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Moving beyond the transfer dyad: Exploring network influences on transfer effectiveness

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ABSTRACT

There is a wealth of research analyzing sender-receiver transfers within multinational corporations focusing on the characteristics of (a) the sender, (b) the receiver, (c) the knowledge subject to transfer, and (d) the immediate transfer context. However, less is known about how networks external to the sender-receiver transfer dyad influence the outcomes of a transfer project. In this paper, we focus on the receiving subunits' internal and external networks and how embedded actors in these networks influence transfer effectiveness. More specifically, by means of an inductive multiple-case study, we explore how internal and external networks of subunits influence the effectiveness of capability transfers from headquarters to subunits. We study 18 transfers of the same capability from headquarters to subunits' innovation projects. We theorize about how the capacity and configuration of receiving subunits' networks can have a unique and detrimental influence on transfer effectiveness. The results of our study suggest that the receiver in a transfer project is not so much a specific unit as a network.

1. Introduction

In this paper, we address a key activity of multinational corporations (MNCs), namely the transfer of capabilities from headquarters (the sender) to subunits (the receivers). In transfers, senders and receivers are embedded in different market contexts and networks (Dellestrand, 2011). We focus on the dyadic transfer between headquarters and subunits and analyze the influence of units external to the headquarter-subunit transfer dyad on transfer effectiveness. These units external to the dyadic transfer can be both sister units within the MNC and units external to the MNC. We conceptualize these units as the receiving subunit's supporting network. Thus, our study is concerned with the business network's influence on transfer effectiveness – a theme that rarely has been explored in previous research.

To elaborate - different resources and capabilities can be subject to transfer. These resources and capabilities can be conceived of as knowledge, innovation, patents, and best practices, and research has argued that transfer positively impacts the competitive advantage of the MNC (Andersson, Buckley, & Dellestrand, 2015; Björkman, Stahl, & Vaara, 2007; Kogut & Zander, 1996; Szulanski, 1996). Transfers can be initiated by different MNC units, i.e., headquarters or subunits, and be directed vertically or laterally (Foss & Pedersen, 2002; Mudambi, 2002; Yang, Mudambi, & Meyer, 2008). Research on this topic has been amalgamated under the umbrella of the so-called transfer literature (for reviews, see Gaur, Ma, & Ge, 2019; Zeng, Grøgaard, & Steel, 2018), that focus on the market context, the firm level, and the individual level impacting transfers (Gaur et al., 2019), and theorize about enablers, barriers, and outcomes of transfer processes (Lee & Choi, 2003). However, as we later argue, the influence of the network external to the transfer dyad on transfer effectiveness has not been addressed by previous research.

The process of transfer between a sender and a receiver is influenced by mechanisms that facilitate or hinder a transfer process (Gaur et al., 2019), which imply a variation in the outcome – or success – of a transfer project (Andersson et al., 2015; Lee & Choi, 2003). Success in transfers is often discussed as transfer effectiveness, i.e., the extent to which the intended change in ways of working is achieved (e.g., Andersson et al., 2015; Jensen & Szulanski, 2007; Minbaeva, 2007).

The typical way of analyzing transfer within MNCs has focused mainly on aspects directly related to the transfer dyad (e.g., Andersson et al., 2015; Jensen & Szulanski, 2007; Minbaeva, 2007). Research has thereby provided important findings concerning influences on transfer effectiveness emanating from (i) the sender, (ii) the receiver, (iii) the focal subject of transfer (i.e., the capability, knowledge, a best practice, etc. being transferred), and (iv) the process by which the focal subject is transferred (for a meta-analysis on the role of integration mechanisms

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for knowledge transfer, see Zeng et al., 2018). However, while we maintain the importance of the received analytical approach towards studying transfer, the present paper adopts a wider view and elucidates the recipient subunits' network that is external to the transfer dyad, and how this network, consisting mostly - but not exclusively - of actors external to the MNC, affects the transfer effectiveness of the focal transfer.

Our focus builds on the notion that MNC subunits do not operate in a void. In fact, subunits are embedded within different business networks that influence operations (Forsgren, Holm, & Johanson, 2005). Subunit embeddedness, as depicted in the business network view, largely shares assumptions with Granovetter's (1985) view on relational embeddedness, where relationships are assumed to influence the behavior of actors who, to a large extent, contribute to the competitive advantage of MNC subunits (Garcia-Pont, Canales, & Noboa, 2009; Gulati, Nohria, & Zaheer, 2000). The business network view conceptualizes the MNC as a loosely-coupled organization, or federation of actors, engaged in exchange activities (Andersson, Forsgren, & Holm, 2007). These actors, or subunits, are embedded in internal as well as external networks of business relationships. Embedded business relationships are defined as relationships characterized by a high degree of mutual, long-term adaptation (Forsgren, Holm, & Johanson, 2005). This set of embedded subunit business relationships enables the recombination of knowledge (or capabilities) driving innovation (Andersson, Forsgren, & Holm, 2002; Andersson *et al.*; 2007; Ciabuschi, Dellestrand & Martín Martín, 2011c). As Forsgren, Holm, & Johanson, 2005 stated: "Business network theory also postulates that the development of new products and processes is an activity proceeding primarily in relationships *between* business actors rather than *within* the actors themselves. Embeddedness in terms of technological development is thus of crucial interest from a network perspective." Opening up for a wider view on networks vis-á-vis transfer builds on the observation that research has identified internal and external networks of MNC units as essential for their competence development, knowledge generation, and innovative activity (Andersson, Forsgren, & Holm, 2002; Ciabuschi, Dellestrand, & Martin Martin, 2011c; Forsgren, Holm, & Johanson, 2005). In the context of transfers, it can thus be argued that senders and receivers do not operate in a void.[1] Consequently, networks are of vital interest for understanding transfer effectiveness within MNCs. We argue that research focusing only on activities pertaining directly to the sender and receiver may have limited the view on what influence transfer effectiveness. There is a dearth of empirical research connected to the potential influence emanating from outside the sender and receiver dyad and how it may impact transfer processes.

Thus, the influence of networks external to a focal dyadic transfer process warrants further research. It has been left relatively unexplored by transfer research, particularly using a business network perspective as a point of departure for the study. Put differently, we simply do not know much about how a transfer process is influenced by networks internal and external to the MNC, but always external to the specific dyadic transfer process.

Some conceptual research has argued that the complexity of recipient units' networks negatively influences the ability of headquarters to manage transfers between subunits (Ciabuschi, Forsgren & Martin 2011b; Ciabuschi, Dellestrand, & Holm, 2012; Forsgren & Holm, 2010), and thus also impede the effectiveness of transfers (Andersson et al., 2015). However, few studies empirically analyze the influence of networks external to the transfer dyad on transfer effectiveness, although networks have been used to study other related issues such as knowledge generation, transfer phases, and motivation (Faems, Bos, Noseleit, & Leten, 2020; Hansen, Mørs & Løvås, 2005; Minbaeva & Santangelo, 2018). Consequently, we argue for the need for exploratory research to identify and unpack how transfer effectiveness in headquarters-subunit relationships is affected by networks external to the specific dyadic transfer participants. In doing so, we focus on the network context of subunits as capability recipients and address the following research question: .

> How do recipient subunit networks external to a transfer project influence transfer effectiveness?

With such a focus, we analyze a transfer of particular importance - namely capability transfers from headquarters to subunits. Our analysis is based on an exploratory multiple-case study (Eisenhardt, 1989; Eisenhardt & Graebner, 2007) of 18 cases of headquarters transfers of one capability in a large industrial MNC (i.e., it is always a case of transferring the same capability to 18 receiving innovation projects). The 18 innovation projects that are the targets for headquarters capability transfer are based at six subunits in Europe, Asia, and North America. We compare the 18 transfers in two groups: nine transfers with high transfer effectiveness and nine with low transfer effectiveness to identify differences in network characteristics influencing transfer effectiveness. Through an analysis of a total of 100 interviews with both headquarter managers in charge of the transfers and with project members and managers in receiving subunits, we identify structural characteristics of subunit networks external to the dyadic transfer that impact transfer effectiveness.

The paper contributes to the transfer literature by bringing the network context of transfer participants to the fore and shows that focusing solely on analyzing features of the transfer dyad limits the understanding of what influences transfer effectiveness. Specifically, this study identifies that the transfer of a capability from headquarters to a subunit is dependent on the capacity of the recipient subunits' networks to facilitate the adoption by (1) contributing relevant competence in relation to what the new capability required, and (2) to coordinate the activities of the new capability when the configuration of influential networks is geographically spread out or external to the MNC. In so doing, we explore the scale, scope, and dispersion of the receiving subunit's network and the influence of these factors on the effectiveness of a transfer process. This contributes to the transfer literature by theorizing on network influences on the outcomes of a transfer process, namely transfer effectiveness, and conceiving the transfer dyad in more porous terms. Based on our findings, we postulate propositions on how the recipient subunit's network may influence transfer effectiveness – questioning the benefit of viewing capability transfers as exclusively occurring in sender-receiver dyads and suggesting that the receiver actually is a network. Building on this insight, the paper outlines the consequences of these propositions and charts several promising avenues for future research.

2. Transfers within the MNC and the under-researched role of networks

Traditionally, the advantages of MNCs have been traced back to the home country (Vernon, 1966) in the form of resources, knowledge, skills, and competencies held by the organization, which become subjects of transfer in order to be exploited in foreign subunits (Hansen & Lövås, 2004; Szulanski, 1996). The ability of MNCs to execute transfers between units has been argued to be a key constituent of the organizations' competitive advantage (Argote & Ingram, 2000), as well as a factor that allows MNC subunits operating in host countries to overcome

[1] To be concrete, what is referred to in this study as the receiving subunits' external network (in relation to the focal dyadic transfer project from headquarters to the subunit) consists of exchange-based relationships in which the receiving subunits were found to rely on several internal and external actors for support critical to its operations, and thereby for its adoption of the transferred capability. These collaborations were long-term and involved exchange, characterized by mutual adaptation, where the subunits received engineering services and support. This depiction of the receiving subunits' network lies close to the literature on business networks (Forsgren, Holm, & Johanson, 2005).

the liability of foreignness (Hymer, 1960; Martin & Salomon, 2003; Najafi-Tavani, Robson, Zaefarian, Andersson, & Yu, 2018). As one of the most dominant themes in the study of MNCs during the last couple of decades (Zeng et al., 2018), the ability to successfully execute transfers is argued to be critical for MNCs in improving the competitiveness of subunits. Research typically deal with transfer as a dyadic matter influenced by relationships between the actors directly involved (i.e., the immediate transfer dyad of the sender and receiver) as well as by the characteristics of the knowledge subject to transfer (see e.g. Gupta & Govindarajan, 2000; Morgulis-Yakushev, Yildiz, & Fey, 2018; Noorderhaven & Harzing, 2009; Szulanski, 1996). However, managing transfers is a complex issue (e.g., Hansen, 2002; Hansen & Haas, 2001; Kogut & Zander, 1992; 1996; Minbaeva & Santangelo, 2018; Zeng et al., 2018; Zhou, Fey & Yildiz, 2020). This is especially so when MNCs engage in transfers across borders where senders and receivers are embedded in different market contexts and specific subunit networks (Achcaoucaou, Miravitlles, & León-Darder, 2014; Ciabuschi, Holm, & Martín, 2014; Hallin, Holm, & Sharma, 2011; Meyer, Mudambi, & Narula, 2011).

Advances in research on MNCs and the role of headquarters suggest a need to identify novel influences to transfer effectiveness (Andersson et al., 2015; Ciabuschi, Forsgren, & Martín, 2017). For example, MNCs have been characterized as increasingly complex organizations concerning their internal and external operational contexts (Buckley & Ghauri, 2004; Forsgren, Holm, & Johanson, 2005). While this kind of complexity has been argued to make the transfer of knowledge throughout the MNC increasingly important (e.g., Doz, Santos, & Williamson, 2001; Teece, 2007; 2014), it has also been argued to make transfer processes more difficult (Ciabuschi et al., 2011b; 2012; Forsgren & Holm, 2010). Consequently, MNC complexity can be expected to make transfers more difficult for senders and receivers. Still, even though transfer presents substantial challenges, it has been argued that headquarters need to engage in transfers to subunits in order to improve the competitive advantage of the MNC (Tran, Mahnke, & Ambos, 2010).

In MNCs, one focus has been on the transfers of capabilities (e.g., Kostova & Roth, 2002; Minbaeva, 2007; Szulanski, 1996). Capabilities can be understood as "*the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, for the purpose of achieving a particular end result*" (Helfat & Peteraf, 2003, p. 999). Although the purpose of capability transfer is to strengthen a firm's competitive advantage, Andersson et al. (2015) argue that it is not until a transferred capability is put to use (to some degree) in the recipients' operations that the new capability can do so. Moreover, distinctions are made between different outcome variables, such as effectiveness, efficiency, and ex-post outcomes. The importance of this is underscored by studies that capture more than one of these outcome variables and find them being influenced by different factors (Ciabuschi, Dellestrand & Kappen, 2011a; Ciabuschi et al., 2011b). In this paper, we follow the definition of Daft (1998) in viewing effectiveness as the extent to which the receiving unit has adopted a transferred capability as compared to the full extent intended by the sender.

Kostova and Roth (2002) investigated how the institutional profile of the recipient's context influenced the effectiveness of headquarters-driven transfers to subunits within MNCs. With this notable exception, little empirical research has yet attempted to identify surrounding networks' (i.e., non-sender or receiver-based) influence on transfer effectiveness in headquarters-subunit transfers of capabilities in the MNC. Moreover, while research on internal and external networks in MNCs has observed the importance of embeddedness and relationships in affecting the managerial relationships between headquarters and subunits (Forsgren, Holm, & Johanson, 2005), we still lack focused research on transfer effectiveness attributable to the diversity of network actors and the network relationships surrounding transfer dyads. This is despite the fact that networks have been pointed out as important (Bartlett & Ghoshal, 1989; Dhanaraj & Parkhe, 2006; Teece, 2014) and that such network influence has been found to impact headquarters involvement in transfers between subunits (Ciabuschi et al., 2011; 2012; Dellestrand & Kappen, 2012; Forsgren & Holm, 2010).

Extant theorizing on the influences to transfer effectiveness investigates the receiving unit as a stand-alone entity that is clearly defined, rather than as an entity with porous boundaries and potentially both susceptible to and dependent on the activities of network actors. Consequently, theorizing on the role of the surrounding network (that is, the network external to the specific transfer dyad) of transfer participants during capability transfers and its effect on transfer effectiveness has received scarce attention. We believe that accounting for what goes on outside the transfer dyad provides an important, although overlooked, perspective that is important for understanding transfer processes' effectiveness. The lack of profound insights into these phenomena warrants an inductive explorative study delving into the role and function of the surrounding network of units engaged in transfer and how this affects transfer effectiveness. Through an explorative approach, this paper expands on what the dyadic perspective on transfer effectiveness entails and opens up for a more contextualized view of transfer processes where the effectiveness of capability transfers in the MNC may be contingent on the characteristics of business relationships in the transfer participants surrounding network.

3. Data and research methods

This paper utilizes a multiple-case methodology (Eisenhardt, 1989; Eisenhardt & Graebner, 2007) in a nested case study (Gibbert & Ruigrok, 2010; Miles & Huberman, 1994). This allows for an in-depth study of the complex dynamics of capability transfers to ongoing subunit innovation projects "in the field" and based on the experience of practitioners (Doz, 2011, p. 586). The inductive multiple-case study is considered suitable for theory development in areas that are less researched (Edmondson & McManus, 2007; Gibbert, Ruigrok & Wicki, 2008). It also has a good fit with the *how* research question of this paper (Eisenhardt & Graebner, 2007; Yin, 2009). This paper thereby utilizes an "inductive theory building" method (Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2011, p.745). It can be understood as implicitly positivist, variable-oriented, replicating, focusing on the convergence of multiple data sources, and setting a study boundary by design (Piekkari, Welch, & Paavilainen, 2009).

3.1. Research setting and sampling

Our object of study, ECV Industries (anonymized), is active in the heavy vehicles industry (e.g., vehicles for farming, mining, construction, forestry, etc.). ECV Industries suits our research focus as capability transfers to subunit innovation projects were considered a vital activity of its headquarters. IRE (Innovation Risk-management Excellence) is a capability transferred from headquarters to subunit innovation projects and had the purpose of harmonizing and improving how innovation projects' work with product quality and risk in research and development (R&D). Specifically, IRE is a way or working (a capability) with product risk-management when developing new products that affects all phases of ECV Industries product development process. It is a method of steps and analyses that, when taken together, is aimed to help an innovation project identify and reduce risk in new products designs. This, in turn, will improve quality as fewer faults will appear as the product is used (since these have been identified and "de-risked" in the work with IRE). More specifically, it highlights the management of product risks (defined as what can go wrong both in the development process and in the finished product) throughout all stages (from early concept development to production), the minimization of risks (through the application of different methodologies and tools such as simulation, risk-spotting meetings, or extreme physical testing), and monitoring, understanding, and agreeing on, any and all remaining risks by various parties within the company. In practical terms, the transfers at ECV

Industries concerned deciding on what capability to transfer, carefully designing a transfer plan, and closely following the capability's transfer to, and adoption at, the different subunits of the MNC.

ECV Industries is a large MNC with over 20,000 employees, and it has globally dispersed R&D operations with substantial activities in more than fifteen countries. The research setting of ECV Industries comprises a rich network context and an excellent laboratory for exploring the influence of surrounding networks of transfer participants on transfer effectiveness. The international and organizational contexts of the MNC offer diversity and complexity that is argued to be suitable for studies aspiring to further develop management theory (Kostova, Roth, & Dacin, 2008; Roth & Kostova, 2003). Using a single MNC as a research context allows keeping the sender fixed (in our case headquarters). In addition, by focusing on how the same capability (called IRE) is transferred to many receiving subunits, we also keep the characteristics of the focal subject to transfer constant. Thus, on the one hand, we can hold a lot of the factors that existing literature has identified as influences to the success of a transfer project constant. Instead, on the other hand, we can create a variation at the recipient end and, more importantly, of the recipient subunit's network that is external to the transfer. That is, we can explore network influences to transfers by our research design. Furthermore, this facilitates investigating the variation in transfer effectiveness (the extent to which the capability has been adopted, i.e., Daft, 1998) in the transfers of the same capability across different subunit innovation projects. Within the single MNC, we use 18 cases of transfer of the same capability to 18 innovation projects (hosted by six subunits) as our units of analysis.

Interviews with headquarter managers were snowball-sampled (Miles & Huberman, 1994) to make sure the managers closest to the transfers were interviewed and had the goal of grasping how headquarters capability transfers to subunits played out. Also, the interviews with headquarter managers helped us to better understand, for example, what the purpose of the transfer was, what the capability was, and how the transfer would be executed. The 18 subunit innovation projects of this study were sampled based on being as comparable as possible. The projects were in similar phases of development, which could otherwise have made comparison difficult. The projects were still ongoing at the time of data collection, which facilitated verifying the effectiveness of capability transfers and interviewing project members about their experiences while still in recent memory. All projects were new product development projects and had comparable cost levels. The differences between the projects mainly concerned their transfer effectiveness and what machines they were developing (combine harvesters, bulldozers, etc.). Besides comparability, we used polar sampling (Eisenhardt & Graebner, 2007), i.e., sampling nine high- and nine low-effectiveness cases to support observing distinct patterns in the data. The transfer effectiveness of the receiving projects was first estimated by headquarters managers in charge of the transfer and later triangulated with project managers and members of the receiving projects. More information on the 18 innovation projects of this study can be found in Table 1.

This paper follows Szulanski (1996) and Ciabuschi, Martín, and Ståhl (2010) by defining a transfer as a concerted effort by which a sender introduces, through a focused transfer process, a specific capability to a specific receiver for a specific purpose. Moreover, transfer effectiveness is operationalized as the extent to which headquarters successfully

Table 1
Overview of sampled innovation projects and data sources.

Project	**East Asia I**	**East Asia II**	**East Asia III**	**North America I**	**North America II**	**North America III**	**West Europe I**	**West Europe II**	**West Europe III**
Project Type	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.
Project Phase	Phase 3 of 7	Phase 4 of 7	Phase 4 of 7	Phase 4 of 7	Phase 3 of 7	Phase 3 of 7	Phase 4 of 7	Phase 4 of 7	Phase 3 of 7
Project Cost[a]	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3
Total Interviews[b]	**8 Interviews**	**8 Interviews**	**7 Interviews**	**9 Interviews**	**9 Interviews**	**8 Interviews**	**5 Interviews**	**6 Interviews**	**6 Interviews**
Project Interviews									
Proj. Manager	3 Interviews	3 Interviews	2 Interviews	3 Interviews	3 Interviews	3 Interviews	1 Interview	1 Interview	1 Interview
Dep. Proj. Manager	1 Interview	1 Interview	1 Interview	1 Interview	1 Interview	1 Interview	0 Interview	1 Interview	1 Interview
Subunit Interviews									
R&D Manager		1 Interview			2 Interviews			1 Interview	
Engineering Manager		1 Interview			1 Interview			1 Interview	
Engineers		2 Interviews			1 Interview			2 Interviews	
Transfer Effectiveness	High	High	High	Low	Low	Low	High	High	High
Project	**North Europe I**	**North Europe II**	**North Europe III**	**South Europe I**	**South Europe II**	**South Europe III**	**East Europe I**	**East Europe II**	**East Europe III**
Project Type	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.	New Prod. Dev.
Project Phase	Phase 3 of 7	Phase 4 of 7	Phase 3 of 7	Phase 4 of 7	Phase 3 of 7	Phase 3 of 7	Phase 4 of 7	Phase 3 of 7	Phase 3 of 7
Project Cost[1]	Class 3 of 3	Class 3 of 3	Class 3 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3	Class 2 of 3
Total Interviews	**6 Interviews**	**5 Interviews**	**5 Interviews**	**7 Interviews**	**6 Interviews**	**5 Interviews**	**7 Interviews**	**5 Interviews**	**5 Interviews**
Project Interviews									
Proj. Manager	2 Interviews	1 Interview	1 Interview	2 Interviews	2 Interviews	1 Interview	2 Interviews	1 Interview	1 Interview
Dep. Proj. Manager	1 Interview	1 Interview	1 Interview	2 Interviews	1 Interview	1 Interview	2 Interviews	1 Interview	1 Interview
Subunit Interviews									
R&D Manager		1 Interview			1 Interview			1 Interview	
Engineering Manager		1 Interview			1 Interview			1 Interview	
Engineers		1 Interview			1 Interview			1 Interview	
Transfer Effectiveness	Low	Low	Low	High	High	High	Low	Low	Low

[a] Company classification where 1 is lowest and 3 is highest.
[b] The interviews focusing on each of the project consists of (1) interviews with the immediate project team (called Proj. Interviews in table above), and (2) interviews with managers and engineers who worked with all three innovation projects. The sum of interviews focusing on a given project thus consists of the project interviews plus the subsidiary interviews in the table above.

manages to transfer a capability, that is, the extent to which the receiving subunit innovation project has adopted the capability compared to the full extent intended by headquarters. This way of operationalizing transfer effectiveness is similar not only to the theoretical definition of effectiveness by Daft (1998), but also to the operationalization by studies of transfer effectiveness in headquarters-to-subunit transfers of capabilities by for example Jensen and Szulanski (2007), Kostova and Roth (2002), and Minbaeva (2007).

3.2. Data collection

To collect data, headquarters managers, as well as managers and members at 18 innovation projects based at six subunits of ECV Industries, were interviewed. These interviews were conducted in 2012, approximately one year after the start of the transfer in order to give the transfer efforts time to transpire before studying influences to its effectiveness. If projects were behind in the adoption of the transferred capability after one year, there would reasonably be factors holding the implementation back (since the transfer was not voluntary but mandated by headquarters), and those factors would be of great interest to understand further. Collecting most data using face-to-face semi-structured interviews allowed for posing follow-up questions, which is particularly valuable when doing exploratory research (Yin, 2009). The questions aimed to elicit the experiences of interviewees rather than capture certain predefined aspects. As a consequence, open questions were asked (see the interview guide in Appendix 3 for further details). The interview data was complemented with ECV Industries' internal documentation on the projects, the capability transferred, and headquarter actions during the transfer.

Specifically, the documents we were given access to outlined what the goal of the transfer was, how the transfer was performed, and what the intended outcomes were. This information allowed us to compare the subunit innovation projects' experiences with the transfer plan as intended by headquarters. The interviews concerned headquarters transfers of a single capability, with a particular weight placed on influences to the transfers' effectiveness. The study comprises 100 face-to-face semi-structured interviews that were on average 55 min long. 28 of these interviews were with headquarters managers, and 72 were with members of innovation projects at six different subunits in five countries across Europe, North America, and Asia. Of these interviews, 81 were allowed to be recorded and subsequently transcribed. The transcribed material and notes comprise approximately 1900 pages of text. The interviews with managers at headquarters focused on activities undertaken during the transfer process and the goals of the capability transfer. The interviews with subunit innovation project managers and project members in the 18 innovation projects were focused on influences on the effectiveness of the capability transfer. The interviews were all conducted methodically and adhered to the same semi-structured interview guide.

3.3. Data analysis

The analysis of this particular qualitative study aims to develop theory (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). We do so by summarizing the data into case descriptions and then identifying common concepts by coding what appears to be challenges to the transfer and transfer effectiveness. We then explain the causal relationships between these concepts or challenges, and by finally stating the relationships between these challenges and transfer effectiveness in the shape of propositions (Thomas, Cuervo-Cazurra, & Brannen, 2011). The steps in analyzing our data are outlined below and illustrated in Fig. 1. As transfer effectiveness was established as a sampling criterion at the onset of the study, it was thereby not the focus of the inductive analysis. However, it was of particular importance for analyzing relationships and postulating propositions (Thomas et al., 2011).

Starting out, we summarized each transfer in a detailed case

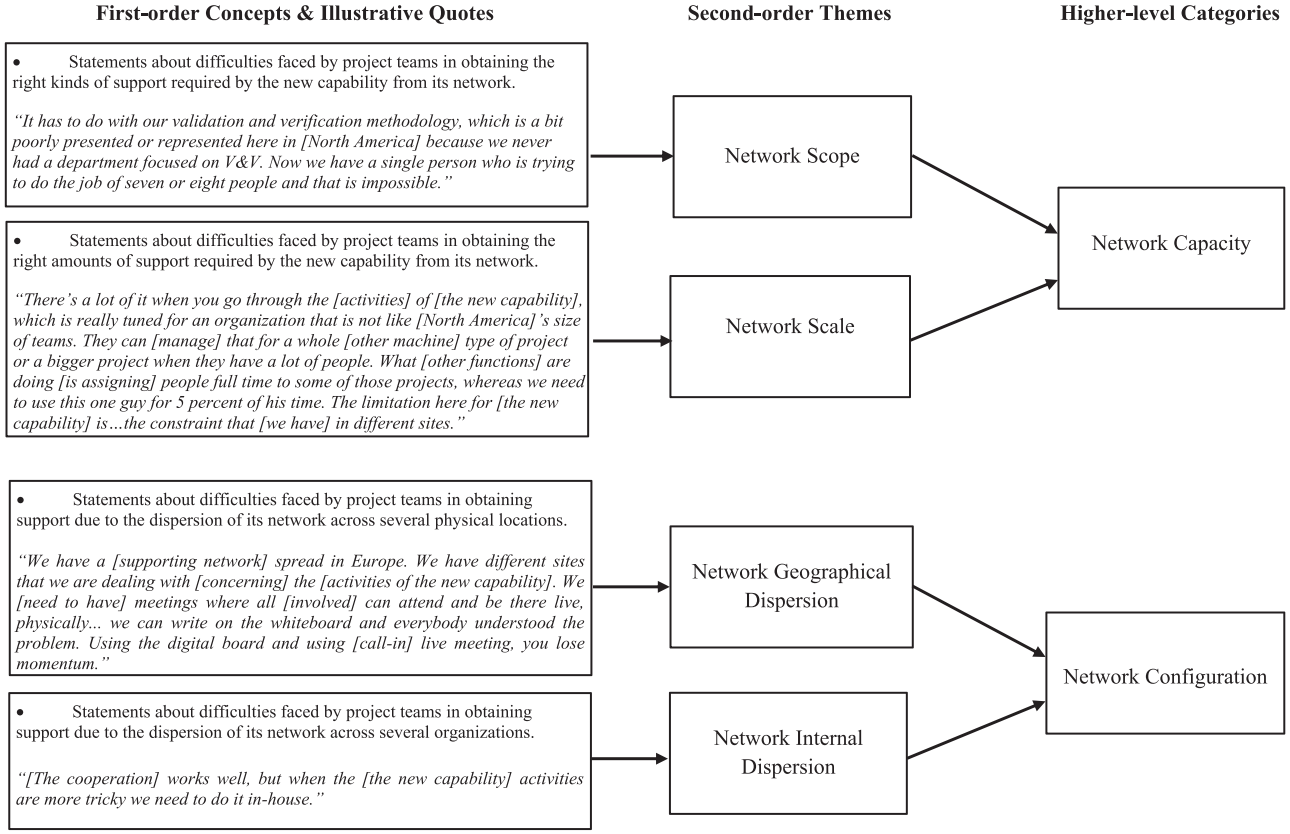

Fig. 1. Inductive data structure exploring network influence on the effectiveness of headquarters transfer of capabilities to subunits the MNC.

description (Eisenhardt, 1989; Miles & Huberman, 1994) which comprised of both the coded interview data and the transfer-related documentation from ECV Industries. Following this step, we follow the procedure and progression of the analysis as outlined by Tippmann, Mangematin, and Scott (2013) from (1) illustrative quotes, (2) how they were labeled with first-order concepts, (3) how codes were aggregated to second-order themes, and (4) how these, in turn, aggregate to higher-level categories. We expand on this analytical procedure in more detail below and illustrate it in Fig. 1.

More specifically, we started the main analysis procedure by applying inductive qualitative practices to make an open coding of our interview data in order to establish first-order concepts. This step was taken as all interviews had been performed and were guided by a focus on coding the interviews case-by-case, looking for influences on transfer effectiveness (Miles & Huberman, 1994). In doing so, we relied on the interviewees' experiences of the transfer (Eisenhardt, 1989) and on the language of interviewees, which allowed for a complete depiction of the study's interview data (Corbin & Strauss, 2014; Tippmann *et al.* 2013).

Early on in this process, it became clear that the influence of networks was a key factor as described by the interviewees. In several projects, there was frustration over the fact that adopting the transferred capability required the support of actors in the internal or external network of the project. These actors, however, were not always equipped to provide such support. Once this became clear, codes that reflected network-related challenges were grouped together to examine the possibilities for axial coding, i.e., to make sense of them together and try to identify similarities between codes.

These codes were then summarized thematically under a set of wider first-order concepts. Examples of first-order concepts are codes relating to statements about difficulties faced by project teams in obtaining the right kind of support required by the new capability from its network.

In the next step of our analysis, we aggregated the first-order concepts into second-order themes (Eisenhardt & Graebner, 2007; Tippmann et al., 2013; Miles & Huberman, 1994) to capture commonalities between the first-order concepts and highlight how different codes seemed to be related. These broader second-order themes each described a certain dimension of the support needed by the innovation project, e.g., the scale or the scope of this support.

An example of this step of analysis is how the open (original) coding suggested that different kinds of abilities – represented by first-order concepts reflecting codes about the lack of so-called "Validation & Verification" (V&V) competences (an advanced product risk-management technique), codes about the lack of more general competences to perform the transferred capability, or codes about the too-small size of the organization – was lacking in the supporting network. These first-order concepts were found to aggregate into two different challenges, which is why we came up with the second-order themes of "network functional scope" (capturing challenges relating to what the network could support with – e.g., V&V and other competences), and "network functional scale" (capturing challenges relating to how much the network could support – i.e., the size of supporting networks as compared to what was needed).

In the third step of our analysis, we grouped the second-order themes into higher-level categories, alternating back and forth between the second-order themes that emerged from our interview data and what we found to be the essence of these themes, i.e., what they essentially were representations of (Corbin & Strauss, 2014; Miles & Huberman, 1994; Tippmann et al., 2013). Examples of these are our higher-level categories of network capacity and network configuration.

Having analyzed the interview data using the procedure described above, we made a cross-case analysis (Eisenhardt, 1989; Miles & Huberman, 1994) that compared and contrasted cases with high and low transfer effectiveness. The cross-case analysis aimed to identify similarities and differences between the two groups of cases to make the connection between certain factors or influences on the one hand and high or low transfer effectiveness on the other. The cross-case analysis aims to explain transfer effectiveness based on patterns of influences visible across the cases. In doing so, we follow Santos and Eisenhardt (2009) in illustrating the relative degree of high or low network capacity and configuration experienced by the receiving innovation projects (see Table 2).

Table 2
Cross-case overview of findings of network influences on the effectiveness of headquarters-to-subunit transfer of capabilities.

	Network Capacity	Network Configuration	Transfer Effectiveness
East Asia I	High (+ +)	High (+ +)	High
East Asia II	High (+ +)	High (+ +)	High
East Asia III	High (+ +)	High (+ +)	High
North America I	Low (- -)	Low (-)	Low
North America II	Low (- -)	Low (-)	Low
North America III	Low (-)	Low (-)	Low
West Europe I	High (+ +)	High (+)	High
West Europe II	High (+ +)	High (+)	High
West Europe III	High (+ +)	High (+)	High
North Europe I	Low (- -)	Low (-)	Low
North Europe II	Low (-)	Low (- -)	Low
North Europe III	Low (-)	Low (- -)	Low
South Europe I	High (+ +)	High (+)	High
South Europe II	High (+ +)	High (+)	High
South Europe III	High (+ +)	High (+)	High
East Europe I	Low (-)	Low (-)	Low
East Europe II	Low (-)	Low (-)	Low
East Europe III	Low (-)	Low (-)	Low

Table 2 summarizes the findings and illustrates how the project teams which relied on supporting networks that were not able to aid them experienced low effectiveness in the transfer of the new capability by headquarters. This is contrasted against those projects whose supporting network was able to provide adequate help in the transfer and who experienced high effectiveness in the transfer of the new capability from headquarters. Moreover, the table illustrates how these experiences of receiving project teams also were relatively similar within subunits. This is reasonable as the findings showed that the project teams at each subunit relied on the same supporting networks. Lastly, following the example of Santos and Eisenhardt (2009), we also illustrate the degree of network-related challenges encountered (-), or not encountered (+), by the different project to provide a sense of the variation as described by the interviewed project teams.

Validity was achieved by several measures taken as part of the analytical process. First, the data has been collected in interviews personally performed by the authors, triangulated within each project, and/or with managers at each subunit. Second, we also interviewed project members from various hierarchical levels and who therefore potentially experience the transfer somewhat differently – which reduces the risk of retrospective sense-making and impression management (Eisenhardt & Graebner, 2007; Gibbert, Ruigrok, & Wicki, 2008; Yin, 2009). Interviewing both project team members and subunit managers allows for triangulating answers and improves construct validity (Gibbert et al., 2008; Yin, 2009). Third, the coding process has been inspected by fellow researchers not associated with this paper yet who had the methodological expertize to scrutinize it. Fourth, in the discussion, the findings are linked to research that covers related research themes (Eisenhardt, 1989). Lastly, to more clearly outline and support the theoretical contributions of this paper, we discuss both the identified constructs and their discovered relationships with transfer effectiveness, i.e., we attempt to explain both 'the boxes' and 'the arrows' (Thomas et al., 2011).

4. Findings

4.1. The challenges of supporting network capacity

While the innovation projects intended as the receivers of the transferred capability were fully responsible for their own operations, they generally were found to rely on a network of internal and external experts, consultants, teams, and engineering companies for specialized advice or services to support them in the transfer. This network will henceforth be referred to as a "supporting network". One overarching factor influencing the transfer's effectiveness lay with the overall capacity of the receiving projects' supporting network to aid the subunit in adopting the new capability.

The supporting networks of some projects were found to face challenges that emanated from their specific characteristics. The first of these challenges, the challenge of network capacity, captures the influence on transfer effectiveness of the capacity of supporting networks, specifically in terms of their functional scale and scope, to aid projects in the transfer of the new capability. The capacity of a project's supporting network negatively affected transfer effectiveness when the projects' networks experienced difficulties in coping with their supporting roles. Projects that relied on a network that was relatively unsuited for the new capability requirements with regard to support experienced transfer effectiveness problems that were not experienced by projects whose supporting networks were comparatively better suited for this kind of support.

The low-effectiveness East Europe I project suffered an acute lack of support from its network. The project members were experiencing difficulties in the transfer of the new capability. They could not get the kind of innovation support they needed – (V&V) support – from their supporting network. In turn, this was because neither the project team nor its supporting network had worked this way as part of their earlier cooperation. These difficulties are reflected in the following quote by a member of the project:

> "[For the new capability] we need more V&V support. It is a critical shortfall. For [our project] we did not have V&V support until after it was required by [the new capability]. Now [North America] [which has the same problems] is helping us with V&V. And we need [other] support as well."

The quote illustrates a transfer case where the supporting network of a project lacked the capacity in terms of the functional expertize in V&V which was needed to support the transfer. Accordingly, there are indications that a lack of network capacity led to a decrease in networks' abilities, but not willingness, to support their projects in the transfer of the new capability. This, in turn, seemed to not have been realized by headquarters, causing low transfer effectiveness. In contrast to the low transfer effectiveness projects, the high transfer effectiveness projects expressed no difficulty in obtaining the required capacity of support from their networks. The supporting networks of the innovation projects in ECV Industries revealed two dimensions of network capacity that made up the influenced transfer effectiveness in the transfer of the new capability: network functional scope and network functional scale.

4.1.1. Network functional scope

First, the findings indicate that an inadequate network scope constituted a critical obstacle to supporting the transfer of the new capability. Specifically, network functional scope refers to challenges arising from situations where the supporting network does not possess the full range of functional expertize required to aid the project team in the transfer. One example of such a situation is the one experienced by the supporting network of the low-effectiveness North America I project whose functional ability to support the project team in the transfer of the new capability was severely limited because of a lack of specific technical functions that were critical to the transfer. The reason for this was that the project team and its supporting network had never cooperated on such functions before. This was pointed to by an engineer in the supporting network of that project:

> "It has to do with our V&V methodology, which is a bit poorly presented or represented here in [North America] because we never had a department focused on V&V. Now we have a single person who is trying to do the job of seven or eight people and that is impossible."

This quote illustrates the lack of network functional scope in terms of V&V. The main point here is that "*because we never had a department focused on V&V*". V&V, however, is needed to adopt IRE, which is why this is a problem.

Contrastingly, the high-effectiveness projects had few problems, if any, with the functional scope of network support. Therefore, the findings indicate that if a project team suffers from a lack of specific supporting technical functions, this may lead to the project members facing challenges in the transfer of the new capability, and subsequently to lower transfer effectiveness.

4.1.2. Network functional scale

The second manifestation of network capacity that was found to pose a challenge to the supporting networks ability to aid project teams in the transfer of the new capability across the innovation projects at ECV Industries, and thereby influence the effectiveness of the transfer, was the dimension of functional scale of the supporting network.

Transfer problems that were caused by the functional scale of the teams in the receiving projects' supporting networks were essentially an issue of the teams not being able to support due to insufficient numbers of personnel or size of operations. Specifically, network scale here refers to whether the supporting network of an innovation project has the needed scale in the functions needed to support the transfer. For example, sufficient scale in V&V would imply a sufficient number of people with expertize in V&V to be able to support the innovation project in question in the transfer of IRE. The transfer of the new capability was found to require much more extensive cooperation between the receiving innovation project teams and their supporting network partners than had their earlier ways of working. This was a major change and a challenge in some cases, as pointed to by a member of the low-effectiveness North America II project:

> "There's a lot of it when you go through the [activities] of [the new capability], which is really tuned for an organization that is not like [North America]'s size of teams. They can [manage] that for a whole [other vehicle] type of project or a bigger project when they have a lot of people. What [other functions] are doing [is assigning] people full time to some of those projects, whereas we need to use this one guy for 5% of his time. The limitation here for [the new capability] is…the constraint that [we have] in different sites."

The functional scale of the supporting network thereby posed a challenge to the effectiveness of transfers arising from situations where the network functions were not large enough to support the innovation projects in adopting the new capability. In essence, this was caused by the external supporting engineering functions being required to play roles in relation to the projects that were on an unprecedented scale and to which it was not well adapted.

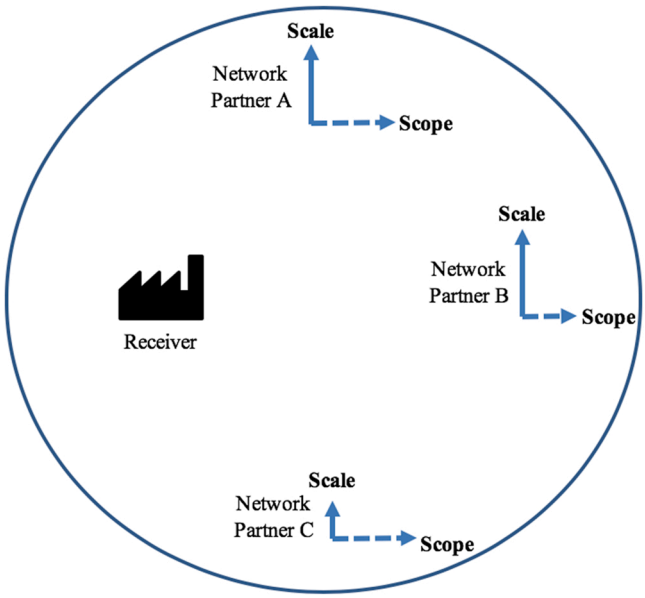

Fig. 2. Illustration of the considerable variation in scale and scope among the recipient's network partners in the transfer of the capability. Fig. 2 illustrates how the receiver was relying on network partners who had varying capacity, in terms of scale and scope, to support it in the transfer of the capability. In the illustration, network partner A has adequate scale and scope (long arrows) to support the receiver in the transfer. Conversely, network partner B has adequate scale but inadequate scope (short arrow), while network partner C has inadequate scale but adequate scope, and thereby both encountered difficulties in supporting the receiver as discussed in the findings above.

4.1.3. *Summarizing network capacity*

The challenge of network capacity indicates how the dimensions of capacity, in terms of functional scale and scope, of the receiving projects' supporting networks were important influences on the effectiveness of the transfer of the new capability across the ECV Industries innovation projects. Appendix 1 presents additional data on the dimensions of network capacity. Fig. 2 illustrates the variation in scale and scope of recipients' networks.

4.2. *The challenges of supporting network configuration*

The challenge of network configuration refers to the dispersion of the network in either being geographically distant from the innovation project it was supporting, or being organizationally separated by being part of another firm. This challenge captures how the adoption of the new capability required much coordination between projects and their supporting networks, and how difficulties in coordination negatively influenced transfer effectiveness. Specifically, a higher dispersion of a project's supporting network negatively affected transfer effectiveness by presenting a more complicated environment in which to coordinate the new capability compared to projects whose supporting functions were less dispersed. The project teams that experienced coordination problems associated with the dispersed configuration of their supporting network in adopting the new capability all experienced low transfer effectiveness. More specifically, such problems were found to emanate from network support activities being internally dispersed throughout the ECV Industries R&D organization as well as externally dispersed among various engineering firms.

The low-effectiveness North America I project was suffering from the challenges to the coordination of the new capability posed by the dispersion of their supporting network. This project faced a situation where the engineers of the functions supporting the transfer of the new capability in their project were stationed at several different R&D sites. This, in turn, made the coordination of their work and ongoing problem-solving concerning the transfer considerably more difficult. This challenge is reflected in the following quote by a member of that project:

> "For a certain support [function] you might have a guy who is a [ECV Industries] guy and who is locally based and two other guys that are non-[ECV Industries] guys and that are in [South Asia], which is putting again a lot of additional complexity in delivering what has to be delivered." "When they are not physically in the same location, you have all the complexity of not being on the same site, which makes it more difficult."

This quote suggests that the people involved in supporting the innovation project in the transfer are dispersed geographically (some locally in the U.S, others in South Asia), as well as organizationally (two non-ECV Industries people, one ECV Industries-person) and that not being physically in the same location or part of the same firm makes supporting the transfer more difficult. The supporting networks of the low-effectiveness innovation projects at ECV Industries revealed two dimensions of network configuration that were indicated to influence the coordination negatively, and thereby the transfer effectiveness, of the new capability: network geographical dispersion and network external dispersion.

In contrast to the situation facing the low-effectiveness projects, the high-effectiveness project teams faced no coordination problems arising from the structure of their internal or external supporting networks, as these were either all present with their own offices at the R&D site, as was the case in East Asia, or the external supporting network engineers traveled to the site, as in the cases of West Europe and South Europe.

4.2.1. *Network geographical dispersion*

The first dimension of the configuration of a project's supporting network that has been shown to make coordination more difficult was the relative geographical dispersion of the network. Supporting networks whose engineers were dispersed between different R&D sites were shown to have greater difficulties in coordinating the changes necessary to switch to the new capability.

An example of how network configuration sometimes posed a challenge to the coordination of the new capability was experienced by a project team whose supporting network was geographically dispersed to several R&D sites, and who had not managed to get effective training and therefore had difficulties in adequately supporting the efforts to adopt the new capability in the receiving innovation project. This situation is reflected in the following point made by a member of the low transfer effectiveness East Europe I project:

> "We have two people supporting from [North America], three from [South Asia], and two from [Eastern Europe], which [for example] makes it difficult in training, which we need to have more of."

4.2.2. *Network external dispersion*

The second dimension of network configuration that was found to influence the effectiveness of the transfer of the new capability to the innovation projects of ECV Industries by posing coordination problems was the extent to which the projects' supporting networks were externally dispersed. The potential problem with networks' external dispersion in relation to the transfer of the new capability was that this dispersion made coordination of the transfer difficult since it involved not only sister units within ECV Industries but also external firms. The external dispersion of activities that support innovation projects creates unique problems for coordinating these activities, as they reside outside the firm's formal boundary. When critical activities needed to support the transfer of the new capability reside in another firm, it can cause challenges, since the visibility and availability of external network engineers may be limited at the same time as access to training their

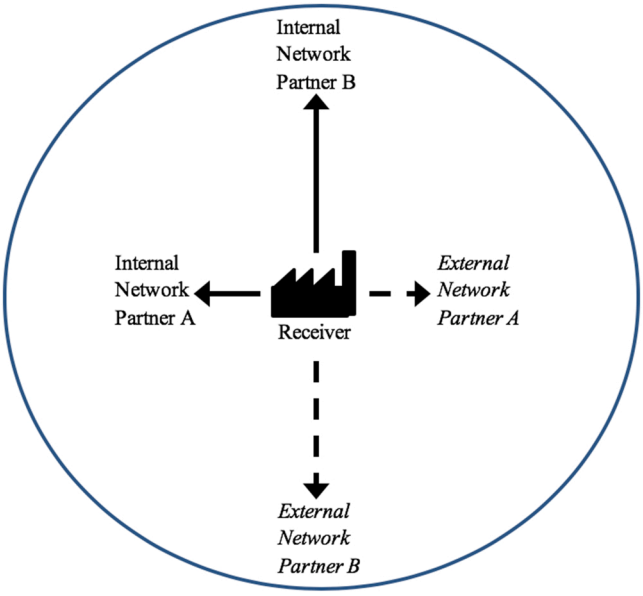

Fig. 3. Empirical illustration of the configuration of the network partners in terms of near/far (length of arrows) and internal/external to the MNC. Fig. 3 illustrates how the receiver was relying on network partners that were dispersed in terms of being both internal (see internal network partners A and B) as well as external (see external network partners A and B) to the MNC. Moreover, and as illustrated by the varying lengths of the arrows leading from the receiver, the different network partners (both internal and external to the MNC), were geographically more or less distant from the receiver. These two kinds of dispersion were found to present challenges to the transfer of the capability as discussed in the findings above.

engineers and coordinating other transfer activities may be particularly difficult.

Coordination problems caused by the external dispersion of innovation projects' supporting networks were related to the receiving subunit having outsourced activities connected to the new capability to external partners. This was seen as a major challenge by an engineer from the supporting engineering functions of the low transfer effectiveness North Europe I project:

> "[The cooperation] works well, but when the [the new capability] activities are more tricky we need to do it in-house."

4.2.3. Summarizing network configuration

The challenge of network configuration indicates how the high or low degree of dispersion, both geographically and externally, of the receiving projects' supporting network affected its ability to support the project teams in the transfer of the new capability, thereby influencing transfer effectiveness. Appendix 2 presents additional data on network configuration. Furthermore, Table 2 encompasses a cross-case overview of the findings. Fig. 3 visualizes the dimensions of network configuration.

5. Discussion

5.1. The challenge of network capacity

The findings indicate that receiving project teams whose supporting networks' capacity, in terms of the capacity dimensions scale and scope of operations, did not correspond to the requirements for support of the new capability also experienced low transfer effectiveness. These findings provide an important example of how we might look beyond the dyadic approach towards a network approach for understanding influences to transfer effectiveness. The findings also indicated that low network capacity led to low transfer effectiveness because it left projects without critically needed support and unable to perform activities necessary for the adoption of the new capability.

These findings suggest that the correspondence between the receiving projects' supporting networks' scale and scope of operations on the one hand, and the requirements of the new capability on the other hand, influenced transfer effectiveness by affecting the level of support received by the project teams when trying to adopt the new capability transferred by headquarters. This, in turn, suggests that the context presents unique features in terms of a critical variation in the capacities of subunit networks to support the transfer and adds further complexity to our understanding of the challenges of capability transfers in MNCs.

More specifically, the findings concerning network capacity finds support in related research on innovation, on capabilities, and business networks. Helfat and Peteraf (2003) argued that a capability is the sum of its constituent parts or activities. The reliance of innovation projects on supporting networks, in turn, as pointed out by Westney and Sakakibara (1986), suggests that the complex nature of innovation sometimes requires the integration of specialist activities from a wide range of cooperating sources and that changes of capabilities, for example through transfers, may upset such arrangements.

Additionally, and specifically mirroring the findings on network functional scale, a new capability may have certain requirements, such as a certain scale of support, for it to be able to generate its intended results (Winter, 2000). Research suggests that different capabilities, although they may serve similar purposes, may affect the resources required to innovate by utilizing very different amounts of resources (Helfat & Peteraf, 2003). This leads us to propose the following:

Proposition. 1A: The greater the correspondence between the scale of support required by the transferred capability and the characteristics of the receiving subunit's supporting network, the higher the transfer effectiveness.

Moreover, and with relevance for the findings on network functional scope, the link between parties' adaptation to each other's activities and needs, on the one hand, and their successful collaboration, on the other, has been emphasized in research on business networks (Holm, Johanson, & Thilenius, 1995). However, making changes to this kind of specialized collaboration – such as changes to the scope of the collaboration due to the adoption of a new capability – could pose a challenge to those collaborations or to the possibilities of successfully managing the transfer (Forsgren, Holm, & Johanson, 2005). This reasoning leads to the following proposition:

Proposition. 1B: The greater the correspondence between the scope of support required by the transferred capability and the characteristics of the receiving subunit's supporting network, the higher the transfer effectiveness.

5.2. The challenge of network configuration

The challenge to transfer effectiveness referred to as network configuration captured the coordination problems facing project teams whose supporting networks were geographically and externally dispersed and who also experienced low transfer effectiveness. This presents another example of how looking beyond the dyad of sender and receiver and also consider the network of the recipient may help expand understanding of what influences effectiveness of transfers in MNCs.

These challenges to the effectiveness of the transfer were found to emanate from network support activities that were geographically dispersed throughout the MNC and externally dispersed through cooperation with specialized engineering firms.

The above findings suggest that the geographical and external configuration of an innovation projects' supporting network influences transfer effectiveness by affecting the ability to coordinate the activities

of the new capability. In turn, this seemed to be difficult for headquarters to handle the transfer and thereby adds to research on how the context of the MNC may cause important challenges to transfers.

This analysis of the findings concerning the configuration of projects' supporting networks and resulting challenges finds support in related literature as relationships with units outside of the formal boundaries of the firm have been found to play important roles in innovation (Forsgren, Holm, & Johanson, 2005; Hedlund & Nonaka, 1991). Although this has not previously been discussed in relation to effectiveness in headquarters transfer of capabilities to subunits, research on global value chains has found that the configuration of interconnected activities makes their coordination more difficult as dispersion reduces overview or managerial (headquarters) visibility (Lynn, 2005). Similarly, flexible and low-cost supply chains have been found to be particularly prone to suffer break-downs when demands change (Yamin, 2011). Mirroring the challenges of network geographical dispersion highlighted in the findings is literature discussing other but similar phenomena. The configuration of networks has been found to make coordination difficult in other contexts. For example, teams whose members are geographically dispersed have been found to face more conflicts and problems detrimental to performance than more concentrated teams (Armstrong & Cole, 2002; Hinds & Bailey, 2003).

Moreover, collaborations that surround specific innovations are sometimes connected to the capabilities currently employed. Therefore, replacing a capability may lead to a lack of fit between the new capability and the structure of these collaborations (Helfat & Peteraf, 2003). Consequently, we propose:

Proposition. 2A: The greater the geographical dispersion of the receiving subunits' supporting network, the lower the transfer effectiveness.

Echoing our findings of the internal and external dispersion of supporting functions is research on how innovation often relies on the widespread integration of different units' skills (Brown & Eisenhardt, 1995; Clark & Fujimoto, 1991). Furthermore, externally dispersed value chains have often been slower to respond to changes than concentrated supply chains because of the challenges to coordination posed by the dispersion of related activities (Lee, 2004). This line of argument leads to the following proposition:

Proposition. 2B: The greater the external dispersion of the receiving subunits' supporting network, the lower the transfer effectiveness. Fig. 4. illustrates the propositions made in a conceptual model.

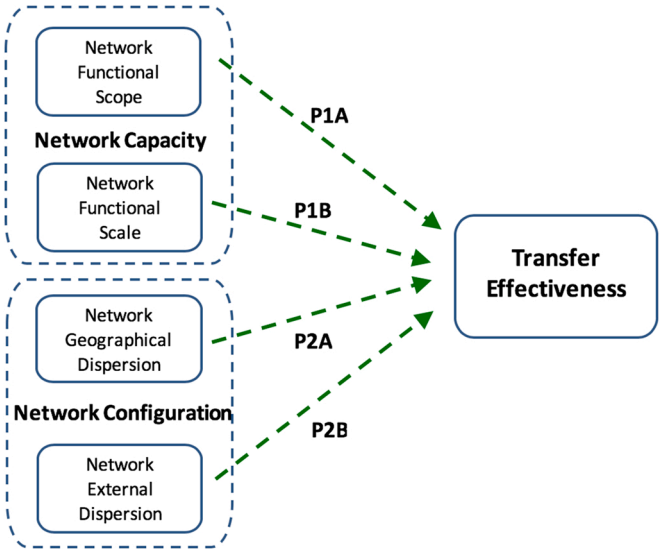

Fig. 4. Conceptual model.

5.3. Theoretical implications

The findings introduce two general factors and four specific dimensions relating to the supporting networks of the subunits that have not previously been discussed in relation to effectiveness in headquarters capability transfers to subunits in the MNC. Specifically, the factor of network capacity with its dimensions of network functional scale and scope, and the factor of network configuration with the accompanying dimensions of network geographic and external dispersion. Identifying these factors widens the influences on transfer effectiveness from predominantly focusing on the characteristics of the sender, the receiver, their relationship, and the capability being transferred to also encompass the influence of recipient subunit networks.

Our findings suggest that it is necessary to question the common tendency to focus exclusively on the sender-receiver dyad when studying transfers within the MNC. They moreover indicate that the supporting networks of the receiving subunit can pose difficult-to-solve challenges to transfers, as such networks often are highly specialized and change slowly (Forsgren, Holm, & Johanson, 2005). Thus, important attributes of the receiving organization conducive for the effectiveness of dyadic transfers are sometimes found to lie beyond the dyad and even beyond the formal boundary of the MNC. These findings move the focus of the transfer out of the traditional dyad of sender-receiver and suggest that the receiving unit is sometimes not so much a unit as a network. Thus, the study identifies specific challenges to transfers emanating from recipients' networks – network capacity in terms of scale and scope, and network configuration, in terms of geographical and external dispersion. This challenge to transfer effectiveness has not been previously discussed in the literature on transferring capabilities to subunits (e.g., Jensen & Szulanski, 2007; Kostova & Roth, 2002; Minbaeva, 2007).

This implies that the concept of the 'receiver' is sometimes arbitrary and may be misleading depending on the transfer projects' reliance on external networks, as the subunit then is not necessarily the sole recipient of the transfer, as some activities required by the transferred capability are supported, or even performed, by network actors. Put differently, the network actors connected to the subsidiary may perhaps better be viewed as part of the transfer's 'receiver' as these network actors directly influence the ability of the subsidiary to adopt the transferred capability by providing critically important support. Moreover, the challenges of network capacity and configuration are related to the idea of how networks that consist of long-term collaborations with specific purposes may become path-dependent and thereby difficult to change (Forsgren, Holm, & Johanson, 2005). As network relationships are unique to specific actors, we observe that headquarters capability transfer to each subunit is a specific challenge that, in some cases, is impeded and, in other cases, facilitated due to network characteristics beyond the recipient unit's qualities. From the view of headquarters' managers, this poses difficulties in foreseeing the potential effectiveness and variation between recipient units (e.g., Forsgren, Holm, & Johanson, 2005; Holm et al., 1995).

Altogether, our findings indicate that the influences on transfer effectiveness identified in this study are essentially outcomes of different interfaces between the new capability and the receiving networks. More specifically, the network influences proposed in this paper capture the extent to which the ability of network actors to cope with the requirements placed upon them by the new capability.

Therefore, this perspective provides a framework for thinking about transfer effectiveness in headquarters capability transfer to subunits as taking place in a system rather than in a dyad. Drawing on Nadler and Tushman's (1980) work, transfers could thereby be viewed through the lens of 'congruence systems'. This would imply explaining variation in transfer effectiveness by capturing specific issues of correspondence between what is transferred, on the one hand, and the receiving system as a whole, on the other. The central premise of such a congruence model is that for any organization to function effectively, there must be consistency – that is, congruence – between its sub-components.

Therefore, a congruence model displays a relatively high or low level of congruence as a consequence of the correspondence between the underlying components, in this case, between (i) the subunits supporting network and (ii) the requirements of the new capability being transferred.

In sum, the findings of this paper contribute to the literature by identifying the extra-dyadic influences of network capacity and configuration and their specific dimensions emanating from recipient networks. These influences have been insufficiently addressed in research as challenges of the context's complexity when investigating transfers of capabilities to subunits. It thereby adds fresh insights to the nascent literature on the complexity of managing transfers in the context of the MNC and points of departure for integration in future theorizing and empirical studies of effectiveness in headquarters transfer of capabilities to subunits as occurring in systems rather than in dyads. Lastly, this paper identifies and unpacks dimensions of network influence on effectiveness in headquarters-subunit capability transfers and suggests how the propositions put forth may be operationalized in future survey-based quantitative studies (as outlined in Appendix 4).

5.4. Managerial implications

This study's managerial implications can be understood as a question of pre-empting challenges to the effectiveness of transfers. This, in turn, involves meticulous planning and a thorough study of what challenges subunits networks may expect to come up against in the course of capability transfers. In practice, this means reaching out to key individuals in subunits with deep knowledge of both headquarters plans for the transfer and the specific subunit networks that make up the context in which the transfer will ultimately take place. Having gained insight into these networks, headquarters may then take measures to strengthen the networks critical to the subunit's ability to adopt the new capability. In fact, our findings show that this is a crucial managerial undertaking during the transfer process: unless supportive network actors can be identified and used, transfer effectiveness may be hampered. The challenge to ensure this support is specific to each subunit's project and supporting network.

6. Conclusion

This paper sheds light on the influence of networks on headquarters capability transfers to subunits in the context of the MNC, with particular emphasis placed on the effectiveness of the transfers. The reliance on this type of long-term relationships characterized by mutual adaptation is common to the literature on business networks (Forsgren, Holm, & Johanson, 2005). Networks have previously been discussed as facilitators of transfers (Tortoriello, Reagans, & McEvily, 2012), to increase the effectiveness of transfers to subunits involved in them (Minbaeva, 2007), and as challenges to headquarters involvement in transfers between subunits (Ciabuschi, Dellestrand, & Kappen, 2011a, 2012). However, there has been little research on how networks influence effectiveness in headquarters transfers of capabilities to subunits (Jensen & Szulanski, 2007; Kostova & Roth, 2002; Minbaeva, 2007). Instead, this research has almost exclusively focused on the dyad of sender and receiver (e.g., Jensen & Szulanski, 2007; Minbaeva, 2007). This is an intuitive focus, considering how the phenomenon is characterized as comprising one sending unit and one receiving unit. However, although several researchers have suggested the need to capture the influence of the context of transfers (Schleimer & Pedersen, 2014; Verbeke, Bachor, & Nguyen, 2013), they have often referred to the cultural or institutional environment in which the transfer occurs rather than to issues such as networks (Kostova & Roth, 2002).

6.1. Limitations

While a small sample is suitable for exploratory multiple-case study research that attempts to extend theory on a phenomenon, additional study of influences on the effectiveness of headquarters transfers of capabilities to subunits in the MNC could benefit from using larger numbers of transfer cases that also span multiple companies and industries. Furthermore, the study on which this paper is based can be viewed as restricted in terms of the time of the study in the process of headquarters transfers. This temporal issue comprises a potential limitation of this study as well as suggests the benefit of doing longitudinal studies capturing how network influences potentially evolve over time.

6.2. Future research

The finding of how networks may critically influence the effectiveness of capability transfers to subunits suggests several avenues for future research. Specifically, it indicates that studies underlining not only the capability of headquarters to manage, or the ability of the receiving subunit to adopt, but also of the ability of subunit networks to support such a capability transfer may further investigate how potentially also other extra-dyadic influences, such as perhaps customers and suppliers, may influence transfer effectiveness. For example, it is not unreasonable to contemplate that, due to its position of being simultaneously detached from, yet responsible for coordinating, the day-to-day operational activities of subunits, headquarters in the MNC may sometimes suffer from a lack of insight into the details of subunit operations. This is seen as constituting a promising future research avenue. It opens up questions of what is assumed about headquarters' ability to initiate and manage transfers, thereby adding to an already challenging role of MNC headquarters. Another interesting agenda for future research is to investigate how dyadic transfer factors, which have been at the core of the analyses of received research, interact with network factors of the subunits on the effectiveness of the dyadic transfer process. Such an approach may identify the relative importance of the impact of the network factors of subunits' in relation to the importance of dyadic features of the transfer partners.

Declarations of interest

None.

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Appendix 1. The challenge of supporting network capacity

Project	North America I	North America II	North America III	North Europe I	North Europe II	North Europe III	East Europe I	East Europe II	East Europe III
D E S	The project team was experiencing	This project team was also suffering from	The supporting network of this project also	The project team had been experiencing	The project team had been experiencing	The project team had been experiencing	This project team was critically	This project team relied on the same	This project team relied on the same

(continued on next page)

(*continued*)

Project	North America I	North America II	North America III	North Europe I	North Europe II	North Europe III	East Europe I	East Europe II	East Europe III
CRIPTION	considerable problems with parts of their supporting network, which in some functions (such as Validation & Verification) had far too few specialists given the amount of work required by the new capability.	a lack of sufficient support for Validation & Verification, which was found to be critical for the transfer of the new capability.	suffered from having too few engineers in some functions, but was working on recruiting more. However, this was difficult for many functions.	problems with their supporting networks' ability to support the adoption of the new capability.	problems with their supporting networks' ability to engage in supporting them in the adoption of the new capability.	difficulties in adopting the new capability. as their supporting network did not seem to have the ability to support them adequately.	lacking several kinds of expertise that it needed to adopt the new capability.in its supporting network.	supporting networks as the other East Europe projects. Yet since they had left other projects to pilot the adoption of the new capability, they had not yet seen the ability of their supporting network to support them in adopting the new capability.	supporting networks as the other East Europe projects. Yet since they had left other projects to pilot the transfer of the new capability, they had not yet seen the ability of their supporting network to support them in adopting the new capability.
INDICATIVE QUOTE	"It has to do with our validation and verification methodology which is a bit poorly presented or represented here in [North America] because we never had a department focused on V&V. Now we have a single person who is trying to do the job of seven or eight people and that is impossible."	"The bad thing is especially for [the new capability] which is driven by V&V. We have one guy for V&V [support] and I assume this is a new guy but who has been placed a few months and we have, I don't know, fourteen projects."	"We were able to hire two senior [engineers] with eighteen and twenty years that I'll say [are] pretty experienced. They've got some scars to show from lessons learned and they came in and were able to pick it up and run with it. Some of the other [functions] hired new people with no experience with [heavy vehicles] and no experience with [ECV Industries capabilities]."	"We had to put [the new capability] on ice because we didn't have the competence out in the [supporting organization]." "Because the project is totally reliant on the [supporting organization's] competence."	"There is a mismatch between the ambition and the facts of life out in the [supporting] organization." "We have been trying to have signatures on the [the new capability] for seven months out of the people that are supposed to sign up."	"Here, I think, we have some major problems though that is really based on that the [supporting organization] takes responsibility for the things and develop a set of rules for how do we do this, and this has not happened fully yet."	"We need more V&V support. It is a critical shortfall. For [our project] we did not have V&V support until after it was required by [the new capability]. Now [North America] is helping us with V&V. And we need [other] support as well."	N/A	N/A

Appendix 2. The challenge of supporting network configuration

Project	North America I	North America II	North America III	North Europe I	North Europe II	North Europe III	East Europe I	East Europe II	East Europe III
DESCRIPTION	The external dispersion of the supporting network of this project was seen as creating situations where the support itself became more difficult.	The supporting network of this project had difficulties supporting the project in performing some of the activities of the new capability since their most experienced	The supporting networks of this project also echoed the problems of having to rely heavily on external personnel as this created experience shortages on-site, which in turn made	The supporting network of this project was geographically dispersed across Europe, which was seen as causing coordination problems in the transfer of the new capability.	This project team was relying on several other projects and their networks for support in several activities of the new capability. But due to changes made by other projects, these	This project team was also relying on several other projects in several activities of the new capability. But due to the difficulty of coordinating these projects, the activities were not	This project team had problems in making sure the supporting network was trained in the new capability, as they were dispersed across several R&D sites.	This project team relied on the same supporting networks as the E. Europe I project. Yet since they had left other projects to pilot the transfer of the new capability,	This project team relied on the same supporting networks as the E. Europe I project. Yet since they had left other projects to pilot the transfer of the new capability,

(*continued on next page*)

(*continued*)

Project	North America I	North America II	North America III	North Europe I	North Europe II	North Europe III	East Europe I	East Europe II	East Europe III
		personnel was external and therefore sometimes unavailable.	performing certain activities problematic.		activities were cancelled, which made the project unable to adopt the new capability.	possible to perform as intended.		they had not yet experienced any effects of the dispersion of their supporting network.	they had not yet experienced any effects of the dispersion of their supporting network.
INDICATIVE QUOTE	"For a certain support [function] you might have hire a guy who is an [EVC Industries] guy and who is locally based and two other guys that are non-[EVC Industries] guys and that are in South Asia, which is putting again a lot of additional complexity in delivering what has to be delivered." "When they are not physically in the same location, you have all the complexity of not being on the same site, which makes it more difficult."	"You have got to, again, have people that are experienced enough to perform the [activity] on a specific system or component to use it." "We have a lot better experience-level with [external personnel] on the [specific vehicles] projects. Most of that experience is in [South Asia] now."	"What we're doing here in North America is we're maintaining a very unhealthy ratio of full time employees on site and [external personnel]. It robs us of opportunity to develop experience at the site." "I think we have an average experience of four and a half years or something, which is not very healthy."	"We have a [supporting network] spread in Europe. We have different sites that we are dealing with [concerning] the [the new capability]. We [used to have] meetings where all [involved] could attend and be there live, physically. we could write on the whiteboard and everybody understood the problem. Using the digital board and using [call-in] live meeting, you lose momentum."	"We were going to cluster [the new capability] with [other projects and their networks]. That's fine. Good plan. Solid plan. But in the voyage suddenly [project X] decides that they were going to put [innovation X] on hold. Then [project Y] said, 'we are going to put [innovation Y] on hold'. Then we were dead."	"There are different opinions how we should conduct this [new capability]. We have a number of [technical] concepts for different machines." "So at the moment…, for [Project Z] we only have one technical concept available out of what should be 5 or 6." "The one big discussion point is that in [the new capability]… you should take all these decisions once [and for all]."	"We have two people supporting from [North America], three from [South Asia], and two from [Eastern Europe], which [for example] makes it difficult in training [for the new capability], which we need to have more of."	N/A	N/A

Appendix 3. Interview guides

Open-ended Questions: Innovation project teams

Introduction

This was an important part of the interview as it relied on the candor of the respondents. It was especially important for me to make clear the issues below:

- Who I, the interviewer, am and why I was there
- Who the respondent is and what he/she does
- How the data will be used and the respondent's anonymity ensured
- Whether I had the respondent's permission to record the interview or not

Main questions

This was the main interview in the sense that it featured the most open questions that allowed the respondents to freely convey their experience of the transfer. Being an exploratory study, it was crucial that they told us what they considered important in relation to how their project team had experienced and dealt with the transfer of IRE. It is also the part on which the analysis is based. (The term' establishment' was the most common one used internally at ECV Industries, which is why it was used in the interview guide instead of 'transfer'. The same goes for the term 'performing' to capture their ability to work with IRE.) The questions are wide and open; especially questions 1 and 2, for the purpose of allowing the respondent to convey his/her view of the transfer without creating expectations of what they should say or otherwise steer them – all in line with the strictly exploratory purpose of this study.

1. How would you say that your project has experienced the establishment of IRE?
2. To what extent would you say that IRE has affected your project?
3. To what extent is your project performing IRE?
4. How did your project experience any training provided in relation to the establishment of IRE?
5. How did your project experience any support provided in relation to the establishment of IRE?

Additional questions

These questions served to probe the respondent in cases where he/she had not been very explicit about the transfer, and also to give explicit respondents a chance to summarize their experience of the transfer. Finally, the last questions aimed to give the respondent a chance to say things that they found important but had not yet mentioned. (Some respondents took a long time to 'warm up', so this approach was very useful.).

6. What would you say could be seen as drivers and obstacles in the establishment of IRE?
   a. Why would you say these drivers and obstacles appeared?
   b. What would you see as a way forward for the establishment of IRE?
7. Is there anything that we haven't talked about that you think might be relevant to mention in relation to the establishment of IRE?

Besides these probing questions, follow-up questions were asked to the more open ones to further explore themes that the respondents brought up.

Wrap-up

– "Thank you for sharing your experiences. They are very valuable for research and for ECV Industries to know how to improve."
– Permission to return with additional questions if necessary.

Complementary perspectives

In order to get a better understanding of the transfer of IRE, we also posed similar questions to engineers external to the project but who were supporting the project (to get a bit more of an outsider's view) as well as to R&D managers at the subunit (to also get the higher-level perspective). These interviews moreover helped in verifying what had been said by project members.

Open-ended questions: Supporting engineers

Interviews with the supporting networks of the projects followed the same procedure as the project. The same questions were also used, although with some adaptation.

1. How would you say that your organization has experienced the establishment of IRE?
2. To what extent would you say that IRE has affected your organization?
3. To what extent is your organization supporting [each of the 3 projects] in performing IRE?
4. How did your organization experience any training provided in relation to the establishment?
5. How did your organization experience any support provided in relation to the establishment?
6. What would you say could be seen as drivers and obstacles in the establishment of IRE?
   a. Why would you say these drivers and obstacles appeared?
   b. What would you see as a way forward for the establishment of IRE?
7. Is there anything that we haven't talked about that you think might be relevant to mention in relation to the establishment of IRE?

Open-ended questions: R&D management

Interviews with R&D Managers also followed the same procedure as the project. The same questions were also used, although with some adaptation.

1. How would you say that [each of the 3 innovation projects at this subunit] have experienced the establishment of IRE?
2. To what extent would you say that IRE has affected [the 3 projects]?
3. To what extent are [each of the 3 projects] performing IRE?
4. How did [each of the 3 projects] experience any training provided in relation to the establishment?
5. How did [each of the 3 projects] experience any support provided in relation to the establishment?
6. What would you say could be seen as drivers and obstacles in the establishment of IRE?
   a. Why would you say these drivers and obstacles appeared?
   b. What would you see as a way forward for IRE?
7. Is there anything that we haven't talked about that you think might be relevant to mention in relation to the establishment of IRE?

Appendix 4. Operationalization of findings

Below follows suggestions on how to operationalize dimensions of network influence on transfer effectiveness for future quantitative studies.

Network functional scope

This dimension could be operationalized by measuring the formal scope of the supporting network participant in terms of the number, or

percentage, of functions that it can provide support for, relative to the scope of support needed to handle the new capability in the receiving subunit or innovation project.

Network functional scale

Similar to scope, this network functional scale may be operationalized by measuring the formal scale of the support that the network participant can provide in terms of the number, or percentage, of scale that it can provide, relative to the scale needed to handle the new capability in the receiving subunit or innovation project.

Network geographical dispersion

The dimension of network geographical dispersion can be operationalized by measuring the average distance of the supporting network participant to the subunit innovation project that needs their support. This would capture the average dispersion of this supporting network.

Network external dispersion

This dimension could be operationalized by measuring the percentage of supporting network participants that are formally external to the MNC. This would capture whether this supporting network is predominantly dispersed within or without the firm's formal boundaries.

In addition to each of these operationalizations, each supporting network participant's importance can be considered by assigning weight by how much of the support needs to be carried by a specific participant.

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