

Comparison of Organisational Structures of Selected Passenger Railway Transport Companies and their Impact on Strategic Goals of Companies

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Abstract: Establishing an appropriate organizational structure is an essential condition for the successful implementation of a corporate strategy. According to current strategists, strategy and structure are interrelated and should be developed in parallel. There is no definitive organizational structure of a company. Based on theories and research on the organizational structure of selected passenger rail transport organizations, it has been shown that an appropriate organizational structure is an important prerequisite for the implementation of the selected strategy. New organizational structures can provide new and interesting opportunities for managers and employees. However, these structures may pose a threat to employees due to the scale of work and, possibly, they may threaten their job. Developing new organizational structures without considering the consequences for those affected is surely inappropriate. At a time of liberalization and increasing competition, an effective organizational strategy is becoming a significant competitive advantage for rail passenger transport organizations.

Keywords: Organizational structure, strategy, rail passenger transport companies, strategic aims

1. Introduction

Nowadays, globalization of markets, intense competition and increased speed of change are among the main factors influencing the business environment. New products and services are created as a result of innovation. Companies frequently find themselves in a situation that requires a prompt response to dynamic changes in the market [1]. The success of any business depends on the basic conditions:

- creation of a strategy that is "better" than the competitors' one,
- successful implementation of the strategy [1].

Strategy is defined as the long-term direction and scope of an organization's activities achieving advantages for the organization through the configuration of its resources in a challenging environment in order to meet the needs of markets and stakeholder expectations [2].

Strategy implementation an important component of strategic management and its role is to bring strategy to life [3]. In addition to effective strategy formulation, effective strategy implementation is a critical component thanks to which some organizations outperform others, as even a well-formulated strategy cannot guarantee success unless effectively implemented [4].

In the past, organizations first needed to develop their strategy and then design an organizational structure to implement it. Strategies were developed at the centre of the organization. Implementation then fell into different functional areas [5]. The structure of an organization cannot be depicted barely as an organizational chart, as it includes the staff, positions, procedures, processes, culture, technology and related elements that make up the organization and defines how all the parts and processes work together (or how they do not in some cases). This structure must be fully integrated into the organization's strategy to achieve its mission and goals. Structure thus supports the strategy [6].

The design of the organizational structure depends on contextual factors such as environment, technology, size, culture, strategies, and goals. The success and survival of an organization depends on finding a balance between its structural dimensions and contingencies [7]. The conceptualization of organizational structure reflects systematic thinking [8]. Top management must be vigilant and must ensure alignment of strategy, structure and environment [9]. According to modern strategists, strategy and structure are interconnected. It may not be optimal for an organization to develop its structure after it has developed its strategy. Their relationship is more complex in two ways:

1. Strategy and structure associated with strategy may need to be developed simultaneously in an experimental way: strategy develops along with the structure. Organizations learn to adapt to changing environment and resources, especially if such a change is radical [5].
2. If the need for a strategy emerges unexpectedly, then learning and experimentation may require a more open and less formal organizational structure [5].

The authors of the presented article analyse and compare organizational structures of selected transport enterprises providing services in railway passenger transport. Subsequently, in the Discussion, they evaluate the impact of organizational structures on corporate strategic goals and their potential to influence the company's strategy. Therefore, the main benefit of this paper is the introduction of a new perspective on the influence of an organizational structure on the strategic management of an enterprise.

2. Literature Review

The issue of corporate organizational structures has been frequently discussed in academic literature; however, not from the perspective of its impact on strategic management, or on setting strategic goals of a company. The impact of the structure on the company strategy in railway transport enterprises providing services in railway passenger transport has not been examined sufficiently yet. For example [10], deals with research on organizational structures using the structural configuration theory developed by H. Mintzberg in 1979. Mintzberg's model is based on five main parts of an organization, five coordination mechanisms, nine design parameters, and four groups of conditions. Mintzberg's model proved to be useful in evaluating and designing changes to the organizational structure of Koleje Śląskie Sp. z o. o. However, the model does not consider the direct impact on the creation of the company's strategic goals and does not specify how restructuring the organizational structure using Mintzberg's model will affect the change in corporate strategic goals.

Stojic discusses the application of exact methods (the fuzzy set theory, multicriteria methods) in creating appropriate organizational structures for railway infrastructure management. In managing and ensuring adequate quality of railway services, the authors emphasize high-quality infrastructure maintenance, proper regulation of railway traffic, sufficient track capacity, speed, and safety [11].

The impact of railway transformation on the changes in organizational structures and creation of a railway transport enterprise strategy is addressed in Wang [12]. The author presents several proposals based on the research of current problems that will help railway enterprises achieve the development of the passenger transport market with a focus on new social media [12].

Achieving competitive advantage challenges organizations to focus on their internal strengths and to acquire and use their resources to develop their capabilities. However, it is important not only to own valuable, scarce, and unique resources, but also to organize and design them in a way that allows using their full potential. An appropriate organizational structure serves as a powerful driver in recognising and developing capabilities, mainly through corporate strategy, structure, and organizational processes. This kind of relationship between the type of organizational structure and the dynamic capabilities to respond flexibly to operative management of the company is addressed in Aleksic's study. The results of the empirical research show a strong connection and the role that strategy, structure and organizational processes play in the development of both forms of organizational capabilities. The paper contributes to current research by providing evidence that it is possible to focus on the design of organizational elements so that it matches organizational resources and their goals [13].

The authors in [14] take a historical view of strategy creation in relation to organizational structure. They analysed three models of organizational structure (hierarchical, lateral, and network) and concluded that their development is more or less parallel to the development of the concept of

strategy. The study analysed possible relationship between the organization's strategy and its structure. A case study was conducted, whose results suggest that structures can be more or less flexible and function as internal organizational frameworks while actively participating in the creation and management of the company's strategy.

The paper [15] claim that the development of an organization's strategy is the main factor influencing the organizational structure of management. Therefore, the design of the organizational structure of management must begin with the formulation of the organization's strategy.

In [16], the authors examine the relationship between sustainable supply chain management and organizational performance, focusing on its operational and financial efficiency. The article provides insight into the operational structure, resource utilization, and identification of strategic tools needed to improve organizational efficiency. The results of the present research highlight the important role of sustainable supply chain in accelerating operational and financial performance of organizations and suggest that it should be considered a secondary strategy and must be integrated into the overall corporate strategy.

Stielike [17] examines changes in organizational structure of railway companies in terms of changes in corporate strategy. The author states that for railway transport to be effectively managed by the state with its limited financial resources, the strategy of the state must shift from the so-called "responsibility for services" to "responsibility for regulation". This means that transport services are always ordered by the state under clearly defined conditions and for a limited period [17].

The analysis of the selected relevant literature shows that the issue of organizational structures and their influence on the strategic management of a company is still a very topical issue being constantly addressed by researchers. There are different views on the creation of organizational structure and the creation of a company's strategy. However, the analysed works provide only a theoretical view of the issue.

3. Comparative Analysis of Selected Enterprises

The chapter focuses on the analysis of organizational structures in selected transport enterprises and on their strategic goals.

Performing analysis refers to a closely related operation performed to summarize the collected data and organize it in order to provide answers to formulated questions. In simple terms, it means studying the data to identify inherent facts [18].

For the purposes of the paper, a comparative analysis of selected enterprises will be performed. Comparative analysis is a systematic side-by-side comparison of two or more things to identify their similarities and differences. The object of investigation can be conceptual—a specific problem, idea, theory—or something more tangible, such as two different data sets [19].

3.1 Analysis of Organizational Structures in Selected Transport Undertakings

A railway enterprise is any public or private company licensed under the applicable legislation of the European Community, whose main task is the provision of services for the carriage of goods or passengers by rail, while providing traction. This includes companies providing traction only (so called loc pools) [20].

The modern management of railway companies in Europe is gradually shifting from multi-level management and corresponding divisional arrangements to the management of clearly defined business processes. Higher competencies and responsibilities are thus left to executive management, i.e., process owners [20].

Železničná spoločnosť Slovensko, a. s. (ZSSK) is a joint-stock company based in the Slovak Republic. Its founder (on January 1, 2005) and sole owner is the state. The rights of the state as a shareholder are exercised by the Ministry of Transport and Construction of the Slovak Republic. The line of ZSSK's business is defined by the company's articles of association. The main activity is passenger transport on national and regional railways and related activities. Passenger transport services are ensured in accordance with the state transport policy of the Slovak Republic and on the basis of the Agreement on transport services in the public interest, concluded pursuant to the Act of the National Council of the Slovak Republic no. 514/2009 Coll. on Transport on Railways, as amended, between ZSSK as the supplier and the state as the customer. In addition to the ordered trains, ZSSK operates IC trains on the Bratislava – Košice line, which function as a commercial product [21]. Sections and departments are divided into subunits, which are further sub-divided into teams. Basic workplaces in selected sections are placed under the teams [22].

Swiss Federal Railways (SBB) manages four operational divisions and a freight section:

- Passenger service markets,
- Provision of passenger services,
- Real estate,
- Infrastructure,
- Freight division (with controlled subsidiaries SBB Cargo Ltd, SBB Cargo International Ltd) [23].

SBB has specialized management units to manage company-wide matters and support divisions:

- Finance (including supply chain management),
- Human resources,
- Information technologies,
- Communications,
- Business development,
- Security,
- Legislation and compliance,

- Public affairs and regulation [23].

SBB also has direct or indirect interests in subsidiaries (or group companies) under its management [24].

SBB's bodies are responsible for the overall management and supervision, in particular for the strategic and financial management of SBB's parent company and the group companies it manages. However, they respect the legal independence of the group companies and the applicable legal, statutory, and regulatory provisions [24].

Central Japan Railway is a major railway enterprise operating in the Chūbu (Nagoya) region of central Japan. The core of CJR's operations is the Tokaido Shinkansen, a major transportation artery connecting the major Japanese metropolitan areas of Tokyo, Nagoya and Osaka. The enterprise also operates a network of 12 conventional lines centred in the Nagoya and Shizuoka areas. Central Japan Railway strives for continuous improvement to ensure the reliability, efficiency, and transparency of the company, to establish its long-term development and increase the sustainable value of the company [25,26].

Table 1 shows selected parameters of railway enterprises.

Table 1 Selected parameters of enterprises. Source: authors

Enterprise	Revenue from transportation	No. of passengers	No. of employees
2021	(mil. EUR)	(mil.)	
ZSSK	65.36	45.67	5 811
SBB	2,349.24	322.90	15,056
CJR	317.26	396.00	18,723

Note 1: The exchange rate in 2021: 1 EURO = 1.08 CHF.

Note 2: The exchange rate in 2021: 1 EURO = 129.86 Yen.

Table 2 Comparison of selected enterprises' parameters. Source: authors

Enterprise	Revenue per passenger	Revenue per employee	No. of passenger
2021	(EUR/pass.)	(EUR/empl.)	per employee
ZSSK	1.43	11,247.63	7,859.23
SBB	7.28	156,033.48	21,446.60
CJR	0.80	16,944.77	21,150.46

Revenues from transport and the number of passengers are influenced mainly by the national transport policy, the macroeconomic situation of the country and the standard of living of the inhabitants of the given country; only partly by the efficiency of the railway company.

The parameters presented in Table 2 show the efficiency of the railway company. The parameter of revenue per passenger indicates how consistently the companies monetize their passengers. Revenue per employee and the number of passengers per employee show the internal efficiency of the companies.

3.2 Strategic Goals of Selected Transport Enterprises

All three analysed railway enterprises have strategic goals in similar areas: customer, process efficiency and service quality. Appropriately selected organizational structures are an important condition for the accomplishment of the strategic goals.

The main strategic goals of ZSSK until 2030 are as follows:

- increase the number of passengers to 100 million in 2030 (growth of 3.16% p.a.),
- increase the revenue from transportation to 160 million EUR in 2030 (growth of 7.28% p.a.),
- conscious management of the operating cost base on stable values indicators [25].

ZSSK aims to achieve the stated goals by implementing the following activities:

- increasing traffic performance,
- investing in the renewal of the vehicle fleet,
- increasing the operability of the ŽKV,
- optimizing sales channels,
- changing the tariff policy,
- digitization of processes,
- development, training, and motivation of employees,
- increasing employee productivity [27].

The main idea of the strategy of the Swiss Federal Railways until 2030 is to increase their flexibility and efficiency [24]. In the 2030 strategy, they focus mainly on four areas:

- greater customer focus and flexibility through integrating different forms of mobility.
- smart growth of core business by increasing modal split.
- sustainability for people, for customers, employees, and society.
- more efficient and cost-effective delivery of added value for public services [24].

Within the subject areas, SBB will focus on the following activities:

- introduction and implementation of a flexible timetable in accordance with customer requirements at attractive time intervals,
- integration of different forms of mobility,
- increasing the speed of transport and focus on long-distance transport,
- increasing the efficiency and economic stability of the company,

- employee development [24].

The central idea of Central Japan Railway's strategy is continuous improvement across the enterprise [25]. The main strategic goals of the company are:

- building a safe and resilient infrastructure (resilience to natural disasters) and providing accessible transport infrastructure (accessibility),
- revitalization of the local community,
- global environmental protection,
- attractive work environment,
- innovative progress [26].

The company aims to achieve the stated goals through the following activities:

- investing in security measures,
- measures to improve services,
- increasing the efficiency of work processes,
- reducing negative impacts on the environment,
- development of human resources,
- investing in new technologies and innovations [26].

Based on the data on organizational structures of the selected enterprises, their strategies and efficiency parameters, it can be stated that:

- SBB and CJR in particular are significantly more efficient than ZSSK,
- SBB and CJR have significantly better prospects of achieving their strategic goals than ZSSK,
- ZSSK should streamline its organizational structure following the example of SBB or CJR.

4. Discussion and Results

Strategy is implemented by employees, not by machines or financial resources. New organizational structures can provide new and interesting opportunities for managers and employees. However, these structures may pose a threat to employees due to the scope of work and may possibly threaten their employment. Developing new organizational structures without considering the consequences for those who will be affected is clearly inappropriate.

In recent years, it has been stated that the impact of process and organization on strategy has been consistently underestimated. The contribution of employees to revitalizing the organization and fostering innovation may be underestimated as well. In addition, the quality of management and the organizational structure itself influence the strategy and may even be a source of competitive advantage. In this sense, it cannot be said that problems related to people and processes arise only after the strategy has been approved. It has also been pointed out that there are companies that have

similar resources differing significantly in their efficiency. The difference may be due to the way companies are organized and how they carry out their activities rather than due to different strategies.

As for achieving strategic goals, the current organizational structure of ZSSK is properly established in terms of goals in the areas of customers, employees, and digitalization.

The greatest risk of not meeting strategic goals caused by inappropriate organizational structure can be identified in the activity Improving the Operability of Railway Rolling Stock, which has a significant impact on all strategic goals of the company. Employees ensuring the operability of Railway Rolling Stock are currently appropriately placed on the level of the so-called basic workplaces. However, in terms of the current organizational structure, they are accountable to superiors in the areas of operation, maintenance, and services at several various levels of management. This often creates a situation where, when identifying problems, and therefore it is not possible to properly evaluate the situation and set up an appropriate remedial mechanism.. The Depo Poprad organizational unit serves as a pilot project for verifying the "Node" operation - a unit managed by the chief and responsible for the areas of operation, maintenance, and logistics. After evaluating the pilot project, the top management of ZSSK shall decide whether the current organizational structure of the enterprise will be changed to 7 nodes. When moving from a functional organizational structure to a divisional node structure, it is important to appropriately determine the interface between the management unit and divisions. In order for divisions to be able to respond flexibly to market demands, they must have sufficient sovereignty. The human factor and the efficient flow of information have the greatest impact on the achievement of strategic goals.

5. Conclusion

An appropriate organizational structure is one, but not the only, condition for successful implementation of the strategy. In addition to corporate communication and management skills, the effectiveness of an organization is an important aspect of its proper functioning.

As new trends in the transport market and the state transport policy for development of railway transport play an increasingly significant role, the organizational structure and policy of enterprises is gaining more importance.

The selected companies have created their organizational structures in line with the areas of their strategies.

On basis of the literature review and a study of selected railway passenger carriers, the following recommendations concerning organizational structure are formulated:

- creation of the organizational structure at the same time as the strategy of the company,
- a low number of management levels will enable flexible adoption of strategic decisions,

- the structure of a large railway passenger carrier operating in a large area (e.g., a national carrier) should include organizational units for management of company-wide matters (strategy, finance, investments, research and development, human resources, etc.) and divisions divided by geographical or functional areas (e.g., vehicles, shop):
 - a strict division into control and executive parts will increase management efficiency,
 - employees are highly specialized experts in their field,
 - greater flexibility and simpler management across regions,
 - ability to adapt more quickly to changes in the given market (region),
 - competencies are delegated to specific divisions; individual results compared to overall results of the entire company are thus easier to measure,
 - in case of failure, a division can be more easily separated,
 - unhealthy competition between divisions can be a disadvantage.

Cross-cutting activities can be implemented by railway passenger carriers through project-based organizational structures. Upon the completion of the project, the companies are managed according to the original organizational structure.

Passenger rail operators will have to respond dynamically to the changes caused by the COVID-19 pandemic and high inflation by updating their strategy and adapting their organizational structure if necessary.

Organizations are constantly under pressure to adapt to changing circumstances. Therefore, no organizational structure of a company is considered final.

References

- [1] Zuzák, R. (2011). Strategic Business Management. Praha, Czech Republic: Grada Publishing.
- [2] Johnson, G., Scholes, K & Whittington, R. (2008). Exploring Corporate Strategy: Texts and Cases (8th ed.). United Kingdom: Prentice Hall International.
- [3] Papula, J., Papulová, Z. & Papula, J. (2019). Strategic management. Praha, Czech Republic: Wolters Kluwer.
- [4] Hitt, M.A., Jackson, S.E., Carmona, S., Bierman, L., Shalley, C.E. & Wright, M. (2017). The oxford handbook of strategy implementation. New York, USA: Oxford University Press.
- [5] Lynch, R. (2018). Strategic management. UK, Harlow: Pearson Education Limited.
- [6] Ansoff, I. (1965). Corporate Strategy. USA, New York: McGraw Hill.
- [7] Sözen, H. (2019). Organizational Structure and Design. Organizational Behavior. Ankara, Turkey: Baskent University.

- [8] Ahmady, G., Mehrpour, M. & Nikooravesh, A. (2016). Organizational Structure. In 3rd International Conference on New Challenges in Management and Organization: Organization and Leadership, 2 May 2016 (pp. 455-462). Dubai, U Arab Emirates: Elsevier Science Bv. DOI: 10.1016/j.sbspro.2016.09.057.
- [9] Kavale, S. (2012). The Connection between Strategy and Structure. International Journal of Business and Commerce 1, 60-70. ISSN: 2225-2436.
- [10] Tomanek, R. (2016). Koleje Slaskie as an Example of H. Mintzberg's Structural Configuration Theory Application in Designing Organizational Structure of a Railway Operator. In TranSopot Conference on Transport Development Challenges in the Twenty-First Century, 25-27 May 2015 (pp. 231-239). Univ Gdansk, Fac Econ, Gdansk, Poland: Springer Int Publishing Ag. DOI: 10.1007/978-3-319-26848-4_21.
- [11] Stojic, G., Veskovic, S., Tanackov, I. & Milinkovic, S. (2012). Model for railway infrastructure management organization. Promet-traffic & transportation 24(2), 99-107. DOI: 10.7307/ptt.v24i2.281.
- [12] Wang, Y.B., Zhao, Y. & Sun, T.Y. (2014). The Research of Promotion Strategies of Railway Company in Terms of Passenger Transportation. In International conference on economics and management, 3-5 Jan 2014 (pp. 528-532). Guangzhou, People's Republic of China: Destech Publications, Inc.
- [13] Aleksic, A. (2018). Evolving Organizational Capabilities through Organizational Design: Influence of Strategy, Structure and Organizational Processes. In 3rd Annual International Scientific Conference of Business Economics, Management and Marketing (ISCOBEMM), 6-7 Sep 2018 (pp. 1-8). Prusanky Nechory, Czech Republic: Masaryk University.
- [14] Borniger, C., Schmidt, S., Schreiber, D. & Branco, M.A.A. (2015). Relationship between strategy and organizational structure: a contemporary multiple case study. Revista Ciencias Administrativas 21(1), 11-41. DOI: 10.5020/2318-0722.2015.v21n1p11.
- [15] Gurianova, E. & Mechtcheriakova, S. (2015). Design of organizational structures of management according to strategy of development of the enterprises. In International Conference on Applied Economics (ICOAE), 2-4 JUL 2015 (pp. 395-401). Kazan, Russia: Elsevier Science Bv.
- [16] Fu, Q.H., Abdul Rahman, A.A., Jiang, H., Abbas, J. & Comite, U. (2022). Sustainable Supply Chain and Business Performance: The Impact of Strategy, Network Design, Information Systems and Organizational Structure. Sustainability 14(3), Article Number 1080. DOI: 10.3390/su14031080.

- [17] Stielike, J.M. (2009) Privatisation of German Rail Requirements for the organizational structure of the railway from a spatial planning perspective. *Raumforschung und raumordnung-spatial research and planning* 67(5-6), 405-411. DOI: 10.1007/BF03185715.
- [18] Ibrahim, M. (2015) The Art of Data Analysis. *Journal of Allied Health Sciences Pakistan*. 1(1), 98-104. Retrieved October 20, 2022, from ResearchGate: https://www.researchgate.net/publication/283269432_The_art_of_Data_Analysis
- [19] Kaluza, J. (2022) What is comparative analysis? A complete guide. Dovetail. Retrieved October 20, 2022, from Dovetail: <https://dovetail.com/research/comparative-analysis/>
- [20] Buková, B., Nedeliaková, E. & Gašparík, J. (2019). *Business in railway transport*. Slovak Republic, Bratislava: Iura Edition.
- [21] BDR (2021, March). Annual Report of Railway Company Slovakia for 2020. Retrieved October 16, 2022, from <https://www.zssk.sk/wp-content/uploads/2021/10/ANNUAL-REPORT-2020.pdf>
- [22] ZSSK, Human Resources Department (2017). *Organizational rules of Railway Company Slovakia*. Internal document ZSSK.
- [23] SBB (2022, October). *Organizational structure*. Retrieved October 20, 2022, from <https://company.sbb.ch/en/the-company/organisation/organizational-structure.html>
- [24] SBB (2022, October). *SBB 2030 Strategy*, Retrieved October 20, 2022, from <https://company.sbb.ch/en/the-company/profile/strategy.html>
- [25] CRJ (2022, October) *Organization Chart*, Retrieved October 20, 2022, from <https://global.jr-central.co.jp/en/company/about/organization.html>
- [26] CRJ (2022, October) *Integrated Report 2021*, Retrieved October 20, 2022, from <https://global.jr-central.co.jp/en/company/ir/annualreport/>
- [27] ZSSK, Department for Management of Strategic Projects (2022) *Strategy of ZSSK until 2030*. internal document ZSSK.