

10th International Scientific Conference Transbaltica 2017:
Transportation Science and Technology

Balanced Scorecard Use in Passenger Transport Companies Performing at Polish Market

Agnieszka Tubis*, Sylwia Werbińska-Wojciechowska

Wrocław University of Science and Technology, Poland

Abstract

The presented paper discusses the theoretical issues concerning the development and implementation of the Balanced Scorecard. Thus, the briefly literature review in this research area is provided. Following this, on the basis of the general model, there were developed pattern cards tailored to the needs of passenger transport companies performing at Polish market. The directions for further research work are defined.

© 2017 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of the 10th International Scientific Conference Transbaltica 2017

Keywords: Balanced Scorecard, land passenger transport, management, strategy, transport company

1. Introduction

Today, the passenger transport sector puts higher demands for companies providing transport services. Increasing competition, unfavorable changes in the environment (e.g. additional charges resulting from the gradual introduction of EU regulations), increasing consumer expectation in the areas of used infrastructure (both vehicles and parking places – railway stations, bus stops), and provided additional services (wireless network availability, electronic ticket introduction), as well as the implementation of the basic transport postulates (travel time, convenience, cost and security) are forcing transport companies strive for organizational efficiency achievement. At the same time,

* Corresponding author.

E-mail address: agnieszka.tubis@pwr.edu.pl

Nomenclature

BSC	Balanced Scorecard
KPI	Key Performance Indicator

transport companies are facing today with many problems in the area of assessing main processes performance level in relation to the defined organizations' strategic objectives [3, 14, 26].

These enhanced passengers' preferences, as well as the modification of the subjective business structure of road passenger transport companies make that the large transport organizations are forced to change their strategy and the method of strategic aims implementation into operational performance level. At the same time, it is possible to use several approaches in the process of supervising the level of transport systems performance. The basic strategic management methods can include mainly [24]: ADL Matrix, Matrix of Hofer and Schendl, McKinsey's Matrix, BCG method, SPACE method, or SWOT analysis. Another option is Balanced Scorecard use, proposed by the authors Robert Kaplan and David Norton [11]. The main issue of the BSC is to link business strategy with company operational activities. This is done by using metrics that indicate both, the implementation degree of adopted by the organization strategy, and the relationship between the operational activities and the company's goals [27]. Thus, the BSC method does not rely on measuring whether the company and its employees perform their tasks well. It gives the ability to check whether the performed tasks support the implementation of organization's strategy.

Following this, the main target of this paper is to discuss the guidelines for the development and implementation of the Balanced Scorecard concept. On the basis of the general model, there are to be developed pattern cards tailored to the needs of passenger transport companies performing at Polish market. Thus, in the next Section, there is provided a briefly literature review in the investigated research area. This gives the possibility to present the Balanced Scorecard model adjusted to the Polish passenger transport sector. The developed model bases on the case company main goals and defined strategy and is dedicated for large transport companies pursuing similar types of business objectives. The work ends up with summary and directions for further research.

2. Balanced Scorecard in the area of passenger transport performance – literature review

Balanced Scorecard is one of the modern business management concepts, which provides a methodology for organization's strategy definition. BSC is the basis for strategic controlling in enterprises [10]. This method allows to translate the strategy, mission and vision of the company into operational activities by defining the objectives and measures in the business four perspectives [11]: financial perspective, customer perspective, internal processes perspective, and growth and development perspective. Achieving the consistency and balance of objectives, actions and results in these four areas allows for delineation and implementation of organization strategy as a whole [6].

The financial perspective is to examine the whole company's finance area. It enables monitoring of the implementation of the planned financial objectives (e.g. the amount of income, return of capital) using measures that simultaneously evaluate a company's financial condition. The customers' perspective allows to determine the sources of the current company's market position and examines customer satisfaction. The internal processes perspective determines the most effective actions. As the part of the BSC, internal processes are classified into three groups: innovative processes, operational processes and after-sales service processes that create value chain. By contrast, the research and development perspective examines the company's availability for innovative changes. It allows to find and exploit growth opportunities by investing in resources that the company has or intends to acquire.

On the other hand, the authors H. R. Friedag, and W. Schmidt in his work [5] proposed a broader look at the BSC, recognizing that any company can create more than four fundamental perspectives. They defined in their work also the competition perspective as an element that enables the achievement of the defined goals.

The issues related to the design and implementation of the BSC method are widely analyzed in the literature. The interest in the implementation of the BSC method can be seen both, in the private sector and in the case of local government units (see e.g. [22]). A comprehensive review of the literature in this research area, including 181 articles published in the period 1992–2011, was presented in [9]. The literature review included a description of the

discussed issues, theoretical basis, applied research methods, and data analysis techniques. Based on this, there are indicated existing gaps in the research area allowing to define the directions for future research tasks.

One of the first work devoted to the BSC method in the area of transport companies performance is [18]. The author presented a proposal of BSC card to evaluate the level of performance of public transport systems, indicating the evaluation measures in the three main areas: efficiency, effectiveness, and prospects for the impact of realized transport services on the environment. On the other hand, the author in [23] focused on the presentation of procedures to develop and implement BSC method for public transport companies. In the work there were presented the examples of BSC cards for department of purchases of local self-government non-profit unit serving the local public transport system for the agglomeration of Ann Arbor-Ypsilanti (The Ann Arbor Area Transportation Authority). This problem was continued in [25], where the author proposed the BSC card for the public transport system functioning in Jakarta. Urban transport system was also analyzed by the authors of works [19, 20]. The main goal of these works was the use of the BSC method in the area of sustainable transport system performance in Singapore [19] and in Mauritius [20].

The next year, in [24], the authors present the perspectives of BSC implementation in companies from the TSL sector, together with the example of the overall analysis performance. They continue considering the possibility of using the BSC method to measure participation and the impact of the implemented ERP systems on the implementation level of company's strategic objectives, given in work [2]. In contrast, the authors of [1] presented the possibility of applying the BSC method in the management processes of transport companies in relation to the specific transport services and reduction of business risk level. In 2012, the authors in [21] proposed an approach of BSC implementation for 3PL logistics service providers. Moreover, in [27], the authors presented the objectives and measures of BSC for a transport company providing freight transport services. The study focused on the presentation of the possibilities of using computer software Result Scorecard based on the BSC to monitor the organization's strategy. In [10] the author presented the BSC method for a company providing international freight transport services. Based on the development of the strategic objectives of the company, and with the use of strategy maps, he developed a strategic scorecard and assessed the effectiveness of the implementation of the controlling system in the audited company.

Simultaneously, there can be found in the literature the studies of BSC method development for rail transport companies (see e.g. [4, 15]), seaport management companies (see e.g. [8, 17]), and air transport services providers (see e.g. [16]).

To sum up, the presented literature review confirms that in the different modes of transport the implementation of the BSC method has contributed to the improvement of the organization processes. Thus, the authors conducted preliminary interviews with senior managers of large enterprises from road passenger transport sector. The research regarded to the identification of managers' needs for information associated with the identification of the degree of implementation of the adopted business strategy. The opinions expressed in the views prevailed that the boards of these companies do not currently have the tools that enable them to clearly assign actions in order to reach their goals and the subsequent monitoring of the degree of their implementation. The only area that is currently subject to control is the finance section. Representatives of the managers are aware that such a narrow perspective of their business strategy evaluation is inadequate to verify the actual efficiency and correctness of the business performance.

3. Balanced Scorecard adjusted to the Polish passenger transport sector

3.1. Case company characteristic

Application of Balanced Scorecard to improve the management process will be discussed on the example of the passenger transport company. The analyzed carrier is a large transportation company providing services both, in the communication of regular regional and national level and in irregular communication (commissioned). It is a limited liability company, whose majority shareholder is the State Treasury. This main shareholder now has a 55% stake in the company. Another big shareholder is a partnership, which owns nearly 35% stake. The remaining minority stake have outside investors – including employees of the company.

Until recently, the performance of the carrier focused primarily on the implementation of transport within scheduled services commissioned by public transport organizers. However, in the face of increasing competition on the passenger transport market, especially from small carriers offering fleet of smaller capacity [13], the company commenced intensive efforts to acquire the additional transport orders. These orders apply to both regular service (e.g. transport of workers for regional companies, transportation for schools) and one-off orders (vehicle rental with service). Competing in open tenders and competitions meant that the company had to revise its current model of business. The change had to be connected not only with freight management system, but also it should be regarded to the philosophy of customer service, fleet management and cost management.

In the face of the new requirements of the market and because of the difficult current situation of the carrier, the new Chairman of the Board started in 2013 to restructure the company, which was completed successfully in 2015. As a result of the restructuring process, the Management Board of the company has decided to:

- replacing the parts of vehicles from owned fleet and striving to harmonize the fleet due to the brand,
- sale of the selected buildings and perform major renovation/reconstruction of operated and maintained buildings,
- provide continuous improvement of the quality of provided services,
- diversify of performed operations.

Before the restructuring process implementation, the management model of the audited enterprise did not assume any solutions that use the concept of “learning organization”, or the philosophy of “continuous improvement”. Currently, the Management Board of the company strongly directs the processes of continuous improvement of the organization. For this reason, it cooperates with one of the universities in order to improve the personnel management system, and hires new employees whose job is to audit the processes in terms of their possible improvement. It should be noted, however, that the company lacks a well-defined and implemented measurement system, which could be used in both the processes of planning and control. The monitored and controlled indicators are currently presented in the Table 1.

Table 1. Key Performed Indicators monitored in the case company.

No.	Notation	Definition	Characteristic
1.	KPI1	Turnover rate	Monitored on a monthly, quarterly and annual basis.
2.	KPI2	Profitability of connections	Profitability is measured taking into account the following parameters: the amount of km driven, the amount of realized connections, the average number of passengers on the course. The profitability is calculated for the individual courses and for the route. The final evaluation of the profitability refers to the direction, and not to the individual courses. Profitability is calculated for routes implemented within the regular public transport.
3.	KPI3	The global costs of business activity	Overall costs incurred in connection with the performed business activities that are the basis for determining the amount of earned profit.
4.	KPI4	Maintenance costs per vehicle	At the end of the month service station is required to specify the amount of the costs attributable to the global maintenance of their own vehicle fleet.
5.	KPI5	The average takings per connection	At the end of each month there is determined the average takings per courses done in a given direction.

Source: Own contribution based on company's internal materials.

The analyzed so far indicators do not meet the expected role. The defined measurement system is focused only on a financial gauges. It lacks the tools to monitor the level of logistics, efficiency of processes in the company, or indicators mapping the development process of the organization. So established measurement system also cannot monitor the degree of implementation of the company's defined strategy. On the contrary, it focuses exclusively on the financial perspective, which may lead to improper management decision making. Adopted by the company's strategic objectives are focused on increasing revenue by improving the quality of transport services and on reasonable business operations. Implementation of such selected tasks can be negatively represented by the current measurement system. For example, the constant improvement of the quality of services requires the development of

additional services, equipment, or vehicle monitoring systems. These tasks will increase the cost of investment in the areas of vehicle equipment and IT systems, and will be translated into an increase in the global costs level.

Currently adopted by the company operating strategy involves significant capital expenditures, whose effect will be possible to register after a certain period of time in the form of increased turnover. Thus, the current accounting result, taking into account the turnover at current levels and raised overall costs associated with these activities, will be evaluated negatively.

The current measurement system is also directed primarily to monitor the performance of a regular public transport services. Recorded turnover is of a global nature, which does not represent the profitability of each of company's activities. This makes it impossible to track the current share of diversified transport services provided to distinguished actors (in the division by public transport – commissioned transport). The profitability measure of performed transport services also applies only to connections resulting from public transport organizer orders. Thus, there is no possibility to evaluate the actual profitability of orders, with the assigned total costs associated with their implementation. Meanwhile, commissioned transportation increase their percentage of the portfolio of services and are an increasingly important element of implemented strategies. Moreover, none of the previously monitored indicators refer to the effectiveness of the fixed assets use, e.g. of the property. The costs associated with their use are hidden in the cost item of global operations, but there is no possibility to measure the effectiveness of their operation. Thus, it is impossible to control the implementation level of rational management of company's properties.

3.2. Preliminary assumptions for conception of Balanced Scorecard model for transport sector

Balanced Scorecard in each case is developed uniquely for a particular organization. This is mainly because as an instrument of implementation of the strategy, it takes into account only the appropriate internal factors, as well as present opportunities and threats [22]. The authors, however, decided to try to create a BSC pattern for a specific group of companies, taking into account the specificity of the analyzed sector, and assuming similar organization characteristic of the entities.

First of all, it should be noted that the passenger transport companies are not classic economic organizations, whose activity is focused primarily on maximizing profits. They perform a social function, providing services in the context of public transport. This does not mean, however, that the attention of managers cannot be aimed at increasing the profitability of the business. It can, but through the development of services in the transport sector and commissioned rational minimization of operating expenses. In this case, the savings should be sought primarily in the decisive elimination of waste occurrence. In any case, the minimization of the costs cannot influence the level of transport services performance.

The road passenger transport companies, in order to meet the challenges of the market and modern trends of management, take the toil to transform into a self-learning organizations. This is the right concept, given that carriers are forced to continuously improve the organizational and technological development so as to meet the expectations of passengers and encourage them to use public transport services. The turbulent passenger transportation market also makes a task of strategic importance connected with learning from completed transformation process in order to be better prepared for the next challenges. Balanced Scorecard supports the process of strategic learning. At the same time, for the current conditions of road transport operation, it is enough to implement a learning concept on the basis of a single loop performance [7]. The Board and management staff of the transport company should in fact work on improvement of processes and focus on the ability to detect and correct errors in relation to a given set of operational standards, laws, values, assumptions that guide organization system. It is impossible to implement in the current transport systems recommended by Kaplan and Norton learning concept that bases on the principle of double loop [12]. It assumes in fact impeachment of the norms and regulations, which in the case of public transport sector is currently unrealistic.

3.3. Balanced Scorecard model for Polish passenger transport sector – conception

The analyzed company is the representative of group of carriers representing a large share of entities providing transport services on the Polish territory. The specificity of the company's management, placed challenges and problems occurring in the business are characteristic for this group of companies. Therefore, on the basis of the

conducted research, it is possible to prepare a standard model of balanced scorecard being tailored to the needs and characteristics of large road passenger transport enterprises. This model takes into account the general strategic guidelines for activities conduction related to the transport of passengers performance. Therefore, after an appropriate adjustments to the needs and situation of a particular carrier, it can be modified and used by most companies in the investigated sector.

Specific objectives adopted in a developed BSC pattern are universal, but take into account the specificity of the large carriers performed at the Polish market. Until recently, these companies operated primarily in the area of public transport. Currently, carriers are looking for new sources of income in the area of commissioned freight services, and irregular transport servicing (employment and school buses). These operations are more profitable and allow the company to further development. Transport requirements imposed by these services are also the basis for changes in the quality of services and processes continuous improvement. The importance of this new business orientation is clearly mapped in the proposed model, both in the form of the set of specific objectives, as well as accompanying measures. There is a clear division into two parallel forms of business – regular services and commissioned services. During the development of measures dedicated to monitor the level of business strategy implementation, there was taken into account the specific nature of transport processes. However, in the case of the universal nature of certain defined specific objectives, especially regarding growth prospects, the proposed measures are of a general nature.

During the development of BSC model, there was pointed out that passenger transport company should focus primarily on the customer perspective and should improve its internal processes performance in order to be able to fulfill the social objectives. Financial goals should be achieved primarily through the elimination of waste and efficient use of resources.

Presented in the Table 2 model that includes specific objectives and the proposed measures is an example of the identification scope prepared on the basis of the data obtained from the audited company and sector analysis.

Table 2. The proposed model of Balanced Scorecard.

Perspective	Detailed goals	Proposed indicators	Indicators characteristic
1	2	3	4
Customers perspective	Increasing market share through acquisition of additional orders in regular and irregular communication	A whole number of orders The number of new orders Percentage share of orders both public and private	The analysis will be subject to the total number of executed orders executed, divided into renewed (continued) orders and obtained new orders. There should be also compared the part of public transport in relation to the desired level of current commissioned transport services. The expected result will be the increasing of percentage of commissioned transport services with maintaining a minimum number of courses on the routes served by public transport.
	Increase passengers satisfaction with the quality of services	The number of reported claims and complaints in relation to previous years The share of complaints relating to the driver/vehicle/punctuality	Here, there will be monitored a number of complaints in the current period to the number of complaints in previous years. At the same time, analysis can be extended to the classification of complaints to individual groups – a complaint to the driver, the vehicle, punctual transport, etc. The comparative analysis of these indicators in future periods will reveal the effectiveness of measures taken to improve the carrier performance level.
	Increase customers loyalty	The number of renewed contracts for additional transport services performance (beyond the timetable)	This indicator is to be supplementary input information for the first group of indicators. The attention in this case is paid on the renewing of additional orders, which reflect the assessment of the quality of carrier services.
	Improving communication with passengers	The number of reported complaints concerning the lack of or incorrect information Total investment in passenger transport systems	The first indicator is supplementary to measurements carried out under the “Increase passengers’ satisfaction with the quality of services” issue. The company’s actions should be aimed at reducing the number of complaints relating to passenger information. The second indicator should reflect the improvement of information systems, as well as it should give the possibility to assess the effectiveness of investments taken in relation to the assessment of service quality.

Continuous of the Table 2

1	2	3	4
Internal processes perspective	Improving the process of preparing the services of additional orders	<p>Average time of offer preparing (for the inquiry and announced tenders)</p> <p>Percentage of tenders being won</p>	<p>Due to a new experience in the area of tenders' offers preparation, management attention will focus on the time required to prepare the documentation that will reflect the speed of response to emerging business opportunities. Shortening the time cannot be at the expense of the quality of prepared papers. Hence, a complementary indicator is aimed at monitoring the effectiveness of the measures taken.</p>
	Improving the quality of review process of claims and complaints	<p>The average time from the submission of the complaint until its consideration</p> <p>Percentage share of complaints/claims processed in favor of passenger</p> <p>Percentage share of complaints/claims deemed unfounded</p>	<p>The speed of company response to emerging complaints will be decided on the final assessment of the customer service level by the passengers. The accompanying pressure of time cannot affect the preciseness of the reasonableness of reported complaints. For this reason, measures aimed at shortening service time must be supported by indicators that monitor the effectiveness of the analyzed complaints.</p>
	Improving the quality of services	<p>The number of canceled courses</p> <p>Punctuality of transport services performance</p> <p>Number of implemented improvements</p>	<p>Recommended measures of achieving the objective are classic indicators relating to the assessment of the quality of transport. At the same time, the carrier as a learning organization should be set to the number of improvements implemented in subsequent periods. The combined analysis of all three indicators will show the effectiveness of the improvement activities.</p>
	Diversification of activities aimed at increasing revenues from additional orders performance	<p>Revenues from additional orders made within scheduled services (transportation of employee, school bus) and vehicle rental</p>	<p>Transportation services being commissioned by the private organizers constitute an additional source of income for carriers. Thus, the business activity of transport companies should therefore be focused on constant increase of income from this operational tasks performance. Comparative analysis of the subsequent periods will show the effectiveness of performed operations.</p>
Financial perspective	Increasing the degree of use of its properties	<p>Revenues/costs from station space rental</p> <p>Revenue/costs from services provided by the vehicles maintenance station</p>	<p>Large companies have the additional infrastructure, which until recently provided services mainly to the company. Strong business orientation of the carrier should be expressed also in increasing its revenues from the use of its property, so that conducted ancillary activity is kept at a certain level of profitability. Otherwise, these indicators should provide a basis for the decision to resign from this business activity.</p>
	Increasing the profitability of services within scheduled services	<p>The average level of operating costs related to operating any connection</p> <p>The profitability of individual courses within scheduled services divided into routes</p>	<p>Due to the increasing share of individual communication in regional transport market, some of the courses, and sometimes even entire route, cease to be profitable at a given level of ticket prices. These indicators should provide information about the need to reduce the costs of transport at the chosen route (e.g. through the selection of smaller vehicles) or having to give up from some courses providing.</p>
	Reducing costs associated with the operation and maintenance of vehicles	<p>The average cost of vehicle repair /renovation/maintenance</p> <p>The average level of combustion of fuel per vehicle</p> <p>The average number of failures per vehicle</p>	<p>Driving down costs associated with the maintenance and operation of vehicles is largely due to the fact that a significant part of the transport fleet of large carriers are to be the vehicles over 10–15 year-old. Representation of the maintenance costs of oldest buses should be incentive for managers to replace them by a newer fleet. The defined goal reflects a new pro-quality approach to its operations by carriers. A newer transport base gives the possibility to raise the standard of services.</p>

End of the Table 2

1	2	3	4
Research and development perspective	Increasing the efficiency of drivers	The proportion of the drivers being in an availability state without driving	Due to the lack of currently automating processes related to the implementation of transport services, the company's employees are its primary and most valuable resource. Especially driver constitute the showcase of the transport company. Development of qualifications and skills of human resources is now a matter of priority, primarily because of the declining trend at Polish market of drivers.
	Increasing workers' skills	Number of training per employee Number of acquired permissions/certificates per employee The level of annual expenditure on staff training	
	Attracting new and maintaining highly qualified/experienced staff	Percentage share of individual groups of employees according to the criterion of education and work experience in the enterprise (sector)	
	Improving IT systems supporting the management and operation of passenger	Expenditure on the development of systems supporting the company's management and passenger service Number of purchased software licenses Number of implemented IT innovation in passenger service	As with other sectors, the development of transport companies is also dependent on the development of IT infrastructure. Growing expectations of passengers on services accompanying the transport that facilitate the use of carrier services, exerts significant pressure investments in this area. At the same time a greater need for analytical managers related to, among others, the diversification of its operations imply the development of ERP systems.

In the most of large passenger transport companies, their strategy is described in the form of some general assumptions. There is a lack of its specification in the form of measurable goals set for individual areas of activity. Thus, the presented BSC model is a pattern that is aimed at suggesting managers which areas requiring clarification and expression in the form of indicators. It should also help to understand and appreciate the idea of BSC as a tool, which is to support companies' activities. The lack of such understanding can be a significant barrier to the implementation of this concept. It is also important to convince other employees to the benefits generated by the BSC model implementation. Employees being unprepared for its implementation, see no justification for the investment of time necessary to develop and implement of BSC in their company. In the described group of companies this will be particularly difficult. In the majority of carriers, the large part of the employees are workers with 10–20 years of experience, accustomed to the “old” management model. Thus, letting the BSC implementation relay solely on the training and communication campaign (recommended in the literature) cannot be very effective. Based on the interviews conducted with senior managers, it seems to be reasonable to link the implementation of the BSC with a dedicated incentive scheme for employees of the company. The implementation of the incentive system based on the BSC results will make every employee being aware of the personal benefits from their extra effort associated with the implementation of corporate strategy. That's every employee in the enterprise decides whether the strategy defined by the Board is realized or not. Noticing that by the management staff and taking it into account in the managed process requires culture change from the current carriers, but also contribute positively to achieving the objectives set by the BSC.

4. Summary

The presented above elements of the BSC are only some proposals corresponding to the general trends of changes and strategies currently being undertaken by the companies in the road passenger transport sector. Through its universal nature, they can be stated as a model/guideline for individual BSC card developed in practice by the carriers, but only at the initial stage of their operation. As it has been already explained above, the complete preparation of the Balanced Scorecard enforces its individual character adapted not only to the general conditions of the sector, but above all to the potential of the company performance.

The given results represent a fragment of the authors research work leading to the development of a model solution for controlling system dedicated to the needs of road passenger transport companies. Further research work will be directed to analyses and evaluation of the possibility of using other analytical tools in the developed model and their adaptation to the requirements of the investigated transport sector.

References

- [1] K. Baganova, M. Luskova, Balanced Scorecard in transport company, *Mechanics Transport Communications* 3 (2009) III-58-III-61.
- [2] D. Chand, G. Hachey, J. Hutton, V. Owahso, S. Vasudevan, A balanced scorecard based framework for assessing the strategic impacts on ERP systems, *Computers in Industry* 56 (2005) 558–572. doi: <http://dx.doi.org/10.1016/j.compind.2005.02.011>
- [3] A. Divandri, H. Yousefi, Balanced Scorecard: A Tool for Measuring Competitive Advantage of Ports with Focus on Container Terminals, *International Journal of Trade, Economics and Finance* 2(6) (2011) 472–477.
- [4] G. Frederico, V. Cavanaghi, A proposal of performance measurement system for the operators of freights railroad transportation. 8th World Congress on Railway Research, Seoul. 2008.
- [5] H. R. Friedag, W. Schmidt, *Moja Strategiczna Karta Wyników*. C. H. Beck, Warszawa. 2004.
- [6] K. Grochowski, *Strategiczna Karta Wyników narzędziem wspierania konkurencyjności w branży logistycznej*. VI Seminarium Młodych Pracowników Nauki, Doktorantów i Adiunktów, Ząb/Zakopane. 2007.
- [7] W. M. Grudzewski, J.K. Hejduk, *Zarządzanie wiedzą w przedsiębiorstwach*, Difin, Warszawa. 2004.
- [8] J. Habelman, Mierniki klienta w strategicznej karcie wyników w portach morskich. *Zeszyty Naukowe Uniwersytetu Szczecińskiego nr 757: Finanse, Rynki Finansowe, Ubezpieczenia* 58 (2013) 181–191.
- [9] Z. Hoque, 20 years of studies on the balanced scorecard: trends, accomplishments, gaps and opportunities for future research. *The British Accounting Review* 46 (2014) 33–59.
- [10] J. Janczewski, *Controlling w przedsiębiorstwie transportowym*. *Zeszyty Naukowe Wyższej Szkoły Humanitas. Zarządzanie* 2 (2013) 153–166.
- [11] R. S. Kaplan, D. P. Norton, The Balanced Scorecard – Measures that Drive Performance. *Harvard Business Review* 70(1) (1992) 71–79.
- [12] R. S. Kaplan, D. P. Norton, *Strategiczna Karta Wyników*, Wydawnictwo Naukowe PWN, Warszawa. 2001.
- [13] K. Karmelita, A. Tubis, Konkurencyjność dużych firm transportu drogowego w regionalnych przewozach pasażerskich, [in:] *Strategie i logistyka w sektorze usług. Logistyka w nietypowych zastosowaniach*. (ed.) J. Witkowskiego, A. Baranieckiej, *Prace Naukowe Wrocław UE*, Wydawnictwo UE Wrocław, Wrocław (2011) 207–216.
- [14] A. Kierzkowski, T. Kisiel, Functional readiness of the check-in desk system at an airport, *Theory and engineering of complex systems and dependability: proceedings of the Tenth International Conference on Dependability and Complex Systems DepCoS-RELCOMEX*, June 29–July 3, 2015, Brunów, Poland. Springer (2015) 223–233. doi: 10.1007/978-3-319-19216-1_21
- [15] H.R. Mir Ali, H.R. Ghaderi, F. Rostami, Review the role of the Balanced Scorecard in the Effectiveness of Office in Khorasan Railway. *Journal of Engineering Research and Applications* 3(5) (2013) 1315–1319.
- [16] D. Nusraningrum, N. Waluyaningsih, Performance analysis: the case of Directorate General of Civil Aviation using Balanced Scorecard. *World Journal of Social Sciences* 3(3) 98–119.
- [17] M. Ossowski, *Strategiczna karta wyników w przedsiębiorstwie zarządzającym portem morskim*. *Zeszyty Naukowe Uniwersytetu Szczecińskiego* 765: *Finanse, Rynki Finansowe, Ubezpieczenia* 61 (2013) 499–507.
- [18] J.K. Phillips, An application of the Balanced Scorecard to public transit systems performance assessment. *Transportation Journal* 41, 1 (2004) 26–55.
- [19] Md.H. Rahman, H.Ch. Chin, Sustainable urban transport in Singapore: a Balanced Scorecard. *OIDA International Journal of Sustainable Development* 2(10) (2011) 19–42.
- [20] Md.H. Rahman, H.Ch. Chin, N. Seebaluck, Urban Transport Sustainability in Mauritius: A Balanced Scorecard. *OIDA International Journal of Sustainable Development* 5(11) (2012) 83–104.
- [21] R. Rajesh, S. Pugazhendhi, K. Ganesh, Y. Ducq, S.C. Lenny Koh, Generic balanced scorecard framework for third party logistics service provider. *International Journal of Production Economics* 140 (2012) 269–282. doi: <http://dx.doi.org/10.1016/j.ijpe.2012.01.040>
- [22] W. Skoczylas, *Strategiczna karta wyników w pomiarze osiągnięć jednostki samorządu terytorialnego*. *Zeszyty Naukowe Uniwersytetu Szczecińskiego* 687: *Finanse, Rynki Finansowe, Ubezpieczenia* 48 (2011) 235–246.
- [23] J. M. Smith, Using a Balanced Scorecard as a strategic tool in public purchasing. *International Public Procurement Conference Proceedings*. (2006) pp. 901–921.
- [24] M. Torbacka, W. Torbacki, *Zarządzanie strategiczne przedsiębiorstwem logistycznym przy pomocy Balanced Scorecard zintegrowanym z ERP*. *Logistyka* 2 (2007) 57–60.
- [25] D. T. Yudiantna, *Balanced Scorecard (BSC) for Public Transport Performance Measurement Based on Service Dominant Logic (S-D logic) Framework*. Service Science Program Karlstad University. 2010.
- [26] M. Zajac, J. Swieboda, Process hazard analysis of the selected process in intermodal transport, *International Conference on Military Technologies (ICMT)* (2015) 1–7, doi: 10.1109/MILTECHS.2015.7153698

- [27] W. Żarski, W. Bojar, Wykorzystanie oprogramowania Result Scorecard do wspomagania monitorowania strategii przedsiębiorstwa transportowego. Available from Internet: <http://wz.utp.edu.pl/index.php/o-wydziale/struktura-wydzialu/katedra-inzynierii-zarzadzania/975-laboratorium-systemow-rachunkowosci-zarzadczej-i-controllingu.html> (access date: 3.11.2014r.)