

FRAMEWORK FOR MODELLING THE MEASUREMENT OF DYSFUNCTIONS IN B2B RELATIONS IN THE SUPPLY CHAIN

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Abstract

The main goal of the article is to identify a framework for modeling the measurement of dysfunctions in B2B relations in the supply chain. The article aims to answer the question: whether and if so, how to measure dysfunctions that occur in B2B relations in the supply chain? The authors initially identified three types of dysfunctions within the external environment of the supply chain (sporadic, constant, ad hoc) and three types of dysfunctions within the internal environment of the supply chain (transport and storage, administrative and legal, communication). The B2B relations between the involved parties in the supply chain may be therefore divided into: internal stakeholder (substantive) and external stakeholder (contractual) that represent internal environment of the supply chain, and institutional stakeholder that represents the external environment of the supply chain. In terms of a dependence of entities in the supply chain, business behavior, benefits and subject of the relation, dysfunctions in B2B relations in the supply chain may be destructive and problematic. Critical analysis of the subject literature and modelling method are applied in the article. The results, that underline the nature of dysfunctions, can be applicable in the business practice.

Keywords: Dysfunctions, B2B, supply chain, relations

1. INTRODUCTION

Possessing or having access to unique, expert knowledge, know-how, partners who cooperate with a given enterprise increases the chances of success on the market. Moreover, a long-term cooperation brings considerable benefits / opportunities, usually to both entities, and it is worth shaping and developing it with a view to achieving a long-term competitive advantage. According to M. E. Porter [1], "*access to work, capital and natural resources no longer determines the success of the organization, because they have become universally available*". In modern supply chain management intangible assets begin to play an increasingly important role. Therefore, it is crucial to comprehend the importance and the nature of B2B relations in the supply chain. The growing number of mutual interactions (both formal and informal) result in problems related to the concept of dysfunctions in relations between particular entities in the supply chain. The World and the Polish literature experience the deficit of scientific publications illustrating models on how to measure these dysfunctions.

Thus, authors of the article find it necessary to define the role of methodology in the framework modelling. W. Kopaliński [2] defines the methodology as a detailed norm of research in science. It is as a set of guidelines on how to proceed that should be used in research in order to achieve a specific goal. On the one hand, the methodology presents the procedure associated with the listing of problems, while on the other contains a description of their solution. The role of methodology in various types of projects (and therefore in the framework for modelling the measurement of dysfunctions in B2B relations in the supply chain) may be characterized as [3]: a formal and detailed diagnosis of the activities carried out in the implementation process in particular stages; a way that covers all activities that start from the preparation phase through the exploitation phase of the implemented solution; a planning of activities on the basis of which the implementation process is carried out; an order and systemization of work associated with the implementation process; a collection of rules that help to manage the project.

The main goal of the article is to identify a framework for modelling the measurement of dysfunctions in B2B relations in the supply chain. The article aims to answer the question: whether and if so, how to measure dysfunctions that occur in B2B relations in the supply chain? Critical analysis of the subject literature and modelling method are applied in the article.

2. THE STAKEHOLDERS THEORY

In order to understand the concept of relations in the supply chain, it is worth to consider the stakeholders theory. R. E. Freeman [4] defines stakeholders as *"all individuals or groups that can influence an organization or an organization can have impact on"*. In Polish subject literature, the term 'stakeholders' is used interchangeably with strategic organization (or supply chain) supporters, interest groups, business groups and partners. Management in the context of supply chain's stakeholders is connected primarily with distinguishing groups that are important for supply chain functioning, classifying them and hierarchizing - from the perspective of importance for the development of a supply chain and generating added value and identifying, evaluating and designing the relations that they create.

The authors of the article assumed the understanding of the stakeholders in their relationship's context. I. Chomiak-Orsa [5] divided them into three categories:

- 1) Internal stakeholders (substantive) are people who co-create the organization (as well as the supply chain) through their work and use of knowledge and competences. Among them there are those who create the organization (and the supply chain) and without whom it cannot function. This group includes: employees, owners, shareholders. Employees create and shape relations and at the same time influence the value of relational capital. In addition, they initiate and implement business processes. Owners and shareholders have a fundamental influence on the implemented strategy and managing methods of the entire organization (and the supply chain).
- 2) External stakeholders (contractual) are a group of cooperating entities, suppliers, customers and competitors. Especially suppliers and customers are important as they are a determinant of development and build the long-lasting organization's image as well as supply chain's effectiveness and efficiency.
- 3) Institutional stakeholders are social and government institutions, pro-ecological organizations, media, consumer groups, local communities, etc. Relations with this group of stakeholders rely on cooperation and relations resulting from social contacts and are reporting or tax obligations.

3. THE CONCEPT OF RELATIONS

In order to understand the concept of relations, one may assume, that there are different approaches in the subject literature and they are usually related to the author and his / her perspective of perceiving that concept. For example, C. Lane and R. Bachmann [6] analysed relations on three levels: interpersonal; organizational; institutional. They indicate that the interpersonal relations are created by company's employees who cooperate with each other within individual companies and build relationships. These in turn are reflected in cooperation contracts or recommendations. Whereas the institutional relations occur, for example, in the context of belonging to organizations associating entities of the same economic sector [7]. In addition, there is also the term of economic, network ties.

T. Ritter, I. F., Wilkinson and W. J. Johnson [8] distinguished five levels of organization's activities, starting with the level of independent actions of individual participants (actors) to finishing with complex network connections between them. The levels concern actors, dyad, portfolio, linked relations and network. In the case of the actors, there are no relations and no interconnections. In the other levels, shaping relationships is visible. And so, in the dyad, relations can be characterized as two-sided, and their character is shaped by connections between two entities. The portfolio is a situation in which individual actors are connected with more than one relation participant. The level of the linked relations presents the relationship distribution of a

given actor and the relationships in which the participants of his relation portfolio remain. At the level of the network of economic connections, the subject of analysis are all relations between elements of a given population.

J. Mohr and R. Spekman [7] characterise inter-organizational relations as “*directed, strategic, occurring between independent enterprises that pursue compatible objectives, seek to achieve mutual benefits and accept a high level of mutual dependence*”. In a slightly different way, E. Rigsbeep [7] defines this concept and considers it in terms of cooperation developed by at least two sides of the relation that cooperate to achieve synergistic benefits.

A slightly different definition is presented by D. Kempny [9], who defines cooperation between at least two organizations as a relation that is based on mutual trust, exchange of information, but also sharing the risks and benefits connected with it. However, usually inter-organizational relations are understood as all forms of connections that appear between specific entities and which are used to coordinate economic activities [10].

Authors of the article identified many common elements of the selected definitions analysis [11-14]: the necessity of interaction between at least two entities; achieving benefits by all parties; interdependence of the parties; occurrence of different kinds of connections between them; establishing relations that require to incur financial expenditures; promoting innovation.

Both in defining the notion of relation and in the attempt to classify it, there are various types of divisions. L. Krzyżanowski [15] proposes a division into two groups of relations: relations and interactions. According to this author, relations do not occur realistically, but it can be seen that they occur between real objects. Interactions occur between real objects that are members of impact relationship and they are real, specific and bring about specific effects in the form of changes. At the same time K. Rogoziński [16] divides relations into different four groups: utilitarian (those that refer to the relations of production, division and exchange); cognitive (those that let you get to know the truth); ethical (those that prefer good and truth); aesthetic (those that accept beauty). Whereas J. Otto [17] gives a slightly different division of relations: relations with customers (refer to strengthening contacts between an organization and customers); relationships with suppliers (focus on strengthening supplier relationships with customers); internal relations (refer to actions taken on the internal market); external relations (refer to actions undertaken with external entities). The last but not least, W. Czakon [18] divides them differently: content (relations refer to the subject of the exchange, its scope and frequency as well as duration); quality (relations include factors such as the degree of compliance and organizational cultures, styles of decision-making and convergence of the observed values); structure (relations refer to such features as: density, centrality, strength of greetings, structural gaps and structural equivalence).

4. DYSFUNCTIONS IN B2B RELATIONS IN THE SUPPLY CHAIN

The B2B relations in the supply chain might face dysfunctions. They are understood as “*deviations from the actual functioning of an enterprise in comparison with its model functioning*” [19]. M.J. Parzych [20] defined the notion of dysfunction as “*lack of functionality, lack of adaptation to some goals and an impaired function or an incorrect activity*”. Authors of the article assumed the procedure to determine dysfunctions as presented by Z. Janowska, J. Cewińska and K. Wojtaszczyk [21]. Therefore, it is necessary to specify: the nature of dysfunctions; the part of the supply chain in which they arise; reasons for their appearance; costs they generate.

According to the presented stakeholder's theory and three categories of their relationships, the framework for modelling the measurement of dysfunctions in B2B relations in the supply chain should include two separate fields of analysis: external environment represented by institutional stakeholder and internal environment composed by internal stakeholders (substantive) as well as external stakeholders (contractual). The first field refers to the five types of dimensions: economic; demographic; natural; socio-cultural; political-legal. The

second field consists of: competitors; manufacturers; customers; suppliers; cooperators; other service companies.

Dysfunctions in relations with the institutional stakeholder vary with the level of mutual contact (in terms of the formal and informal relation and / or cooperation). The regularity of occurrence of such dysfunctions should be divided into: sporadic (when deviations are rare but visible); constant (when deviations are present all the time with a huge impact on the supply chain); ad hoc (when deviations are uncommon and unlikely).

Both in the supply chain's external and internal environment the most common dysfunctions appear at the three levels: strategic; operational; tactical. The strategic level refers to the supply chain management (its strategy, controlling process, indication the directions of development, etc.) with threats related to the situations that cannot be affected by the supply chain (institutional stakeholders in external environment). The operational and tactical levels refer to disturbances related to the operational management (the functioning of the enterprises in the supply chain, human resources management, reporting and accounting systems, etc.).

Therefore, the measurement of dysfunctions in B2B relations in the supply chain should start with the analysis of the supply chain's external environment. Firstly, markets in which it operates should be monitored from the micro, mezzo and macro perspective within the previously characterized dimensions. The permanent monitoring process of markets as well as demand and supply fluctuation analysis are fundamental for the existence of the supply chain. Secondly, all potential threats in particular dimensions should be identified on the basis of the existing strategic management methods in order to define dysfunctions in relations with the institutional stakeholder. The supply chain has to deal with the turbulent external environment which is one of the basic manifestations of competitiveness. The collected data and obtained information have to be processed and analyzed in order to be transformed into knowledge. The creation of knowledge and the process of its sharing is necessary to solve various types of problems that result in different types of deviations from norm. Thirdly, the diagnosis of the identified dysfunctions in relations with the institutional stakeholder should be performed. The categorization of deviations from norm should meet the presented above levels and regularity of dysfunctions. Nevertheless, the further macro research should be performed in order to diagnose the most common types of dysfunctions in the external environment of the supply chain. However, the final part of the step three is followed by the activation of a so-called warning system that allows the managers to focus on the strategic, operational and tactical decisions that have to be implemented in order to minimize the negative aspects of any kind of deviations from norm. Fourthly, the emergency procedure that deals with the emerging dysfunctions should be prepared and enforced individually for the various types of the dysfunctions in B2B relations in the supply chain. The proposed procedure might be composed by: the complex characteristics of the nature of the particular dysfunction; the definition of the supply chain activities in which dysfunction is revealed; the analysis of the dysfunction's negative effects; the diagnosis of the transaction cost of the dysfunction for the supply chain; the method of the dysfunction measurement in the form of a scale of response to this dysfunction.

In the internal environment the three types of dysfunctions in B2B relations in the supply chain might be identified: administrative and legal (inter-organizational relations in the supply chain); transport and storage (deviations from norm that have an impact on B2B relations in the supply chain); communication (relations referring to the information flows in the supply chain). All of them should be seen in the perspective of the strategic, operational and tactical level, both substantive and contractual. The framework for modelling the measurement of dysfunctions in B2B relations in the supply chain has been presented on **Figure 1**.

The proposed framework for modelling the measurement of dysfunctions in B2B relations in the supply chain relates to the improvement of the supply chain (and relations amongst internal, external and institutional stakeholders). Therefore, it indicates the necessity for modelling, diagnosing, designing and preparing new solutions. According to the authors, the process of minimizing the negative effects of these dysfunctions can be divided into following stages: identification of deviations; their diagnosis; design and preparation of an emergency procedure; implementation of that procedure; the process of controlling whether the dysfunction

has been removed. If the deviation from norm has not been eliminated, the procedures presented in the framework should be applied again. More specifically, the identification of the dysfunction should be followed by: the development of assumptions / framework; gathering information on a specific dysfunction; analysis of the collected data and characteristics of major problems related to the dysfunction; characteristics of corrective actions and their implementation; controlling and evaluation of results.

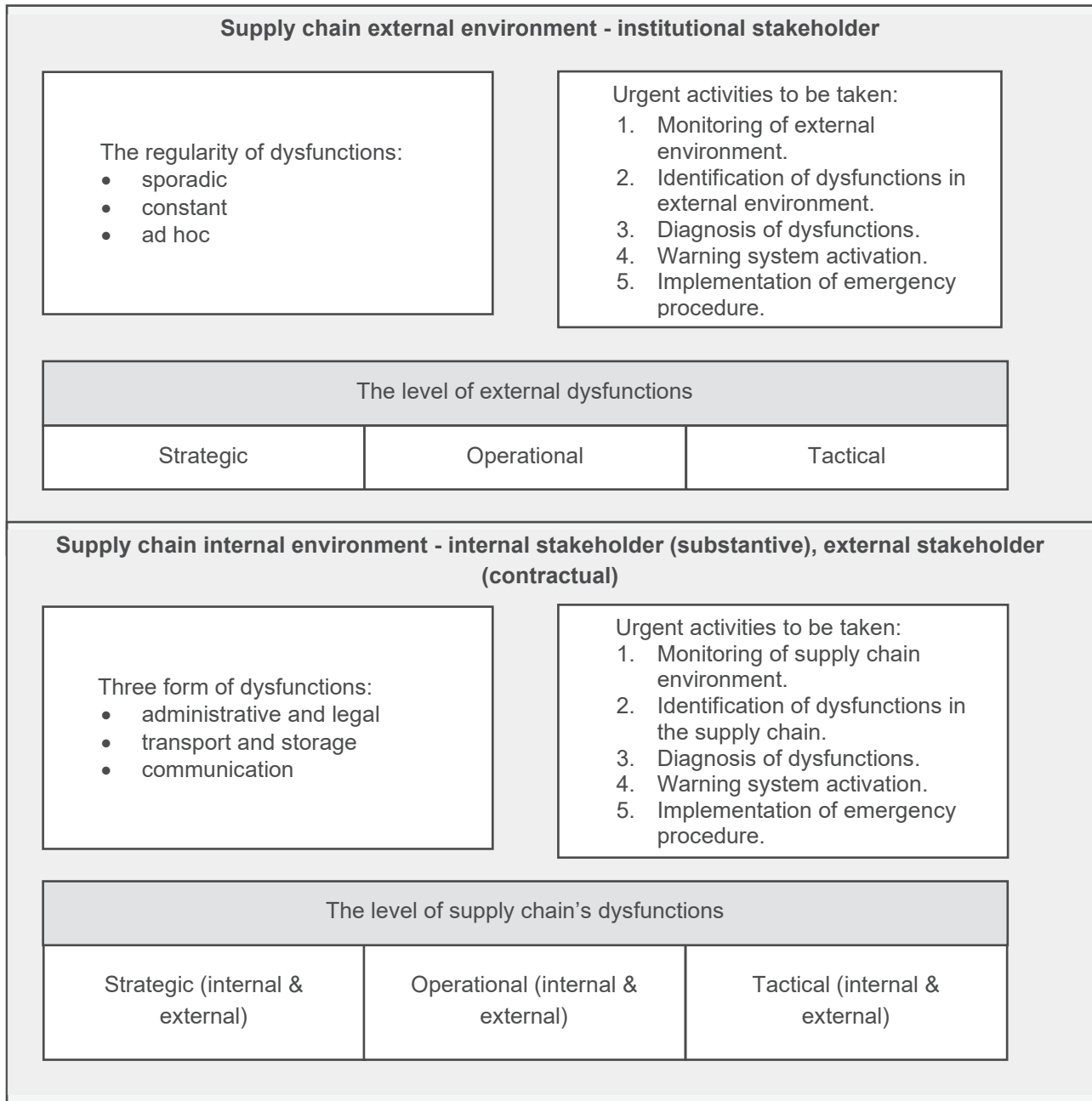


Figure 1 Framework for modelling the measurement of dysfunctions in B2B relations in the supply chain [own study]

5. CONCLUSION

The effects of implementation of the presented framework for modelling the measurement of dysfunctions in B2B relations in the supply chain refer to the improvement in the supply chain management and reduction in time of supply chain's flows. The benefits include: the holistic approach (the framework is universal), easy

knowledge sharing, guarantee of deep analysis of dysfunctions and maximizing effectiveness of supply chain's activities.

Dysfunctions in B2B relations are undoubtedly the part of the supply chain. The scarcity of publications referring to these deviations from norm affect the possibility to prepare, develop and implement the model for measuring dysfunctions. The proposed framework suggests the necessity to conduct a future research that will consolidate the understanding of nature of dysfunctions in B2B relations in the supply chain. Authors of the article find it obvious to point out several questions that should be answered in such researches:

- How to minimize the role of dysfunctions in B2B relations in the supply chain?
- How to cooperate with entities manifesting high level of dysfunctions in B2B relations?
- How to deal with institutional stakeholders with a constant regularity of dysfunctions in B2B relations?
- What kind of emergency procedures should be implemented in external and internal supply chain's environment?
- Does universal (holistic) model for measurement the dysfunctions in B2B relations in the supply chain exist?
- How to evaluate such model?

Nevertheless, the scale of dysfunctions in B2B relations in the supply chain is one of the key determinants influencing the efficiency of the chain functioning. Therefore, it is necessary for enterprises to manage intellectual capital efficiently, with a special care for external and relational capital, as well as to cooperate on the basis of trust and partnership.

REFERENCES

- [1] PORTER, M.E. *Porter o konkurencji*. Warszawa: PWE, 2001.
- [2] KOPALIŃSKI, W. *Słownik wyrazów obcych i zwrotów obcojęzycznych*. Warszawa: Wiedza Powszechna, 1989, p. 330.
- [3] TRZASKALIK, T. *Wybrane zagadnienia zarządzania projektami. Informatyka w badaniach operacyjnych*, Katowice: Wydawnictwo Akademii Ekonomicznej, 2005.
- [4] FREEMAN, R. E. *Strategic Management: A Stakeholder Approach to Strategic Management*. Darden Graduate School of Business Administration. Charlottesville: University of Virginia, Working Paper no. 1-2, 2001.
- [5] CHOMIAK-ORSA, I. *Zarządzanie kapitałem relacyjnym w procesie wirtualizacji organizacji. Podejście modelowe*. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, 2013.
- [6] CZAKON, W. Zasobowe uwarunkowania tworzenia sieci międzyorganizacyjnych przedsiębiorstwa. In: KRUPSKI, R., ed. *Zarządzanie strategiczne, ujęcie zasobowe*. Wałbrzych: WSZiP, 2006.
- [7] RZEPKA, A. *Relacje międzyorganizacyjne i kapitał intelektualny jako czynniki rozwoju mikro i małych przedsiębiorstw. Studium na przykładzie wybranych przedsiębiorstw polskich i gruzińskich*. Warszawa: Difin, 2018.
- [8] CHOMICKI, M. Metody i instrumenty relacji kooperacyjnych. *Acta Univesitatis Nicolai Copernici, Zarządzanie*. 2016. vol. XLIII, no. 2, 2016.
- [9] KEMPNY, D. *Logistyczna obsługa klienta*. Warszawa: PWE, 2001.
- [10] BORKOWSKA, B. and KLIMCZOK, B. Współdziałanie przedsiębiorstw w świetle mikroekonomicznej teorii firmy. In: *Współdziałanie strategiczne w gospodarce*. Wrocław: Prace Naukowe AE we Wrocławiu, no. 786, 1998.
- [11] TYSKIEWICZ, R., *Zarządzanie z relacjami z interesariuszami organizacji*. Warszawa: Wydawnictwo Placet, 2017.
- [12] OTTO, J. Rola i znaczenie relacji we współczesnym marketingu. *Przegląd organizacji*. 2000. no. 7-8.
- [13] PSZCZOŁOWSKI, Z. *Mała encyklopedia prakseologii i teorii organizacji*. Wrocław: Wydawnictwo Ossolineum, 1978.

- [14] RAJZER, M. Istota relacji rynkowych. In: BILIŃSKA-REFORMAT, ed. *Relacje podmiotów rynkowych w warunkach zmian*. Warszawa: Wydawnictwo Placet, 2009.
- [15] KRZYŻANOWSKI, L. *Podstawy nauk i organizacji i zarządzaniu*. Warszawa: Wydawnictwo Naukowe PWN, 2012.
- [16] ROGOZIŃSKI, K. *Zarządzanie relacjami w usługach*. Warszawa: Difin, 2012.
- [17] OTTO, J. *Marketing relacji. Koncepcja i stosowanie*. Warszawa: C. H. Beck, 2004.
- [18] CZAKON, W. Istota relacji sieciowych. *Przegląd Organizacji*. 2005. no. 9.
- [19] MIKOŁAJCZYK, Z. *Techniki organizatorskie w rozwiązywaniu problemów zarządzania*. Warszawa: Wydawnictwo Naukowe PWN, 1994.
- [20] PARZYCH, M. J. Dysfunkcje w zarządzaniu kapitałem w małych i średnich przedsiębiorstwach. *Studia i Materiały, Wydział Zarządzania Uniwersytetu Warszawskiego*. 2009. no. 1-2.
- [21] JANOWSKA, Z., CEWIŃSKA J. And WOJTASZCZYK, K. *Dysfunkcje w zarządzaniu zasobami ludzkimi*. Łódź: Wydawnictwo Uniwersytetu Łódzkiego, 2005.