Exploring the effects of subsidiary interdependence on the performance of global product launches

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Abstract. We explore the effects of subsidiary interdependence on global product launch performance using a case-study design combining quantitative and qualitative data collected from subsidiaries participating in the global launch of a new drug by a major pharmaceutical multinational enterprise. The study combines pre-launch survey data on subsidiary interdependence with post-launch quantitative performance data to select eight of 67 subsidiaries involved in a global product launch. We also analyse information gathered through in-depth interviews with 19 subsidiary managers to explore various facets of the relationship with their headquarters and other subsidiaries. Our findings suggest that the positive effect of interdependence on global product launch success varies with subsidiaries' involvement in decision-making, with the division of labour and responsibilities, and with the existence of cognitive, relational and structural social capital. Based on our findings, we present several propositions regarding the effects of subsidiary interdependence on the success of global product launches.

Keywords: global product launch, subsidiary interdependence, launch performance, social capital, case-study approach.

1 INTRODUCTION

Existing research considers firms' ability to introduce and commercialize new products as essential for the growth and performance of firms in general (Penrose, 1959) and multinational enterprises (MNEs) in particular (Calantone & Griffith, 2007). While much research on global product launches (GPLs) has focused on explaining product innovation in the context of such launches (Bruce, Daly, & Kahn, 2007), comparatively less research exists on launch performance. This omission is problematic as research shows that products that are superior to those offered by the competition can fail as a result of an unsuccessful launch (Lee & O'Connor, 2003; Tang & Collar, 1992). Furthermore, understanding launch performance is important because prior research views launch competence as an essential part of firms' global market competence, which has been shown to have a positive effect on product performance (Calantone, Schmidt, & Song, 1996), competitive advantage (Bstieler, 2012; Wong, 2002), and overall company performance and survival.

Research on GPL performance has explored how launch process characteristics determine performance yet paid little attention to the role of organizational factors in determining launch performance. Most studies of the determining factors of GPL performance focus on launch characteristics as explanatory factors. Examples of such characteristics are the degree to which firms standardize or customize the launch process (Chryssochoidis & Wong, 2000; Lee, Lin, Wong, & Calantone, 2011), the importance of pre-launch activities (Kleinschmidt, de Brentani, & Salomo, 2007), the timeliness of the international product rollout process (Chryssochoidis & Wong, 1998, 2000), and the launch window and product price (Verniers, Stremersch, & Croux, 2011). So far, relatively little attention has been paid to the organizational contexts in which launch processes are embedded. Exceptions are studies of the impact of headquarters-subsidiary relationships on the timeliness of international new product

rollouts (Lee & Wong, 2012), of the importance of cross-border integration and relational capital for new product launch outcomes (Lee, Chen, Kim, & Johnson, 2008), and of the impact of patenting activities and international research and development on GPL performance (Penner-Hahn & Shaver, 2005). As a consequence, several authors call for more research on the influence of organizational factors on GPL performance (Song & Montoya-Weiss, 2001; Yeniyurt, Townsend, & Talay, 2007) and for more scholarly attention to the moderating factors in that relationship, in particular in an international context (Lee, et al., 2008).

Among the organizational factors that potentially determine launch performance, interdependence appears to be of particular importance. Interdependence refers to the reliance of different sub-units within a multinational enterprise – i.e., subsidiaries and headquarters – on each other (O'Donnell, 2000). Prior research into the effects of interdependence broadly falls into one stream of research that predominantly highlights positive effects of interdependence and a second stream that has paid comparatively greater attention to the likely negative effects of interdependence.

Focussing on the positive effects of subsidiary interdependence, a *first stream* of research drawing on a variety of theories, including institutional theory, transaction cost theory or agency theory, provides compelling arguments for a positive effect of interdependence on MNE performance (Bartlett & Ghoshal, 1999; O'Donnell, 2000; Subramaniam & Watson, 2006; Watson & Roth, 2003; Yip, 2003) as well as specifically on the performance of MNEs in knowledge-intensive industries (e.g., Frost & Changhui, 2005; Kotabe, Dunlap-Hinkler, Parente, & Mishra, 2007). Depending on the chosen theoretical basis, existing research highlights different mechanisms through which subsidiary interdependence affects firm performance. For example, some authors argue that subsidiary interdependence positively affects MNE performance by allowing MNEs to leverage market imperfections intrinsic to

global industries (Porter, 1986; Roth, 1995). Taking an institutional perspective, Zaheer (1995) suggests that subsidiary interdependence is associated with enhanced sharing and coordinating of resources across MNE sub-units, which helps overseas subsidiaries in dealing with their liability of foreignness.

A *second stream* of research has highlighted the potential negative effects of increasing subsidiary interdependence. These negative effects include the diversion of resources, the creation of delays or the potential for causing turf-wars among MNE sub-units (Astley & Zajac, 1990; Becker-Ritterspach & Dörrenbächer, 2011; Dörrenbächer & Geppert, 2006, 2009; Forsgren, 1990; Forsgren, Holm, & Johanson, 2005; Geppert, Becker-Ritterspach, & Mudambi, 2016). Dörrenbacher and Geppert (2006: 254), for example, highlight that more complex interdependencies among MNE units lead to the emergence of a "greater variety of new power players" in MNEs.

While there has thus been research into the effects of subsidiary interdependence, we propose that our understanding of the effects of subsidiary interdependence needs to be enhanced in two ways. First, we suggest that the adoption of a particular theoretical lens to analyse and empirically test particular effects of interdependence that were identified ex ante prevents capturing previously unidentified effects. Existing research tends to view subsidiary interdependence and its effects through particular theoretical lenses that focus on the identification of only a small number of effects of interdependence. However, by using a particular theoretical lens researchers ignore potential effects of interdependence that are central when using an alternative lens, which also limits our understanding of the relative importance of and complex interplay among different effects of interdependence. For example, isolated analyses of positive and negative effects limits novel insights into the degree to which negative effects may offset potential positive ones. Although combining different lenses or

theories might be a solution, those theories tend to conflict in their assumptions and objectives. For instance, research studying the positive effect of subsidiary interdependence is often based on economic theories, in particular agency theory and transaction cost economics (O'Donnell, 2000; Subramaniam & Watson, 2006) or (organizational) network theory (Ghoshal & Bartlett, 2005). In contrast, research studying negative effects tends to be informed by sociological or political theories, such as (sociological) institutionalism (Westney, 2005) or social exchange and resource dependence theory (Becker-Ritterspach & Dörrenbächer, 2011; Dörrenbächer & Geppert, 2009; Ferner, 2000).

Second, as outlined above, prior research has predominantly theorized and tested only direct, unmoderated effects of various drivers affecting aspects of global product launches (e.g., Chryssochoidis & Wong, 1998, 2000; Kleinschmidt, et al., 2007; Verniers, et al., 2011). Although research has begun to highlight and explore the likely contingent nature of these (e.g., Lee & Wong, 2012; Lee, et al., 2008), there remains a need to investigate the role that other factors might play in moderating the effects of these drivers, particularly that of subsidiary interdependence.

We thus explore the following research questions: *(1) How does interdependence impact the performance of GPLs? (2) Are there particular factors that weaken/strengthen the effects of interdependence on the performance of GPLs?* We use an exploratory case-study research design that combines quantitative and qualitative data collected from subsidiaries participating in the global launch of a new drug by a major MNE in the pharmaceutical industry. We suggest that the pharmaceutical industry is a suitable context to explore our research questions. Global product launches in this industry crucially depend on the combination of the headquarters' knowledge of the new product and overseas subsidiaries' knowledge of the local market conditions. This leads to pronounced mutual dependence

between headquarters and subsidiaries, because whereas subsidiaries often have little or no prior knowledge of the a new product or medical approach, the headquarters frequently lacks information on the sales mechanisms and local regulation that is needed to obtain approval and successfully launch a new drug in a particular market. By exploring our research questions and developing propositions on the effects of subsidiary interdependence in the context of global product launches, we aim to contribute to a better understanding of subsidiary interdependence and its effects and to improved knowledge of the drivers of the success of global product launches. From a practical point of view our study hopes to raise managers' awareness not only of the positive effects of subsidiary interdependence on the success of global product launches, but also of potential negative effects of this interdependence when planning such launches. Given the central role that successful product launches plays for firms, such knowledge is of great practical importance.

The remainder of the paper is organized as follows. First, we review the literature on the effects of interdependence on the performance of multinational enterprises to inform our subsequent exploratory study. We then explain our explorative research design and our use of quantitative and qualitative data. Following that, we present the results of our between-case and within-case analysis and then formulate a series of research propositions that can be tested in future research. We conclude the paper by discussing the theoretical and managerial implications as well as the study's limitations.

2 LITERATURE REVIEW

Recent research has begun to pay more attention to the influence of organizational factors on product launch performance (Frattini, Dell'Era, & Rangone, 2013; Song & Montoya-Weiss, 2001; Yeniyurt, et al., 2007) as well as on the potential factors that moderate this relationship (Lee & Wong, 2012; Lee, et al., 2008; Story, Boso, & Cadogan, 2015). However, research is

still to consider how interdependence, i.e., the extent to subsidiaries within a multinational enterprise depend on the headquarters and other subsidiaries (O'Donnell, 2000; Subramaniam & Watson, 2006), affects the performance of GPLs. Interdependence appears as a particularly important organizational factor in this context given the substantial amount of attention that it has received as a determining factor of MNE performance (Bartlett & Ghoshal, 1999; O'Donnell, 2000; Subramaniam & Watson, 2006; Watson & Roth, 2003; Yip, 2003). In line with guidance and common practice in exploratory, case based research (e.g., Eisenhardt, 1989; Eisenhardt & Graebner, 2007), we review the literature to identify the potential effects of subsidiary interdependence and contingencies of these effects. This identification of the effects of subsidiary interdependence highlighted in prior research provides us with a structure that will guide the subsequent open coding of our qualitative data gathered through interviews.

2.1 Positive effects of subsidiary interdependence

Prior research has presented strong arguments for positive effects of interdependence on the performance of multinational enterprises. Interdependence across sub-units within a multinational enterprise arises as a consequence of the integration of worldwide operations and the global positioning of MNCs (Ghoshal & Nohria, 1989). Interdependence is important as it allows MNEs to leverage market imperfections intrinsic to global industries to deliver higher competitiveness and performance (Porter, 1986; Roth, 1995). Research has advanced strong arguments for a number of *positive effects* of interdependence on the performance of multinational enterprises. First, interdependence is proposed to be associated with greater levels of *information exchange* among the different units of a multinational enterprise (Bartlett & Ghoshal, 2002; Ho, 2014). This exchange of information enables headquarters or particular subsidiaries to leverage the expertise of other subsidiaries to improve their capabilities, make better strategic decisions, react better and faster to local competition, and thus perform better in

their respective environments (see, for example, Birkinshaw, Hood, & Young, 2005; Roth, 1995; Subramaniam & Watson, 2006). Second, interdependence has been argued to lead to *greater levels of sharing resources* such as human resources or production facilities among the units of a multinational enterprise (Gupta & Govindarajan, 1986). This sharing of resources enables MNE sub-units to draw on resources that they do not have. Such sharing of resources and can be critical for a successful product launch as sub-units do not have to incur the costs of acquiring elsewhere or spend the time developing these resources internally. Third, fostered by the greater exchange of information and sharing of resources arising from it, interdependence is also expected to allow for the *development of resources and capabilities* at the subsidiary level (Bartlett & Ghoshal, 2002). These newly developed resources and capabilities can be an important source of value creation at the local level but also at the global level if they can be leveraged across the MNE (Frost, Birkinshaw, & Ensign, 2002).

2.2 Negative effects of subsidiary interdependence

Despite the positive effects just outlined, research has also highlighted a number of potential negative effects of interdependence on MNE performance. First, interdependence can affect performance negatively as the coordination of interdependence relationships can lead to the *diversion of resources* that are necessary to ensure the subsidiary's competitiveness in the individual market (Subramaniam & Watson, 2006). Second, interdependence can also lead to a *slowdown of decision-making processes* (Bartlett & Ghoshal, 2002). Third, interdependence can also affect the distribution of power within multinational enterprises and give room to the occurrence of *power games and conflicts* between the subsidiary and the headquarters and other subsidiaries (Astley & Zajac, 1990; Dörrenbächer & Geppert, 2006). Finally, interdependence can lead to subsidiaries having to give up their local interest to realize global corporate goals (Bartlett & Ghoshal, 2002).

2.3 Factors moderating the effect of subsidiary interdependence on performance

Given the inconclusive arguments on the effect of interdependence on MNE performance, recent research has begun to identify moderators of this relationship. Research has highlighted the (de-) centralization of decision-making, subsidiary autonomy and the subsidiaries' involvement in decision-making, as well as the related issue of the degree to which overseas' activities are controlled by headquarters as potential moderating factors. This research has specifically underlined the importance of a clear division of labor and responsibilities, e.g. through the allocation of particular roles to subsidiaries (e.g., Frost, et al., 2002; White & Poynter, 1990), as well as the importance of subsidiary involvement in decision making (e.g., Doz, 2016; Yu, Wong, & Chiao, 2006) as conditions under which interdependence has a positive effect on performance. Furthermore, research has highlighted how social capital might moderate the relationship between interdependence and MNE performance by allowing for an increase in the formal and informal flows of information between actors in a network (e.g., De Clercq, Thongpapanl, & Dimov, 2015; Kostova & Roth, 2003; Nahapiet & Ghoshal, 1998). Providing a fine-grained categorization of social capital Nahapiet and Ghoshal (1998) distinguish between structural, relational, and cognitive social capital. According to these authors, structural social capital refers to the pattern of personal relationships between actors, relational social capital to the quality of these relationships (e.g. trust, friendship), and cognitive social capital to the existence of shared understanding and meanings among the involved actors.

3 METHODOLOGY

Our research design consists of an exploratory case-study approach based on qualitative and quantitative data. An exploratory approach allows for the identification of a broad range of potentially novel performance effects of interdependence as well as factors that moderate those

effects in the context of a global product launch. This would not be possible through a hypothesis-testing approach, in which effect and moderators are chosen ex ante based on a particular theoretical framework.

We collected data at three different points in time before and after the global launch of a pharmaceutical drug. We first use quantitative data to identify eight subsidiaries with extreme combinations of interdependence (high/low) and local market launch performance (high/low). Subsequently, we use those selected subsidiaries in a qualitative study using in-depth interviews of such managers to identify the relationship between interdependence and launch performance. Our interviews were geared towards gathering information on the likely positive (i.e., information exchange, resource sharing, and the development of resources and capabilities) and negative (e.g., diversion of resources, slowdown of decision-making processes, and power games and conflicts) effects of subsidiary interdependence. Additionally, we aimed at eliciting information on the relative importance of these effects and factors that may moderate these effects, in particular different types of social capital.

We adopt an exploratory case-study design (Yin, 2003) focused on the global launch of a drug by a major pharmaceutical MNE in 67 countries across all continents. Case-study research has previously been used to explore issues related to the management of multinational enterprises (Berchtold, Pircher, & Stadler, 2010; Stensaker & Gooderham, 2015) in general and specifically to study the development and launch of new products using either qualitative data (e.g., Bruce, et al., 2007) or a combination of qualitative and quantitative data (e.g., Wei, Frankwick, & Nguyen, 2012). The specific context of our study is a large global pharmaceutical company with HQ in Europe and its global launch of a new drug for the prevention of venous thrombo-embolism following elective hip or knee surgery. While a drug with similar effects already existed in the market, the new drug promised significant

improvements in clinical application and allowed for a more efficient treatment with less bleeding than the established injection therapy. Three years after the launch of the product, the firm's major competitors also launched new drugs with similar effects and treatment efficiency. The new drug was expected to become one of the most important drugs in the company's product portfolio. Accordingly, successful product launch was crucial for the company's result and share price. Because the etiology of thrombosis is similar across countries, the product was launched very rapidly in all of the company's 67 key markets to maximize revenue.

The pharmaceutical industry is particularly suitable for investigating our research questions given the importance of interdependence for multinational enterprises in this industry (e.g., Frost & Changhui, 2005; Kotabe, et al., 2007). While firms' ability to introduce and commercialize new products has been argued to be a major determinant of performance across industries, previous research has highlighted the pronounced role that it plays in the pharmaceutical industry. For instance, a study by McKinsey indicates that of the 210 launches of new drugs they investigated, over 60% failed to meet expectations (Ahlawat, Chierchia, & Arkel, 2005). It is therefore of critical importance for MNEs in this sector to understand the determinants of GPL performance. For instance, commentators have attributed the comparatively low performance of Levitra, Bayer's answer to Pfizer's Viagra, to a lack of harmonization and coordination among Bayer's global network of operations (e.g., Salz, 2008). At the same time, the successful launch of a new drug depends on the approval of a drug through host country authorities and the nature of reimbursement policies that affect the likelihood of a drug being prescribed by medics and thus the eventual take-up of a drug. While these factors thus affect the performance of a GPL in this sector, also a subsidiary's interdependence with the headquarters and other subsidiaries is likely to influence the role that these factors have on the up-take of a drug in a particular market. This is because as a result of

this interdependence, subsidiaries may be able to access the headquarters' and other subsidiaries' expertise, medical studies, or lobbyists.

To ensure rigor of our approach we combined qualitative and quantitative data that we collected at three different points in time before and after the global launch of the drug. In a *first data collection phase,* prior to the launch of the drug, we asked subsidiaries participating in the launch to provide information on their interdependence with the headquarters and other subsidiaries. In a *second data collection phase*, one year after launch, we collected performance data on the launched drug in each of the local markets. We then combined the two sets of data to categorize subsidiaries into four groups on the basis of their interdependence (high vs. low) and the national performance of the launch (high vs. low). In a *third and final data collection phase* we conducted in-depth interviews with senior managers at eight subsidiaries (two in each of the four categories) to explore the various facets of relationships between them and the headquarters and other subsidiaries. The following sections describe our approach in more detail.

3.1 Data collection phases 1 and 2: determining subsidiary interdependence and launch performance

In our first data collection phase, and prior to the launch of the drug (December 2008), we used the company's intranet to distribute invitations to senior managers at the 67 subsidiaries participating in the launch containing a link to an online questionnaire. To ensure data collection equivalence (Hult, et al., 2008), we used one single questionnaire in English for all managers. This was possible because the working language at the MNE is English and because the seniority of respondents. In the questionnaire we asked respondents to provide information on the interdependence of their subsidiary with the headquarters and other subsidiaries using Subramanian and Watson's (2006) eight-item scale. Sample items include "Subsidiary depends

on the effective functioning of headquarters to keep performing its tasks effectively" and "The activities of headquarters influence the outcomes of the subsidiary".[1] We received 54 usable responses.

In a *second data collection phase*, one year after launch (January to May 2010), we collected performance data on the launched drug in each of the local markets. Given the variety of potential indicators for measuring the performance of product launches (e.g., Bruce, et al., 2007; Griffin & Page, 1996), we collected data on *patient shares* from IMS Health Inc., a provider of information for the pharmaceutical industry instead of using the assessments of the subsidiary managers in order to avoid biases.[2] Patient shares are calculated as the quotient of the number of patients who have undergone an elective hip or knee replacement and were treated with the new drug divided by the total annual number of such cases in the respective country. We used national patient over market shares because differences in the therapy regimes across countries limit the comparability of market shares between markets and because antithrombotic agents can be used for many different indications. We obtained information on patient shares for 37 of the 54 markets.

3.2 Data collection phase 3: exploring distinct combinations of interdependence and launch performance through qualitative interviews

In this phase we used data on interdependence (phase 1) and launch performance (phase 2) to select subsidiaries to study in our qualitative data collection phase. We adopted a non-random, theoretical sampling approach and selected subsidiaries with extreme combinations of interdependence (high/low) and launch performance (high/low). Such an approach is a central element of recommendations on qualitative, case-based research because extreme cases are likely to render the processes that are of interest to the researcher particularly transparent and observable (Eisenhardt, 1989; Glaser & Strauss, 1967; Miles & Huberman, 1994). To select

those cases we followed indications in the literature (Eisenhardt, 1989) and plotted the 37 subsidiaries from data gathering phase 2 based on their interdependence and performance scores using median splits to separate them into high and low quadrants (Figure 1). We then identified subsidiaries with extreme combinations of interdependence and launch performance while also taking into account the economic relevance of the market in question for the MNE to increase the managerial impact of our findings. The economic impact criterion did not affect our choices for subsidiaries from quadrants 1 (Mexico and France) and 4 (Switzerland and UK), as those four subsidiaries were also the most extreme cases. However, economic relevance of the local market for the MNE did lead us to prefer for quadrant 2 Ukraine (over South Korea) and Italy (over Greece) despite comparable levels of interdependence and launch performance. Similarly, in quadrant 3 we chose Hungary and Germany (over Slovenia and Portugal). Table 1 shows the selected subsidiaries and their combinations of interdependence and launch performance.

*** Insert Figure 1 & Table 1 here ***

In our *third and final phase* of data collection we conducted in-depth interviews between December 2010 and May 2011 with 19 senior level marketing managers at the eight selected subsidiaries. Our choice of eight specific cases is in line with prior research recommending between 4 and 10 units of analysis per case-study (Eisenhardt, 1989). We interviewed managers face-to-face at the HQ or subsidiary locations. All interviews were carried out with managers involved in the national product launch, such as the subsidiaries' general manager or product manager in English, lasted on average two hours, and were recorded. Interviews were kept relatively open in order to allow for the emergence of themes. However, to secure the interviews with managers of such seniority, interviewees were made aware up-front of the purpose of the research being the investigation of the role of

interdependence of country operations on launch performance. Finally, to elicit additional information on questions that emerged during the analyses of the initial interviews, we conducted six follow-up interviews. These follow-up interviews were also carried out in English, via telephone or videoconference, and lasted on average 45 minutes. These interviews were not recorded, but extensive notes were taken during them to complement the initial interview data.

4 ANALYSES

Following recommendations on case-based research we conducted a within-case analysis followed by a cross-case analysis (Miles & Huberman, 1994). The *within-case analysis* treated each of the subsidiaries as a separate case within each of the four subsidiary groups. The interviews for each subsidiary were transcribed and analysed using NVivo. Following suggestions for qualitative data-analysis (Miles & Huberman, 1994) and prior qualitative research in the area of new product development (e.g., Rubera, Ordanini, & Calantone, 2012) we used open and axial coding to identify themes that emerged as possible explanations for the variety in the nature of the relationship between interdependence and launch performance (Miles & Huberman, 1994; Strauss & Corbin, 1990). The open coding was informed by the potential effects of interdependence and moderators identified in the review of the literature on the impact of interdependence on MNE performance. The subsequent *cross-case analysis* compared the themes and relationships identified in individual cases using a replication logic to examine if emerging propositions held across cases (Miles & Huberman, 1994; Rubera, et al., 2012; Yin, 2003). The cross-case analysis led to insights regarding the likely positive and negative effects of interdependence on the performance of GPLs (RQ1) as well as factors that potentially moderate these effects (RQ2). Results of each of our analysis steps are presented in the following sections.

4.1 Within-case analysis

We grouped the analysis of our individual cases under four subsidiary types: type 1 – high interdependence/high launch performance; type 2 – high interdependence/low launch performance; type 3 – low interdependence/high launch performance; type 4 – low interdependence/low launch performance.

4.1.1 Type 1 subsidiaries: High interdependence - high launch performance

We selected the French and the Mexican subsidiaries as extreme cases of high interdependence and high launch performance. Respondents provided insights into the relationship between interdependence and GPL performance (RQ1). Managers in both subsidiaries reported high levels of *information exchange* with other subsidiaries, although most of this exchange took place with the headquarters. The Mexican Product Manager stressed the importance of an intensive exchange of information for the performance of the product launch:

> *"[T]there is a relationship between the global and local [organizations] and they need each other, because they have a common responsibility to successfully launch the product. [...] There is a bilateral flow […] we provide information and [we] receive information."*

Subsidiary managers in both subsidiaries also highlighted high levels of resource and information exchange with other subsidiaries. The product manager at the subsidiary in France, for example, stated that

> *"[Our] philosophy [was to] 'maximize' what was done globally, because local resources were limited [...] and [our aim was] to get all the best materials from [the HQ]."*

Similarly, an interviewee at the Mexican subsidiary stated:

> *"We were facing a lot of difficulties with the authorities and the change in regulatory issues, [so] we needed to go back [to] the global and ask for different information."*

The high level of *resource and information exchange* for the particular product launch was also considered to be part of the on-going and general exchange of information and sharing of resources with other subsidiaries. As a consequence, such exchange allowed for improving the *knowledge and capabilities* of these subsidiaries, both in general and with regard to their knowledge and capabilities necessary for the launch of the particular drug. One interviewee at the Mexican subsidiary stressed the importance of its ability to share resources, in particular human capital, with other subsidiaries. This manager stressed that, without the help of the headquarters and other subsidiaries in developing and preparing the local launch, team and sales staff the subsidiary would not have been able to launch the product successfully. For example, an interviewee at the Mexican subsidiary reported that

> *"…[from a] strategic point of view, [the HQ's] contribution was very high; it [would have been] impossible to continue with the local plants. […] if [we hadn't had] the support from HQ; and to be honest, we always received the support from [HQ]."*

When asked about potential negative effects of subsidiary interdependence, the interviewees did not recount any negative incidents related to the diversion of resources or possible delays. Similarly, they did not report any significant conflicts or engaging in power games in their relationship with the headquarters or other subsidiaries.

Respondents in both subsidiaries also provided information on the factors affecting the relationship between interdependence and GPL performance (RQ2). Specifically, respondents pointed at a *clear division of labour and responsibility* between these highly interdependent subsidiaries and other subsidiaries as a key to preventing the duplication of efforts. This was highlighted by a manager at the subsidiary in France:

> *"My feeling is that the very close cooperation between us and the colleagues [at the HQ and other subsidiaries] is important. [T]he closer [this cooperation] is, the […] more fine-tuned the marketing material can be, avoiding reinvention […]."*

The interviews further highlighted the importance of the different dimensions of social capital for these subsidiaries. Managers in both subsidiaries reported having developed extensive *personal networks* to colleagues at other subsidiaries while also stressing the high levels of trust existing in these personal networks. This trust seemed to be mutual, as managers at both subsidiaries stressed that the headquarters trusted them to carry out local customization of global materials. Although the personal networks did not always include colleagues working on the same product launch in other subsidiaries, managers stated that they could still draw on these networks to by-pass the formal reporting chains and obtain information that was useful for the product launch. The analysis of these two subsidiaries also indicated high levels of *cognitive social capital*. Managers at both subsidiaries explained that, through interactions over time and staff rotation in different functional areas, they had developed shared norms and a shared philosophy with colleagues at the headquarters and at other subsidiaries. These shared norms enabled the smooth collaboration with other MNE-sub-units in the context of the GPL and were thus conducive to its performance.

4.1.2 Type 2 subsidiaries: High interdependence - low performance

We selected the Italian and Ukraine subsidiaries as cases of high interdependence and low launch performance. Respondents in the two subsidiaries provided insights into the relationship between interdependence and GPL performance (RQ1). In our survey conducted for phase 1 of this research, these two subsidiaries had scored high on interdependence. The low launch performance of these highly interdependent subsidiaries appears out of line with the literature, which indicates that at high levels of interdependence should lead to high performance effects (Bartlett & Ghoshal, 2002). However, the MNE literature also suggests that high interdependence should lead to greater exchange of information (Bartlett & Ghoshal, 2002) and interviewees in both subsidiaries stressed a lack of *information exchange* with either the

headquarters or other subsidiaries in general. As the local product manager in the Italian subsidiary put it:

> *"[M]aybe you say something to one [MNE sub-unit] and not to another one, so maybe communication [among sub-units] should be better."*

Interviewees highlighted that the particular product launch was no exception and that they would have preferred more information exchange. They also attributed the low launch performance in part to this lack of information exchange. The low level of information exchange was paralleled by similarly *low levels of sharing of resources* such as particularly knowledgeable staff between these two subsidiaries and other subsidiaries. Managers perceived this lack of resource sharing as a cause of the low performance of the product launch as they were concerned about the lack of support from headquarters and from other subsidiaries in developing their local launch team and sales staff.

Managers at the subsidiaries in Italy and Ukraine highlighted potentially negative effects of their subsidiary's interdependence with the headquarters and other subsidiaries. Specifically, managers at both subsidiaries reported *conflicts and power games* with other MNE sub-units. A central issue that caused conflicts between these subsidiaries and the headquarters was the allocation of headquarters' attention and resources across different country operations, which the interviewees at the Italian and Ukrainian subsidiaries perceived to be unfair. For example, the manager of the Ukrainian subsidiary complained that, "…headquarters pays too much attention to Slovenia, Korea etc. This is just leading to drawn-out processes and dilution [of efforts and resources]". The interviewed managers suggested that these conflicts led to a lower exchange of information and less resource sharing and thus to a comparatively lower level of launch performance in these countries. Managers at these subsidiaries also stressed the significant delays resulting from their dependence on headquarters

for the provision of certain resources, such as, specific information on the drug that was necessary for local marketing activities.

Respondents in the two subsidiaries also provided information on the factors affecting the relationship between interdependence and GPL performance (RQ2). Specifically, a first theme that emerged during the interviews was that there was little involvement of these subsidiaries in the *decision-making processes* associated with the product launch. Moreover, a lack of *a clear division of labour and responsibilities* between the regional and global marketing organization led to the duplication of efforts, thus negatively affecting launch performance. A manager of the subsidiary in Italy noted, for example, that the allocation of responsibilities and roles *"[…] between regional and global is not always very clear."* Respondents at these subsidiaries highlighted the need to clearly define roles and to minimize operational overlaps in interdependent relationships.

The two subsidiaries were also characterized by the absence of *extensive personal networks* to the headquarters and other subsidiaries. These networks were not as developed as in other subsidiaries because organizational restructuring at the subsidiary level had led to recent changes in personnel in these subsidiaries. The two subsidiaries were slow in recreating personal networks with managers at the headquarters and in other subsidiaries and managers admitted that they were reluctant to invest time and money in building such relationships. However, managers at these subsidiaries also stressed the potential role of this absence of extensive personal networks for the lack of a successful product launch and emphasized their intention to put more effort into creating such links to colleagues at the headquarters and other subsidiaries in future. The interviewees highlighted the importance of such relationship-building with other subsidiaries in general, and with colleagues involved in product launches in

particular as a factor positively affecting launch performance. The Italian product manager, for example, stressed that

> *" ... global meetings are absolutely important for many reasons: for the alignment [of launch-related activities] with the common objective, but even more so for the relationship and network building."*

4.1.3 Type 3 subsidiaries: Low interdependence - high performance

We selected the UK and Swiss subsidiaries as cases of low interdependence and high launch performance. Respondents in the two subsidiaries provided insights into the relationship between interdependence and GPL performance (RQ1). The high performance of these two subsidiaries with low levels of interdependence appears out of line with the literature on the effects of interdependence on MNE performance, which indicate that at low levels of interdependence performance effects should be absent or be less pronounced (Bartlett & Ghoshal, 2002). However, despite low levels of interdependence, managers at these subsidiaries reported high *levels of information exchange and resource sharing* with other subsidiaries both in general, but also in the particular context of the product launch. For instance, interviewees stressed the high levels of responsiveness of the headquarters when they needed particular information or resources. The brand manager at the UK subsidiary, for example, stated that

> *"... if I asked for something, people came back to me with an answer. It might not be the one I wanted, but people came back with an answer. [...] Communication was very good and there were no barriers."*

These subsidiaries also benefitted greatly from the support provided by the headquarters in developing local launch capabilities, which local managers saw as crucial for the successful product launch. For example, the Swiss marketing manager stated that *"[a]t an early stage [we had] the right people that had a very good knowledge of the market."*

Managers at the Swiss subsidiary reported frequent conflicts with the headquarters. Although these were seen as associated with the level to which the subsidiary depended on certain resources and information being provided by the headquarters these conflicts were not necessarily seen as detrimental to the success of the launch of the drug in the local market. Although they were not seen as particularly important, interviewees in these two subsidiaries also suggested that their dependence on the headquarters and other subsidiaries for particular information, created delays in the decision-making processes at the subsidiary level.

Respondents in both subsidiaries also provided information on the factors affecting the relationship between interdependence and GPL performance (RQ2). Specifically, a first factor emerging as a possible moderator of the effects of interdependence was the lack of a *clear division of labour and responsibilities*. Managers in the two subsidiaries stressed that the roles and responsibilities of both the headquarters and the different subsidiaries should be more clearly defined to avoid the duplication of efforts. As the manager at the subsidiary in Switzerland stated: "You should know exactly which person is responsible for what".

Managers at these subsidiaries also possessed high levels of both *structural as well as relational social capital*. They frequently met with colleagues from both headquarters and other subsidiaries. For example, one manager suggested that "[…] it helps a lot if you know the person not only by phone but also in person. [To do this] you have to meet each other on a regular basis." Managers were thus able to develop a close network of relationships throughout the organization that they could draw on when needed. These relationships were also characterized by high levels of trust, which enabled the involved parties to rely on the timely delivery of required information or resources. This high level of trust also allowed the subsidiary managers to openly voice concerns regarding the local suitability of certain launch decisions taken by the headquarters or recommended based on the experiences of subsidiaries

in comparable markets and achieve a greater degree of fit of the product launch with the local conditions. For example, the product manager of Switzerland stated that, "[Y]ou can criticize each other. [T]his is very important. I can criticize you and you can criticize me and still trust me." These strong network ties also resulted in the development of cognitive social capital, i.e., shared norms that facilitated the coordination of launch activities between the subsidiary and the headquarters on the one hand, an between the subsidiary and other subsidiaries on the other hand. A product manager at the subsidiary in Switzerland recalled the period leading up to the product launch:

> *"I also think there was quite a good '[team] spirit' that is not only professional but [that] there is sympathy [and] you like the person or group."*

4.1.4 Type 4 subsidiaries: Low interdependence - low performance

We selected the German and Hungarian subsidiaries as extreme cases of low interdependence and low launch performance. Respondents provided insights into the relationship between interdependence and GPL performance (RQ1). Respondents in both subsidiaries reported very little exchange of information taking place between the subsidiary and the headquarters or other subsidiaries. Although managers in both subsidiaries regularly reported to the HQ, the flow of information was mainly uni-directional with little information flowing back from HQ to subsidiaries. There was also concern about a lack of information exchange with other subsidiaries. The product manager at the Hungarian subsidiary suggested that more exchange of knowledge and information was necessary to allow for *"jointly solving problems, [and] sharing experiences and best practices."*

The very low level of *exchange of information* and *sharing of resources* was also reflected in the context of the product launch. During the launch, subsidiaries provided the headquarters and other subsidiaries in comparable markets with local market information but

received very little information and resources in time for the launch so that they had to rely on their own resources and knowledge. An interviewee at this Hungarian subsidiary stated, "We had to think ahead because the deliverables from [HQ] simply didn't come through or didn't come through on time." As a consequence, the HQ had, for instance, very little input in the development of the promotion material for the new drug.

The *delays* in the provision of the mentioned "deliverables", mainly product information needed for local marketing activities, was stressed as having had a negative effect on the performance of the drug's launch in the subsidiaries' markets. Although the issue of the promotion materials not being provided in time was eventually resolved, the interviewed managers at these subsidiaries recalled *conflicts* with the headquarters and other subsidiaries and resorting to *power games* when trying to find a solution. For instance, the German subsidiary was not happy with the advertising materials provided by the headquarters and decided to develop and use their own materials when launching the drug.

The information obtained from the German and Hungarian subsidiaries also points at potential factors affecting the relationship between interdependence and the performance of the product launch in the subsidiaries' market (RQ2). Specifically, manager responses suggest the local managers' network of relationships with managers at the headquarters and at other subsidiaries– i.e., their *structural social capital* – as a moderating factor in the relationship between interdependence and launch performance. For example, the product manager of the subsidiary in Hungary stated that,

> *"I think that [personal contacts] are absolutely contributing in a positive way. [I]t would be very important for [me] to know whom to find if I have a particular problem. [That would] save time [and] make things go easier."*

Both subsidiaries lacked strong links with other subsidiaries due to recent departures of key personnel with such networks across other MNE sub-units. Table 2 summarizes the effects

of interdependence on the launch performance as well as factors that appeared to influence the existence and strength of these effects that were identified in the different subsidiaries.

*** Insert Table 2 here ***

4.2 Cross-case analyses and research propositions

The purpose of the cross-case analysis was to follow a 'replication logic' and compare the potential effects and moderators that emerged in the different types of subsidiaries to arrive at testable propositions (Miles & Huberman, 1994; Rubera, et al., 2012; Yin, 2003).

4.2.1 Positive effects of interdependence on launch performance

The cross-case analysis suggests that *exchanging information* with the headquarters and other subsidiaries as well as *developing local resources* are contributing factors to launch performance while the *sharing of resources* is not associated with launch performance. First, our findings thus suggest that while interdependence may not be associated with higher information exchange, information exchange contributes positively to launch performance. This underlines the importance of information exchange in MNEs in general (e.g., Berchtold, et al., 2010; Birkinshaw, et al., 2005; Stensaker & Gooderham, 2015; Su, Huang, & Contractor, 2010) and specifically in the context of GPLs (e.g., Bruce, et al., 2007; Chryssochoidis & Wong, 2000). Although research on MNEs suggests that high levels of interdependence are associated with high levels of information exchange (Bartlett & Ghoshal, 2002), our findings do not support this expectation. The impacts of interdependence and information exchange on GPLs may need to be studied separately as high levels of information exchange are not an automatic consequence of high levels of interdependence. Subsidiary interdependence might lead to negative effects that may have reduced the exchange of information between highly interdependent subsidiaries. This finding highlights the potential limitations of economic

theories, such as, for example, agency theory, in the context of subsidiary interdependence with their focus on subsidiary interdependence as a means to reduce information asymmetry between headquarters and overseas subsidiaries. Future research might thus employ alternative theories to enhance our understanding of the link between subsidiary interdependence and information exchange. This is important given that our findings do indicate that high levels of information exchange are paralleled by high levels of launch performance in all of the analysed subsidiaries.

Our findings further suggest that while in the context of product launches interdependence is not directly associated with the *development of resources and capabilities at the subsidiary level,* such development does contribute positively to launch performance. The literature on interdependence has stressed the *development of resources and capabilities at the subsidiary level* as a positive outcome of interdependence (Birkinshaw, et al., 2005). Our findings do not suggest a clear association between interdependence and the development of local resources and capabilities. A possible explanation of this unexpected finding may be the dynamic relationship between interdependence and the development of resources and capabilities at the subsidiary level. In the case of the type 2 subsidiaries high levels of interdependence may *not yet* have led to the development of local resources and capabilities, whereas in type 3 subsidiaries the high levels of local resources and capabilities may have been the result of high levels of interdependence in the past which have been maintained irrespective of declining levels of interdependence. Although the analysis period in our study spanned more than two years, confirming such a dynamic relationship would require a historical analysis of the subsidiaries which was beyond the scope of the study.

Even though interdependence is not associated with the *development of resources and capabilities at the subsidiary level,* such development still appears to be associated with launch

performance. That is because all subsidiaries that successfully launched the product reported high level of local resource development. These findings are in line with research that has stressed the relevance of launch capabilities on launch performance (Bruce, et al., 2007; Calantone & Griffith, 2007; Kleinschmidt, et al., 2007; Lee, et al., 2011). Hence, our findings lead to the following propositions:

> *Proposition 1. In the context of global product launches, subsidiary interdependence will be associated with greater sharing of resources among MNE units.*
>
> *Proposition 2. Exchange of information and the development of local resources will have a positive effect on launch performance.*

Finally, our findings suggest an association of interdependence with resource sharing in the context of GPL performance. However, they do not suggest a positive impact of sharing of resources on launch performance. The findings with regard to the *sharing of resources* are in line with the existing general literature on MNEs in as far as they indicate that high levels of interdependence are associated with high levels of resource sharing. However, unlike the exchange of information, there does not appear to be a relationship between resource sharing and launch performance. This finding contrasts with prior research that highlights the importance of resource sharing for the performance of subsidiaries in MNEs (see, e.g., Kogut, 1985).

The absence of clear links between subsidiary interdependence and the *development of resources and capabilities at the subsidiary level* and between the sharing of resources and GPL performance may be explained by the potentially limited geographical fungibility of firm resources. Future research drawing on theories that highlight the creation and sharing of resources in MNEs, such as, for example, the resource-based view or modern internalization

theory (Rugman & Verbeke, 2001), should thus strive for a finer-grained differentiation of resources when investigating the sharing of resources in MNEs.

4.2.2 Negative effects of interdependence on launch performance

Our findings also provide some evidence for negative effects of high levels of interdependence. However, these effects appear to reduce the positive effects commonly associated with interdependence, such as, in particular, information exchange, rather than directly affecting launch performance. With regard to the *diversion of resources* and the *delays in decision-making* highly interdependent subsidiaries did suffer from such diversions. However, while managers at those highly interdependent subsidiaries with low launch performance did not view diversion of resources as a determining factor for their product launch performance they highlighted in particular the delays in decision-making as affecting the overall flow of information. Similarly, the interviews revealed the existence of power games and conflicts at some, but not all of the subsidiaries.

4.2.3 Moderating factors in the relationship between interdependence and launch performance

Our findings suggest shared-decision making as a potential moderating factor on the relationship between interdependence and launch performance. The general literature on MNE management has highlighted the role of shared decision-making (Bartlett & Ghoshal, 2002; Doz, 2016) in determining MNE performance. Our interviewees reported differences in the degree to which interviewees considered their subsidiaries to have been involved in decision-making. For example, despite being highly interdependent with the headquarters and other subsidiaries, the performance of the product launch in Italy was low compared to other highly interdependent subsidiaries and Italian managers reported low levels of involvement in decision-making related to the product launch. A comparison of the different subsidiaries

suggests that interdependence may be conducive to successful product launches when accompanied by high levels of involvement of subsidiaries in decision-making.

These findings lead to the following proposition:

> *Proposition 3. Subsidiary interdependence has a positive effect on the success of global product launch when MNE units are involved in decision-making.*

A further factor with an apparent moderating effect of the relationship between interdependence and launch performance was the *division of labour and responsibilities*. Our data first suggests that the *division of labour and responsibilities* positively moderate the impact of interdependence on launch performance. This finding thus points towards a more active role of headquarters, one that focusses on the orchestration of resources across its various operations. This is in line with research suggestion an enhanced of MNE headquarters in achieving novel combinations of resources and capabilities across national borders (e.g., Rugman, Verbeke, & Nguyen, 2011; Verbeke & Yuan, 2010). Based on this discussion of our findings, we formulate the following proposition:

> *Proposition 4. Subsidiary interdependence has a positive effect on the success of global product launch when there is a clear division of labour and responsibilities among MNE units.*

The various facets of *social capital* also emerged as playing a moderating role in the relationship between interdependence and launch performance. Our analysis indicates that the effects of interdependence on launch performance vary with the existence of personal networks among subsidiary managers and their colleagues at headquarters and other subsidiaries, i.e. with the existence of *structural social capital*. These findings are in line with suggestions

regarding the importance of structural social capital for the performance of GPLs (e.g., Bstieler, 2012; Harvey & Griffith, 2007; Wong, 2002). Similarly, our analyses highlighted the level of trust – i.e., of *relational social capital* – that exists between a subsidiary and the headquarters and other subsidiaries as a factor that strengthens the influence of interdependence on the performance of a GPL. Finally, our findings indicate that interdependence is associated with launch performance when the subsidiary has a shared culture with the headquarters and other subsidiaries, i.e., when it is in possession of *cognitive social capital*. Overall, our findings with regard to the role of social capital lead us to formulate the following propositions:

> *Proposition 5. Subsidiary interdependence has a positive effect on the success of global product launch when subsidiaries possess structural, relational and cognitive social capital.*
>
> *Proposition 6. Subsidiaries' structural, relational and cognitive social capital has a positive effect on launch performance.*

5 DISCUSSION AND IMPLICATIONS

Our comprehensive exploratory study responded to recent calls for more research into the effects of organizational factors on the performance of GPLs (Bstieler, 2012; Song & Montoya-Weiss, 2001; Yeniyurt, et al., 2007) by exploring the effects of subsidiary interdependence on GPL performance and factors that might moderate these effects.

Our findings suggest that some positive effects attributed to interdependence in prior research on MNE performance – such as the sharing of resources and the development of resources and capabilities at the subsidiary level – also exist in the context of GPLs. At the same time, we find evidence for some of the negative effects of interdependence as well and that these negative effects may outweigh the aforementioned positive effects under certain

conditions. Specifically, our data shows that the existence and strength of both negative and positive effects of interdependence on launch performance depends on the nature of existing organizational and personal relationships a subsidiary and the headquarters and other subsidiaries. Our study thus contributes to on-going efforts to explain the performance of GPLs (see, for example, Chryssochoidis & Wong, 1998; Chryssochoidis & Wong, 2000; Harvey & Griffith, 2007; Kleinschmidt, et al., 2007; Lee, et al., 2011).

Our findings also suggest that the important role that interdependence plays in the management of MNEs may be more complex in the context of GPLs. First, in contrast to research on the broader link between interdependence and MNE performance, our analysis indicates that higher levels of interdependence are not always associated with greater information exchange or greater development of local resources and capabilities for a product launch. This is because the increase in information exchange may be stymied by some of the negative effects of greater interdependence, in particular, the likely delays in decision-making.

Our findings underscore the role of various facets of *social capital* in affecting the performance of GPLs both directly and as moderators of the effect of interdependence on the national performance of a GPL. As a consequence, the necessary development of a comprehensive theoretical framework to explain launch performance in the context of GPLs would need to account for both the complex and dynamic effects of interdependence on performance as well as to account for how social capital affects that relationship.

We decided to adopt an exploratory, inductive approach to study the effects of subsidiary interdependence instead of testing hypotheses that were derived from a particular theory because different theories – as a result of their particular assumptions – tend to focus on particular effects to the detriment of a fuller understanding of the effects of subsidiary interdependence. By highlighting the complex and moderated effects of subsidiary

interdependence, our results thus suggest that future hypothetico-deductive research should attempt to combine or integrate theoretical frameworks that overcome the isolated focus on specific outcomes of subsidiary interdependence characterizing prior research. Our findings suggest that social capital theory may provide a useful basis for developing such a more comprehensive explanation of the effects of subsidiary interdependence.

Our findings also have *managerial implications* in that they highlight various factors that may help MNEs increase the likelihood of successful GPLs. Specifically, our study shows that organizational factors such as the interdependence of country operations, social capital and information exchange between a subsidiary and the headquarters and other subsidiaries can affect the performance of GPLs. Our findings underline the crucial role of information exchange among subsidiaries in this context but also imply that such exchange is not an automatic consequence of greater interdependence. Information exchange may in fact be hindered by negative effects associated with greater interdependence, in particular by the delays in information exchange and conflicts among subsidiaries that depend on each other. Further, our results suggest that GPL teams as well as local product managers should encourage cross-unit collaboration in the context of GPLs. Yet, practitioners should be aware that creating interdependence between a subsidiary and the headquarters and other subsidiaries may on its own be insufficient to lead to the desired effects. Rather, our findings indicate that such interdependence might have to be supported by decisions regarding the nature of the relationships between a subsidiary and the headquarters and other subsidiaries as well as the creation of structural, relational as well as cognitive social capital within their organizations. Prior research has highlighted various means through which firms can increase social capital, including, for example, global leadership development programmes or increased employee mobility (Bozkurt & Mohr, 2011; Stensaker & Gooderham, 2015). Our findings also suggest that companies may be able to increase the likelihood of performance of their GPLs by

involving subsidiaries in the GPL decision-making process early on, clearly defining roles and responsibilities of MNE sub-units in the context of GPLs, and by fostering the development of social capital across MNE sub-units through, for example, increasing staff interaction through global meetings.

This study has several limitations. A first limitation relates to the focus of this study on the effect of a key intra-organizational factor, interdependence from the subsidiary perspective, on GPL performance in isolation of global strategic extra-organizational networks and alliances. Recent research on the growing importance of global strategic extra-organizational networks and alliances for the performance of GPLs (Fang, Lee, Palmatier, & Han, 2016; Harvey & Griffith, 2007) suggests that such extra-organizational factors may be additional key determinants of GPL and firm performance. While the findings of this study provide no evidence for the role of such external networks in GPL performance, future research should focus on such networks to enhance the understanding of the relevance and interplay of both intra- and inter-organizational networks for the performance of GPLs.

A second limitation concerns the choice of methodology. We considered our exploratory case-study approach to be the most appropriate for investigating our research questions given the absence of theory on the effects of interdependence on the performance of GPLs and the inconclusive findings on the effects of interdependence on MNE performance in general. However, while case based research can lead to theoretical generalization, it does not allow for statistical generalization (Gummesson, 2005; Hillebrand, Kok, & Biemans, 2001). Therefore, future research should empirically test the propositions which we advance using quantitative research designs. Such research should consider additional industries to allow for a greater degree of statistical generalizability. For instance, research by Hultink, Hart, Robben, and Griffin (2000) suggests that launch decisions may affect the performance of product

launches differently for consumer versus industrial products, thus calling for future research to consider different types of industries.

Third, although we are interested in subsidiaries interdependence with both headquarters and other subsidiaries, most of our discussion relates to the dependence of a focal subsidiary on the headquarters and on other subsidiaries.[1] This, however, results from our focus on the individual subsidiary in our empirical analyses. While managers at individual subsidiaries may have raised the headquarters' or other subsidiaries' dependence on their own subsidiary, we did not feel such information could be used to make valid inferences regarding the headquarters' or other subsidiaries' dependence on the focal subsidiary, let alone the (general) level of interdependence among operations of the MNE. Consequently, our discussion does indeed tend to focus on subsidiary dependence, rather than subsidiary interdependence. Although this is common to research on subsidiary interdependence taking the perspective of individual subsidiary (e.g., Subramanian and Watson, 2006), our understanding would benefit from more in-depth analyses of interdependent relationships and their effects from the perspectives of all involved parties.

Finally, although we followed various steps suggested in the literature to ensure data equivalence across subsidiaries before and after the survey was carried out (see in particular, Hult, et al., 2008), our assessment of interdependence and the categorization of subsidiaries into four types was based on the evaluation this measure by one single respondent per subsidiary. Therefore, while we took care in making sure that we had a senior manager at the subsidiary answering our survey, we cannot rule out the possibility that an assessment of interdependence using multiple respondents per subsidiary could have led to a different selection of subsidiaries

[1] We like to thank one of the anonymous reviewers for highlighting this issue.

to study. While our approach was to an extent restricted by feasibility and time considerations regarding the access to key senior managers across a wide range of national subsidiaries, we do acknowledge this as a limitation of our research.

Despite these limitations, we are confident in the robustness of our research design and the quality of our findings for several reasons. First, our study is based on data from a major global player in the pharmaceutical industry. Second, our combination of primary survey data, actual performance data and interview data allowed for a triangulation of the findings. Third, the combination of primary data from multiple respondents and at different times combined with actual performance data eliminated the risk of a common method bias usually present in cross-sectional designs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Fourth, the collection of performance data after the actual product launch allows for greater confidence in the causal nature of any identified links. Fifth, asking respondents to evaluate their subsidiary's relationship with the headquarters and other subsidiaries *before* the actual performance of the subsidiary was known prevented the performance outcomes to influence respondents' assessments of these relationships, which is likely to be the case in studies where information is gathered through different sources but not at different points in time.

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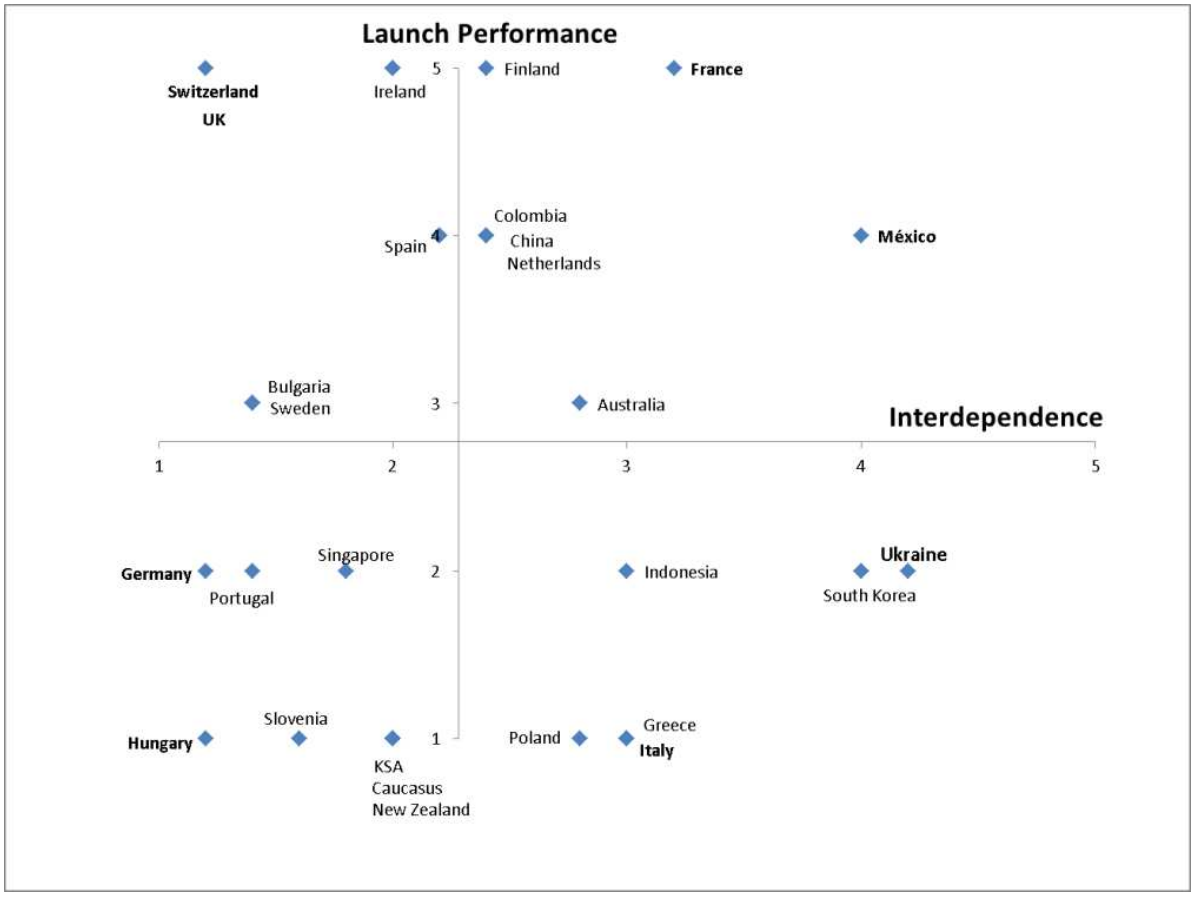
FIGURE

Figure 1. Interdependence-launch performance-combinations of subsidiaries



TABLES

Table 1. Selected subsidiaries in the different combinations of interdependence and launch performance

Type	Interdependence	Launch Performance	Selected subsidiaries
1	High	High	France, Mexico
2	High	Low	Italy, Ukraine
3	Low	High	UK, Switzerland
4	Low	Low	Germany, Hungary

Table 2. Identified themes within and across subsidiaries

	Subsidiary Type 1 (France, Mexico)	Subsidiary Type 2 (Italy, Ukraine)	Subsidiary Type 3 (UK, Switzerland)	Subsidiary Type 4 (Germany, Hungary)
Interdependence[1]	High	High	Low	Low
Launch Performance[2]	High	Low	High	Low
Positive effects of interdependence[3]				
Exchange of information	High	Low	High	Low
Sharing of resources	High	High	Low	Low
Local resource development	High	Low	High	Low
Negative effects of interdependence[3]				
Resource diversion	Low	Medium	Low	Low
Delays	Low	High	Medium	Medium
Power games and conflicts	Low	Medium	Medium	Medium
Factors weakening/strengthening these effects[3]				
Sub involvement in decision making	Medium	Low	High	Low
Clear division of labor and responsibilities	High	Low	Low	Low
Social capital				
Cognitive	High	Low	High	Low
Relational	High	Low	High	Low
Structural	High	Low	High	Low

[1] Information collected through pre-launch questionnaire survey; Interdependence construct combining subsidiaries' interdependence with the HQ and subsidiaries' interdependence with other subsidiaries; [2] Information gathered through post-launch survey and secondary data; [3] Information gathered through post-launch interviews;

ENDNOTES

[1] Following Subramaniam and Watson (2006) we asked respondents to indicate the extent to which each of the following statements describes the subsidiary: (1 = to a very little extent, 5 = to a very great extent): Subsidiary depends on the effective functioning of headquarters to keep performing its tasks effectively; The activities of headquarters influence the outcomes of the subsidiary; Headquarters depends on this subsidiary to effectively perform its tasks in order to continue performing its tasks effectively; The activities of this subsidiary influence the outcomes of headquarters; This subsidiary depends on the effective functioning of other foreign subsidiaries to keep performing its own tasks effectively; The activities of other foreign subsidiaries influence the outcomes of this subsidiary; The activities of this subsidiary influence the outcomes of other foreign subsidiaries; Other foreign subsidiaries depend on this subsidiary to effectively perform its tasks in order to continue performing its tasks effectively.

[2] To ensure robustness of our performance measure, we also obtained data on two alternative measures of launch performance. First, we obtained data on the *sales of the product* in the respective country one year after the launch of the product from IMS Health Inc. Second, we gathered data on brand-uptake in each of the subsidiaries. To obtain an independent assessment of this variable, we asked the company's Regional Business Heads to assess the level of brand uptake one year after the launch in each of the national markets on a Likert-type scale from 1 'very slow' to 5 'very fast'. These two alternative measures of launch success are highly correlated with patient shares.