

## ANALYSIS OF ENTERPRISE PERFORMANCE AND COMPETITIVENESS TO STREAMLINE MANAGERIAL DECISIONS

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**Abstract:** The main aim of this article is to analyse the performance development of the selected Slovak company – Košice International Airport by means of modern approaches of financial performance evaluation linked to designing a strategic Balanced ScoreCard (BSC). The empirical analysis of the company's financial performance development was performed on the basis of the selected financial ratio indicators and selected prediction models which form input data for creating a new Creditworthy Model (CWM) of performance. Finally, the authors have formulated the company's Balanced ScoreCard containing new strategic goals interconnected with the analysis of financial performance development to streamline strategic managerial decisions on the global market.

**Key words:** Enterprise Performance, Creditworthy Model, Balanced ScoreCard, Strategic Managerial Decisions

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### Introduction

Nowadays, the analysis and management of enterprise performance is getting more and more attention than in the past due to the constantly changing global business environment bringing new, modern approaches to solve the issue in question. Attention of stakeholders is focused primarily on long-term horizon; short-term business performance is gradually losing its importance. However, enterprise performance is relatively difficult to measure, as shareholders, business executives, specialists, employees and other stakeholders have different requirements and visions. There is an obvious need to use new methods of performance management within strategic-oriented management (Rajnoha et al., 2016). Traditional approaches of enterprise performance management based on evaluating accounting indicators such as revenue, profit or market share are insufficient today, especially because of stronger competition arising from integration and globalization of the world market. Companies start to realize that they are obliged to continue in seeking new modern approaches to improve their performance and thus maintain competitive position within the global market.

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## Literature Review

There are many various approaches of enterprise performance and competitiveness in the literature. Faltejskova et al., (2016) formulate the enterprise performance as the success on the market, the ability to succeed in the competition and to find the possibility for further growth in the constantly changing, unstable environment. Goncharuk (2014) defines an organizational mechanism of enterprise performance management as a system of actions and interactions of organizational structures solving the main issue of enterprise performance management – ensuring sustainable growth of enterprise performance. The enterprise performance according to Niznikova et al. (2015) represent one of the crucial factors for responsible company governance, especially from the perspective of valuation in the current competitive environment. For this reason, all enterprises have to dispose of a set of financial and non-financial indicators that can characterize its performance as accurately as possible. Rajnoha and Dobrovic (2017) add that actual business environment depends especially on the performance in generating and utilizing new knowledge, information systems, innovations and management techniques and tools creating the higher business performance. One of the most significant experts interested in competitiveness at all is undoubtedly M. E. Porter. He states that competition is at the core of the success or failure of firms and it determines the appropriateness of firm's activities that can contribute to its performance, such as innovations, a cohesive culture or good implementation (Porter, 2008). Building a competitive advantage should be a part of strategic management that consists of creating effective mechanisms enabling to predict the future of a company on the market and its impact on competitiveness.

There are only a few studies dealing with the task of the Creditworthy Model of performance. Horvathova and Sofrankova (2012) have demonstrated the use of traditional methods of enterprise performance in the form of Creditworthy Model. According to them the position of enterprises within the space is based on two dimensions: financial performance and evaluation of enterprise success. Horvathova and Mokrisova (2014) have analyzed the application of Creditworthy model in practice on the example of real enterprises and compared the results achieved with other diagnostic performance assessment methods. Horvathova et al. (2015) have focused on the selection of key performance indicators and risk factors of the selected industry and their application in formation of the Creditworthy Model. Based on the results they have found out that profitability, which negatively affects financial performance, is not such low to constitute a risk for given sector. The risk is liquidity and related activity that enterprises have to deal with.

The Balanced ScoreCard as a concept evaluating performance from other perspectives of enterprise activity is the subject of many research studies. Besides theoretical review of BSC, its characteristics, evolution, reasons and benefits of the application, Gavurova (2011) has performed the first exhaustive survey in Slovak firms implementing BSC and their clients – companies with deployed BSC systems and compared findings with the research results of renowned American Balanced

ScoreCard Institute. Gavurova (2012) has also focused on identifying problematic areas of the BSC system implementation and proposing some possible solutions. After that, the author focused on systematization of the basic BSC principles and their concretization by means of potential reason of malfunction. Rajnoha et al. (2015) have identified the impact of selected non-financial indicators and methods of the management on the overall performance of selected industries in Slovakia. As reported by authors, by applying the selected models such as Balanced Scorecard, Business Intelligence, strategic planning and controlling, innovation and others, companies operating in selected Slovak industry will achieve a better performance. Rajnoha et al. (2016) have detected also another key tool in increasing of overall performance of mentioned enterprises. It seems to be employing a system of strategic performance management of the firm supported by a knowledge-based Business Intelligence Information System. Knapkova et al. (2014) have analyzed the use of BSC concept in Czech enterprises and the effect of its use on financial performance of companies. Finding of the study is compared with different results achieved by other authors' research studies.

### **Methodology and a Model of Performance**

In this paper, the authors addressed the performance development analysis of the selected Slovak company – Košice International Airport using modern approaches of financial performance evaluation linked to designing a strategic Balanced ScoreCard. The empirical analysis of the company's financial performance development was realized by applying the selected financial ratio indicators and prediction models, which formed the input data for creating a new Creditworthy Model (CWM) of performance. At the end of this study, the authors have formulated the company's Balanced ScoreCard (BSC), in which they have defined new strategic goals interconnected with the analysis of financial performance development to streamline strategic managerial decisions on the global market.

In addition to the traditional approaches of performance evaluation by means of the financial – economic analysis, attention is continuously focused on the modern ones. Jencova (2016) determines the basic criteria that are to be fulfilled by a modern indicator:

- show the closest possible link to the value of shares that can be demonstrated by statistical calculations,
- allow for using as much information and data provided by accounting as possible, including indicators based on the accounting data,
- overcome objections against accounting indicators affecting financial efficiency, it is necessary to include risk calculation and take into account the extent of the committed capital,
- the indicator should allow a clear identification of its link to all levels of management,
- the indicator should support company's value management on the market.

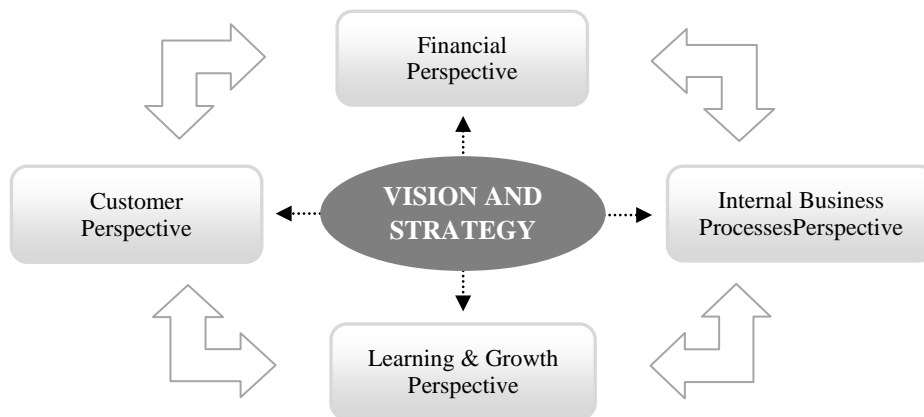
One of modern models of enterprise performance evaluation is the Creditworthy Model (CWM) of performance which is the most suitable model for comparison of financial performance of two or more enterprises. The position of the enterprise is determined by cross point of the values that are plotted along the x-axis and the y-axis. The future success of the enterprise is plotted on the x-axis and is determined by the transformation results of the prediction models (Quick Test, Altman Z-score, Taffler's Model, Creditworthiness Index) and by the transformation of financial ratio indicators' results to the y-axis (Days Receivable Outstanding, Days Short-term Payable Outstanding, Days Inventory Outstanding, Degree of Over-capitalization, Total Indebtedness, Share of Short-term Liabilities, Return on Equity, Return on Sales, Total Liquidity, Current Liquidity). The financial performance indicators included in the Creditworthy Model can be selected as needed and converted into points using transformation table. Each indicator (out of 10) can get a maximum of 8 points, thus the maximum number of points that an enterprise can obtain is 80. Predictions models' values are rated by a maximum of 80 points obtained by recalculation of prediction models' values using a scoring table (Horvathova and Mokrisova, 2014).

The analyzed Creditworthy Model can monitor and evaluate each number of enterprises as well as their optimal values. However, one enterprise is considered to be the best in certain area and the second one as the worst. Creditworthy Model has its own performance portfolio, which consists of financial performance indicators and enterprise success indicators, while it is divided into the following performance fields (Horvathova and Mokrisova, 2016): Inappropriate, Doubtful, Substandard, Watch and Excellent. If the analyzed company achieves the best results possible it is situated in the performance field of "Excellent". This position should be a goal for all enterprises and it is defined by a score of more than 64 points achieved in financial performance and more than 52 points within the enterprise success. The average performance value is located in the field of "Substandard" where the financial performance is below 52 points but higher than 32 points and the enterprise success may not be lower than 26 points. The worst position is located in the performance field of "Doubtful" and "Inappropriate" with financial performance defined by a score of 32 points and less. It is important for these enterprises to improve their results as they are threatened by bankruptcy in the near future.

Financial performance evaluation	16	Inappropriate	Doubtful	Substandard	Watch	<b>Excellent</b>
	32	Inappropriate	Doubtful	Substandard	Watch	Watch
	48	Inappropriate	Doubtful	Substandard	Substandard	Substandard
	64	Inappropriate	Doubtful	Doubtful	Doubtful	Doubtful
	80	Inappropriate	Inappropriate	Inappropriate	Inappropriate	Inappropriate
		16	32	48	64	80
		Success evaluation				

**Figure 1. Enterprise Performance Portfolio – Creditworthy Model of performance**  
 (Horvathova and Mokrisova, 2016)

Balanced ScoreCard (BSC) as a strategic tool for measuring and managing performance was created by Norton and Kaplan (2000) when developing a new project in 1990. They assumed that internal enterprise processes can be managed by management accounting, process management and controlling. The first generation of Balanced ScoreCard was perceived as a performance measurement system that used important aspects of business expressed in visions of the enterprise, its missions and strategy. The second generation of Balanced ScoreCard represented a system of enterprise strategy implementation. The second phase was based on creating relations between measuring tools and goals, as well as between goals and their representatives (Kiselakova et al., 2015).



**Figure 2. Balanced ScoreCard Framework** (Norton and Kaplan, 2000)

Handoko and Wehertaty (2017) add that BSC research developed significantly, not just considering it as performance measuring tool but also as a strategic management system. The practical application of Balanced ScoreCard in

enterprises has been constantly spreading to many countries and different sectors of the economy.

### Results and Discussion

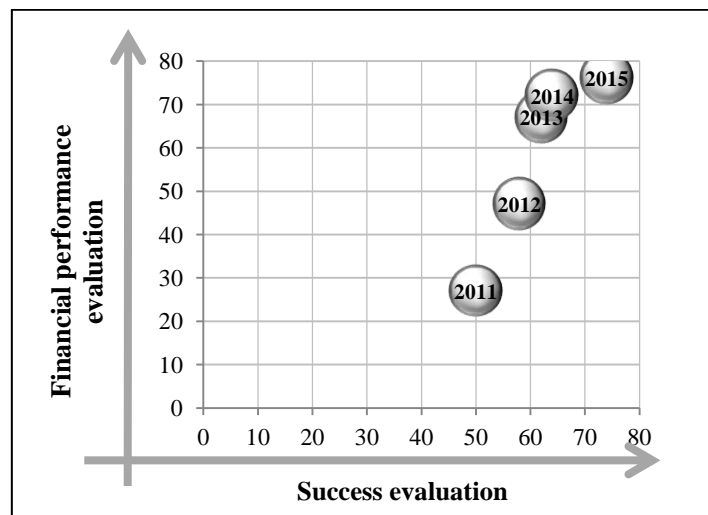
In order to process this article, the authors chose the company – Košice International Airport operating in the field of transport, which is included in the service (tertiary) sector. This sphere is currently one of the largest and fastest growing areas of the national economy of modern countries. Air transport belongs to the service sector and together with other means of transport it is used by more and more clients. In Slovakia, emphasis must be put on increasing performance and quality of services provided as well as creating pleasant and comfortable surroundings for passengers on the aircrafts and airports where they spend a lot of time while travelling. This is one of the possibilities how to get closer to the best airports in the world. Košice International Airport is applying, retaining and upgrading the Integrated Management System (IMS) including the System of Quality Management, System of Environmental Management and System of Security Management and Health and Safety Protection at work. In order to increase performance and competitiveness of this company the authors have created a Creditworthy Model of performance and strategic system of balanced indicators – the Balanced ScoreCard.

**Table 1. Input Values for the CWM of Performance**

Indicator	2011	P*	2012	P*	2013	P*	2014	P*	2015	P*
Days Receivable Outstanding	29.44	8	23.0	8	31.0	8	29.7	8	59.9	8
Days Short-term Payable	28.67	8	32.1	8	34.3	8	43.0	8	44.0	8
Days Inventory Outstanding	10.69	8	13.1	8	13.5	8	8.90	8	6.33	8
Degree of Over-capitalization	0.32	4	0.44	6	0.49	6	0.68	8	1.42	8
Total Indebtedness (in %)	1.43	8	1.55	8	1.71	8	0.98	8	4.70	8
Share of Short-term Liabilities	0.01	8	0.01	8	0.01	8	0.02	8	0.02	8
Return on Equity (in %)	-	0	2.20	0	1.50	0	3.00	0	4.28	2
Return on Sales (in %)	-	0	3.63	6	4.69	6	8.56	8	10.1	8
Total Liquidity	1.43	2	1.55	2	1.71	4	1.57	2	5.41	8
Current Liquidity	0.61	4	0.67	4	0.91	6	0.98	6	4.70	8
<b>Financial performance</b>	<b>50</b>		<b>58</b>		<b>62</b>		<b>64</b>		<b>74</b>	
Quick Test	9.00	8	9.00	8	12.0	12	12.0	12	17.0	16
Altman Z-score	1.78	12	2.86	12	19.6	20	11.0	20	9.50	20
Taffler's Model	-4.25	0	0.26	10	0,29	15	2.40	20	2.42	20
Creditworthiness Index	-0.97	7	2.33	17	3,74	20	6.90	20	6.98	20
<b>Success</b>	<b>27</b>		<b>47</b>		<b>67</b>		<b>72</b>		<b>76</b>	
*P = Points reached; 0 – the worst score possible; 8 – the best score possible										

So as to evaluate the performance of Košice International Airport the authors have applied the CWM, which provides an analysis of the company in terms of two dimensions, namely the financial performance dimension and the success dimension. The resulting values of selected EX POST ratio indicators and prediction models within the analyzed company and their point ratings during the years 2011 – 2015 are presented in the following Table 1.

Based on the company's results and the way of CWM's point rating by means of the scoring tables, the company was located in the performance field of "Doubtful" during the first analyzed year 2011. The enterprise performance was negatively affected by the results of financial indicators which did not achieve optimal values in many cases. In the next year of 2012, a 20-point increase within the financial performance evaluation was recorded as well as 8-point increase within the success evaluation, which led to a shift to the performance field of "Substandard". In the year 2013, a positive increase for both CWM dimensions was noticed again. The performance of Kosice Airport had to be monitored in detail as the values reached were so close to the "Excellent" performance field. In the year 2015, the financial performance of the company was moving on the border line between the fields listed above, but the positive development of financial indicators in the next year caused a definitive shift to the "Excellent" performance field. Graphic development of Creditworthy Model is presented in Figure 1.



**Figure 1. Results of the CWM Development over the Years 2011 – 2015**

According to the results of the CWM we can consider the financial performance of Košice International Airport as relatively standard (over the years 2012 – 2015). In addition, the company continues to keep its performance level on the market stable and strives for its continuous growth.



Based on the development analysis of financial situation and application of the CWM on Košice Airport a Balanced ScoreCard was designed. Proposed strategic goals were divided according to the general BSC perspectives (Financial, Customer, Internal Business Processes, and Learning & Growth) to improve and make the company's position on the global market more efficient.

**Table 2. Strategic Goals of the BSC Perspectives for the Years 2017 – 2018**

Strategic goal	Description
<b>Financial Perspective</b>	
Increasing Shareholder Value	During the analyzed years, Košice International Airport recorded mostly profit. The company should focus on improving the development of modern indicators that can increase the shareholder value creation.
Increasing Sales	Sales have a significant impact on the development of other financial indicators, such as profitability, activity as well as the modern indicator Economic Value Added (EVA). Without increasing their values, it is difficult to achieve a rising trend of mentioned indicators.
Increasing Return On Equity (ROE)	The company was showing insufficient values of Return of Equity (ROE), so it is undoubtedly necessary to enhance this indicator in the long-term perspective.
Decreasing Days Receivable Outstanding	Due to the positive impact on the financial situation, Košice Airport should try to decrease its values.
<b>Customer Perspective</b>	
Increasing the Number of Airlines and Final Destinations	An increased number of airlines will also increase the number of destinations leading to an increase in passengers.
Increasing the Passenger' Satisfaction	To fulfill this goal, it is important to provide quality services and monitor the passengers' satisfaction.
Increasing the Number of Passengers	An increased number of passengers will ensure higher sales.
<b>Internal Business Processes Perspective</b>	
Environmental Protection	Seeking and changing processes and activities that can be realized with minimum environmental damage.
Safety at Work	An effort to create a safe work environment for employees.
Increasing Labor Productivity	Increasing labor productivity will ensure better results for the enterprise, which will reflect in higher customer satisfaction.
Quality of Services Provided and Logistics	An effort to provide services of the same quality or to fine-tune or innovate them.



Implementing Innovation	Initiation of hardware, software or organizational innovations improves the labor efficiency and contributes to faster check in/out of the passengers.
<b>Learning &amp; Growth Perspective</b>	
Improving Quality of Employees	Only a high-quality employee can provide a high quality service, therefore, it is important to organize various training courses for employees (language course, course of communication behavior, educational courses, etc.).
Ensuring Employee Satisfaction	Only a satisfied employee will continue working on his/her position what leads to decrease in fluctuation and increase in quality of his/her service.
Sufficient Motivation of Employees	It is also very important to motivate employees through variety of benefits, bonuses, recognition and adequate total rewards for work provided.

This study can state that BSC shapes the central part of a strategic communication and performance measurement system and helps managers to communicate and monitor the implementation of strategy using a system inter-linked with the long-term visions.

### Conclusion

Air transport belongs to the service sector that includes all the sectors of human activity, the essence of which is to provide services. At present, the tertiary sector represents a significant part of developed economies (60 % of GDP) and it is the fastest growing sector in Slovakia as well.

The main aim of this article is to analyze the performance development of selected Slovak company – Košice International Airport using modern approaches of financial performance evaluation linked to designing a strategic Balanced ScoreCard. In the analytical part, the authors evaluated the financial performance of Košice International Airport on the basis of secondary data available from the company's financial statements over the years 2011 – 2015. While evaluating financial performance of a company the authors have focused on the development analysis of the selected ratio indicators and prediction models, which formed the input data for new Creditworthy Model (CWM) of performance. Finally, the authors have formulated the Balanced ScoreCard (BSC), in which they have defined new strategic goals in connection to the analysis of financial performance development. We have also formulated several ways to improve company's performance and competitiveness in order to streamline strategic managerial decision-making that may act as an inspiration for other companies on the global market.

Implementing the BSC helps translate strategy of the firm into more easily understood operational metrics and goals. An advantageous solution for strategic

business and performance management seems to be the interconnection of the BSC concept, the Economic Value Added (EVA) and financial ratio indicators. EVA as a top indicator within the financial perspective puts pressure on business executives to ensure a short-term as well as long-term increase of EVA that creates assumptions for increasing also the Market Value Added (MVA). Pyramidal decomposition of EVA can easily identify the basic factors influencing value creation, which are subsequently strengthened within the individual BSC perspectives. In this way, methods and procedures of financial analysis can be efficiently implemented into the performance measurement and thus support the company's competitiveness. Our CWM of performance can be modified as required by analysts and it can apply unlimited number of financial ratio indicator that are subsequently expressed as a single score and graphically illustrated in the final performance field. Another advantage of CWM model is the ability to combine internal and external factors influencing business performance in order to create a three-dimensional CWM with the application of internal and external risks, financial performance factors and success evaluation models of a company.

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#### ANALIZA WYNIKÓW PRZEDSIĘBIORSTWA I KONKURENCYJNOŚCI W CELU USPRAWNIENIA DECYZJI ZARZĄDCZYCH

**Streszczenie:** Głównym celem tego artykułu jest analiza rozwoju wydajności wybranej słowackiej firmy - międzynarodowego lotniska w Koszycach za pomocą nowoczesnych metod oceny wyników finansowych związanych z opracowaniem strategicznej karty wyników (BSC). Empiryczna analiza rozwoju wyników finansowych firmy została przeprowadzona na podstawie wybranych wskaźników finansowych i wybranych modeli predykcyjnych, które tworzą dane wejściowe do tworzenia nowego modelu wiarygodności kredytowej (CWM). Wreszcie, autorzy sformułowali zrównoważoną kartę wyników firmy, zawierającą nowe cele strategiczne połączone z analizą wyników finansowych w celu usprawnienia strategicznych decyzji zarządczych na globalnym rynku.

**Słowa kluczowe:** wydajność przedsiębiorstwa, model wiarygodności kredytowej, zrównoważona karta wyników, strategiczne decyzje menedżerskie.

#### 企业绩效与竞争力对流线管理决策的分析

**摘要:** 本文的主要目的是通过与设计战略平衡记分卡 (BSC) 相关的现代财务绩效评估方法, 分析所选斯洛伐克公司 - 科希策国际机场的绩效发展情况。对公司财务业绩发展的实证分析是在选定的财务比率指标和选定的预测模型的基础上进行的, 这些模型构成输入数据以创建一个新的绩效信誉模型 (CWM)。最后, 作者制定了公司的平衡记分卡, 其中包含与财务业绩发展分析相关的新战略目标, 以简化全球市场上的战略管理决策。

**关键词:** 企业绩效, 信誉模型, 平衡记分卡, 战略管理决策。