b> 5 352	<b>1 824</b> 323
<b>Number of intersections on lines with national significance</b> including two-level ones	item	<b>10 331</b> 3 385	<b>1 651</b> 315
<b>Number of platforms</b> including those on lines with national significance	item	<b>7 129</b> 4 927	<b>733</b> 671

Source: Own study based on the Multiannual Rail Investments Program by 2015.

**Table 2.** Qualitative indicators anticipated as program outcome

Indicator	Meas unit	Size	
		As at 31.12.2012	Covered by the program 2013–2015
Track length for maximum train speed 160 km/h	km	1 956	1 107
Track length for maximum train speed 200 km/h	km	0	510
Length of tracks with train speed increased by at least 30 km/h	km	-	2 415
Available axle loads 221 kN	km	11 972	2 311

Source: Own study based on the Multiannual Rail Investments Program by 2015.

An important part of effectiveness aspects for the Multiannual Rail Investments Program by 2015 included the definition of the system for its monitoring and evaluation.

Monitoring of the progress is carried out by the infrastructure administrator based on the referred indicators for material and financial progress (recorded, properly processed and used for ongoing management of specific projects). As part of the monitoring, the following instruments are harnessed: periodical, annual and final reports, indicators of material and financial progress, IT systems

for internal and external monitoring. Central to the functioning of monitoring system is tracking of progress, delays and risks in projects executed. Whilst monitoring within the surveillance and control system is carried out from the level of the budget holder (relevant minister in charge of transport) who brings focus on the assessment of conformity of accomplishment with the plan, evaluations of material and financial progress, identification of possible threats occurring and recognition of mechanisms and methods to eliminate threats. It should be emphasized that data obtained through the monitoring process constitutes – for persons being in charge – the information basis to support decisions on the investment processes.

Equally important in this context are evaluation reports. As part of the program evaluation, two reports are anticipated to be drawn up, i.e.: mid-term report in 2014 and ex post report – in the fourth quarter of 2016. Both documents will contain the assessment of the execution status of MRIP and evaluation of the impact of the program on increased availability and improved quality of railway transport in Poland – and thus combining financial and material effects. The findings from these reports will be incorporated in subsequent multiannual railway investments programs.

In the case of the agreement to subsidise the management costs for rail infrastructure and its protection from the budget, transfer of public funds to the infrastructure administrator takes place in Poland by means of grants – based on the annual eligible costs plan. Importantly, with regard to this form of funding, the management by objectives, including close dependence of funds allocated on effects delivered, was deployed. In the context of management by objectives, the agreement provisions oblige the administrator to effectively disburse funds generated from core earnings in order to reduce fees charged by carriers. Basically, improvement in effectiveness in this case is understood as an accomplishment of works in terms of maintenance and overhaul of the infrastructure which lead to biggest reductions in journey time for minimum financial expenditures. Alongside, it should be stressed that the administrator assigns execution costs to each work, the effect in the form of savings in journey time and effectiveness of costs incurred are calculated on that basis.

Meanwhile, connecting the funds allocated on effects produced reflected the system for the decreasing eligible costs plan adopted in the maintenance agreement (in the case of each train delay for reasons attributable to the administrator, thus causing decline in eligible punctuality below the threshold specified in the agreement, an accident or serious accident above the specified limit) as well as contractual penalties contained in the agreement (e.g. average speed on the network operated falls).

The tendency to evaluate by effects is broadly applicable also to the PSC contracts concluded between the State Treasury and carriers: PKP Intercity S.A. (in terms of transport services across provinces and international transport services) and PKP Przewozy Regionalne sp. z o.o. (in terms of international transport services). When purchasing the public transport services from operators, the state makes their remuneration due conditional on the results produced in the form of e.g. punctuality of trains as well as quality of the transport organised (e.g. through ensuring adequate cleanliness as well as equipment of carriages and toilets, modification of trains to accommodate disabled passengers, pregnant women and passengers with small children, etc.) All in all, the agreements concluded include a precisely defined penalty system reducing the remuneration due to the carrier in the event of a failure to provide a service of adequate quality.

An extract from the exemplary catalogue of penalties was provided in Table 3.

**Table 3.** An extract from the penalty catalogue

No.	Description	Manner in which penalties are charged	Amount of penalty in relation to the basic amount*
1	2	3	4
1.	Eligible Punctuality of all trains within the monthly settlement at the level: < 85% – for the Task	for each month	2%
2.	Eligible Punctuality of the single train within the monthly settlement < 75%	for each train	0.06%
3.	Cancellation of the train without ensuring substitute transport	for each case	0.3%
4.	Train composition inconsistent with the provision of the Agreement	for each case	0.06%
5.	Failure to maintain quality parameters for preparing the train composition for departure from the starting station (on the basis of the minimal quality requirement set out in Appendix 5.1)	for each train	0.08%
6.	No seats designated and labelled for disabled persons, pregnant women and passengers with small children	for each train	0.06%
7.	Failure to announce or untimely announcement of permanent change in the train timetables	for each train	0.06%
8.	Failure to maintain due cleanliness in the train	for each train	0.05%
9.	Failure to provide toilets with soap and toilet paper as well as water (except for periods when temperature drops below -5°C continuing over three days in carriages with open circulation)	for each carriage	0.005%
10.	Absence of lightning in a compartment or corridor	for each carriage	0.005%
11.	No heating in a compartment or corridor over the period of low temperatures	for each carriage	0.005%
12.	Failure to remove ice or snow from access steps to carriages	for each carriage	0.003%

**Table 3. cont.**

1	2	3	4
13.	Lack of luggage rack in a compartment of the carriage	for each carriage	0.003%
14.	Lack of waste bins in a compartment of the carriage	for each carriage	0.003%
15.	Failed sound system in a compartment or corridor	for each train	0.003%
16.	Failure to meet another quality requirement set out in Appendix 5.1	for each train	0.006%
17.	Inappropriate conduct of the train crew in contravention of quality requirements laid out in Appendix 5 and other detailed regulations of the Company	for each case	0.001%

\* Basic amount – 1/12 of the estimated amount of the Compensation laid out in the Annual Agreement as a ceiling on funds allocated on its accomplishment from the national budget for the specific Financial Year.

Source: Own study.

### **3. Use of performance information in the management system in the railway infrastructure in Poland**

Performance and measurable, positive quality effects yielded by the changes effected – both in the structural context as well as with regard to the manner in which tasks commissioned are financed and settled in the Polish rail industry moved to the foreground in numerous aspects of this transport sector. This can be proved by, among others, the findings of the evaluation research conducted by independent entities (such as in relation to the Multiannual Rail Investments Program by 2015) as well as effectiveness reports compiled in connection with the fulfilment of tasks by specific rail sector stakeholders in Poland.

The initial implications of the multiannual program implemented have been already evident in the latest EU transport scoreboard [www 3] where Poland tops the lists of in terms of the share of electrified railway lines (score in 2013 – 62.33%), the quality of rail infrastructure improved insignificantly (score for the indicator over 2013-2014 totalled 2.93% as compared to 2.56% for the period 2012-2013, and the road fatalities indicator marginally dropped (from 1.5% in 2012 fell down to 1.4% in 2013). By the same token, Poland reported a slight increase in the consumer satisfaction with rail transport (from 63.6% in 2012 up to 64.7 in 2013). In this context, two specific aspects deserve attention. First, the full effects produced by the program will be evident after 2015 (whereas the EU ranking mostly refers to 2013). Second, it should be underlined that despite intensive modernising, works performed on railways entails frequent inconvenience for passengers (e.g. interim longer journey times caused by modernisation of the railway line), the satisfaction level soars, as corroborated by other research recently completed.

According to the findings from the mid-term report on the Multiannual Rail Investments Program by 2015, the general rating for investments implemented within the MRIP is positive – both modernised as well as revitalised lines show that in Poland there is a high social demand for cutting-edge rail eagerly used by passengers and freight consignors. Fundamentally, the projects executed meet this demand, thereby contributing to increased accessibility and enhanced quality of railway transport. Based on the data available it was estimated that the total reduced journey time between regional centres in passenger traffic equalled 200 minutes. Cumulative benefits should be estimated at PLN 30.5 million per annum, compared to PLN 5.3 million in freight traffic. It should be emphasized that estimations were made based on the data available in mid-2014, and scores attained following the completion of the whole MRIP will be higher. They will be entirely estimated as part of the projected ex-post evaluation of the program. The implementation of the program also helped indirectly to galvanise the development of enterprises that cooperate with the rail sector, boost investment appeal of regions in the vicinity of railway lines, reduce congestion on roads as well as ensure effective utilisation of human resources and employment optimisation.

This thesis is corroborated by the indicators values scored within the program and displayed in Table 4. Additionally, it should be noted that accomplishment of program objectives set is determined by implementation capacities, technological and organisational potentials of the market for design and implementation companies as well as engineers overseeing agreements, construction sites and contracts.

**Table 4.** Completed program indicators over 2013-2015

Indicator	Meas. unit	Size		
		2012	2013	2014
Length of railway lines	km	556	796	742
Length of railway routes and main tracks	km	850	1241	1235
Length of tracks in total	km	879	1276	1391
Number of engineering structures	item	413	646	875
Number of intersections	item	296	390	714
Number of intersections on lines with national significance	item	169	353	630
Number of platforms	item	138	171	291
Track length for maximum train speed 160 km/h	km	5	147	204
Track length for maximum train speed 200 km/h	km	0	0	180
Length of tracks with train speed increased by at least 30 km/h	km	-	514	717
Available axle loads 221 kN	km	409	709	928

Source: Own study based on the Reports on the implementation of the program.

The estimated impact on indicators for passenger and freight rail transport services was also defined for *case studies* projects accomplished. To this end, data on operational work prior to and following modernisation were harnessed, whilst in the case of the station Ursus Niedźwiadek – results from interviews supported the estimations. The results of the foregoing estimations are summarised in Table 5.

**Table 5.** Changes in railway transport for *case study* projects accomplished (annual values)

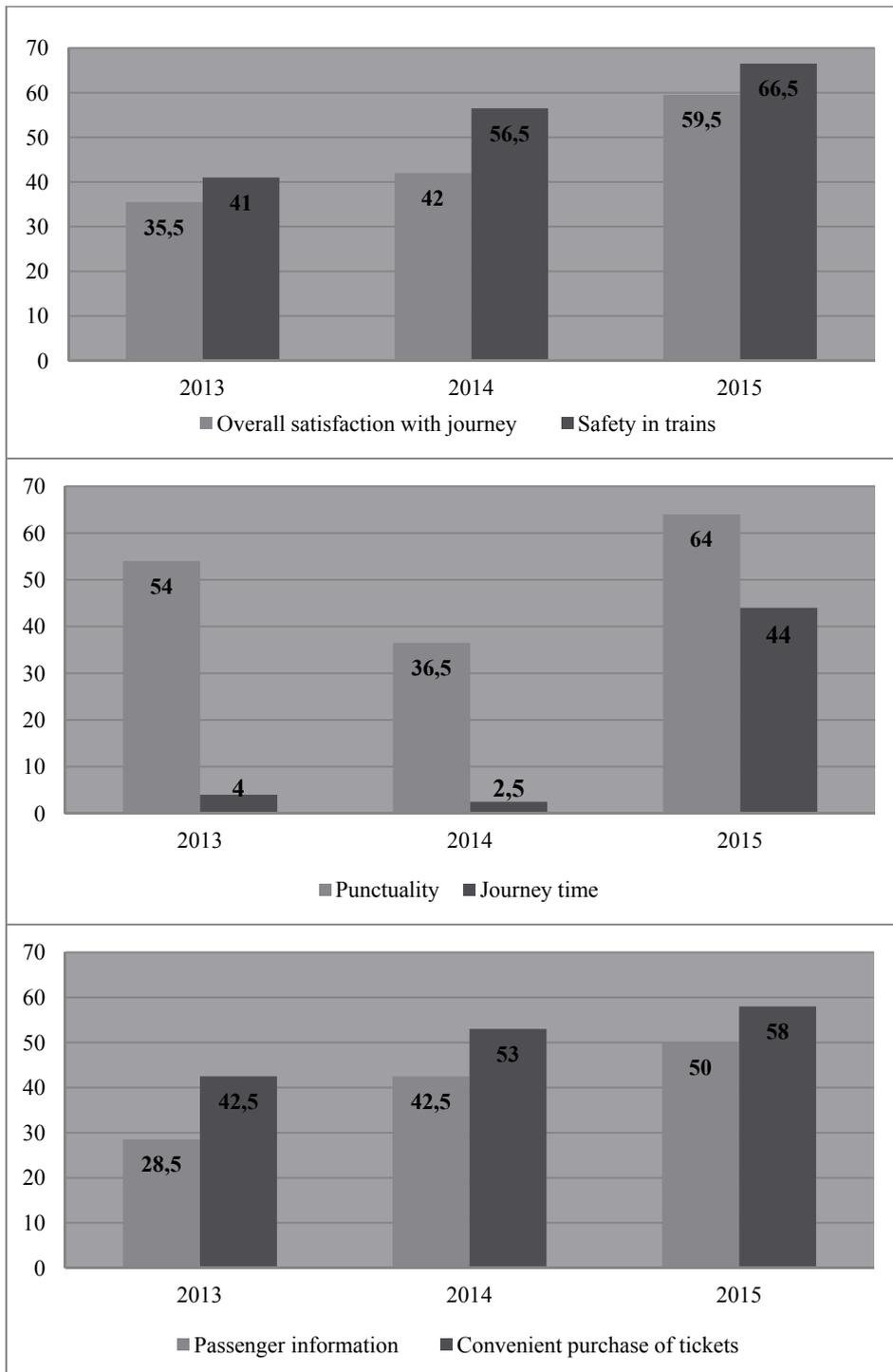
Name of the project	Impact on the size of passenger transport [paskm]	Impact on the size of freight transport [tonkm]
Modernisation of the railway line No. 30 Łuków – Lublin Północny on the section from Lubartów to Lublin Północny	11 029 866	1 512 568
Enhanced quality of railway transport services through improvements in the technical condition of the railway line No. 18 Kutno – Piła on the section from Toruń to Bydgoszcz	-6 599 985	-69 915 819
Modernisation of the railway line E65, section from Warszawa to Gdynia, Phase II (route section LCS Nasielsk)	12 415 436	-35 948 349
Modernisation of the railway line No. 357 Sulechów – Luboń on the territory of the Wielkopolskie Province, with substantial meaning for the operation of transport services between small towns and Poznań agglomeration on the section Wolsztyn – Luboń	19 367 855	-5 842 195
Construction of the new railway station Warszawa Ursus Niedźwiadek together with associated infrastructure on the line No. 447 Warszawa Zachodnia – Grodzisk Mazowiecki in the area of the residential estate Niedźwiadek in Ursus district	6 875 000	0
Modernisation of the railway line No. 8, construction of the junction railway line to the airport Okęcie (from the station Służewiec to the station MPL Okęcie)	17 532 676	0
Construction of the access track from the station Świdnik to the airport terminal Port Lotniczego Lublin S.A. in Świdnik Together with associated infrastructure	722 475	27 510
Revitalisation of the railway line No. 131 Chorzów Batory – Tczew, section from Bydgoszcz Główna to Tczew	22 139 191	92 698 836

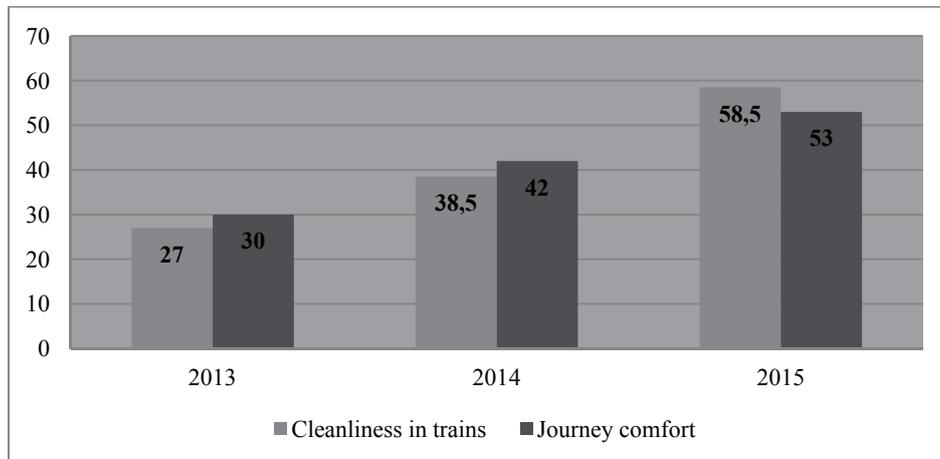
Source: Wolański M. (2014), The assessment of the execution of the Multiannual Rail Investments Program by 2015 and estimation of the impact exercised by the Program on increased accessibility and improved quality of rail transport in Poland. Final report. EGO – Evaluation for Government Organizations s. c., p. 13.

In interviews conducted as part of *case studies*, passengers said that they experienced increased journey comfort and quality. For the “record” modernisation project LCS Nasielsk as many as 78.7% of those surveyed reported improvements, whereas only 1.4% reported deterioration caused by changes. What’s more, as many as 11.7% declared that they did not previously travel on

this line, and 33% admitted that they travel more due to modernisation. Passengers also indicated reduced journey time and punctuality (detailed findings from the survey are available in appendix to this report). Overall, this is the result of several factors – modernisation of the railway line with poor infrastructure prior to the renovation as well as a good service prepared by Koleje Mazowieckie including frequent journeys, exclusively new rolling stock and tariff integration with ZTM Warszawa (Public Transport Authority in Warsaw). For the remaining investments, though smaller in their scope, the passengers rating is unequivocally positive. However, the enhanced quality of railway transport and journey time reported by passengers does not translate into a spectacular upsurge in the number of passengers using railway transport services – the net result (persons that travel more frequently minus persons that travel more seldom) equals around 10%, though because of the survey method, passengers who definitively abandoned railway transport services are not incorporated, which in practice suggests at most a significant percent increase in travelling frequency. Relatively few respondents noticed an improvement in punctuality.

The emphasis on the client-oriented approach in Polish rail sector (typical to enterprises managed in a modern manner in a free market economy) where the client is a final recipient of railway transport services provided is validated by the fact that these aspects are incorporated while formulating objectives, and then research is conducted to investigate their accomplishment by specific companies – carriers. A flagship example of operations carried out in this manner is the company PKP Intercity S.A. In this context it should be noted that surveys of customer satisfaction travelling with Trains PKP Intercity have been carried out by the company since 2013. For the purposes of the surveys, detailed areas affecting the overall passenger satisfaction with journey were defined, i.e. convenient purchase of tickets, cleanliness and safety at railway stations, journey time, punctuality of trains, information during journey, safety in trains, cleanliness in trains and journey comfort. Quantitative research is conducted on a regular basis, twice a year – on a sample of 1400 persons. However, due to application of the identical and repetitive research tool and methodology (individual interview in a train using a paper survey questionnaire – PAPI) it is made possible to not only monitor ongoing satisfaction level among passengers, but also to track its changes over time (tracking research). The satisfaction level is understood as a difference between percentage of satisfied persons and those unsatisfied expressed in points. Whereas average satisfaction is calculated as an arithmetic average of two satisfaction surveys (spring/autumn) in the specific year expressed in points. Graph 1 shows an average customer satisfaction – an ultimate recipient of railway transport services delivered by the company PKP IC in each area analysed over 2013-2015.





**Graph 1.** Average level of passenger satisfaction over 2013–2015 with regard to: overall satisfaction with travelling, safety in trains, punctuality, journey time, passenger information, convenient purchase of tickets, cleanliness in trains, and journey comfort

Source: Own study.

The findings from the surveys conducted in the company PKP Intercity S.A. over 2013–2015 clearly show an upward trend in the customer satisfaction level. The largest leap *in plus* was reported for journey times by trains. It should be however noted that obtained values for referred indicators completely translate into the assessment of activities performed by the company management board. Namely, the abovementioned objectives for 2015 included a surge in indicators: “cleanliness in trains” and “travelling comfort”. Depending on the scale of growth, the management board receives a rating for activities performed (from 80% up to 120%).

Looking ahead to the next periods (i.e. over 2016–2023), the assumed outcomes of changes effected in the rail infrastructure in Poland were illustrated, among others, within the National Railway Program by 2023 (NRP). Though, it should be underscored that program effects were identified for each specific objective. Hence, such specification produces standardised requirements for the contractors of the NRP, as well as bringing greater transparency and legibility of the Program. Moreover, for effects identified for diverse objectives it is possible to permeate, which manifests the complementarity of program assumptions.

The intended effect of the specific objective under the heading “Strengthening the efficiency of railway transport” will be reduced journey times by trains on all railway lines under the management of PLK S.A., increased capacity of lines on the sections with largest traffic or capacity use, longer sections of high

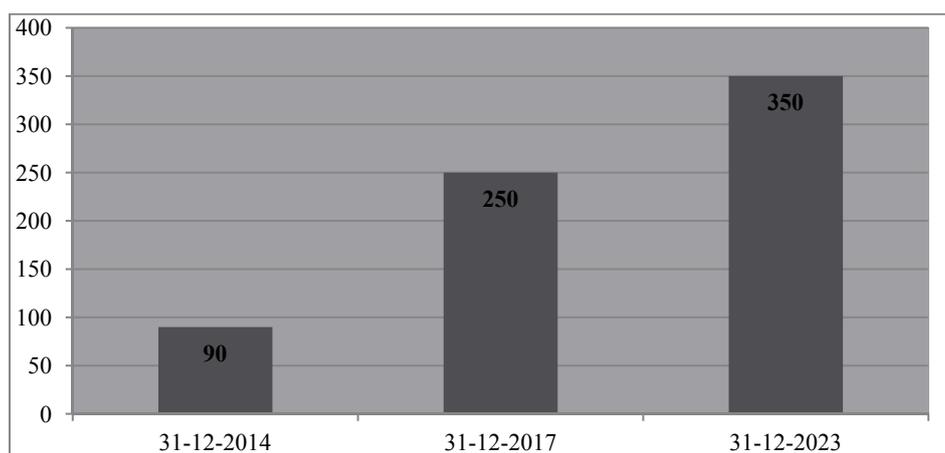
speed railway lines allowing for passenger train transport with the speed over 160 km/h, longer sections of railway lines with available axle loads  $\geq 221$  kN and enhanced capacity of infrastructure operating to seaports in Gdańsk, Gdynia, Szczecin and Świnoujście.

The indicator that shows the attainment of the foregoing objective is the length of high speed railway lines allowing for the passenger train transport with the technical speed over 160 km/h. The evolution of the abovementioned indicator over 2014-2023 is presented in Table 6 and Graph 2.

**Table 6.** Size of the indicator related to the length of high speed railway lines allowing for the passenger train transport with the technical speed over 160 km/h over 2014-2023

Indicator	Measurement unit	Size of the indicator in years		
		31.12.2014	31.12.2017	31.12.2023
The length of railway lines allowing for the passenger train transport with the technical speed over 160 km/h	km	90	250	350

Source: Own study based on the National Railway Program by 2023.



**Graph 2.** The length of railway lines allowing for the passenger train transport with the technical speed over 160 km/h over 2014-2023

Source: Own study based on the National Railway Program by 2023.

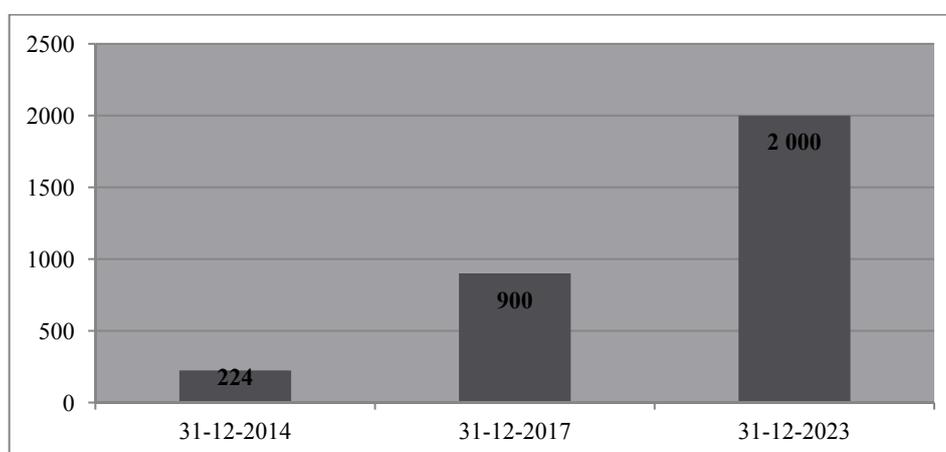
More railway lines equipped with ERTMS/ETCS, increased number of two-level crossings and modernisation of level crossings and decreased number of railway accidents at the junction of railway lines and roads at level crossings are the anticipated effects of the second objective: Enhancing safety of railway transport.

The indicator showing the accomplishment of that objective is Length of railway lines on which ERTMS/ETCS were built. The evolution of the above-mentioned indicator over 2014–2023 is presented in Table 7 and Graph 3.

**Table 7.** Estimated size of the indicator concerned with the length of railway lines where ERTMS/ETCS were built over 2014–2023

Indicator	Measurement unit	Size of the indicator in years		
		31.12.2014	31.12.2017	31.12.2023
The length of railway lines where ERTMS/ETCS were built	km	224	900	2000

Source: Own study based on the National Railway Program by 2023.



**Graph 3.** The length of railway lines where ERTMS/ETCS were built over 2014-2023

Source: Own study based on the National Railway Program by 2023.

The third objective formulated in the NRP is to improve the quality of passenger and freight railway transport. Overall, it is assumed that its accomplishment will produce the following effects:

- access to railway transport provided to persons with reduced mobility, while taking into consideration regulations specified in the Commission Regulation (EU) No. 1300/2014 of 18 November 2014 on the technical specifications for interoperability relating to accessibility of the Union’s rail system for persons with disabilities and persons with reduced mobility,
- increase in the number of regional centres connected by railway lines upgraded for passenger trains to reach at least an average speed of 100 km/h,
- increase in the number of passengers transported on lines managed by PLK S.A. (globally for the following carriage categories: regional, inter-regional, international, express),

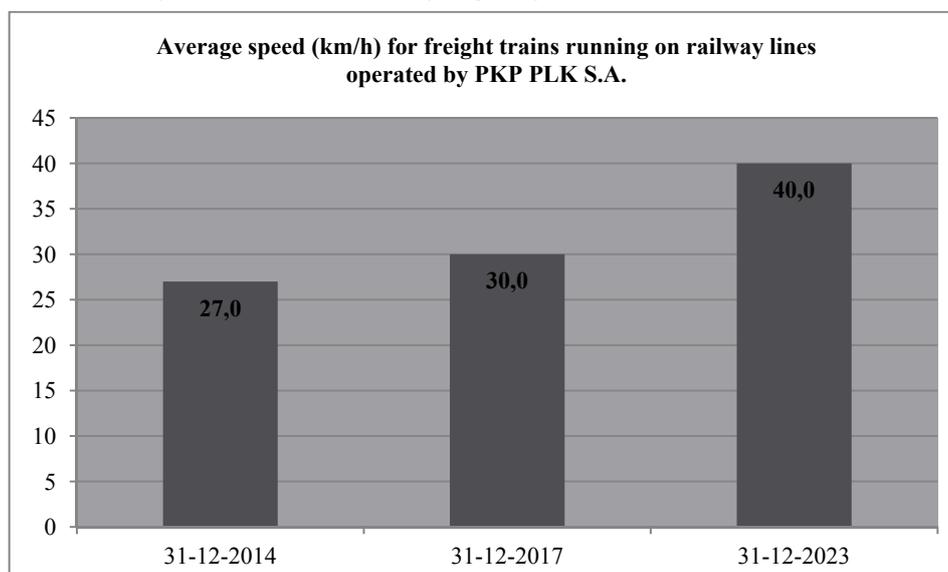
- increased weight of goods transported,
- increased speed for freight trains on railway lines managed by PLK S.A.,
- increased speed for freight trains on the territory of Silesian agglomeration,
- increased share of railway intermodal transport in freight railway transport in total.

Indicators that show the accomplishment of that objective include an average speed for freight trains running on lines operated by PLK S.A. and a number of regional centres connected with railway lines upgraded for passenger trains to reach at least an average speed of 100 km/h. The evolution of the abovementioned indicator over 2014–2023 is presented in Table 8 and Graph 4 and 5.

**Table 8.** Size of indicators measuring the degree to which the objective: improving quality in passenger and freight railway transport over 2014–2023 is attained

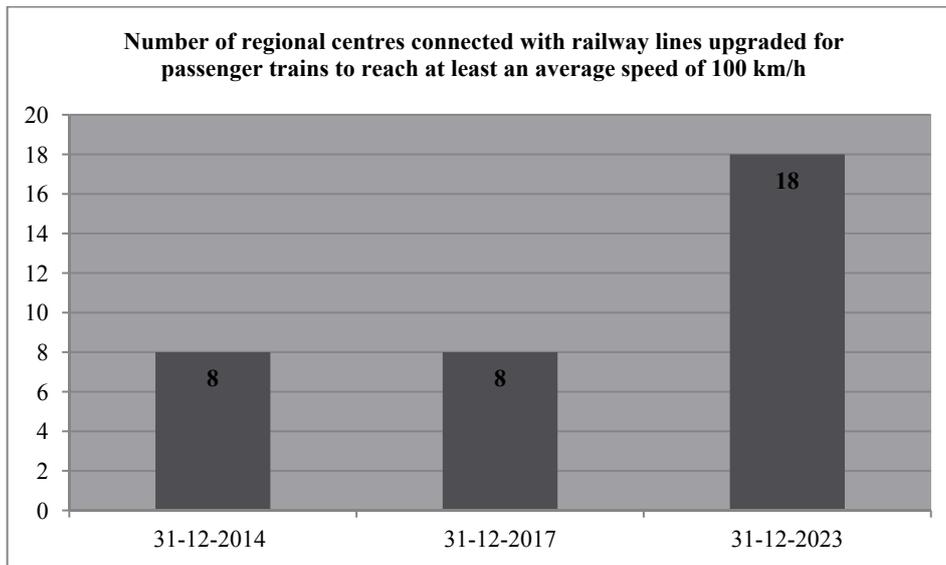
Indicator	Measurement unit	Size of the indicator in years		
		31.12.2014	31.12.2017	31.12.2023
Average speed for freight trains running on lines operated by PLK S.A.	km/h	27.0	30.0	40.0
Number of regional centres connected with railway lines upgraded for passenger trains to reach at least an average speed of 100 km/h	number	8/18	8/18	18/18

Source: Own study based on the National Railway Program by 2023.



**Graph 4.** Average speed for freight trains running on railway lines operated by PLK S.A. over 2014–2023

Source: Own study based on the National Railway Program by 2023.



**Graph 5.** Number of regional centres connected with railway lines upgraded for passenger trains to reach at least an average speed of 100 km/h over 2014-2023

Source: Own study based on the National Railway Program by 2023.

The implementation of plans described is closely linked to the pursuit of further increased competitiveness of the railway transport in Poland through, among others, reducing the gap in rail journey time between regional centres and road transport. Meanwhile, the emphasis will be placed on continual winning and maintaining trust of clients and passengers. Earning the trust will be fostered by substantial improvement in the quality of services, use of cutting-edge infrastructure, IT technologies, territorial and inter-branch integration of transport services. Simultaneously, revitalisation of assets and effective allocation of available financial resources takes place. To this end, it is essential to furnish main lines with high operational parameters, specifically to raise the speed for trains, thereby increasing railway time accessibility to the capital and primary regional centres. The enhanced utility and accessibility of the Polish railway system may only be possible through improvements in aspects such as: technical condition of networks, traffic speed, degree of electrification, percentage of twin-track and multiple track lines, state of the art in signalling and traffic control systems. Over the programming period 2007-2013 as well as in previous years, major transport routes were modernised in the Polish railway sector, though none of them was completely upgraded. The objective for the perspective 2014-2020 is to continue modernisation of these lines. Specifically, the investments at the border with Germany are critical. The foregoing investments will

complement the modernisation of the two routes running East-West which are significant to national as well as international transport services. Included in a list of operational goals to be attained in the railway transport sector is modernisation of the network TEN-T (Trans-European Transport Network). The objective of setting up of TEN-T network is to transform the current system of roads, rail, airports and waterways with their diverse operational parameters into a coherent transport network. For the core network TEN-T it is required to achieve parameters in conformity with requirements for interoperability, notably the instalment of the ERTMS (European Rail Traffic Management System). The core network is to be established by 2030 and comprise 9 major transport corridors. They will constitute primary transport connections, thus shoring up common market access and stimulating future economic growth. The core network will be supplemented by its reinforcing comprehensive network which is expected to be in place by 2050. Thus, it will ensure the coverage of the whole EU territory and accessibility of all regions.

Over 2014-2020 the robust support for the railway sector is anticipated in Poland, in accordance with the objectives of the European transport policy, objectives of the Transport Development Strategy as well as the country-specific recommendations of the Council of the European Union, in particular recommendations regarding the effective and smooth implementation of investment projects in railways that seek to enhance the transport accessibility while at the same time increasing safety for traffic participants and performance of the transport sector, through establishment of a coherent, sustainable and user-friendly transport system at the national, European and global level. In this context it should be emphasized that the economic and managerial approach of the public sector to the fulfilment of public tasks somehow compels the contemporary administration to search for new financial solutions. Hence, on one hand, the assumption rests on the quest for higher privatisation of services provided by specific entities – railway market stakeholders, and on the other hand, on the establishment of a long-term collaboration between the public and private sectors to accomplish public tasks on the basis of public-private partnerships. Clearly, the implementation of the public-private partnership formula in the field of railway investments provides an opportunities in the context of e.g. nodal infrastructure – railway stations, terminals as well as line infrastructure (building and maintenance of railway lines, building high-speed tracks).

To sum up, it should be highlighted that the change in the management system in the railway infrastructure as addressed in this paper is two-fold, firstly it translated into a robust progress in its functioning in free market economy, and

secondly, it helped to delineate further directions and paths for operations. As revealed in the second edition of the EU Transport Scoreboard published by the European Commission on the 20<sup>th</sup> November 2015 – Poland railways as compared to other EU states, even though requiring further improvements, shows a significant progress in numerous categories. Ratings of the quality of the transport infrastructure in Poland are more positive than in the last reporting period [www 4].

Taking account of the factors that testify to the attractiveness of the Polish Railway market such as: the geographical location on transport routes (transport corridors of the total length of over 5,000 km run through Poland), its large territory and relatively dense network of railway infrastructure (third longest in Europe), the volume of traffic (second in Europe as regards the freight market) and multiple infrastructure investments, including increased line parameters, it can be expected that this market will enjoy dynamic growth over the years ahead, thereby providing an opportunity for its potential stakeholders.

Given that the solutions applied on the ground of the Polish railway stand out by high universalism (for example in the context of management structure as well as construction of indicator models and use of performance information), they may be leveraged within upgrades of systems for public task management in other countries – while suitably adapting to specific social and economic conditions prevailing in those countries.

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**ZMIANA SYSTEMU ZARZĄDZANIA W SEKTORZE PUBLICZNYM  
NA PRZYKŁADZIE INFRASTRUKTURY KOLEJOWEJ W POLSCE**

**Streszczenie:** Zarządzanie w sektorze publicznym znacząco różni się od rozwiązań mających zastosowanie w sektorze prywatnym. Jest to spowodowane odmiennym zakresem zadań realizowanych przez te dwie kategorie podmiotów życia gospodarczego – wynikającym głównie z faktu, iż działalność państwa przy jednoczesnym wypełnianiu swoich funkcji nie jest ukierunkowana na osiągnięcie zysku.

Celem niniejszego artykułu jest przedstawienie zmiany sposobu zarządzania zadaniami publicznymi w Polsce na przykładzie kolei, a także zaprezentowanie nowego systemu, co, biorąc pod uwagę znaczny uniwersalizm zastosowanych rozwiązań, może stanowić przykład dla innych krajów (zwłaszcza Europy Środkowo-Wschodniej), które przeszły proces transformacji. Punkt odniesienia dla ujętych w artykule poszczególnych elementów systemu zarządzania stanowi także opublikowane przez Komisję Europejską 20 listopada 2015 r. drugie wydanie tzw. tabeli wyników UE w dziedzinie transportu, która porównuje postępy państw członkowskich w 29 kategoriach transportowych. Warto w tym miejscu zaznaczyć, że choć obecna pozycja Polski jest odległa, co wynika m.in. z ugruntowanej pozycji i jakości infrastruktury kolejowej krajów tzw. starej Unii, to w większości obszarów zanotowano wzrost względem poprzedniego badania. Co więcej, biorąc pod uwagę fakt, iż proces modernizacji ma charakter wieloletni, przyjmuje się, że efekty prowadzonych działań w coraz większym stopniu będą widoczne w kolejnych edycjach rankingu.

**Słowa kluczowe:** zarządzanie publiczne, efektywność, inwestycje, usługi publiczne.