

Virtual Assignments: A Knowledge-based Perspective

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Abstract

Virtual assignments are characterized by the spatial separation of private and business life. The virtual delegate lives and interacts in one culture, yet he or she works together mainly with people from another culture. While the virtual assignee is physically located in the headquarters, from an organizational and operational point of view, he or she belongs to a foreign subsidiary.

While in the last years several conceptual studies of virtual assignments have been published, there is a lack of empirical data on this new form of staffing overseas positions. The aim of this paper is therefore to explore the conditions under which virtual assignments are used in practice. More specifically, the knowledge-based view is applied to analyze the use of virtual assignment to support knowledge transfers between the units of a MNC.

Based on the knowledge-based view several research hypotheses are developed and tested in 255 MNCs in the BRICS countries (Brazil, Russia, India, China and South Africa). A regression analysis reveals that the use of virtual assignments depends on the intensity and the mode of knowledge transfer between headquarters and subsidiaries of a MNC. Contrary to our hypothesis, the direction of knowledge transfer has no significant influence.

Problem and Objectives

One of the main challenges for multinational corporations (MNCs) is to find the right candidates for their overseas positions. Traditionally, MNCs have three alternatives, namely the recruitment of parent-country, host-country or third-country nationals (Rosenzweig and Nohria, 1994; Harvey, Speier and Novecevic, 2001; Harzing, 2001a).

Parent-country nationals (expatriates) are employed for many reasons, such as for the transfer of corporate culture and politics, the facilitation of communication between subsidiaries and headquarters, the broadening of international experience of expatriates and the promotion of loyalty to the headquarters. Using host-country nationals, on the contrary, is often more economical. Moreover, their integration into the subsidiary is easier and they are more likely to be highly motivated. The recruitment of third-country nationals, as the third alternative, gives MNCs access to a larger pool of qualified managers and specialists. It also facilitates the coordination of their various foreign operations.

While these traditional forms of staffing have their particular advantages, there are many disadvantages as well, such as high expatriation costs for the headquarters, dual career implications and reintegration problems (Delios and Bjorkman, 2000; Harzing, 2001; Tharenou and Harvey, 2006). As a result, new alternatives of staffing like short-term delegations as well as international commuter and frequent flyer assignment are becoming more and more popular in many MNCs (Harris, Brewster and Erten, 2005; Collings, Scullion and Morley, 2007). The most innovative form is the virtual assignment which will be the focus of this paper.

According to PricewaterhouseCoopers (2000, p. 31) an international assignment is called virtual when “an employee does not relocate to a host location, but has international responsibilities for a part of the organization in another country which they manage from the home country”. Virtual assignees remain most of the time in their home country. In comparison with expatriates, virtual assignees are not delegated abroad. They work in the headquarters and use modern electronic media such as emails, conference calls or videoconferences to communicate with their foreign colleagues, customers or suppliers. This interaction with individuals with other cultural backgrounds in other countries encompasses most of their work (Holtbrügge and Schillo, 2006).

Regardless of their particular form, virtual assignments are characterized by the spatial separation of private and business life. The virtual delegate lives and interacts in one culture, yet he or she works together mainly with people from another culture. While the virtual assignee is physically located in the headquarters, from an organizational and operational point of view, he or she belongs to a foreign subsidiary.

Virtual assignments offer several advantages (Table 1). One advantage is the ability to work abroad without going abroad. Virtual expatriates work internationally without leaving their familiar surrounding. The time of absence is reduced, which improves the work/life balance. Another advantage is that the family does not have to be relocated. This enables children to follow their education and spouses to maintain their own career, which avoids conflicts within the family and dual-career problems. Likewise, the reintegration of virtual expatriates is much easier. Virtual assignees never lose contact to the headquarters and their local colleagues, because they remain integrated into its decision-making processes and networks. Moreover, virtual assignments are often cheaper than traditional forms of expatriation. For example, a salary premium as compensation for relocation abroad is not necessary. Finally, training for family members is superfluous since they remain in the home country.

Table 1 *Characteristics of traditional and virtual foreign assignments*

	Traditional Foreign Assignments	Virtual Assignments
Advantages	<ul style="list-style-type: none"> • easier control of subsidiary operations • positive image of delegates as ambassadors of the headquarters • easier implementation of technical and management know-how • talented managers are given international experience 	<ul style="list-style-type: none"> • ability to work abroad without going abroad • improved work-life balance • lower costs • greater flexibility in recruitment (no need to consider personal or family restrictions)
Disadvantages	<ul style="list-style-type: none"> • difficult adaptation to host-country conditions • low continuity of management due to limited delegation terms • high expatriation costs • problems for dual-career couples • repatriation problems 	<ul style="list-style-type: none"> • reduced face-to-face contact with colleagues and customers • reduced richness of communication through electronic media • continuous switch between home- and host-country interactions • high demands concerning communication and intercultural skills

A major disadvantage of virtual assignments is a reduced opportunity of communication. Since face-to-face contacts with colleagues, customers or suppliers are reduced to a minimum, no firsthand experiential learning of foreign cultures takes place. Because of the

large geographic distance, the virtual assignee and his counterparts communicate mainly through emails, conference calls or videoconferences, while personal meetings and subsequently face-to-face communication are very limited. For example, it is not possible to meet colleagues and chat with them on the floor or during lunchtime. This enhances the likelihood of misunderstandings and intercultural management problems (Briscoe and Schuler, 2004, p. 222; Dowling and Welch, 2004, p. 68). In addition, communication through electronic media becomes more complex due to different communication styles and time zones (Jarvenpaa and Leidner, 1999). Moreover, virtual assignees have to switch continuously between home- and host-country interactions which may have a negative impact on their work commitment and identification. As a result, the demands on virtual assignees concerning communication and intercultural skills are very high.

In the last years several conceptual studies on virtual assignments have been published, e.g. on their advantages and disadvantages compared to traditional assignments (e.g., PricewaterhouseCoopers 2000; Welch, Worm and Fenwick, 2003; Fenwick, 2004), possible fields of their application (e.g., Holtbrügge and Schillo, 2006) and their requirements for intercultural training (Holtbrügge and Schillo, 2008). Despite the large number of articles published recently, there are so far no empirical studies of their practical use in MNCs. The aim of this paper is therefore to explore the conditions under which virtual assignments are used in practice. More specifically, the knowledge-based view is applied to analyze the use of virtual assignments to support knowledge transfers between the geographically dispersed units of a MNC.

The paper is organized as follows. In the next section, the knowledge-based view will be applied to virtual assignments and several research hypotheses will be derived. Afterwards, the methodology of the study will be explained. This is followed by the presentation and discussion of the main results. The paper ends with a summary of the main contributions and limitations of the study as well as some suggestions for future research.

Theory and Hypotheses: A Knowledge-based View of Virtual Assignments

In the last years, the aims of foreign assignments have gradually changed. While in former times, control and coordination motives played a dominant role (e.g., Edström and Galbraith, 1977), the role of expatriates as vehicles for disseminating knowledge across MNC units is gaining more and more importance. As a consequence, foreign assignments are often

analyzed from a knowledge-based view (e.g., Tsang, 1999; Downes and Thomas, 2000; Bonache and Brewster, 2001; Minbaeva and Michailova, 2004).

According to the knowledge-based view, the collection, development, and exploitation of organizational knowledge is a main success factor of MNCs. Organizational knowledge can be defined as a context-specific, relational and action-oriented network of information that organizations develop in order to interact with their environment (Nonaka and Takeuchi, 1995, p. 57). As Bartlett and Ghoshal (1987, p. 37) recognize, knowledge management, that is “the ability to learn – to transfer knowledge and expertise from one part of the organization to others worldwide – became more important in building durable competitive advantage”. Similarly, Gupta and Govindarajan (1991, p. 772) argue that, in addition to capital and product flows, “knowledge flows across subsidiaries become particularly significant”. The main reason for this is that knowledge is very difficult to imitate and to adopt, thus, compared to products, technologies and other resources, building a more reliable and sustainable source of competitive advantage (e.g. Grant 1996; Meso and Smith, 2000; Adams and Lamont, 2003).

MNCs may apply different instruments of knowledge transfer such as manuals, reports, emails, telephone calls, videoconferences or delegations of headquarters expatriates. The use of these instruments for knowledge transfer have been intensively analyzed in recent studies (e.g., Gupta and Govindarajan, 2000; Minbaeva et al., 2003; Holtbrügge and Berg, 2004). These studies, however, do not take into account new instruments such as virtual assignments. The aim of this study is therefore to close this research gap and to explore the use of virtual delegations for knowledge transfer. More specifically, the influence of the intensity, direction and the mode of knowledge transfer on virtual delegations will be analyzed.

Intensity of Knowledge Transfer and Use of Virtual Delegations

An important contribution of the knowledge-based view is to point out the major relevance of knowledge for the success of a company. Not physical assets but knowledge is an important resource and source of competitive advantage. This is particularly relevant in knowledge-intensive industries such as IT, biotechnology or consultancy where permanent knowledge-based innovations play a key role.

For a MNC this requires not only to develop and to collect as well as to protect knowledge against imitation by others, but also to transfer knowledge between its geographically

dispersed units. E.g., a subsidiary in a lead market may share its experience of the introduction of a new product with subsidiaries in other countries where the launch will take place later. Similarly, a patent which was developed in one country is the more useful, the more it can be applied in other countries as well (e.g., Beise, 2001).

Virtual assignments are argued to be an appropriate instrument to support the transfer of knowledge within a MNC. The Janus-faced character of virtual delegates – living physically in one country while working in another – makes them aware of the differences between the two. The simultaneous confrontation with two different physical, mental and emotional environments requires them to adopt knowledge permanently to the specific local context. Thus, virtual delegates can be regarded as commuters and boundary-spanners between two worlds who permanently translate knowledge which was originally embedded in one context to another one (e.g., Au and Fukuda 2002). Since this translation is the more important, the more knowledge is transferred within a MNC, the following hypothesis can be derived:

Hypothesis 1: The higher the intensity of knowledge transfer between headquarters and subsidiary, the more often virtual delegates are used.

Direction of Knowledge Transfer and Use of Virtual Delegations

According to Gupta and Govindarajan (1991), MNCs can be thought of as a network of multidirectional knowledge transactions among units located in different countries. For each type of transaction subsidiaries can differ regarding the volume and criticality of knowledge flows. To the extent that subsidiaries engage in intra-MNC transactions, they can differ also regarding whether they are either the receivers or the providers of what is being transacted. Combining these two factors, any subsidiary of a MNC can be distinguished according to the extent to which it engages in knowledge inflows from and the extent to which it engages in knowledge outflows to other units of the MNC.

The transfer of knowledge, however, does not necessarily guarantee its efficient application. The receiving units must also develop a high “absorptive capacity”, i.e. the “ability to recognize the value of new information, assimilate it, and apply it to commercial ends” (Cohen and Levinthal, 1990, p. 128). According to Cohen and Levinthal, this ability depends – among other things – on the structure of communication and the distribution of knowledge within the company.

Empirical studies reveal that foreign delegations may be efficient instruments to enhance the absorptive capacity of a subsidiary. Since expatriates are physically located in the subsidiary, they are best suited to adapt knowledge inflows from the headquarters to the specific conditions under which the subsidiary operates (e.g., Ghoshal, Korine and Szulanski, 1994; Harzin, 2001b; Björkman, Barner-Rasmussen and Li, 2004). Virtual Delegates, on the contrary, are physically located in the headquarters. Thus, it can be argued that their particular strength is to consider the specific conditions of the home country, i.e. to enhance the absorptive capacity of the headquarters. These considerations lead to the following hypothesis:

Hypothesis 2: The higher the relative importance of knowledge outflows from the subsidiary to the headquarters compared to knowledge inflows, the more often virtual delegates are used.

Mode of Knowledge Transfer and Use of Virtual Delegations

With reference to the characteristics of knowledge flows it can be distinguished between objective vs. experiential knowledge (Penrose 1959) respectively explicit vs. tacit knowledge (Polanyi 1966). Objective or explicit knowledge, on the one hand, refers to knowledge that can be articulated either verbally or in writing (e.g., in manuals or mathematical expressions) and thus can be transmitted in formal, systematic language (e.g., in mails or reports). Experiential or tacit knowledge, on the other hand, is implicit, non-verbalized and therefore difficult to formalize and to communicate since it is embedded in individual experiences and involves personal beliefs, perspectives and value systems (Hedlund and Nonaka 1993, Nonaka and Takeuchi 1995).

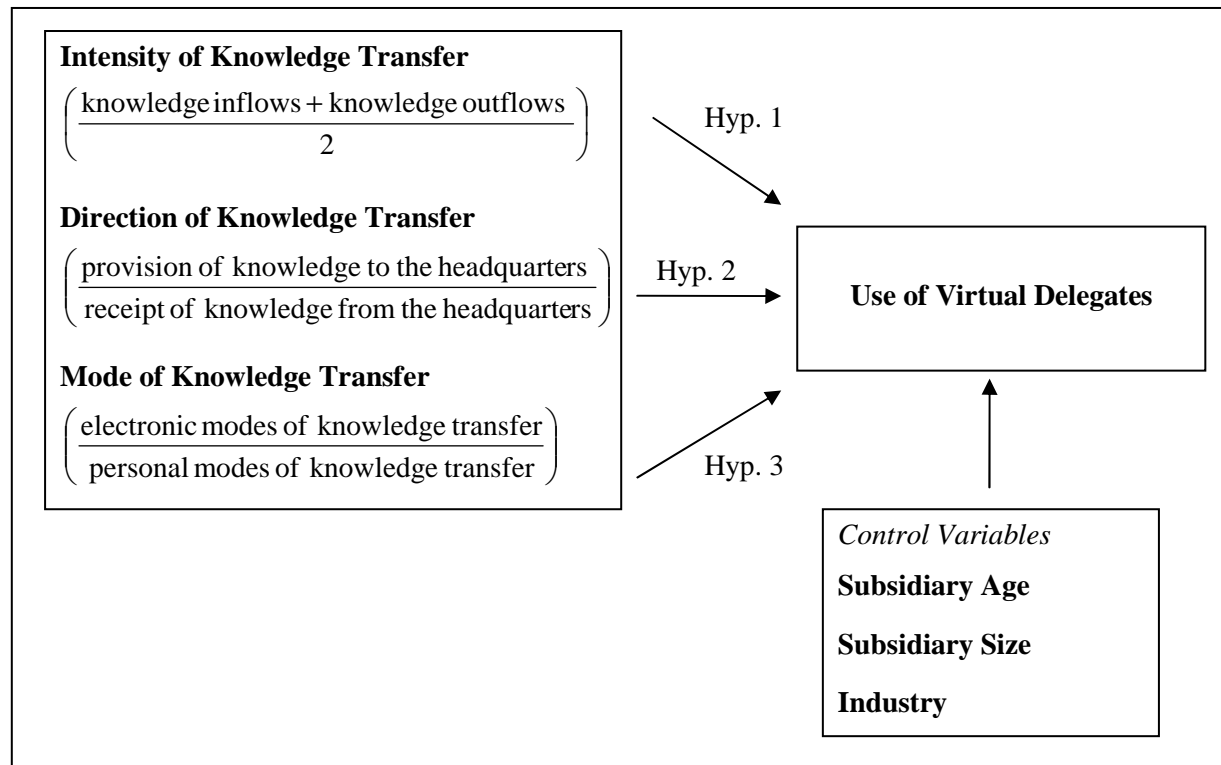
Empirical studies (e.g., Holtbrügge and Berg, 2004) underline, that these two forms of knowledge require different mechanisms of transfer. Experiential or tacit knowledge can be best exploited through personal modes. These allow the transfer of knowledge that the sender may be unaware of, that requires trust-creation between the sender and the receiver, and that needs to be adapted to different cultures, laws, and business practices (Pedersen et al. 2003). Moreover, personal modes of knowledge transfer proceed synchronously. The simultaneous attendance of sender and receiver enables more spontaneous forms of communication. Additionally, communication is not limited to verbal expressions, but may include also non-verbal elements. Thus, the media richness of personal communication is high.

On the contrary, explicit or objective knowledge is more likely to be transferred through electronic media (Pedersen et al. 2003, p. 76). Electronic modes are able to transfer large amounts of data which is not possible through face-to-face interaction. Knowledge transfer through electronic media is also more precise because information may be digitalized and selective perceptions of individuals are less likely. However, the knowledge transfer is asynchronous and delayed, which complicates explanations and requests. Alike, electronic modes are not able to transfer emotions easily.

Virtual delegates work in the headquarters and use modern electronic media such as emails, conference calls or videoconferences to communicate with their foreign colleagues, customers or suppliers, while face-to-face contacts with their counterparts are reduced to a minimum. Therefore, personal communication e.g., to meet and chat with colleagues on the floor or during lunchtime, is not possible. Moreover, the richness of electronic media is limited, which makes the use of virtual delegates less appropriate for the transfer of implicit knowledge. Hence we propose:

Hypothesis 3: The higher the relative importance of electronic compared to personal modes of knowledge transfer, the more often virtual delegations are used.

The research model of our study is illustrated in Figure 1.

Figure 1 *Research Model*

Methodology

Sample

In order to test the research hypotheses developed in the last paragraph, an empirical study among MNCs in the BRICS countries (Brazil, Russia, India, China and South Africa) was conducted. These countries were selected because they absorb a high degree of foreign direct investment (FDI) (UNCTAD, 2006). Moreover, many MNCs have established operations in these countries in the last years only. This allows them to implement the most recent management techniques here. Since virtual assignments are a very innovative form of filling overseas positions, they may be expected to be particularly relevant in the BRICS countries.

We contacted the chambers of foreign trade of the United States of America and of the member countries of the European Union in the BRICS countries and were able to receive a large number of contact addresses. All subsidiaries of MNCs headquartered in the U.S. or the EU were contacted via email and asked to participate in the study in January 2007. A link in the email led them to an online questionnaire where the respondents could choose between a German and an English version. To ensure the equivalency of questions the original German language questionnaire was translated into English by a professional translator using the

translate/re-translate method. After four weeks, we sent out a reminder to those companies that had not answered by that time. Finally, 255 usable questionnaires were received. A test for non-response bias by comparing early and late arriving responses according to Armstrong and Overton (1977) revealed no significant differences for any independent variable, and non-response bias was therefore not considered as a problem.

The geographical distribution of the respondents is presented in Table 2. It shows that the numbers of subsidiaries located in China and India, which are the two countries absorbing the largest amount of FDI from Germany at the moment, are the highest in our sample. Subsidiaries in South Africa are slightly overrepresented and those in Russia underrepresented in our sample. ANOVA analyses revealed no significant differences concerning the use of virtual assignments between different home and host countries. On average, the subsidiaries employed 1,114 people and are 17.148 years old. 47.8 % of them are manufacturing units, and 52.2 % operate in services and trade.

Table 2 *Geographical Distribution of the Sample*

<i>Country</i>	<i>Number</i>	<i>Percentage</i>
Brazil	23	9.0 %
Russia	4	1.6 %
India	72	28.2 %
China	95	37.3 %
South Africa	61	23.9 %
Total	255	100.0 %

Measures

Dependent Variables

Before measuring the dependent variable “use of virtual delegates” first the concept of virtual delegation was explained to the respondents. Virtual delegates were defined as “employees located in the headquarters, who work predominantly for the subsidiary by using electronic media for communication”. Afterwards, they were asked to assess the actual use of virtual delegates in their subsidiary to realize six different aims ((i) transfer of technological, administrative or sales know-how, (ii) transfer of corporate culture, (iii) supervision and control of the subsidiary, (iv) compensating lack of local managers, (v) further training of employees, and (vi) ensuring efficient coordination and communication) on 7-point Likert-type scales ranging from 1 = “virtual delegates are not used at all” to 7 = “virtual delegates

are used very extensively”. For the six sub-scales a composite index was calculated which shows a very high internal reliability (Cronbach’s $\alpha = .874$).

Independent Variables

The *direction of knowledge transfer* was measured according to Gupta and Govindarajan (2000) by asking the respondents “to what extent the subsidiary (i) provides knowledge and skills to the headquarters” and (ii) “receives knowledge and skills from the headquarters”. Both variables were measured on 7-point Likert-type scales going from 1 = “not at all” to 7 = “to a very high extent”. A ratio of both items was calculated indicating the relative importance of knowledge outflows compared to knowledge inflows.

The *intensity of knowledge transfer* was measured with the same items and calculated as the sum of knowledge inflows and knowledge outflows divided by 2.

The dominant *mode of knowledge transfer* was measured according to Holtbrügge and Berg (2004) by asking the respondents to indicate the extent to which (i) personal communication and (ii) electronic media such as the intranet are used. Both variables were measured on 7-point Likert-type scales going from 1 = “not important at all” to 7 = “very important”. A ratio of both items was calculated indicating the relative importance of electronic compared to personal modes of knowledge transfer.

Control Variables

Three control variables were included. *Subsidiary age* was measured by asking the respondents when their subsidiary was founded. This number was subtracted from 2007 (the year of the study). Moreover, we included *subsidiary size* (measured as the number of employees working in the subsidiary) and *industry* (with 1 = “service and trade” and 0 = “manufacturing”). These control variables have been widely used in empirical studies of traditional assignments (e.g., Delios and Björkman, 2000; Harzing, 2001; Tan and Manhoney, 2002, 2006; Minbaeva, 2003) and may be expected to influence the use of virtual assignments as well.

Results and Discussion

A first important result of our study is that virtual delegates are used in practice. Although the mean of 2.760 is below average, only a very small number of respondents mentioned that

virtual delegates are not used in their company at all. Thus, while former conceptual studies point out the advantages of virtual assignments, our study is the first to prove empirically the relevance of this new form of filling overseas positions. However, it has to be taken into account that the subsidiaries in our sample are quiet large. It has yet to be proven if virtual assignments are used in smaller subsidiaries and in other regions of the world as well.

Table 3 shows that virtual delegates are used for different reasons. The most important is to ensure efficient coordination and communication between headquarters and subsidiaries and to transfer technological, administrative or sales know-how. The least important motive is to compensate a lack of local managers in the host country.

Table 3 *Motives of using virtual delegates*

<i>Motives</i>	<i>Mean</i>	<i>SD</i>
Transfer of technological, administrative or sales know-how	3.086	2.092
Transfer of corporate culture	2.529	2.013
Supervision and control of the subsidiary	2.847	2.132
Compensating a lack of local managers	2.149	1.775
Further training of employees	2.820	1.952
Ensuring efficient coordination and communication	3.129	2.189

Notes N = 255

The means, standard deviations and correlation coefficients of all variables are presented in Table 4. It shows that the intensity of knowledge transfer between headquarters and subsidiaries is relatively high (mean = 4.041). The ratio for the direction of knowledge transfer indicates that, on average, subsidiaries receive more knowledge than they provide (mean = .872). For the mode of knowledge transfer, personal communication is slightly more important than the use of electronic media (mean = .953).

The correlation analysis reveals that there is only one statistically significant relationship between the independent variables (on a very low level of significance), so our results do not warrant concerns about multicollinearity (Hair et al., 1995). The dependent variable “use of virtual delegates” shows highly significant correlations with the intensity and the mode of knowledge transfer, however, no significant correlation with its direction. As well, there are no significant correlations between the use of virtual delegates and any of the control variables.

Table 4 Means, Standard Deviations and Correlations

	Mean	SD	1	2	3	4	5	6	7
1 Use of Virtual Delegates	2.760	1.589	-						
Intensity of Knowledge									
2 Transfer	4.041	1.577	.366***	-					
Direction of Knowledge									
3 Transfer	.872	.699	.024	.058	-				
Mode of Knowledge									
4 Transfer	.953	.378	.136*	-.013	-.112†	-			
5 Subsidiary Age	17.148	21.262	-.085	-.041	-.112†	.057	-		
6 Subsidiary Size	1,114	5,570	-.042	.014	-.005	-.012	.195**	-	
7 Industry	.522	.501	-.095	-.053	.171**	.040	-.134*	-.082	-

Notes † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; $N = 255$

The results of the regression analysis are reported in Table 5. The use of virtual delegates was entered as the dependent variable into three regression models. In the first model, only the control variables were integrated. Model 1 is statistically not significant. In the second model, only the independent variables were integrated, while both control and independent variables were entered into the third model. Model 2 ($F = 8.098^{***}$) and Model 3 ($F = 4.933^{***}$) are both highly significant.

Table 5 Regression Analysis on Use of Virtual Delegates

	Model 1	Model 2	Model 3
<i>Independent Variables</i>			
Intensity of Knowledge Transfer		.271***	.285***
Direction of Knowledge Transfer		.025	.031
Mode of Knowledge Transfer		.146*	.154*
<i>Control Variables</i>			
Subsidiary Age	-.100		-.074
Subsidiary Size	-.027		-.034
Industry	-.056		-.081
R ²	.013	.095	.117
Adjusted R ²	.001	.083	.093
Change in adjusted R ²		.082	.092
F	1.068	8.098***	4.933***

Notes * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; $N = 255$; standardized coefficients shown

The independent variables accounted for a very modest share of the variance in the use of virtual delegates ($R^2 < .013 - .117$). This moderate result is of little concern here, since the main objective of this study is to find out to what extent virtual assignments are associated with knowledge transfers in MNCs and not to find out what circumstances contribute to the use of virtual assignments in general. The low values of R^2 indicate that there are other factors contributing to the use of virtual assignments than knowledge transfers, as could have been expected.

Hypothesis 1 predicted that virtual delegates are the more often used, the higher the intensity of knowledge transfer between the headquarters and the subsidiary is. This is clearly supported by the regression analysis. In both models the regression coefficient is significant on a very high level. Similarly, the correlation between these two variables is highly significant. Thus, hypothesis 1 is supported by our data.

Hypothesis 2 suggested that virtual delegates are the more often used, the higher the relative importance of knowledge outflows from subsidiary to headquarters compared to knowledge inflows from headquarters to subsidiary is. Our results do not support this hypothesis. In both models, the regression coefficient is not significant. Moreover, the correlation analysis shows no significant correlation between the use of virtual delegations and the direction of knowledge transfer. One explanation for this unpredicted result may be that virtual delegates are seen as uncommitted mediators between the headquarters and the subsidiary who do not belong to either side. Therefore, they may not only – as proposed in hypothesis 2 – facilitate the knowledge transfer from the subsidiary to the headquarters and its efficient absorption there but may also support knowledge transfers from the headquarters to subsidiaries.

In hypothesis 3 we proposed that the use of virtual delegates is the higher, the higher the importance of electronic compared to personal modes of knowledge transfer is. This is clearly supported by our study. The regression coefficients in both models are significantly positive, although on a medium level only. The correlation analysis shows a similar result. Thus, hypothesis 3 is supported by our data.

Like in the correlation analysis, the control variables show no significant coefficients in our regression models. Neither the age and the size of the subsidiary nor the industry in which it operates are able to explain the use of virtual delegates. This result is in accordance with former empirical studies of traditional assignments by Minbaeva et al. (2003) and Delios and

Björkman (2000), while Harzing (2001) and Tan and Manhoney (2006) found these variables to be relevant.

Contributions, Limitations and Implications for Future Studies

The first important contribution of this study is that virtual delegates are used in practice. While several conceptual studies point out the advantages of virtual assignments (e.g., PricewaterhouseCoopers 2000; Welch, Worm and Fenwick, 2004) and possible fields of their application (e.g., Holtbrügge and Schillo, 2006), our study is the first to empirically prove the practical relevance of this new form of filling overseas positions. More specifically, it reveals some conditions under which virtual delegates are used to support the transfer of knowledge within MNCs. Thus, the study has practical implications for companies that plan to use virtual assignments and point out several variables which they may consider in their decision-making process.

An important theoretical contribution of our study is that it successfully links the knowledge-based view with the use of virtual delegates. The results show that the use of virtual delegates can partially be explained by using this theoretical perspective. Virtual assignments may support the transfer of knowledge within MNCs and can therefore contribute to their competitive advantage. More specifically, the study reveals that this new form of filling overseas positions is used the more often, the more intense the knowledge transfer between the units of a MNC and the higher the proportion of the electronic compared to personal modes of knowledge transfer is. Furthermore, the Janus-faced character of virtual delegates – living in one country but working in another one – allows them to transfer knowledge between the geographically dispersed units of a MNC regardless whether they are mainly providers or receivers of knowledge. Thus, the study contributes to our understanding of knowledge transfers within MNCs.

A limitation of this study is the geographical distribution of the sample. Only subsidiaries in the BRICS countries with headquarters in the U.S. and the EU were analyzed. Although these countries are of particular importance for FDI, a transfer of the results to other regions may be problematic given the different economic, legal and political conditions. Therefore, it might be interesting to explore the use of virtual delegates in other, more industrialized regions such as the Triade countries (EU, U.S., Japan).

Another limitation is that our study does not include any efficiency criteria. The study reveals, from a knowledge-based view, under which conditions virtual assignments are used, but can not predict whether they are – compared to other instruments – more or less efficient to support the transfer of knowledge within a MNC. An analysis of the efficiency of virtual assignments, however, would require a complex research design with at least two respondents in each company to reduce the problem of common method bias (e.g., Podsakoff et al., 2003). Moreover, the efficiency of virtual assignments may be evaluated differently by the headquarters and the subsidiary, making it necessary to include the perceptions of both sides.

Finally, a limitation of our study is the low percentage of variance in the use of virtual delegates which can be explained by our regression models. One reason for this is that we limited our focus to one particular theoretical framework, namely the knowledge-based view. Therefore, future studies should base on other concepts such as transaction cost economics or agency theory to analyze additional antecedents which may explain the use of virtual delegates in MNCs.

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