Mason-Jones, R. & Towill, D. R. (1998) Time compression in the supply chain: information management is the vital ingredient, Logistics Information Management, vol 11, iss 2.

Mason-Jones, R. & Towill, D. R. (1999) Total cycle time compression and the agile supply chain, International Journal of Production Economics, 62 (1999) 61-73.

Nattermann, P. M. (2000) Best practice (not equal to) Best Strategy, McKinsey Quarterly.

Porter, M. E. (1996) What Is Strategy? Harvard Business Review, Nov-Dec 1996.

Ratner, M. & Ratner, D. (2003) Nanotechnology: A Gentle Introduction to the Next Big Idea, Prentice Hall, Upper Saddle River.

Robbins-Roth, C. (2000) From Alchemy to IPO, Basic Books, New York.

Sanchez, R. (2004) Creating Modular Platforms for Strategic Flexibility, Design Management Review, Winter.

Sanchez, R. and A. Heene. (1997). Competence Based Strategic Management. John Wiley & Sons, New York.

Stalk, G. (1988) Time: The Next Source of Competitive Advantage. Harvard Business Review, July-August.

Towill, D. R. (1996) Time compression and supply chain management – a guided tour. Logistics Information Management, vol 9, iss 6.

Womack, J. P.; Jones, D. T. & Roos, D. (1991) The Machine That Changed the World, Harper Collins, New York.

CHAPTER 19

KNOWLEDGE MANAGEMENT ACROSS BORDERS: EMPIRICAL EVIDENCE OF THE CURRENT STATUS AND PRACTICES OF KNOWLEDGE MANAGEMENT IN MULTINATIONAL CORPORATIONS

Helmut Kasper and Florian Kohlbacher

Vienna University of Economics and Business Administration, Vienna, Austria

Knowledge management seems to have become a ubiquitous phenomenon both in the academic as well as in the corporate world. However, according to the authors, there has not been any comprehensive and holistic empirical study of the current status and practices of knowledge management in corporations. Therefore, based on our recent global study on knowledge management and organizational learning in multinational companies (MNCs), this paper wants to make up for this shortcoming in knowledge management research. In nine renowned MNCs, three interviews with respondents from the top and upper management level were conducted in the headquarters and in two different subsidiaries respectively. Thus, both quantitative and qualitative data from 81 interviews in total were earned. This paper focuses on the use of knowledge management tools and shows that not all tools have the same impact, and some of them even influenced knowledge management processes negatively.

1. Introduction

There has not been any comprehensive and holistic empirical study of the current status and practices of knowledge management (KM) in corporations. Looking at the current status and practices of KM in the corporate world might help to find an answer to the question of whether this passion for KM is a passing fad. Therefore, based on our recent

global study on KM and organizational learning in multinational companies (MNCs), this paper wants to make up for this shortcoming in KM research. The focus lies on the use of different KM tools and their impact on knowledge transfer within MNCs.

2. Research Methodology

The insights offered in this paper are based on a recent global study (2001-2005) on KM and organizational learning in MNCs conducted by the authors. Nine renowned MNCs were selected to serve as our sample. In each MNC, three interviews with respondents from the upper management level (mainly CEOs, HR-managers, CFOs) were conducted in the headquarters and in two different subsidiaries respectively. Thus, we earned both quantitative and qualitative data from 81 interviews in total.

For our theoretical sample we attempted to select companies that would provide us with an opportunity to collect rich data and to compare different approaches on KM and the way knowledge is handled in a variety of different contexts. Specifically the research sample consists of 27 units of 9 MNCs from different branches. The headquarters and two subsidiaries are each chosen to reflect as many regional and cultural differences as possible. Consequently, it was our aim to gain the support of units located in very different regions.

In accordance with our qualitative research design for our explorative study, in-depth interviews (qualitative, semi-structured) based on an interview guideline were conducted with respondents in the respective countries. The interviews were transcribed and encoded based on our system of categories so that they could be used not only for qualitative word context analysis supported by NVivo but also for quantitative analysis using logistic data regression, MANOVA and ANOVA.

To analyze and interpret the data, we used qualitative content analysis according to Mayring, which is "an approach of empirical, methodological [sic] controlled analysis of texts within their context of communication, following content analytical rules and step by step models, without rush quantification" (Mayring 2000). Following our research questions, the aspects of text interpretation are put into categories which are formed inductively and/or deductively and revised within the process analysis (feedback loops).

To lend quantitative support to the observations that emerged from the interviews, we conducted several additional surveys. Central to the findings presented in this paper were two different collection instruments. First, a questionnaire on KM tools and processes used in the organization was employed. On a seven-point scale the usage frequency of 19 common KM tools was surveyed. The influence of these KM tools on the inter-organizational knowledge transfer was analyzed in a multivariate fashion using a logistic regression model. The antilogs of the model-coefficients were interpreted as the corrected odds ratio.

Second, an illustration prepared in accordance with structure formation technique was used to visualize the knowledge flows on both the personal and the technical level between the different units as perceived by the interviewee.

3. The Results: Current Status of KM in MNCs

3.1. *Use of KM tools in MNCs*

Nonaka and Takeuchi (1995) distinguish between explicit and tacit knowledge (cf. also Inkpen and Ramaswamy 2006 for a discussion in a global KM context). Their well-known spiral of knowledge illustrates the process of creating knowledge in an organization through the interaction between tacit and explicit knowledge. Although many studies apply and extend the Nonaka and Takeuchi (1995) model, the lack of classification and categorization of existing KM systems (KMS) is especially problematic. In fact, a survey of the KMS literature indicates that there appears to be no generally accepted systematic framework guiding KMS research (Gallupe 2001). However, there are some contributions that attempt to provide insight into the entire process of KM. These processes, each including various forms of knowledge, are very complex. Consequently, to capture an organization's entire KMS seems to be very

difficult. Notwithstanding the problems arising from this complexity, some authors have made attempts to categorize KMS (e.g. Birkinshaw 1999; Davenport 2005; Davenport and Harris 2005; Hansen, Nohria *et al.* 1999; Hong 1999; McAdam and McCreedy 1999; Zack 1999; Bloodgood and Salisbury 2001; Earl 2001; Gallupe 2001; Holsapple and Joshi 2001).

For our purposes, the approach suggested by Hansen *et al.* (1999) renders itself particularly useful. The authors found that in some companies, KMS center around the technological infrastructure, while other companies primarily foster personal communication and contact. Technologically focused companies, it is argued, attempt to codify and store knowledge in databases to make it easily accessible to anyone in the company. The authors call this a codification strategy. A personalization strategy, in contrast, implies that knowledge is closely tied to the individuals who develop it. In these companies, information technology primarily serves to enable communication among the members.

The Hansen *et al.* (1999) approach does not only have a high face validity, but a suitable scale, based on Nonaka and Takeuchi's knowledge spiral, has also been developed by Becerra-Fernandez and Sabherwal (2001). We slightly modified this scale and aggregated the different KM tools as personalization and codification instruments. To this end, we identified the personalization and codification tools and created two dimensions by splitting the scale. In the following exhibits, we list the items associated with codification (Table 1) or personalization (Table 2).

The following two exhibits show the average use of the codification (Figure 1) and the personalization tools (Figure 2) in the nine MNCs surveyed in our study. The average use was surveyed by using a seven-point scale going from "very infrequently" (value 1) to "very frequently" (value 7) and "not applicable" coded by value 0. With a total mean of 4.56, the personalization tools are used a little bit more frequently than the codification tools (total mean of 4.33).

Table 1. Codification KM tools.

Capture and transfer of experts' knowledge
Decision support systems
Modeling based on analogies and metaphors
Groupware and other team collaboration tasks (e.g. document sharing)
Databases
Web-based access to data
Pointers to expertise (skills "yellow pages" within the company)
Repositories of information, best practices, and lessons learned
Web pages (Intranet and Internet)
A problem-solving system based on a technology like case-based reasoning

Table 2. Personalization KM tools.

Learning by observation
Chat groups/Web-based discussion groups
Employee rotation across areas
Cooperative projects across subsidiaries
The use of apprentices and mentors to transfer knowledge
Brainstorming retreats or camps
Learning by doing
On-the-job-training
Face-to face meetings

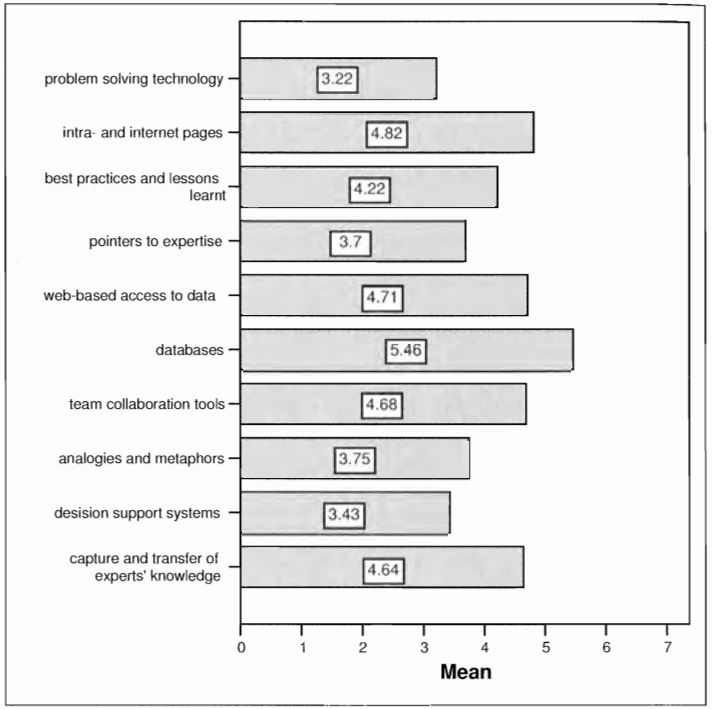

Figure 1. Average use of codification tools.

3.2. *Impact of tool use on the inter-organizational knowledge transfer*

Knowledge is transferred in organizations whether or not the process is managed at all and the everyday knowledge transfers are part of organizational life (Davenport and Prusak 2000). However, there are certain factors that influence the transfer of knowledge and different strategies to manage knowledge sharing in firms can be applied.

The authors have developed a comprehensive model of knowledge sharing in MNCs, which can basically be divided into three sub-models (Kasper and Haltmeyer 2002; Kasper and Mühlbacher 2004): A model describing the process of inter-organizational knowledge sharing, a model of the organizational context factors and a model of international/ inter-organizational context factors influencing the process. Since the context factors have a strong impact on the process of KM, the process and context of KM are highly intertwined. For a successful management

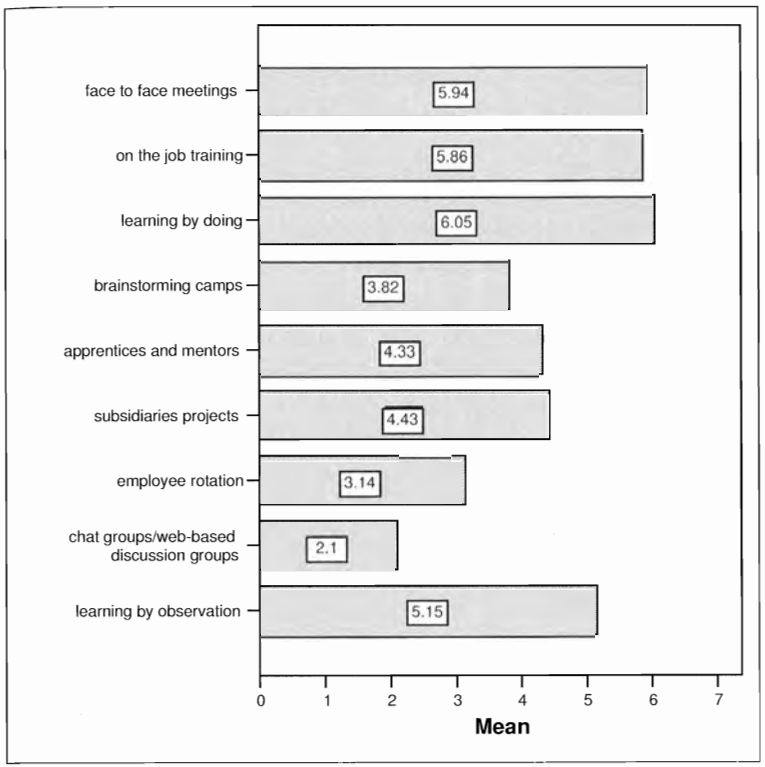

Figure 2. Average use of personalization tools.

of knowledge sharing between these organizations it is absolutely necessary to be aware of these different context factors, to know about their influence on the knowledge sharing process, and to adapt the KMS to these conditions. (Kasper and Haltmeyer 2002).

Among the different context factors we identified, it is the factor of appropriate structures/infrastructure that comprises the KM tools. As a matter of fact, learning in organizations requires an adaptation of the organizational structures. In order to enable learning and knowledge sharing, a flexible structure that encourages growth and experimentation, creative problem solving and flexibility must be in place (Kasper and Haltmeyer 2002). Besides, fostering both formal and informal communication and providing sophisticated KM tools to enable the capture, storage and dissemination of knowledge are also a conditio sine qua non. Davenport *et al.* (1998) in their study of successful KM projects

put it like this: "Knowledge projects are more likely to succeed when they use the broader infrastructure of both technology and organization" (p. 51).

Table 3. KM tools.

Tool 1 Capture and transfer of experts' knowledge
Tool 2 Decision support systems
Tool 3 Learning by observation
Tool 4 Chat groups/Web-based discussion groups
Tool 5 Employee rotation across areas
Tool 6 Cooperative projects across subsidiaries
Tool 7 Modeling based on analogies and metaphors
Tool 8 Groupware and other team collaboration tasks (e.g. document sharing)
Tool 9 Databases
Tool 10 Web-based access to data
Tool 11 Pointers to expertise (skills "yellow pages" within the company)
Tool 12 The use of apprentices and mentors to transfer knowledge
Tool 13 Brainstorming retreats or camps
Tool 14 Repositories of information, best practices, and lessons learned
Tool 15 Web pages (Intranet and Internet)
Tool 16 Learning by doing
Tool 17 On-the-job-training
Tool 18 A problem-solving system based on a technology like case-based reasoning
Tool 19 Face-to face meetings

Using a logistic regression model, we looked at the impact of the average use of the 19 different KM tools (see Table 1 and Table 2) on the inter-organizational knowledge transfer within each of our 9 target companies. The inter-organizational knowledge transfer in MNCs is represented by the knowledge flows between headquarter and subsidiary and between subsidiaries respectively. Besides, personal knowledge flow and technical knowledge flow can be distinguished. We defined personal knowledge flow as a more or less direct exchange of knowledge on a person-to-person basis. This includes face-to-face meetings, telephone, e-mail, videoconferences etc (cf. also Hansen, Nohria *et al.* 1999). Technical knowledge flow, in contrast, means the sharing of knowledge via a technical intermediary with the collectivity. Here, knowledge needs to be codified and transmitted to the intermediary first, before it is transferred further to or 'picked up' by the final recipients. Table 3 gives an overview of the KM tools as they were surveyed by our questionnaire.

Table 4 shows the impact of the KM tools on the personal knowledge flow. The significant values are highlighted in bold: Decision support systems (Tool 2), Databases (Tool 9), Web-based access to data (Tool 10), Pointers to expertise (skills "yellow pages" within the company) (Tool 11), and Web pages (Intranet and Internet) (Tool 15).

While Tool 2, Tool 10 and Tool 15 reduce the chance for a high personal knowledge flow, Tool 9 and Tool 11 increase it. In fact, Tool 2 reduces the chance for a high knowledge flow per unit by 32%, Tool 10 by 28% and Tool 15 by 36%. Tool 9 increases it by 70% and Tool 11 by 38%. In other words, an increased use of Decision support systems (Tool 2), Web-based access to data (Tool 10), and Web pages (Intranet and Internet) (Tool 15) reduces the personal knowledge flow, while an increased use of Databases (Tool 9) and Pointers to expertise (skills "yellow pages" within the company) (Tool 11) increases it.

How come that tools which are supposed to support KM (processes) in firms, have a reverse effect? As matter of interest, all of the KM tools that had a significant impact on the personal knowledge flows belong to the KM tools used for codification according to our attribution. It should be plausible to assume that codification tools have influence on the technical flow of knowledge while personalization tools have impact on the personal knowledge flow. However, this reasoning takes only the

Table 4. Impact of KM tools on personal knowledge flow.

	Beta	SE Beta	OR	-95%CL	+95%CL	p value
Const.B0	-4.067884	2.587898	0.01711356	9.55073E-05	3.066508	0.1159866
TOOL_1	0.003807144	0.2103082	0.9962001	0.6534758	1.518671	0.985557
TOOL_2	**-0.3869662**	**0.1869819**	**0.679114**	**0.4668055**	**0.9879828**	**0.03850364**
TOOL_3	-0.06062911	0.1927317	0.9411722	0.6395229	1.385103	0.7530844
TOOL_4	0.2383463	0.2163488	1.269149	0.8224999	1.958345	0.2706108
TOOL_5	0.1659317	0.1927571	1.180493	0.8020992	1.737394	0.3893364
TOOL_6	0.1566458	0.2012908	1.169581	0.7812048	1.751039	0.436453
TOOL_7	0.1225021	0.1713576	1.130322	0.8016772	1.593692	0.4746814
TOOL_8	0.09255841	0.217329	1.096977	0.7095248	1.696007	0.6701903
TOOL_9	**0.5313026**	**0.2571841**	**1.701147**	**1.015803**	**2.848879**	**0.03885108**
TOOL_10	**-0.329154**	**0.1963935**	**0.7195322**	**0.4853431**	**1.066723**	**0.09374947**
TOOL_11	**0.3223179**	**0.1869587**	**1.380324**	**0.9488431**	**2.008017**	**0.08471654**
TOOL_12	0.133987	0.2236924	1.143378	0.7301617	1.790444	0.5491912
TOOL_13	0.1829853	0.2304218	1.200797	0.756553	1.905898	0.4271247
TOOL_14	0.08610144	0.1928761	1.089917	0.7403799	1.604472	0.6553056
TOOL_15	**-0.4461421**	**0.2112163**	**0.6400928**	**0.4191169**	**0.9775763**	**0.03467255**
TOOL_16	-0.1232741	0.3266165	0.8840213	0.4592775	1.701572	0.7058585
TOOL_17	0.3885334	0.3177485	1.474816	0.779959	2.788714	0.2214255
TOOL_18	0.2077617	0.1717025	1.23092	0.8724228	1.736731	0.2262842
TOOL_19	-0.1068618	0.3180194	0.8986498	0.4749944	1.700171	0.7368557

positive effect into account and neglects a possible negative impact. In fact, the increased use of codification tools which again increase the availability of information and knowledge might render personal contact unnecessary up to some extent and thus decrease the personal knowledge flow between different units within MNCs. If the desired information or knowledge can easily be accessed from a repository such as decision support systems or the intranet, knowledge exchange on a personal basis might become superfluous. This explains reasonably well why Tools 2, 10 and 15 have a negative impact on the personal knowledge flow. Moreover, it is not surprising that an increased use of pointers to expertise (Tool 11) leads to a higher personal knowledge flow. Pointers to expertise like yellow pages for example, do not carry or contain the knowledge itself, but – as the term already suggests – point to the place

or person where the knowledge is located. Thus, having identified the knowledge source, it needs to be tapped to initialize the knowledge exchange. Usually this implies direct contact with the person that possesses the relevant knowledge. This again, increases the personal knowledge flow as a consequence.

But why is it that a higher use of databases (Tool 9) has a positive impact on the personal knowledge flow? A feasible explanation of this phenomenon is that in contrast to web-based access to data and intranets for instance, databases might only be accessible locally but not inter-organizationally (i.e. across all subsidiaries). Or, even if the databases are available globally they might not also be completely up-to-date or it might be more difficult to make them become available across all subsidiaries. As a matter of fact, this is the case with one of the most widely used groupware Lotus Notes, where databases first need to be replicated to another location and are usually only updated once per day. Therefore, if a lot of knowledge is stored in databases locally, this knowledge still needs to be shared and transferred inter-organizationally via personal contact, thus leading to a higher personal flow of knowledge. Moreover, even though explicit knowledge can be shared through contributing to and referring to databases and other documents that can be placed in various searchable forms, the knowledge encoded in databases is never complete (Mohrman, Finegold *et al.* 2002). In fact, the embedded assumptions and tacit understanding behind it must be shared in person-to-person interactions (ibid.; cf. also Leonard and Swap 2005).

Table 5 shows the impact of the KM tools on the technical knowledge flow. The significant values are highlighted in bold: Capture and transfer of experts' knowledge (Tool 1), Decision support systems (Tool 2), Learning by observation (Tool 3), Employee rotation across areas (Tool 5), and Modeling based on analogies and metaphors (Tool 7).

While Tool 2, Tool 3 and Tool 7 reduce the chance for a high technical knowledge flow, Tool 1 and Tool 5 increase it. In fact, Tool 2 reduces the chance for a high knowledge flow per unit by 27%, Tool 3 by 27% and Tool 7 by around 30%. Tool 1 increases it by 54% and Tool 5 by 51%. In other words, an increased use of Decision support systems (Tool 2), Learning by observation (Tool 3), and Modeling based on

Table 5. Impact of KM tools on technical knowledge flow.

	Beta	SE Beta	OR	-95%CL	+95%CL	p value
Const.B0	-1.026577	2.323514	0.3582312	0.00340332	37.70716	0.658622
TOOL_1	**0.4311437**	**0.2242218**	**1.539017**	**0.9819578**	**2.412092**	**0.05450848**
TOOL_2	**-0.3142127**	**0.1564019**	**0.7303637**	**0.5338454**	**0.9992241**	**0.04454466**
TOOL_3	**-0.3180095**	**0.1869631**	**0.7275959**	**0.5002277**	**1.05831**	**0.08896745**
TOOL_4	0.1341113	0.1780405	1.14352	0.8003629	1.633806	0.4512978
TOOL_5	**0.4102652**	**0.1818746**	**1.507217**	**1.046844**	**2.17005**	**0.02409245**
TOOL_6	-0.1974307	0.1950358	0.820837	0.5552754	1.213404	0.3114122
TOOL_7	**-0.3517492**	**0.1644112**	**0.7034565**	**0.5059908**	**0.9779842**	**0.03240697**
TOOL_8	0.1752157	0.1861984	1.191503	0.8204239	1.730422	0.3467036
TOOL_9	0.1880341	0.2102614	1.206875	0.7918849	1.839341	0.3711749
TOOL_10	-0.04808488	0.1883939	0.9530529	0.653355	1.390224	0.7985425
TOOL_11	-0.1640579	0.1597696	0.8486929	0.6161633	1.168975	0.3045035
TOOL_12	-0.143622	0.1940553	0.8662151	0.587125	1.277971	0.4592396
TOOL_13	0.2091027	0.2171909	1.232571	0.7975923	1.904773	0.3356754
TOOL_14	0.00316004	0.1590544	1.003165	0.7293569	1.379763	0.984149
TOOL_15	-0.1609621	0.1865019	0.8513243	0.5858332	1.237132	0.3881115
TOOL_16	0.3844723	0.3262531	1.468839	0.7638733	2.824406	0.2386267
TOOL_17	-0.227724	0.2915341	0.796344	0.4439819	1.428355	0.4347359
TOOL_18	-0.08180435	0.1577127	0.9214522	0.671751	1.263972	0.6039789
TOOL_19	0.1914657	0.3014144	1.211023	0.6619388	2.215579	0.5252867

analogies and metaphors (Tool 7) reduces the technical knowledge flow, while an increased use of Capture and transfer of experts' knowledge (Tool 1) and Employee rotation across areas (Tool 5) increases it.

Here, Tools 1, 2 and 7 are codification KM tools while Tools 3 and 5 are personalization KM tools. Of the former, only Tool 1 has a positive impact on the technical knowledge flow, while Tool 2 and 7 correlate negatively. The finding that Capture and transfer of experts' knowledge (Tool 1) increases the chance for a high technical knowledge flow is hardly surprising. However, the fact that Decision support systems (Tool 2) influence the technical knowledge flow negatively is a rather puzzling result. At this point of the study, the authors see the need for further research and investigation. The negative impact of Modeling based on analogies and metaphors (Tool 7) might be due to the fact that even though it is a codification tool, steps of personal rather than technical knowledge transfer and communication are involved. Indeed, analogies and metaphors represent a way to codify tacit knowledge. This is a difficult and time-consuming task, which might prevent employees from making use of this codification tool. Hence, it rather hinders than fosters the technical knowledge flow.

Tools 3 and 5 belong to the personalization KM tools. The outcomes of Learning by observation (Tool 3) are probably very hard to codify and need to be shared personally, thus reducing the chances for a high technical knowledge flow. Interestingly, Employee rotation across areas (Tool 5) increases the chance for a high technical knowledge flow. One reason for this might be that the changing of locations and positions makes it necessary to codify and store relevant knowledge to make it become available to successors and other (i.e. former) colleagues. Of course, this can also be done personally, but the company might request people who are to be moved to codify and store as much knowledge as possible and then transfer it to their colleagues. Additionally, employee rotation strengthens the knowledge connections between the different locations, resulting in better interpersonal relationships. This might lead to a higher level of trust, not only in the personal knowledge of the colleagues but also in the external knowledge stored in different codification tools.

4. Conclusions

This study provides empirical evidence for the impact of commonly used KM tools on the personal and technical knowledge flow within MNCs. It

yields two interesting findings. First, not all of the prevalent KM tools show a significant impact on either the personal or the technical inter-organizational knowledge flow. In fact, only 9 out of 19 tools (Tool 2 was significant both for the personal and the technical flow) proved to have a significant effect. Second, not all of the significant tools displayed a positive impact. Indeed, 5 of the 9 significant tools have a negative influence on the knowledge flow (Tool 2 shows a negative impact in both cases of personal and technical knowledge flow).

Moreover, of the 2 personalization tools one has a negative and the other one a positive impact. Interestingly, there are by far more significant codification tools than personalization tools, even though we found that personalization tools are used slightly more often than the codification tools (see above). Of the 7 codification tools, 4 reduce the chance for a high knowledge flow, and only 3 increase it. This seems to be rather astonishing given the fact that technology has been frequently viewed as both a key contributor to and enabler of KM (cf. e.g. Davenport and Prusak 2000). Indeed, expectations for knowledge technologies were or still are quite high as the following statement shows:

"Knowledge technologies attempt to push users to think beyond their current boundaries, thus facilitating organizational activity, promoting continuous improvement and growth through innovation" (Moffett, McAdam *et al.* 2004, p. 176).

Does this mean that KM tools – especially the codification ones – should be discarded? According to the authors, this is not necessarily the case. However, arbitrary and incautious use of KM tools might be a waste of money and even lead to counter-productive effects. For tools to be effective they have to be widely accepted and perceived as useful by those who are supposed to employ them, i.e. the employees. Besides, as our results suggest, one has to be aware of the fact that different tools have different effects on the way knowledge is shared. Hence, depending on what kind of knowledge flow is to be encouraged the appropriate tools have to be applied. Above all, KM is more than simply implementing KM tools and a lot of different factors have to be taken into account. Davenport *et al.* (1998) put it like this: "Effective KM is neither panacea nor bromide; it is one of many components of good management" (p. 56).

One of these factors that are necessary for KM to become effective is a "knowledge-friendly" culture (Davenport, De Long *et al.* 1998). Zack (1999) puts it like this: "Effective use of information technology to communicate knowledge requires that an organization share [sic] an interpretive context" (p. 50). In fact, "if the cultural soil isn't fertile for a knowledge project, no amount of technology, knowledge content, or good project management practices will make the effort successful" (Davenport, De Long *et al.* 1998, p. 53). Nevertheless, even though technology alone does not make a firm become a knowledge-creating company, at least the presence of KM technologies may even have a positive effect on the knowledge culture of the organization (Davenport and Prusak 2000).

References

Akhavan, P., M. Jafari et al. (2006). Critical success factors of knowledge management systems: A multi-case analysis. *European Business Review*, 18,(2), 97-113.

Becerra-Fernandez, I. and R. Sabherwal (2001). Organizational knowledge management: A contingency perspective. *Journal of Management Information Systems*, 18(1), 23-55.

Birkinshaw, J. (1999). Acquiring intellect: Managing the integration of knowledge-intensive acquisitions. Business Horizons May-June, 33-40.

Bloodgood, J. M. and W. D. Salisbury (2001). Understanding the influence of organizational change strategies on information technology and knowledge management strategies. *Decision Support Systems,* 31, 55-69.

Davenport, T. H. (2005). Thinking for a living: How to get better performance and results from knowledge workers. Harvard Business School Press, Boston.

Davenport, T. H., D. W. De Long, et al. (1998). Successful knowledge management Projects. *Sloan Management Review,* 39, 43-57.

Davenport, T. H. and J. G. Harris (2005). Automated decision making comes of age. MIT *Sloan Management Review,* 46(4), 83-89.

Davenport, T. H. and L. Prusak (2000). Working knowledge: How organizations manage what they know. Harvard Business School Press, Boston.

Earl, M. (2001). Knowledge management strategies: Towards a taxonomy. *Journal of Management Information Systems,* 18(1), 215-233.

Gallupe, B. (2001). Knowledge management systems: Surveying the landscape. *International Journal of Management Reviews,* 3(1), 61-77.

Hansen, M. T., N. Nohria, et al. (1999). What's your strategy for managing knowledge? *Harvard Business Review,* 77(2), 106-116.

Holsapple, C. W. and K. D. Joshi (2001). Organizational knowledge resources. *Decision Support Systems*, 31, 39-54.

Hong, J. (1999). Structuring for organizational learning. *The Learning Organization,* 6(4), 173-185.

Inkpen, A. C. and K. Ramaswamy (2006). Global strategy: creating and sustaining advantage across borders. Oxford University Press, New York.

Kasper, H. and B. Haltmeyer (2002). Knowledge sharing in multinational organizations. *Journal of Cross-Cultural Competence & Management*, 3, 279-313.

Kasper, H. and J. Mühlbacher (2004). Entwicklung des organisationalen Wissens in lernenden Organisationen, Zur Differenz zwischen theoretischem Anspruch und Unternehmenswirklichkeiten. Strategien realisieren - Organisationen mobilisieren, Das neueste Managementwissen aus dem PGM MBA. H. Kasper. Linde International. Vienna: 241-261.

Leonard, D. A. and W. C. Swap (2005). Deep smarts: How to cultivate and transfer enduring business wisdom. Harvard Business School Press, Boston.

Mayring, P. (2000). Qualitative content analysis [28 paragraphs]. Forum Qualitative Sozialforschung / Forum: *Qualitative Social Research* [On-line Journal], 1(2).

McAdam, R. and S. McCreedy (1999). A critical review of knowledge management models. *The Learning Organization,* 6(3), 91-100.

Moffett, S., R. McAdam, et al. (2004). Technological utilization for knowledge management. Knowledge and Process Management 11(3), 175-184.

Mohrman, S. A., D. Finegold, et al. (2002). Designing the knowledge enterprise: Beyond programs and tools. *Organizational Dynamics*, 31(2), 134-150.

Nonaka, I. and H. Takeuchi (1995). The knowledge-creating company: How Japanese companies create the dynamics of innovation. Oxford University Press, New York.

Zack, M. H. (1999). Managing codified knowledge. *Sloan Management Review*, 40(4), 45-58.

SECTION III

TECHNOLOGY AND INNOVATION MANAGEMENT