

***A summary of a doctoral thesis
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“Coopetition on the electricity trading market”
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This doctoral thesis takes on the issue of coopetition on the electricity trading market.

The concept of coopetition was first used in the early twenties of the twentieth century (1911) by the entrepreneur Kirk S. Pickett, who used the term to describe the simultaneous cooperation and competition taking place between the same companies at the same time. The main proponents of the said term shall be deemed M. Brandenburger and B. J. Nalebuff, who, in 1996, published a book entitled *Coopetition*. This, first fully devoted to the issues connected with coopetition, publication popularized distinct perception of the, paradoxical in the light of current management theories, strategy of coopetition in the scientific world.

The current scientific achievements in the field of knowledge of coopetition are in the growth phase. In fact, scientists talk about an early phase of the development of the coopetition theory. Although a number of different types and forms of simultaneous cooperation and competition are identified, among them: bilateral, networked, horizontal, vertical, dominated by the competition/cooperation, or balanced, in the world's literature on the issues of coopetition, little exploratory research can be found. A systematic review of foreign and domestic literature published up to January 2011 indicates, therefore, many planes and areas where the phenomenon has still not been investigated, revealing a space for new proposals in this regard. There is a particular lack of studies on morphology of coopetition and its contextuality depending on the industry in which the companies operate using the competition strategy. They would enable us to identify the symptoms, types and forms of coopetition depending on the particular economic environment in which companies have the conditions to use forms of coopetition not yet described in literature.

Such a section of the economic reality is constituted by the electricity trading market, which has never, either in domestic or international publications, been subject to scientific explorations for cooperative behaviours, despite the evidence of

occurrence among electricity retailers of unusual, for the current state of knowledge, vertical-horizontal configuration of coopetition. The main objective of this work is therefore to identify coopetitive behaviours on the Polish electricity market in order to better recognize the complexity and heterogeneity of coopetition and supplement the knowledge about this phenomenon.

The theoretical-cognitive aim of this work is, in turn, to identify patterns of coopetitive behaviour occurring between energy retailers on the electricity trading market. Finally, the utilitarian aim of this thesis is to determine the directives for application of coopetition on electricity trading market, which will help the interested parties in the beneficial – for each party of the relationship – management of coopetition.

Based on the analysis of the Polish energy market and the analysis of the results of a systematic review of the literature on coopetition, the following research hypotheses have been proposed:

H1: *Electricity retailers simultaneously compete and cooperate with other energy retailers from whom they purchase electricity for resale.*

H2: *Electricity retailers mutually benefit from simultaneous participation in competitive and cooperative relations with other retailers from whom they purchase electricity for resale.*

H3: *Electricity retailers forge with other energy retailers, from whom they purchase electricity for resale, changing – in the degree of intensity of their mutual cooperative and competitive behaviours – relationships of simultaneous competition and cooperation.*

H4: *Complementarity of competences of retailers of electricity with other energy retailers from whom they purchase electricity for resale is a necessary condition of coopetition between them.*

Hypotheses: 1, 2, 3 refers to the essence of coopetition. The first tests whether there are, on the Polish electricity market, unconventional vertical-horizontal coopetitive behaviours of enterprises, characterized in accordance with the general definition of coopetition by the simultaneity of competitive and cooperative behaviours of the parties. The second and the third test to see if these relations are also additional features of coopetition such as: profitableness for a party and its

volatility, which have been identified by the author through a systematic review of literature. The last, fourth, hypothesis, checks the condition of the existence of coopetition between electricity suppliers, which has been formulated on the basis of an analysis of the specificity of the energy market and the analysis of the existing research results in the field of coopetition published in literature.

The scope of work includes a group of business connections of one incumbent energy supplier, belonging to the group of six vendors separated from the former distribution companies, with other energy retailers, which are, paradoxically, its customers (19 companies). For each of these relationships a case study has been conducted which is considered to be an adequate scientific method in exploratory studies in management sciences. The knowledge obtained in this way was supported by a systematic examination of documents, in order to minimize the subjectivity of the research and to ensure the accuracy of the results through triangulation of data.

The first chapter of this dissertation presents inter-organizational relations of companies in competitive markets, which are identified in the strategic management literature and theoretical basis of the inter-organizational business interactions. This chapter provides an introduction to the concept of coopetition.

The second chapter presents the current state of knowledge about coopetition based on quantity. It was developed based on a systematic analysis of the reviewed literature, published until January 2011 at home and abroad. It presents a synthesis of knowledge about coopetition and its essence, and presents the most researched and overlooked aspects of this phenomenon in based on time and region.

Chapter three presents the functioning of the Polish electricity market in the conditions of competition which affected the cooperative behaviours of the involved companies. It contains information on the way of implementing the energy market in Poland, its regulations leading the energy companies to compete with each other, and the adopted regulatory and legislative attempts to open up the market to new players. In addition, the chapter presents ways to intensify the competitive behaviour of the participants and the results of such attempts in the economic reality of Polish electricity retailers.

The fourth chapter describes the methodology of field research of Polish energy market. It explains why qualitative research with the use of case study was performed, as well as presents the technique used for the field research and

describes the organization of these studies and their progress. In this section, we also brought closer issue of collecting the empirical data and dilemmas faced by researchers undertaking to carry out field research in the field of management studies.

The last, fifth, chapter of the paper is devoted to the presentation of the results of field studies. At first, it discusses the issue of cooperation, then competition, mutual benefit and variability with which the phenomenon of coopetition is identified. The second part of this chapter presents models of cooperative behaviours identified on the Polish energy market, which are based on orthogonal and heterogeneous nature of coopetition. Finally, the third part presents original directives of applying coopetition on the Polish retail electricity market.

The results demonstrate the occurrence of coopetition among electricity retailers operating on the Polish energy market. The identification of the phenomenon of coopetition took place on the basis of the features that were selected during a systematic review of literature. These include the most vital trait: the simultaneity of the occurrence of competition and cooperation between the same organizations, as well as additional features: mutual benefits derived from participation in cooperative relations and the volatility of individual inter-organizational interactions occurring between competitors. The results have thus strengthened the paradigmatic autonomy of the emerging theory of coopetition.

However, the assumption of the research that each mutual purchase/sale transaction between the Polish electricity retailers, as a result of cooperative regulations, is a manifestation of an unusual vertical-horizontal coopetition was not confirmed (Table 1). This is due to the fact that we identified an associated with it co-existence of parties to the contract, or one-dimensional relations: competition or cooperation.

Table 1. Research Findings

Research Hypotheses	Test of the hypothesis	Research Findings
H1: Electricity retailers simultaneously compete and cooperate with other energy retailers from whom they purchase electricity for resale.	negative	<p>not every transaction of purchase/sale carried out between energy retailers is associated with their simultaneous cooperative and competitive interactions. Among the studied subjects, we also identified the coexistence of the parties and the unidimensional relationships of competition or cooperation. This situation results from the regulations, to which the entities are subject to, phases of their development in the market, and the strategic decisions of individual parties.</p> <p>Among the companies that apply coopetition, we identified passive/active forms of cooperation and competition.</p>
H2: Electricity retailers mutually benefit from simultaneous participation in competitive and cooperative relations with other retailers from whom they purchase electricity for resale.	positive	<p>simultaneity of the occurrence of mutual cooperative and competitive behaviours of Polish energy retailers allows the parties to derive mutual benefits, which confirms the results of previous studies on coopetition. The benefits gained take various forms depending on the contract, as well as the size of the company which engages in cooperative relationships with its competitor. They result from individual aims of the companies they intend to achieve through coopetition with another party, directly in competition with the first company.</p>
H3: Electricity retailers forge with other energy retailers, from whom they purchase electricity for resale, changing – in the degree of intensity of their mutual cooperative and competitive behaviours – relationships of simultaneous competition and cooperation.	positive	<p>cooperative relationships concluded among Polish electricity retailers fluctuate in terms of the intensity of their respective cooperative and competitive behaviours during coopetition. This variation stems not only from internal motives of competitors and the market situation, but also from the regulations governing the coopetition passively cooperating with each other. This finding is reinforced by the opinion of 47% of researchers on the treatment of variation as one of the paradigmatic determinants of coopetition.</p>
H4: The complementarity of competences of retailers of electricity with other energy retailers from whom they purchase electricity for resale, is a necessary condition of competition between them.	positive	<p>a necessary condition for the existence of coopetition of Polish electricity retailers is their complementarity of competences. Due to the limited competence, sellers decide to purchase the energy wholesale from their competitors rather than purchase it on their own on the wholesale market, which contributes to forging a passive/active cooperation between both competing firms.</p>

The obtained results confirm the significance of contextual presentation of coopetition in exploratory studies depending on the markets/sectors where there are indications for occurrence of coopetition. They also highlighted the heterogeneous and orthogonal nature of coopetition who has its particular expression in the new typology based on the conducted research. We developed nine theoretical models of cooperative behaviours and four of them were identified among the studied subjects who differ in terms of forms of behaviour: passive; active; passive and active mutual cooperative and competitive interactions between the parties of the relationship. It has thus been shown that coopetition concluded between the parties from the same sphere is not a homogeneous strategy. In addition, we have proven that coopetition is a relational strategy, tailored to the needs of the partner, which is clearly illustrated by the behaviour of respondent A, who, in 2010–2011, functioned in four different models of coopetition with his competitors simultaneously. Hence – when proposing a new typology of coopetition, including passive, mixed, active and flexible coopetition, we have, at the same time, confirmed and highlighted the heterogeneity and relationality of the phenomenon of coopetition in real economy. In addition, we have provided support for typologies already presented by: Y. Luo, K.–S. China, B. L. Chan, P.–K. Lama and A. A. Lado, N. G. Boyd and S. C. Hanlon by showing their practical use in the examination of real economy, and on the other hand, we have supplemented the typology proposed by M. Bengtsson and S. Kock, pointing to the multi-level analysis of coopetition in balanced relationships. Finally, it has been proven that a necessary condition to establish coopetition between organizations is their complementarity, which, combined with the variety of individual business strategies and business regulations implemented, determines the types of cooperative relationships – passive, mixed, active and flexible.

The obtained results of research are also reflected in the practical recommendations targeted at electricity retailers interested in working with their competitors. First, each time before deciding to enter a cooperative relationship, it is recommended to conduct a deep assessment of the projected cost of participating in this type of business relationship and comparing it to the cost of independent participation in the wholesale market and – in the case of planned active forms of cooperation with a potential competitor – of unfettered competition, so as to be able to choose the best business solution. It has to be remembered that electricity retailers

operate not only on the dynamic, growing market, allowing them to systematically develop their own competence, but also in a dynamic regulatory and legislative environment, which, as was pointed by the respondents themselves, significantly shapes the cost of wholesale purchase of electricity and, in effect, determine the business benefits from applying coopetition. Secondly, it is recommended that the companies interested in coopetition carefully chose their business partners, i.e. the choice should be preceded by verification of potential coopetitors in terms of their financial strength, market position and business strategy, as the lack of diligence of each of them, insolvency or financial problems can directly affect the functioning of other, influencing the mutual benefit of coopetition for the parties involved in it. Thus, any decision made by an entity in connection with the implementation and management of coopetition, should be based as much on a systematic analysis of the determinants of internal stakeholders as on external analysis of the circumstances, as the achievement of business success is dependant on both this factors.

In conclusion, the results of the research enriched the hitherto knowledge about coopetition by presenting the nature and morphology of the identified cooperative relationships between companies on the Polish electricity market, and enabled the development of directives for the application of coopetition on energy market. Therefore, the research goals were achieved.

The present dissertation does not completely exhaust the relevant issues of coopetition. The presented state of knowledge, supplemented with own research results about the cooperative behaviours, still needs development through further research that will enable the systematic development of the theory of coopetition. The thesis is, however, a contribution for a better understanding and knowledge of the complexity and multidimensionality of this unusual, for market practices, phenomenon and can serve as an inspiration for further cognitive research. Among other things, the research should concentrate on the determination of the intensity of coopetition or on the replication of the presented case study on other electricity retail markets. This applies especially to markets in the European Union member states that, as a result of EU directives, are subject to a similar legal regulations and environmental determinants of competitive environment.

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