SME supplier upgrading during the cooperation life cycle – Evidence from Central and Eastern Europe*

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This paper proposes mechanisms of SME supplier upgrading during the cooperation life cycle, in the CEE context. The methodology consists in 1) confronting and then combining the global value chain governance and the resource-based streams of research on upgrading and learning with the use of the cooperation cycle as a mediator and 2) formulating research hypotheses to be tested in the specific type of case study, namely a prospective case study. According to the findings, in the initial phase of cooperation, upgrading is primarily determined by the network governance mode, which depends on asset specificity, contractual hazards, and supplier capability. At this stage of cooperation, we also identified absorptive capacity as instrumental to introducing customer-driven innovations. During the evolution of cooperation, upgrading is determined by absorptive capacity and dynamic capabilities of the supplier, while the governance mode forms an institutional framework enabling these factors to act.

Key words: supplier upgrading, cooperation life cycle, resource-based view, governance, networks (JEL: M16, M21, L14)

* Manuscript received: 30.04.2015, accepted: 01.11.2015 (3 revisions).

The article was written with the financial support from the Polish National Centre of Science [Narodowe Centrum Nauki] – Decision no. DEC-2013/09/B/HS4/01938. Project "The process of SME growth. Combining the resource-based and transaction cost approaches".

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JEEMS, 21(3), 318-351 DOI 10.1688/JEEMS-2016-Gancarczyk
ISSN (print) 0949-6181, ISSN (internet) 1862-0019 © Rainer Hampp Verlag, www.Hampp-Verlag.de

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1. Introduction

The aim of this paper is to propose mechanisms of SME supplier upgrading during the cooperation life cycle, in the Central and East European (CEE) context. To implement this aim, we apply a research framework that integrates the global value chain and the resource-based view perspectives with the use of the cooperation cycle as a mediator, and we test this framework in the case study of a medium-sized company.

Internationalization of economic activity was traditionally studied from the perspective of market development and cost pressures that stimulate outsourcing by the companies in high-cost countries to companies in lower-cost countries. Recently, we observe a growing interest in learning and development processes, knowledge transfer, including technology flow, and in upgrading or locking-in that may result from the participation in international exchange (Lam 2007; Lorentzen 2008; De Propris et al. 2008; Tolstoy 2010; Malecki 2010; Wall/Van der Knaap 2011; Makó et al. 2011; Wach 2012; Gancarczyk 2015; Geodecki/ Grodzicki 2015). These processes are specifically relevant for small and medium-sized enterprises (SMEs) in the CEE context, due to their recent inclusion into the international value chains as suppliers to large companies. The CEE suppliers' advantage is predominantly in lower cost, however, in order to be competitive partners in value chains, they need to make-up technological distance and develop their capability base (Lungwitz et al. 2006; Makó et al. 2010), i.e., they need to continually upgrade. The upgrading concept is shared by the literature on global value chains (GVCs) and by the technology management literature to describe learning and development by suppliers from less developed and emerging economies due to cooperation with transnational corporations (TNCs) from developed economies (Lager 2000; Schmitz 2006; Aspers 2010; Ivarsson/Alvstam 2011; Simms/Trott 2014).

Upgrading means the improvement of relative competitive position through the development of capabilities in the area of products, processes, functions and value chain to advance into more sophisticated, higher value adding activities (Humphrey/Schmitz 2002; Gereffi et al. 2005; Aspers 2010). As other phenomena related to learning, upgrading requires in-depth, multi-factor investigation to uncover mechanisms of this process, i.e. relationships among determinants – their cause-effect logic and hierarchy of importance. The mechanisms of inter-firm learning and development are evolutionary and processual phenomena of which mechanisms need to be investigated over the history of relationships. The current research addresses this need by studying upgrading over the cooperation life cycle. Such characteristics of the research area favor a qualitative, case study approach (Simms/Trott 2014; Ivarsson/Alvstam 2011).

Direct business links with customers are extremely important for SMEs, which source information and knowledge externally, due to limited potential

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(Cho/Yoon 2014; Audretsch/Vivarelli 1996; Sugasawa/Liyanage 1999). At the same time, however, in-depth case study analyses of technology transfer and knowledge spillovers mainly focus on large suppliers, thus justifying the qualitative and micro-analytic approach by their individual economic importance (Ivarsson/Alvstam 2011; Lee/Saxenian 2008; Kodama/Shibata 2013; Simms/Trott 2014; Yan et al. 2014). In-depth studies devoted to exploring the mechanisms of upgrading in small and medium-sized enterprises of moderate competitive position, acting in difficult, hierarchical governance structures, are underresearched (Pietrobelli/Rabellotti 2006; Ahlin et al. 2014).

They are also rare in the CEE context (Belaya/Hanf 2014), as to-date contributions on the internationalization of these economies focus primarily on the evolution of subsidiary competence and FDI determinants (Golikova et al. 2011; Lawrence et al. 2005; Pisoni et al. 2013; Moser et al. 2014; Filippov/Duysters 2011; Gorynia et al. 2007; Larimo/Arslan 2013). This stream of research provides insights into factors of network formation and knowledge flow between foreign subsidiaries and local enterprises. However, local supplier upgrading effects and knowledge spill-overs from subsidiaries of transnational corporations are only implied or presented indirectly in this context.

Our article contributes to the literature on SME upgrading processes by revealing mechanisms of supplier upgrading during the cooperation evolution in the CEE context with the use of in-depth case study approach.

Another challenge of to-date research on supplier upgrading refers to theoretical and methodological frameworks, which need further development in order to adequately address the specificity of this phenomenon. The two major approaches to learning processes in international networks are offered by the literature on governance in global value chains (GVC) (Gereffi 1996; Humphrey/Schmitz, 2002; Humphrey/Schmitz 2004a; Humphrey/Schmitz 2004b; Sturgeon et al. 2008) and by the resource-based view (RBV) of the firm (Penrose 1959; Cohen/Levinthal 1990; Kogut/Zander 1992; Peteraf 1993; Barney 1999; Teece et. al. 1997; Kogut 2000; Teece 2007). These theories propose alternative views on determinants and mechanisms of learning and upgrading and they demonstrate both explanatory capacity and some limitations in this regard. The GVC perspective is more externally oriented and puts emphasis on governance structure (power relations and supplier's position in the network) as affecting the possibilities for upgrading (Kaplinsky/Morris 2001). Consequently, it is less efficient in describing the internal dynamics of supplier learning and development. Alternatively, the RBV posits that learning and innovation development are dependent on internal capabilities of the supplier, but it is less relevant in highlighting the impact of external governance structures on the possibility of upgrading (Kaplinsky/Morris 2001; Tsang 2000; Foss/Foss 2005; Williamson 1993; 1999).

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In recent years, developments have been made in GVC to include internal capabilities into determinants of governance (Kaplinsky et al. 2002; Gereffi el al. 2005; Pietrobelli/Rabellotti 2011). Also, the RBV research explores the role of governance mode in learning and knowledge exchange (Kogut/Zander 1992; Leiblein/Miller 2003; Hoetker 2005). These integrative approaches that give primacy to one of the theories, with a moderating role for the other one, have proved their validity in empirical research. This calls for exploring under what conditions the specific variables of GVC and the RBV have a primary role in explaining the learning processes. In this vein, the article follows the recommendations that we learn more about mechanisms of learning and upgrading, namely, how and why capability and governance factors change over the course of buyer-supplier cooperation (Gereffi et al. 2005), and how upgrading is achieved through co-evolution of buyers and suppliers (Pietrobelli/Rabellotti 2011). These recommendations acknowledge the evolutionary nature of learning and development. During the cooperation evolution there may be changes in the determinants of upgrading, favoring those of GVC or of the RBV, due to the changes within the organization and in the inter-organizational governance. Developing trust, adjustments, mutual understanding of values, developing technological routines and collaboration procedures occur with the time flow and with the history of interactions. These factors of time and change are thus acknowledged in the paper's methodological assumptions. As earlier indicated, the cooperation life cycle is an observed phenomenon in our research, since we investigate supplier upgrading during the evolution of the cooperation with partners in international networks. The cooperation life cycle is also exploited at the methodological level. Namely, it acts as a mediator between the two theories considered, i.e. a construct that may explain which theory holds when and how they can complement each other (Leavitt et al., 2010). The construct of cooperation life cycle has the following characteristics. 1. It denotes time flow and associated changes in cooperation characteristics and in supplier potential. 2. It, however, does not represent a specific theory of life cycle, as applied to product or industry, that differentiates by strictly defined phases and associated attributes. We use it in a broader sense, as synonymous with cooperation history or cooperation evolution (the expressions used in the paper interchangeably), consisting of the stages marked by the length and depth of relationships.

We contribute to theoretical and methodological efforts to explain supplier upgrading based on the GVC and RBV assumptions, by proposing a framework that integrates these theories with the use of the cooperation life cycle as a mediator. The adoption of this mediator enabled highlighting under what conditions (why and how) the determinants of the two theories hold.

The mechanisms of SME upgrading represent a complex and explorative theme (Ahlin et al. 2014), which justifies the case study method. At the same time, there are established and alternative theoretical explanations of learning in net-

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works, namely GVC and the RBV, that we combine into one framework. Such characteristics of theoretical background and the area of research enable the use of a specific form of case study, i.e. prospective case study. This kind of case study enables deductive testing of the theory, instead of inductive and explorative approach typical of qualitative methods. Consequently, the proposed GVC-RBV conceptual framework of supplier upgrading is further tested with the use of innovative, prospective case study design, recently proposed for organizational research (Bitektine 2008). By matching the research framework with its actual implementation, we formulate recommendations for future research and business practice.

Overall, the paper contribution consists in 1) proposing the mechanisms of SME supplier upgrading during the cooperation life cycle, in the CEE context, 2) broadening the integrative GVC-RBV studies of supplier upgrading by proposing a research framework with the use of the cooperation life-cycle as a mediator and by verifying it based on falsification test, 3) formulating implications for future research in SME supplier upgrading and for business practice.

2. Theoretical framework

2.1 Upgrading mechanisms according to the global value chain perspective

In the governance literature, it is investigated how different types of governance modes impact the roles, power relations, and competitive positions of contracting partners. Here we will mainly focus on the global value chain approach of this literature stream (Gereffi 1996; Humphrey/Schmitz 2002; Humphrey/Schmitz 2004a; Humphrey/Schmitz 2004b; Gereffi et al. 2005; Sturgeon et al. 2008), as it directly addresses the issues of upgrading or downgrading of suppliers in international networks. The GVC conception draws upon transaction cost economics to explain the dynamics of inter-firm governance in global value chains (Gereffi et al. 2005; Williamson 1998; 1999; 2002; 2005). The rationale for this focus is that inter-firm governance, beside internal capability, is an important source of Schumpeterian rents and competitive advantage (Kaplinsky/Morris 2001). Therefore, development and upgrading are inherently dependent on the specific governance solutions.

Upgrading denotes the improvement of relative competitive position due to the development of capabilities in the area of products, processes, functions and value chain governance to advance into more sophisticated, higher value adding activities (Gereffi 1996; Humphrey/Schmitz, 2002; Humphrey/Schmitz 2004a; Humphrey/Schmitz 2004b). Downgrading means opposite processes, leading to going down the value chain into more standardized, lower value activities due to the commoditization of products, processes and functions, when the company stops to innovate but only sticks to the extant standards (Simms/Trott 2014; Lager 2000). Upgrading can thus be treated as an outcome of a supplier innovation

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activity that arises from the interaction with the customer and from the supplier's internal capabilities (Sturgeon et al. 2008, Aspers 2010; Ivarsson/Alvstam 2011; Simms/Trott 2014; Lager 2000). However, upgrading has a comparative component differentiating it from innovation (Kaplinsky/Morris 2001). It denotes relative endowments – competitive advantage and value increase relative to competitors, while innovations do not necessarily lead to the relative competitive advantage (Kaplinsky/Morris 2001). This is because innovation consists in introducing new solutions, which demonstrate different levels of newness, such as being new only to a company or its industry and market, or worldwide (OECD 2005). Therefore, the accumulation and specific configuration of innovative activities may lead to upgrading as an ultimate outcome. The delimitation between innovation and upgrading can be perceived as the difference between introducing new solutions versus outcomes and performance leading to Schumpeterian rents, accordingly.

The relationships between product, process, functional and value chain upgrading (Humphrey/Schmitz 2002) and adequate innovations can be conceptualized as follows. Product/service upgrading is achieved by expanding the range of products/services or improving the products/services within the existing portfolio of a company. It emerges from prior product/service innovations within the extant portfolio. Process upgrading, as improvement in the efficiency of production, is proceeded by adequate process innovations. Functional upgrading is an outcome of introducing new functions (such as design, marketing, manufacturing) within the existing value chain. This competence development corresponds to vertical integration and is achieved by adequate product (such as a new component) and/or service (such as design service) innovations, often associated with process and organizational innovations as well. Chain upgrading means switching to new value chains as a result of introducing products and services that initiate new industries in the company portfolio. This competence development is achieved by product or service innovations that do not rely on the existing value chains but require establishing the new ones. Due to its complex nature, chain upgrading is also associated with process and organizational innovations that pertain to the introduced new value chains.

According to the GVC, upgrading depends on governance modes, which determine the roles of contracting partners and the possibility of learning and knowledge exchange (Humphrey/Schmitz, 2002; Gereffi et al. 2005; Pietrobelli/Rabellotti 2011). Among determinants of governance modes one can find asset specificity and contractual hazards associated with a specific exchange (Williamson 1985; 1993; Gereffi 1996; Zacharakis 1997; Humphrey/Schmitz 2002; Brouthers/Nakos 2004). Asset specificity means that firm resources are tailored to the needs of a specific buyer and they lose their value in the alternate usage (Williamson 1985; 1999; 2002). Specific assets imply dependence of the partner who bears larger idiosyncratic investment and they increase contractual hazards

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suffered by the dependent party (Williamson 1985; 1993; 1999; 2002; Humphrey/Schmitz 2002). Contractual hazards denote the threats associated with contracting and they are an aggregate of some particular factors, such as information asymmetry (uneven access to information between partners), appropriability concerns (some external benefits and costs in transacting, such as information leakage), opportunism from a contracting party (self-interest seeking with a guile) and uncertainty (about partner credibility and changes in the environment) (Williamson 1975; 1983; 1985).

Recently, the set of factors affecting the governance choice was reformulated and expanded in GVC. Namely, partner capabilities were added as a governance factor, and asset specificity was decomposed into levels of transaction complexity, i.e. the amount of information that needs to be exchanged between partners, and formalization (codification) in the specific exchange (Gereffi et al. 2005). Generally, the increased transaction complexity is associated with increased asset specificity, while a higher level of technology codification decreases asset specificity. Capabilities are not systematically defined in the GVC approach; however it can be inferred that they denote a development level of a supplier's resources and competences, namely, the degree to which it can meet requirements of transacting with a given customer. As such, capabilities affect the governance choice, specifically when cooperation is being negotiated and established (Gereffi et al. 2005; Sturgeon et al. 2008). Consequently, further changes in the level of capabilities, influence the alterations of governance modes (Pietrobelli/Rabellotti 2011).

Three major variables discussed above, transaction complexity, codification of transaction and supplier capabilities determine five governance structures, including market, hierarchy and three types of network governance, represented by modular, relational and captive value chains (Gereffi et al. 2005; Sturgeon et al. 2008). The specific governance solutions determine the prospects for supplier upgrading. Captive networks, applied in the case of high transaction complexity and codification (medium level of asset specificity) and low supplier capabilities, offer a limited opportunity to upgrade (Gereffi et al. 2005). The lead company provides a complete technology and specifies the terms of production and supplies. Such a relationship poses the threat of locking the subcontractor in the standardized, lower value adding activity in the international value chains (Rugraf 2010, Pavlínek 2012; Gancarczyk/Gancarczyk, 2013). In modular networks (high transaction complexity and technology codification, which implies medium asset specificity, and high subcontractor capabilities) and relational networks (high transaction complexity but low codification, i.e. high level of asset specificity, and high subcontractor capabilities), a lead company formulates requirements as to product characteristics and a supplier offers its own engineering and design to meet these expectations and to benefit from upgrading (Humphrey/Schmitz, 2004b; Winter 2010; Gereffi et al. 2005).

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As upgrading is closely associated with innovation activity, the efforts were made to identify the links between the type of governance and the type of innovation achieved (Lam 2007; Lorentzen 2008). Namely, the distinction is proposed between hierarchical and heterarchical networks, which produce process and incremental vs. product and radical innovation, accordingly (Lorentzen 2008; De Propris et al. 2008; Wall/Van der Knaap 2011; Isaksen/Karlsen 2012). Captive networks represent hierarchical governance with centralized authority and capabilities, vertical, uneven power relations and dependence. Modular and relational networks feature power and competence structure typical of heterarchical networks, in which power relations may be balanced or uneven, but authority and competence are more decentralized, leading to reciprocity and mutual dependence in both vertical and horizontal links (De Propris et al. 2008; Wall/Van der Knaap 2011; Ivarsson/Alvstam 2011).

The empirical evidence presents two opposing views on the development prospects for SME suppliers to large enterprises in international networks (Díez-Vial 2010). According to one view, the relationships between big companies and their small counterparts are based on mutual benefits and synergistic effects. In the global supply chain, large enterprises act as hubs, global pipe-lines or gatekeepers (Giuliani 2011; Munari et al. 2012). Another viewpoint emphasizes a disadvantaged position of SMEs, which need to invest in specific assets in order to start and maintain collaboration with big customers. The advantage of large enterprises enables them to act opportunistically and externalize costs and risk to SMEs (Besser/Miller 2010). The majority of SMEs that cooperate with large enterprises operate in complex, hierarchical, captive networks or in quasi-integrative arrangements (Nooteboom 1993; Everaet et al. 2010). Opportunism experienced by SMEs can be reduced by formal safeguards in contracts; but it is even more effectively suppressed by institutional norms and rules that form a basis for reciprocity and trust (Dewald et al. 2007; Lui et al. 2009; Freiling/ Laudien, 2012).

Research on the networks among Western and CEE partners confirms the prevailing hierarchical division of power when lower value activities are outsourced to CEE suppliers and Western customers search for cost advantages (Belaya/Hanf 2014; Lungwitz et al. 2006). The level of subsidiary autonomy is perceived both as a condition for its development and the evidence of its upgrading (Pisoni et al. 2013). At the same time, subsidiaries are reported to generate relatively low technology spillovers to domestic firms and these effects are stronger when they feature a higher degree of autonomy. The uneven or balanced division of power depends on the objectives of Western customers and on the initial competence level of the CEE suppliers (Lungwitz et al. 2006).

Based on the above discussion, the following mechanism of supplier upgrading can be derived from the governance perspective: *configuration of factors such*

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as asset specificity, contractual hazards and supplier capability affects the choice of network governance mode, which in turn impacts supplier upgrading.

The governance mode, as the major determinant of upgrading in this approach, forms the initial conditions – a framework, stimulating or hampering innovative activities and upgrading. It is specifically relevant when cooperation is being established and developed between the partners. This leads us to the following hypothesis about the mechanism of supplier upgrading from the governance perspective:

> Hypothesis 1. *In the initial phase of cooperation, supplier upgrading is determined by the governance mode affected by factors such as asset specificity, contractual hazards and supplier capabilities.*

On the other hand, in the GVC literature it is acknowledged that the governance mode is less capable of explaining the mechanisms of evolution and learning within the organization, i.e. how value created in network relationships is later transformed into an individual company endowments and competitive advantage during the history of cooperation (Kaplinsky/Morris 2001; Tsang 2000; Foss/Foss 2005; Williamson 1993; 1999). Kaplinsky and Morris (2001) acknowledge the value of company capabilities and underline the role of dynamic capabilities in the internal process of upgrading. Correspondingly, Gereffi et al. (2005) postulate that the dynamics of both the external (value chain-driven) and internal (capability-driven) determinants should be studied to address why and how these factors change. Pietrobelli and Rabellotti (2011) recommend that co-evolution of buyers and suppliers should be more thoroughly explored and propose the innovation system as an additional factor moderating the governance choice. They also put stress on the evolution and dynamics of governance structures acknowledging changes in governance, which they largely attribute to the supplier competence development as stimulated by the localized innovation system.

We thus observe the recommendations to join the external, governance-driven, with the internal, capability-driven mechanisms of supplier development, and the need to more systematically analyze the internal mechanisms of company upgrading. Consequently, it leads to moving the attention from governance mode itself to other determinants that cause the evolution of governance structures and that enable the transformation of the benefits of the inter-firm networks into the firm's capabilities. The conceptualization of such mechanisms is offered by the resource-based view of the firm.

2.2 Upgrading mechanisms according to the resource-based view of the firm

Resource-based view originated as a theory of firm growth (Penrose 1959) being a dynamic process of internal learning and development (Wernerfelt 1984; Kogut/Zander 1992; Peteraf 1993; Barney 1999). More recent developments in

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this theory, such as absorptive capacity and dynamic capability concepts, reflect this focus on organizational learning as well. Dynamic capabilities, i.e. the ability to integrate, build and reconfigure internal and external competences in response to the changing environment (Teece et al. 1997; 2007; Eisenhardt/Martin 2000; Helfat et al. 2007; Di Stefano et al. 2010) are conducive to innovative activity. They are also perceived as adapting or replacing the existing routines and ways of solving problems by the new, more efficient solutions (Zollo/Winter 2002; Zahra et al. 2006). Absorptive capacity, i.e. the ability to absorb and internalize external knowledge (Cohen/Levinthal 1990) can be described as either potential or realized (Zahra/George 2002). The potential absorptive capacity is reflected in some conditions for absorption of new methods of functioning, in terms of company capabilities. Results of adopting new methods of functioning represent realized absorptive capacity (Ahlin et al. 2014; Kotabe et al. 2011). Absorptive capacity influences gathering and internalizing of knowledge (Cohen/Levinthal 1990; Munari et al. 2012) and at the same time, it is a prerequisite for dynamic capabilities to act. Therefore, it can be argued that there is a causal relationship between the two variables, namely, dynamic capabilities are dependent on the capacity to absorb external information and knowledge. Despite some inconsistencies in defining the two constructs, they represent distinct cognitive and organizational dimensions (Zahra/George 2002), covering a number of company attributes and processes (Lane et al. 2006). Moreover, as concepts that describe learning processes, they are of evolutionary and path-dependent character (Freiling et al. 2012). Capabilities are considered the major determinant of governance, suppressing the impact of asset specificity and opportunism (Barney 1999). Therefore, it is posited that absorptive capacity and dynamic capabilities can lead to modifying the governance mode of a cooperation during its evolution (Kogut/Zander 1992; Leiblein/Miller 2003; Hoetker 2005). In the RBV it is acknowledged that networks provide favorable conditions for resource accessing and sharing, including knowledge and information exchange, and that the governance structure is a factor of learning (Kogut 2000; Huggins/Johnston 2010; Jack et al. 2008). On the other hand, the core issues of governance regarding power, hierarchy, and positioning in the network, as well as hazards and costs that are associated with networking, are largely neglected in this approach (Tsang 2000; Foss/Foss 2005; Williamson 1993; 1999).

To sum up, the RBV suggests the following mechanism of supplier upgrading: *absorptive capacity and dynamic capabilities both condition upgrading, however, they also affect changes in the governance of customer-supplier relationships.*

According to empirical studies, capabilities have stronger moderating effect on the choice of network governance by SMEs than by large companies (Hoetker 2005; Verwaal et al. 2010; Díez-Vial 2010). Facing high transaction costs due to asset specificity and opportunism, SMEs still choose network collaboration in-

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stead of vertical integration, due to constraints in their resource and competence base (Liao et al. 2003; Exposito-Langa et al. 2011). Studies on competence development in networks of enterprises from Western and East European countries are rare and they primarily focus on regional clusters as units of analysis. According to the findings, upgrading of SMEs from CEE countries depends on the level of their intellectual, organizational and institutional similarity (proximity) and is of a long-term, evolutionary nature (Gancarczyk 2015; Crestanello/Tattara 2011; De Propris et al. 2008). The research reports the moderating effect of absorptive capacity on the relationships between participation in networks and SME innovation (Ahlin et al. 2014). In–depth studies of individual small-supplier upgrading hardly exist. Instead, the focus is on subsidiary development and FDI determinants, where knowledge spillovers and supplier learning are only implied (Lawrence et al. 2005; Filippov/Duysters 2011; Golikova et al. 2011; Pisoni et al. 2013). Nevertheless, these studies provide the insights into determinants of competence development and knowledge sharing in networks among Western and CEE enterprises. It is acknowledged that the process of upgrading is evolutionary and time itself is a factor in this process (Filippov/Duysters 2011; Golikova et al. 2011). Moreover, learning and development take place in a variety of functional areas of the subsidiary, and they run at different paces. Namely, the learning of higher value and more advanced functions is slower than in lower value and less complex functions (Filippov/Duysters 2011). Alternative, more balanced and reliability-based relationships evolve when the supplier-customer contracts concern higher levels of technology development and when the competence of suppliers is high (Lungwitz et al. 2006).

Based on the earlier discussion of the RBV theory and empirical research referring to it, and correspondingly to Hypothesis I, we apply an evolutionary perspective of the cooperation life cycle as a mediator that combines governance-based and the RBV factors. Consequently, we formulate the following hypothesis as to upgrading mechanisms during the history of customer-supplier cooperation:

> Hypothesis 2. *During the evolution of cooperation, absorptive capacity and dynamic capabilities of the supplier are the major determinants of supplier upgrading.*

3. Methodology

3.1 Method

In order to trace the mechanisms of upgrading, which are of the process nature and respond to the question of 'how' to explain the evolution of this specific phenomenon, in-depth and qualitative case study is the most appropriate research method (Yin 2003; Silverman 2005; Eisenhardt/Graebner 2007). The need for in-depth analysis is also justified by the exploratory theme of mechanisms of supplier upgrading in the CEE context, as to-date case studies focus

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primarily on the evolution of the competence of Western subsidiaries instead of on local supplier upgrading. We focused on a single case study due to the complex nature of the problem researched, and to thoroughly test the theoretical framework and a broad set of variables related to the long-term operations of the company. This qualitative approach is instrumental for the subsequent design of quantitative studies in this area. On the other hand, we focus on learning and development in international networks, for which there is an established theoretical background, primarily from GVC and the RBV. As these are also alternative theories, there is a need for their deductive testing with the use of a method appropriate for the phenomenon under study in order to achieve more comprehensive and coherent theoretical framework. Considering the exploratory, process, and multivariate nature of the phenomenon and the extant theoretical framework at the same time, we employed a case-based, qualitative deductive testing (Leonard-Barton 1990; Yin 2003). Our approach differentiates by adopting an innovative case study design, recently proposed as a prospective case study (Bitektine 2008). The prospective case study provides a structured way of addressing empirical phenomena based on the existing theory and to-date empirical verifications. It represents the integration and refinement of to-date qualitative and case-based deductive theory testing, namely, the pattern-matching approach and alternative theoretical template strategy (Langley 1999; Lee 1989). The pattern matching approach involves comparing the expected, theory-based outcomes with the rel-life phenomena (Campbell 1966; Trochim 1989; Yin 2003). The alternative template approach confronts the theories in search of more consistent theoretical landscape (Langley 1999; Leavitt et al. 2010). The prospective case study design consists in 1) a systematic formulation of the hypotheses based on the extant theory and 2) the verification of the hypotheses in the case study to achieve analytical generalization. Analytical generalization will enable us to confirm or to reject the extant theory, based on a falsification test (Eisenhardt 1989). The falsification test consists in rejecting theories, which are not capable of explaining empirical observations, or sustaining and sometimes combining them into one theoretical framework (Popper 1968). As such, it does not have the capacity to confirm the existing theories by proof, but only to reject, sustain, expand, or combine them based on the evidence from the case study. Moreover, naturalistic generalization will be possible, i.e. transferability of results and conclusions to similar objects and contexts as those in the case study (Yin 2003; Silverman 2005), i.e. to medium-sized companies from the CEE countries, operating in international networks.

The specific research procedure involved the following steps:

- Formulation of the research aim and the main problem and the identification of the alternate theories for deductive qualitative testing.
- Formulation of the hypotheses based on the GVC and the RBV theoretical background.

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- Selection of the case study, where the competing theories can be tested.
- Formulation of criteria for outcome evaluation. This involved the operationalization of the main research variables reflected in the hypotheses developed earlier.
- Establishing the methods of data collection and analysis.
- Follow-up case study research to evaluate the hypotheses.
- Organizing the data, evaluating, interpreting.

3.2 Research object and sources of data

In the empirical research, we investigated the factors and mechanisms of upgrading by inclusion into international networks of the Polish international freight transport company, ZET Transport, within the time span of 12 years (2001-2012). The following arguments determined the company choice: 1) ZET's long-term history of operating internationally, 2) representing SME sector and intermediate industry that is typical of SME suppliers providing intermediate goods and services in global value chains (Pietrobelli/Rabellotti 2006; Wach 2012), 3) strategic intent of the firm to upgrade and increase value and 4) availability of data, as ZET is both experienced in and open to collaboration with academia. Considering these characteristics, the object of our research met the criteria of a case that is relevant to the research problem (supplier upgrading in international networks) and typical (representing SME suppliers) (Yin 2003).

The research project duration was six months, from August 2013 to January 2014. A mixed method approach was adopted, combining desk research, analysis of secondary sources, structured and semi-structured interviews and participant observation. Structured and semi-structured interviews comprised a total of 27 hours (of which 20 were audio-recorded) with respondents such as Quality Manager, Manager for Financial Controlling, Marketing and Development Specialist and Chairman of the Board. Considering the respondents' long-term position at the company and areas of responsibility, we can consider them to be key informants. Direct, participant observation covered 30 hours, during which different functional areas of the company were analyzed, with a special emphasis on managing logistics and shipping, customer relationships management, and outsourcing to sub-contractors. The analysis of secondary sources included company records, among which databases of customers and subcontractors and formal long-term contracts with these entities in the years 2001-2012, were of specific importance.

Data sourcing involved two steps, namely:

1. In the first step, the structured interviews, secondary data analysis and participant observation were done to define the main variables and their measures. Moreover, at this stage, three groups of long-term customers were identified to denote different phases of network relationships development.

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2. In the second step, semi-structured interviews were implemented to explain the main determinants of cooperation in each of the three groups of customers, i.e., at the introductory, longer-term and embedded phases of network development, and to identify the upgrading mechanisms for each of these groups.

The data were coded and interpreted independently by the two researchers, then jointly discussed and submitted in the form of five reports to the key informants. After introducing their comments and adjustments, the final report was compiled and submitted for approval again.

3.3 Variables

Variables considered in the governance and resource-based perspectives and included in the hypotheses stated in Section 2 were decomposed and operationalized into research variables, with the active participation of the interviewees mentioned earlier. The interviewees were told the essence and possible measures of each variable and then they offered measures appropriate to their industry and the operations of their company.

Upgrading as dependent variable

The ultimate target of upgrading is a higher value-adding position in the value chain. In the case of ZET as a transporting company, the upgrading into more value adding activities would mean that instead of offering only a simple transporting service, it can provide a full transporting-shipping-logistics package. This comprehensive capacity of the supplier is achieved due to the earlier introduction of specific services and products (such as manufacturing of packages and packaging the goods), new processes (such as development of IT platforms to exchange files and other information with customers, software for monitoring and management of the vehicles), and new functions (such as coordination of the customer value chain). Consequently, in our research, upgrading means the development of competence base through specific innovations. These innovations can have different sources, i.e. they may be primarily driven externally, due to governance mode, or internally, due to absorptive capacity. Upgrading is conceptualized as a reference category, not measured directly, but inferred from innovations introduced.

Explanatory variables from the governance perspective

When operationalizing the constructs of the governance perspective we focused on asset specificity, contractual hazards and capability.

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Asset specificity

The variable of asset specificity was decomposed into measures reflecting adjustments of the supplier's assets to a specific customer. These adjustments implied 1) the loss of productive value in alternate usage, and 2) either mutual dependence of partners or uneven dependence that threatens the partner who bore a larger idiosyncratic investment. Measures of the level of asset specificity included: the costs and time of adjustments to the buyer's standards, possibility of adapting the investment to other relationships and market contexts, possibility of reusing or multiple use in the specific exchange, the level of transaction complexity in terms of time and cost devoted to negotiate the contract and to process the order relative to orders from other buyers, level of transaction codification, i.e. level of formal and standardized procedures and processes applied, relative to informal and tacit flow of information required for a specific exchange. The interviewees attributed low, medium and high levels to the above measures to reflect the levels of asset specificity, accordingly.

Capability

Capabilities denote a level of supplier's resources and competences to meet requirements of a specific buyer relative to competitors at a specific point in time, when transaction and its governance mode is being negotiated and established. Consequently, the measures of supplier capabilities included the ability to cooperate at a specific level of technology and the level of discretion as to the way of resolving the problems raised by the buyer. As such, capability denotes ZET's potential as perceived by the customer, based on the evidence in the form of to-date customer base and projects implemented, physical infrastructure, quality standards, permits and industry certificates. They constitute a codified and tangible evidence of company resources and competences, indicating its capacity to fulfill the requirements of a customer.

Contractual hazards

Contractual hazards are an aggregate variable, covering information asymmetry, appropriability concerns, opportunism and uncertainty. Measures of information asymmetry between ZET Company and its customers included the level of advance information on order volumes and schedules by the customer, the level of advance information on specific technical adjustments needed for cooperation, and the level of advance information on the total cost of processing orders, including idiosyncratic investments. Appropriability concerns were approximated as the risk of business information leakage. Opportunism measures were linked to information asymmetry and appropriability concerns, and they involved the difference between the costs of cooperation as stated in the formal contract and the real costs incurred; the number of additional requirements as to standards of cooperation relative to the terms of formal contracts, the difference between the declared and realized volume of sales. Changes in the price of oil, currency rates

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and level of demand were identified as main measures of environmental uncertainty.

Explanatory variables from the RBV perspective

The RBV perspective was reflected in the concepts of absorptive capacity and dynamic capabilities. Alternatively to the understanding of capability in the governance approach as a specific level of resources, the concepts of absorptive capacity and dynamic capabilities were understood as competences to learn as well as to develop and change, accordingly.

Absorptive capacity

In the operationalization of the absorptive capacity variable we put stress on the realized absorptive capacity, in order to avoid the overlap with the variable of dynamic capabilities, developed below. Since absorptive capacity is considered as a construct with structural differences relative to dynamic capabilities, we needed to delimit these two constructs. Here we differentiated two degrees of absorptive capacity advancement, namely 1) absorption as introducing the standards imposed by the buyer and applying them to this individual buyer only; 2) internalization understood as transforming externally driven innovations (based on the absorption) into standards and practices (routines) of the whole organization, to improve performance and to compete in other markets (to acquire new customers). The absorption is necessary to implement specific investments. The important characteristic of the resultant upgrading is its external source and implementation in response to a specific buyer. The adequate measures of the absorption degree included introducing operational standards, organizational changes and changes in the functionality of the transportation service for an individual client, while the internalization was approximated as integrating these changes into standards and processes of the entire organization.

Dynamic capabilities

Dynamic capabilities are a more advanced competence relative to absorptive capacity, namely they were treated as internally-driven (and not imposed by the buyer) transforming and reconfiguring the absorbed and internalized standards into new services and functions. We focused on the empirical evidence for dynamic capabilities in the company, i.e. they were approached as "realized" dynamic capabilities, like the "realized" absorptive capacity described above. Consequently, measures of dynamic capabilities included developing a comprehensive logistics, shipping and transporting service with the use of own technical and organizational knowledge and introducing new functions into the customer-value chain.

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4. Results

ZET Transport is a family-owned medium-sized firm, operating in the international segment of the transport, shipping and logistics (TSL) industry since 1993. The TSL activity belongs to network industries due to multiple inter-organizational relationships in the process of delivering this service and generating innovations in this area. The firm has developed a network system based on its divisional structure with foreign branches in Slovakia and Austria, cooperation with customers and organizations in its environment (including business organizations and universities), outsourcing to smaller subcontractors and specialized providers of equipment, as well as advisory and financial services. The company is located in Nowy Sacz in Malopolska region, near the southern border of Poland, a natural geographical location to serve as a liaison in the trade between the West and the East of Europe, as well towards the South of Europe. Due to this favorable geographical location, a spatial concentration of international freight transport enterprises emerged in Nowy Sacz and the surrounding counties, during the transformation of Polish economy into a market system. The agglomeration differentiates by almost exclusively small and medium size of companies, while the international freight industry is generally dominated by large enterprises. Spatial and industrial concentration stimulates outsourcing between medium companies, such as ZET, and smaller entities. The main directions of ZET's operations include the West, the East and the South of Europe, as well as Kazakhstan and Siberia. For the Western European companies that pursue economic exchange with the Eastern Europe or the Asian partners, ZET is an experienced service provider that demonstrates knowledge of the markets with a high degree of uncertainty. The company combines international and local linkages, namely it serves transnational companies (TNCs) or foreign and Polish large enterprises, but it maintains local, embedded links with subcontractors and other TSL firms operating locally. ZET Transport demonstrates above average competence compared with competitors of similar potential, which is reflected in its ISO 9000 and other industrial certificates, proprietary information system 'Softrans' to manage internal and external operations, specialized software and equipment for monitoring trucks, and in a relatively advanced, resource-oriented system of financial controlling. Accumulated experience and high qualifications of the personnel, together with well-developed technology and formal credentials, enable the company to operate in all three segments of TSL market and to act independently, as a service provider to final customers – manufacturers or distributors – instead of being only a subcontractor to large logistics companies. The current business model of ZET is, however, challenged by the scale economies and advanced operational technologies of large logistics operators and by cost efficiency of small and micro enterprises. Medium-sized companies experience difficulties in meeting the advantages of these two groups, and either choose to downgrade, by becoming subcontractors to logistics

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centers, or struggle to maintain a group of loyal, long-term customers, to compete independently with large and small international freight transport companies on the direct customer market.

We primarily investigated the relationships of ZET Transport Company with its large buyers conducting international operations and thus inserting the company in their international value chains. The buyers are subsidiaries of transnational corporations located in Poland or large Polish enterprises of international reach. Another important group in the company network are subcontractors participating in processing larger orders, as they are directly involved in delivering services to larger customers.

In the TSL industry severe competition and market-based relationships are increasingly evident, due to standardization of transportation service and due to open information about prices, service suppliers and offerings through the internet exchanges. On the other hand, large and loyal customers are critical for business stability and planning. Each year, the company serves around 1,200 customers (mean figure from the years 2010-2012), of which loyal buyers account for 40 entities. Out of the loyal buyers, 10 companies have signed long-term contracts with ZET, and the remaining companies maintain relational, repetitive transactions, based on the spot contracts (commissions). The company considers a customer loyal, if the cooperation has lasted at least 3 years, it is still valid, and it reaches at least 30 commissions a year. The importance of long-term customers in the company sales is presented in Table 1.

Table 1: Structure of long-term (loyal) and short-term customers of ZET Transport

Ratio	Long-term customers	Short-term customers
Years 2008-2009		
Share in the number of commissions (%)	80	20
Share in the value of commissions (%)	75	25
Years 2010-2012		
Number of customers per year	40	Around 1,200
Share in the number of commissions (%)	70	30
Share in the value of commissions (%)	65	35

Source: own elaboration based on the interviews (ZET Transport's calculations).

Each year, the group of ZET's subcontractors can reach 250-400 of which 15 are considered long-term suppliers according to the same criterion of at least three-year valid cooperation and at least 30 orders processed annually (Table 2). All of them are located in the same or bordering counties. Formal, long-term contracts have been signed with five of them. They are micro or small transporting com-

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panies that use logistics and shipping from ZET and benefit from the lease of the company equipment and other tangible and intangible resources.

Table 2: Structure of long-term (loyal) and short-term subcontractors to ZET Transport in the years 2010-2012

Ratio	Long-term subcontractors	Short-term subcontractors
Number of subcontractors per year	15	400-500
Subcontractors' share in the number of commissions (%)	14,6	85,4
Subcontractors' share in the value of commissions (%)	14,8	85,2
Share in the number of commissions outsourced (%)	50	50
Share in the value of commissions outsourced (%)	65	35

Source: own elaboration based on the interviews (ZET Transport's calculations).

Within the time span covered by the research (2001-2012), we have identified three groups of large customers differing in the length of cooperation history (at various stages of cooperation life cycle), which enabled us to define mechanisms of upgrading during the evolution of cooperation. These three groups were 1) subsidiaries of TNCs at the introductory stage of cooperation (from three- to four-year experience) – 9 entities, 2) TNC subsidiaries with a longer term history of relationships (from five- to seven-year experience) – 21 entities, 3) TNC subsidiaries and large Polish enterprises of international reach that pursue at least eight-year embedded relationships with ZET – 'embedded customers' (10 entities).

4.1 Subsidiaries of TNCs at the introductory stage of cooperation

Governance type and its impact on upgrading

Based on this group of customers we can analyze the mechanisms of upgrading in the initial phase of cooperation. When explaining the core of these cooperation relationships, our key informants put stress on formal terms of cooperation, including long-term contracts with specific provisions, and on the formal credentials required from ZET to prove its capacity as a qualified supplier. Transporting service does not involve complex and advanced technology relative to other industries, however, larger companies utilize intensely IT solutions and adequate equipment for coordination and monitoring in response to the requirements of demanding customers. Moreover, the transportation activity, as a type of service business, requires adjusting to idiosyncratic requirements of the customer, both in terms of administrative and bureaucratic procedures and regarding the specific treatment of goods transported and logistics of the entire process. The result is a medium level of transaction complexity. At the same time, there is a high level of codification of the information instrumental to implement

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orders from TNCs. Accordingly, we deal with a medium level of asset specificity, due to high codification and medium transaction complexity. Contractual hazards result mainly from environmental uncertainty (demand dynamics, fuel prices, currency risk) and to a lesser extent from partner behavior (information asymmetry, appropriability concerns, and opportunism), because of the high level of information codification. Contractual hazards mostly remain unregulated or, in the case of larger volumes involved, they are mitigated by formal long-term contracts. Network governance instead of market transactions is chosen in order to economize on transaction costs driven by the large volume of orders and operational standards expected. The latter factor requires some standard capabilities from the supplier to meet the formal requirements. The firm receives codified terms of cooperation that relate to infrastructure, equipment, labor conditions, operational excellence and social responsibility. ZET is not usually required to provide own technological input, and we observe a one-way transfer of information from customers to the supplier, with little interaction to exchange information and knowledge. Introducing TNCs' standards translates into incremental process and organizational upgrading, new for the company and some of its competitors and not for the entire market. A part of the related innovations are idiosyncratic investments for ZET, so they represent transaction costs of cooperation with specific partners and they do not transfer into common organizational standards and routines to strengthen the company position on other markets as well. The network governance mode adopted here reflects the assumptions of the governance perspective as to the impact of asset specificity, contractual hazards and capability. The resultant governance is a hierarchical network of captive type (producer-driven network). Some of these relationships lead to the supplier downgrading by going down the value chain, when ZET only leases vehicles and equipment, without providing value adding services such as shipping or logistics.

Absorptive capacity and dynamic capabilities and their impact on upgrading

At this level of relationships, the firm demonstrates the absorptive capacity to introduce the required innovations, i.e. it reaches the absorption degree of absorptive capacity functioning. On the other hand, these externally imposed standards are not transformed into the organizational routines and regulations, i.e. it cannot be observed how absorptive capacity as internalization acts, as yet.

4.2 TNC subsidiaries with a longer term history of relationships

Governance type and its impact on upgrading

The relationships with this group are characterized by well-established routines. Continuing cooperation is a recognition of ZET's absorptive capacity and a required level of operational excellence. Buyers demand additional idiosyncratic investment (such as new certificates and permits to transport dangerous materials, sometimes building a dedicated infrastructure), often without a bounding

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declaration to maintain the cooperation or a volume of orders. In most cases, however, the investments do not increase value added and profit margin of the service, merely being a precondition for sustaining the cooperation. This attitude is typical of hierarchical governance, where supplier bears the risk and higher investment. The conditions of asset specificity, and contractual hazards remain similar to those found in the introductory stage of cooperation. Despite a longer history of exchange and some process and organizational innovations providing for incremental upgrading in this regard, the governance continues as a hierarchical, captive network. The company gets stuck in a specific position and the increased competence does not bring opportunities for implementing additional activities in the customer's value chain (new functions, new services). In consequence, we deal with governance conditions similar to those described for the initial stage of cooperation.

Absorptive capacity and dynamic capabilities and their impact on upgrading

Absorptive capacity is demonstrated as the ability to internalize a part of idiosyncratic investments (innovations imposed by the buyer) into the company standards and routines, and into marketing activities. Therefore, at this stage of relationship development, ZET reaches the internalization degree of absorptive capacity functioning. Then, these process innovations facilitate attracting new, more demanding customers. Innovations internalized help to compete on new markets and to offer added value to the group of customers with embedded relationships, further described below. Moreover, the upgrading of ZET Transport benefits the company subcontractors, who absorb the improved standards, practices and equipment. One caveat in this technology transfer is its one-way direction and hierarchical model, with little feedback, both in the case of the company and TNC buyers, and in the case of subcontractors, for which ZET is a source of innovation and a dominant company.

4.3 TNC subsidiaries and large Polish enterprises of international reach – embedded customers

Governance type and its impact on upgrading

The third group of customers features the longest history of cooperation and is differentiated by governance mode, which is non-hierarchical in nature and combines relational and buyer-driven networks. Customers do not set up specific standards, but rather expect ZET to organize the entire transportation process based on general operational requirements. ZET provides own solutions and undertakes other activities from the customer's value chain, such as packaging, storing, loading, and manufacturing packages. Asset specificity becomes high due to transaction complexity, its low codification, and a high degree of adjusting to the customer business model. Contractual hazards stemming from idiosyncratic assets are mitigated by trust and mutuality on the part of both the customer and ZET. Simultaneously, the capability required from ZET is high, as it

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relies not only on meeting the required operational standards, but also on the advanced coordination of the entire process of the packaging-transporting-shipping-logistics service.

Absorptive capacity and dynamic capabilities and their impact on upgrading

The heterarchical, relational and buyer-driven governance mode forms favorable environment for innovations. However, our informants did not consider it as the major determinant of changes in the company competence base. These were rather outcomes of the supplier's increasing capacity to absorb the required standards, and later to flexibly offer new solutions (functionalities and services). Absorptive capacity as 'absorption' is not of major importance, as this group of customers does not impose specific technological or organizational standards, but it rather benefits from the competence base developed and internalized through the collaboration with two groups of customers described earlier. These improvements are integrated (integration degree of absorptive capacity) into the services offered to the embedded customers. At this stage, we observed the evidence of dynamic capabilities utilization, as operationalized earlier. This was reflected in a complex and comprehensive service, designed based on earlier internalized standards. The observed service and functional upgrading consists in going up the value chain and is based on the innovations in the area of service, product and process, being a novelty for the company and, in some cases, for the industry as well. Long-term ZET's subcontractors are critical participants in these relationships, as they normally serve the same embedded customers. They absorb technology provided by ZET to implement a high-quality service, but their own input into developing the service is modest.

Table 3 summarizes the mechanisms of upgrading at various stages of cooperation cycle (determinants of cooperation, network governance and upgrading results).

Table 3: Upgrading mechanisms at various stages of cooperation cycle

Stage of cooperation	Introductory stage	Longer-term relationships	Embedded relationships
Determinants of cooperation	Asset specificity Contractual hazards Capability Absorptive capacity (absorption)	Asset specificity Contractual hazards Absorptive capacity (internalization)	Absorptive capacity Dynamic capabilities
Network governance	Captive and producer-driven networks	Captive and producer-driven networks	Relational and buyer-driven networks
Upgrading results	Incremental process and organizational upgrading Downgrading incidence	Incremental process and organizational upgrading to attract new customers	Service and functional upgrading

Source: own elaboration based on the interviews (ZET Transport's calculations).

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4.4 Verification of hypotheses

Hypothesis 1

The analysis of relationships in the initial phase of cooperation generally confirms the assumptions on the impact of governance mode on the mechanisms and types of upgrading from hierarchical networks observed in the case of ZET. The company capacity to learn and develop, by exploiting dynamic capabilities and, to a large extent, absorptive capacity as well, is not evident for customers at this stage of cooperation. Some objective and observable conditions such as asset specificity, contractual hazards and supplier capability in terms of formal credentials (permits, certificates), tangible and intangible technology and reputation, play the major role in establishing governance that stimulates upgrading as predicted in the governance perspective. Considering this, Hypothesis 1 cannot be rejected by falsification test. Despite not having established direct influence on the governance established, absorptive capacity (degree of absorption) at this stage of cooperation is instrumental to upgrading and introducing innovations in response to customer's requirements. Therefore, we expand Hypothesis 1 by the inclusion of this factor into the set of upgrading determinants at the initial stage of cooperation.

Hypothesis 2

We identified two advanced stages of the evolution of cooperation, namely longer-term and embedded stages. During the longer-term phase, governance mode did not undergo changes and continued to be the one established at the initial stage of collaboration. However, besides absorptive capacity understood as absorption, we also observed the importance of absorptive capacity to internalize the idiosyncratic investments imposed by the buyers (internalization degree of absorptive capacity) and to turn them into company standards, tangible resources and practices exploited in other markets. The stage of embedded relationships also provides the evidence of modifications in the governance mode, resulting from the increased competence, which can be attributed to the functioning of both absorptive capacity and dynamic capabilities. Considering the above, Hypothesis 2 cannot be rejected by falsification test.

Upon the findings we can state that the governance and resource-based variables are both relevant in explaining mechanisms of supplier upgrading, but their explanatory power differs in different phases of cooperation. Namely, in the initial phase of cooperation, upgrading process is determined by governance mode, which dependents on asset specificity, contractual hazards and a supplier capability. Moreover, one of the important drivers of upgrading is absorptive capacity (absorption degree) to introduce specific, customer-driven innovations. At this stage, governance mode, i.e. network type, regulates major conditions for learning and generating innovations, with some moderating effect from absorptive capacity. During the evolution of cooperation, upgrading process is deter-

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mined by the RBV factors, including absorptive capacity and dynamic capabilities. The increasing role of these RBV factors provides for changes into the governance type, transforming networks into less hierarchical and more heterarchical. At this stage, governance mode forms a framework for absorptive capacity and dynamic capabilities to act as major determinants.

5. Discussion and conclusion

The contribution of the paper is of theoretical, methodological and practical nature.

The theoretical contribution consists in 1) proposing the mechanisms of SME supplier upgrading during the cooperation life cycle, in the CEE context, and in 2) broadening the integrative GVC and the RBV studies in supplier upgrading, by proposing a research framework with the cooperation life cycle as a mediator, and by verifying it based on the falsification test.

According to the findings, the mechanisms of SME supplier upgrading are dependent on the advancement of cooperation history. Namely, *in the initial phase of cooperation, we found upgrading as primarily determined by the network governance mode, which depends on asset specificity, contractual hazards and supplier capability. Moreover, at this stage of cooperation, we also identified absorptive capacity as instrumental to introducing customer-driven innovations. During the evolution of cooperation, specifically at its advanced stage of embedded relationships, upgrading is determined by absorptive capacity and dynamic capabilities of the supplier, while the governance mode forms an institutional framework enabling these factors to act*.

The mechanisms of SME supplier upgrading revealed in this study are a general proposition, which is not context-specific. On the other hand, we have conducted our investigation in the CEE environment due to location of the company researched, and we referred to the extant empirical evidence on learning and innovation development in business networks in this geographical setting (Belaya/ Hanf 2014; Ahlin et al. 2014; Golikova et al. 2011; Lawrence et al. 2005; Pisoni et al. 2013; Moser et al. 2014; Filippov/Duysters 2011; Gorynia et al. 2007; Lungwitz et al. 2006; Larimo/Arslan 2013; Rugraf 2010, Pavlínek 2012; Crestanello/Tattara 2011). *These contextual circumstances provide for the explanation as to why the specific set of factors holds for the specific phase of cooperation and finally, what bridges the transition from less to more advanced forms of upgrading.* The governance factors represent formal institutional arrangement at the start of cooperation, when supplier's identity and reputation, specifically that of SME supplier from the CEE environment, cannot be fully acknowledged by the customer (Moser et al. 2014; Lungwitz et al. 2006). On the other hand, this institutional set-up undergoes changes, which cannot be explained by the governance factors themselves, as asset specificity, contractual hazards and capability remained stable in the initial phase of cooperation and in longer-term rela-

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tionships. One explanation lies in the embedded relationships with partners featuring a long history of cooperation and thus recognizing the supplier as trustworthy, reliable and able to innovatively solve complex problems. Such relationships are founded on repetitive and long-term collaboration. Absorptive capacity and dynamic capabilities prove their impact in the long run, and the depth of progressive changes they may bring varies, depending on the length of cooperation, among others. Therefore, the first explanation would be of evolutionary character – it is a natural cycle of cooperation when supplier develops its competence and this affects the change of network governance leading to the increased upgrading and innovative activity (Golikova et al. 2011; Filippov/Duysters 2011). This observation confirms the relevance of applying the cooperation life cycle as a mediator that structures the logical connections between the GVC and RBV determinants studied. It is worth noting that the life cycle pattern proves viable in the current discussion on the learning processes observed in clusters and networks (Fornahl et al. 2015; Shin/Hassink 2011). On the other hand, not all of ZET's partnerships evolved into advanced forms of upgrading and related governance modes as valuable embedded customers are a relatively narrow group of loyal buyers. Another explanation stems from the characteristics of the large customers, primarily their embeddedness in local context and the degree of devolution they enjoy from their corporate headquarters (Pisoni et al. 2013; Rugraf 2010, Pavlínek 2012; Crestanello/Tattara 2011). Namely, the embedded customers enjoyed more independence in decision-making and procurement management than other customers. This probably allowed for a less standardized procurement system, in which the supplier could offer the increased value added, finally leading to the more balanced and reciprocal governance relations.

Another theoretical contribution is broadening the integrative GVC governance and the RBV research on supplier upgrading. The GVC approach was earlier expanded by adding the capability variable to determinants of governance choice, and the importance of dynamic capabilities was acknowledged (Humphrey/Schmitz 2002; Kaplinsky et al. 2002; Kaplinsky/Morris 2001; Gereffi et al. 2005; Pietrobelli/Rabellotti 2011). Also, in the RBV studies we observe the interest in how different forms of governance may affect the opportunity for learning (Kogut/Zander 1992; Leiblein/Miller 2003; Hoetker 2005).

Our approach differs from to-date contributions in two ways. Firstly, it is directly focused on supplier upgrading issue, instead on governance evolution that implies supplier upgrading as one of the important outcomes of this evolution. Secondly, it intends to integrate GVC and the RBV perspectives into a new framework on an equal basis, to check under what conditions their determinants hold. Namely, when designing the research framework and implementing it, we did not assume a primacy or a leading role of one theory to be enriched with the selected variable(s) of the other approach. Instead, we expected the relevance of

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the both approaches, depending on the advancement of the cooperation history. To-date research focused primarily on one of the theoretical perspectives, with the use of the other's variables as moderators, i.e. they were either integrating the governance constructs into the RBV or the RBV variables into GVC. One group of these studies proves the relevance of absorptive capacity and dynamic capabilities in supplier learning, with some influence from governance mode as well (Ahlin et al. 2014; Escribano et al. 2009; Exposito-Langa et al. 2011; Kotabe et al. 2011; Liao et al. 2003; Breznik/Lahovnik 2014; Di Stefano et al. 2010; Munari et al. 2012; Helfat et al. 2007). The other group confirms the validity of governance mode as the major factor, with the influence of capabilities (Gereffi et al. 2005; Sturgeon et al. 2008; Pietrobelli/Rabellotti 2011; Isaksen/Karlsen 2012; Ivarsson/Alvstam 2011). The revealed relevance of these approaches called for further exploring the logical connections between them, in order to find mediators that explain under what conditions their respective assumptions hold. After considering the input of GVC and the RBV in explaining the mechanisms of supplier development, we integrated these theories in a dynamic way with the use of the cooperation life cycle as a mediator.

Based on the empirical verification of this integrated conceptual framework, we identified differing explanatory power of the two approaches, depending on the phase of cooperation with customers. The observation was that during the initial stages of collaboration, absorptive capacity and dynamic capabilities, as the major constructs representing the RBV, do not reveal their influence yet, but the development of supplier is primarily determined by the GVC governance factors. These primarily formal and observed factors (asset specificity, contractual hazards and initial capability) form a foundation for cooperation to start and operate, when the supplier's trustworthiness and potential cannot be fully recognized or/and it is not developed enough. During the evolution of cooperation, in mutual relationships associated with knowledge exchange, the potential of the supplier is both increased and better recognized by the buyer, the latter becoming more open to the supplier's initiative and adjusting the governance arrangements to this change. This is a mutually reinforcing process – the supplier meets the requirements and develops a competence, and later, it is encouraged to provide more complex solutions or its proposals to provide such solutions are more openly accepted. This evolution makes the issues of absorptive capacity and dynamic capabilities a primary mechanism of supplier upgrading. At this advanced stage of the cooperation evolution, the GVC governance forms an institutional framework that enables the RBV factors to act, but at the same it undergoes modifications due to the absorptive capacity and dynamic capabilities acting as the major forces for upgrading.

Our findings are in accord with the earlier results of research, confirming the importance of the RBV factors and the governance factors. The new insight we bring consists in revealing when each set of factors demonstrates the major ex-

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planatory power. The findings are also supportive of the mutually moderating roles of both perspectives. We observed the primary role of governance issues in the initial phase of cooperation, moderated by absorptive capacity, and the major role of absorptive capacity and dynamic capabilities, with the moderating role of governance mode, during the evolution of cooperation.

The methodological contribution includes a proposal of a research framework to study supplier upgrading mechanisms in international networks and formulating implications for future research in SME supplier upgrading in international networks. The research methodology was innovative in adopting the prospective case study design for deductive testing of an SME supplier learning (Bitektine 2008). Our findings enable naturalistic generalization and analytical generalization (Eisenhardt 1989). The naturalistic generalization means that results apply to similar cases and conditions, i.e. they are relevant for medium-sized enterprises (SMEs) that prevailingly act as suppliers in hierarchical international networks and to the TSL industry. The analytical generalization is based on a falsification test, due to which none of research hypotheses could have been rejected. The research demonstrates, however, some limitations, such as relying on a single case study method. This methodology enables weak forms of generalization, i.e., naturalistic generalization and analytical generalization. Analytical generalization cannot confirm the assumptions by 'proof', but instead, it checks whether they can be rejected or not, in this one particular case. Our hypotheses cannot be rejected, but they cannot be confirmed by 'proof', due to non-random design and a single study method. On the other hand, this methodological approach is appropriate when studying complex processes to extend the existing theory and to provide directions for future quantitative research that would confirm such case-based theory development.

The research design did not allow for investigating specific relationship in real time to understand the entire process of their evolution. This is why, we focused on the relationships with groups of customers at different stages of network evolution. Such methodological approximation has an advantage over relying upon retrospective interviews alone to investigate a distant past of 12 years, since recalling remote facts may be biased by memory gaps and post-rationalizations. It needs to be admitted that this approximation of cooperation cycle is not fully equivalent to studying the evolution by direct observation, which represents a limitation of this research. However, during the interviews, respondents were asked to recall the earlier phases of relationship development for each of the three groups of customers, which confirmed our conclusions as to mechanisms of upgrading that change in time. To ensure more objective and detailed analysis of the transition from longer-term, hierarchical networks to embedded, heterarchical ones, a researcher should directly observe the real processes and determinants. This can be achieved by a long-term study conducted in real time. We

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hope this study provides relevant material for designing such studies with the use of multiple-case study and quantitative methods.

Other critics of the adopted methodology may refer to the inference from the observed results of cooperation and from subjective explanations of determinants by respondents as a basis for making conclusions. On the other hand, such an approach may be valued for providing a direct understanding of variables derived from theory by the interviewees, who were key informants and experts in the area studied. This, in turn, helped to avoid indirect and artificial approximation of the research variables by the investigators alone.

The contribution for business practice covers formulating recommendations as to increasing the prospects for upgrading by SME suppliers that act in hierarchical networks and transforming specific investments into cooperation with large buyers. In hierarchical, captive networks, where buyers specify requirements without expecting solutions or innovative input from the supplier, there is a limited possibility for the supplier to exploit the achieved upgrading. Instead, upgrading and resultant innovations can be utilized in other markets – to attract new customers and in order to provide the increased value in non-hierarchical networks. This finding conforms to the observations by Gereffi et al. (2005) and by Pietrobelli and Rabellotti (2011). The important competence in hierarchical networks is the capacity to internalize benefits from idiosyncratic investments imposed by the buyer. Otherwise these investments remain transaction costs, i.e. the company internalizes the costs of starting and maintaining the cooperation without fully internalizing benefits from these investments. Process upgrading turns to be transaction costs in such a case, because it does not increase the value of the service and its profit margin, but it is merely a prerequisite for starting a cooperation. Moreover, as an idiosyncratic asset, it is initially applicable only to some part of the organization and to the specific customer. Internalizing benefits from upgrading and innovations that are transaction costs consists in transforming them, through standardization and routinization processes, into the common company assets to strengthen its competitive position in other markets as well.

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