9 July 2011

The Effect Of Knowledge Management Systems On Absorptive Capacity: Findings From International Law Firms

Andre Schaefferling
German Graduate School of Management and Law, andre.schaefferling@ggs.de

Heinz-Theo Wagner
German Graduate School of Management and Law, heinz-theo.wagner@ggs.de

Martin Schulz
German Graduate School of Management and Law, martin.schulz@ggs.de

Thorsten Dum
German Graduate School of Management and Law, thorsten.dum@ggs.de

ISBN: [978-1-86435-644-1]; Full paper

THE EFFECT OF KNOWLEDGE MANAGEMENT SYSTEMS ON ABSORPTIVE CAPACITY:

FINDINGS FROM INTERNATIONAL LAW FIRMS

André Schäfferling, German Graduate School of Management and Law, Heilbronn, Germany, andre.schaefferling@ggs.de

Heinz-Theo Wagner, German Graduate School of Management and Law, Heilbronn, Germany, heinz-theo.wagner@ggs.de

Martin Schulz, German Graduate School of Management and Law, Heilbronn, Germany, martin.schulz@ggs.de

Thorsten Dum, German Graduate School of Management and Law, Heilbronn, Germany, thorsten.dum@ggs.de

Abstract

This case study is engaged in examining the effects of knowledge management systems (KMS) on absorptive capacity (ACAP). Often regarded as the major source of innovation and firm competitive advantage, ACAP raises questions of how to value, assimilate and apply new knowledge. Based on a multiple case study design we specifically investigate KMS as antecedent of ACAP. We interviewed six experts employed in knowledge management functions at two different international law firms operating in the Asian-Pacific, American, and European legal market. The findings from our case study analysis demonstrate that KMS have a positive effect on ACAP, especially on knowledge acquisition and assimilation.

Keywords: Absorptive Capacity, Knowledge Management, Knowledge Management Systems, Professional Service Firms, Law Firms.

1 INTRODUCTION

Empirical research over the last 20 years shows that firms may significantly improve their innovative capabilities by leveraging the skills of internal and external knowledge. Many research papers have been published in the last years within the broader domain of strategy incorporating the role of organizational knowledge as a basis of competitive advantage. Knowledge management raises questions about how organizations process knowledge and, more specifically, how they create new knowledge in order to gain competitive advantage.

The growing importance of knowledge in contemporary research has, thus, paved the way for the development and advancement of several research streams and conceptualizations, among them the concept of absorptive capacity (ACAP) which has also been found to be an important factor for organizational learning and innovation. Because of the managerial challenges of knowledge transfer with its multifaceted nature of the boundaries, cultures, and processes involved, ACAP can be seen as the major source of competitive advantage. In their seminal article, Cohen and Levinthal (1990) offered the most widely cited process-definition of ACAP, viewing it as the firm's ability to value, assimilate, and apply new knowledge.

Considering the importance of absorptive capacity, identification of its antecedents becomes a necessity as well. However, Lane et al. (2006) and Daghfous (2004) report on studies of ACAP identifying that just a small group of studies has looked into its antecedents. Among these studies are for example those focusing on organizational form and combinative capabilities (Van den Bosch et al. 1999), organizational flexibility (Lane et al. 2001), and more recently on knowledge sharing (Liao et al. 2007) or knowledge transfer (van Wijk et al. 2008). Additionally, a current review on ACAP and IS research revealed that the influence of IT on ACAP so far has hardly been investigated (Roberts et al. forthcoming). Besides a few theoretical statements regarding what the effect of knowledge management might be (compare Lane et al. 2006, p. 858), especially empirical research explicitly addressing this topic remains absent.

Thus, both knowledge management and IT are hardly addressed by prior research. This paper is engaged in knowledge management systems (KMS) combining both areas neglected by prior research. Therefore, since empirical research addressing the role of Knowledge Management Systems (KMS) on ACAP is absent, the objective of this project is to fill in this gap. Accordingly, we formulate the following research question:

> *How and why do knowledge management systems impact absorptive capacity of professional services firms?*

Drawing on previous research on absorptive capacity, we contribute to the literature by detailing KMS effects associated with ACAP processes. Especially, we contribute to theory by investigating the effects of KMS as an antecedent of ACAP. With our analysis we deepen the understanding of ACAP and its antecedents, and help to reconcile prior findings.

We carry out our study in the context of professional service firms (PSFs, in particular law firms, auditing firms or tax consultancy firms) because they are of growing importance in today's business world and heavily depend on the knowledge of their personnel. Since the investigated PSFs are characterized by high knowledge intensity, low capital intensity, and a professionalized workforce (von Nordenflycht 2010), we believe that we are able to detect effects of KMS in an ACAP context. In an effort to streamline our research project, we chose two international law firms interviewing six knowledge managers for case study investigation.

This research paper is structured as follows: First, we provide the theoretical foundation of ACAP and KMS, followed by our research model. Subsequently, we will explain our methodology and give insights into the data collection and analysis process. Finally, we will provide an overview of preliminary findings and our conclusion.

2 THEORETICAL FOUNDATION

This section provides an overview of the theoretical foundation of this study by introducing the concepts of absorptive capacity (ACAP) and knowledge management systems (KMS).

2.1 Absorptive capacity (ACAP)

An important factor for organizational learning and innovation is the absorptive capacity of a firm (Nahapiet and Ghoshal 1998). Proposed by Cohen and Levinthal (1990), absorptive capacity can be defined "as the ability to recognize the value of external information, assimilate it and apply it to commercial ends" (Eisenhardt and Santos 2002, p. 141). Many studies have shown that ACAP positively impacts the accumulation of knowledge across different units of a firm (Rao and Drazin 2002) which in turn contributes to intra-organizational knowledge flow (Szulanski 1996), inter-organizational learning (van Wijk et al. 2008), firm performance (Lane et al. 2001), and innovation (Tsai 2001). The ability to recognize, assimilate, and apply new knowledge does not reside in any single individual but depends on interactions, interdependent activities, and knowledge exchanges among individuals (Nelson and Winter 1982). Absorptive capacity, and thus the ability to sense the environment and to detect opportunities, crucially depends on prior knowledge accumulated over time and is therefore path-dependent (Cantwell 2002). Thus, ACAP is influenced by "internal channels of communication, the distribution of knowledge in the environment and in the firm, and the pattern of R&D investment decisions" (Eisenhardt and Santos 2002, p. 141).

Zahra and George (2002) distinguish between two components of ACAP which they call potential absorptive capacity (PACAP) and realized absorptive capacity (RACAP). PACAP refers to the ability of firms to acquire and assimilate external knowledge while RACAP refers to the ability of firms to transform and exploit knowledge. PACAP consists of acquisition and assimilation capabilities; an acquisition capability refers to the ability of a firm "to identify and acquire externally generated knowledge that is critical to its operations" while "assimilation refers to the firm's routines and processes that allow it to analyze, process, interpret, and understand the information obtained from external sources" (Zahra and George 2002, p. 189). RACAP consists of transformation and exploitation capabilities. "Transformation denotes a firm's capability to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge" (Zahra and George 2002, p. 190) which involves new interpretations of existing, adding new, and deleting pieces of old knowledge. Exploitation, then, refers to "a firm's ability to harvest and incorporate knowledge into its operations (Zahra and George 2002, p. 190). Outcomes of the ability to exploit knowledge are e.g. new goods and processes (Spender 1996).

Todorova and Durisin (2007) currently tackle the reification of the ACAP construct and complemented the framework of Zahra and George by re-introducing the concept of "recognizing the value" of new knowledge as originally proposed by Cohen and Levinthal (1990). Furthermore they emphasize that assimilation and transformation might be alternatives to one another and also interdependent because knowledge might be assimilated, transformed and assimilated again.

2.2 Knowledge management systems (KMS)

Following contemporary research, knowledge management can be understood as "identifying and leveraging the collective knowledge in an organization to help the organization compete" and "to increase innovativeness and responsiveness" (Alavi and Leidner 2001, p. 113). To attain this purpose, the organizational focus on knowledge management can vary, like "focus on building and managing knowledge stocks", concentrating on "knowledge flow and the processes of creation, sharing, and distribution of knowledge" (compare also Argote et al. 2003), or "on building core competencies, understanding the strategic advantage of know-how, and creating intellectual capital" (Alavi and Leidner 2001, p. 110). Since the knowledge is more widespread and continuously accumulating, the

handling of existing knowledge, as well as the absorption and processing of new knowledge became more difficult. Therefore, knowledge management systems were "developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application." (Alavi and Leidner 2001, p. 114; see also Alavi and Tiwana 2009) and help firms to identify, find (see also Denrell et al. 2004), and leverage knowledge.

3 RESEARCH MODEL

This section outlines how knowledge management systems influence organizational absorptive capacity as an antecedent (see Figure 1). For analyzing the impact of KMS on ACAP we refer to the refined model of absorptive capacity as conceptualized by Todorova and Durisin (2007).

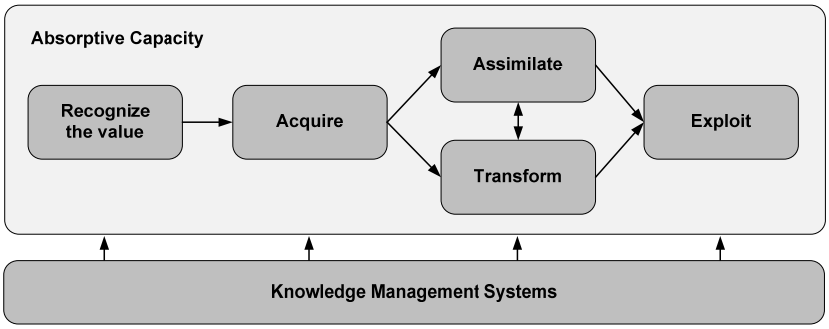

Figure 1. Knowledge management systems as an antecedent of absorptive capacity.

Following the conceptualization of absorptive capacity by Cohen and Levinthal (1990) and Todorova and Durisin (2007), the first component highlights the prerequisite of recognizing the potential value of new external knowledge. As Cohen and Levinthal (1990) pointed out, the ability to evaluate new knowledge depends on the similarity to existing knowledge. Summarizing contemporary research, Todorova and Durisin (2007, p. 777) conclude that "firms often fail to identify and absorb valuable new external knowledge because they are hampered by their embedded knowledge base, rigid capabilities, and path-dependent managerial cognition". Modern KMS techniques can help to leverage the present organizational memory and "increase the speed at which organizational memory can be accessed" (Alavi and Leidner 2001, p. 119). For instance, the technological knowledge management infrastructure can support knowledge relevant for a firm's competition and environment (Gold et al. 2001). Thus, awareness of existing knowledge and its value for an organization can be considered as two integral parts of recognizing the value of new knowledge. Providing the right systems for these activities facilitates recognition and limits costly and unnecessary frailties. Thus, we propose:

P1: KMS have a positive effect on recognizing the value of new knowledge.

As the second component of absorptive capacity, knowledge acquisition encompasses "a firm's capability to identify and acquire externally generated knowledge that is critical to its operations" (Zahra and George 2002, p. 189). Zahra and George outline three attributes that influence knowledge acquisition routines: intensity, speed, and direction. By "finding an expert or a recorded source of knowledge using online directories and searching databases" (Alavi and Leidner 2001, p. 114) organizations can reduce the time to acquire specific knowledge significantly. For example advanced information technologies like the internet, data mining techniques, and software agents (Alavi and Leidner 2001, p. 108) can help identifying relevant knowledge and optimizing "the paths that the firm follows in obtaining external knowledge" (Zahra and George 2002, p. 189). Furthermore, Gold et al. (2001) mention benchmarking as an excellent opportunity to acquire new knowledge, which is an IT-intense procedure. We therefore argue that information technologies might have a significant impact on knowledge acquisition mechanisms.

P2: KMS have a positive effect on knowledge acquisition.

Based on previous research, Zahra and George define knowledge assimilation as “the firm's routines and processes that allow it to analyze, process, interpret, and understand the information obtained from external sources” (2002, p. 189). Todorova and Durisin precise this definition by adding the notion that new knowledge can only be assimilated if it “fits the existing cognitive schemas well” (2007, p. 778). Four commonly cited mechanisms for assimilating knowledge are rules and directives, sequencing, routines, and group problem solving (Gold et al. 2001 p. 191). In this respect, KMS can be applied in various ways to improve knowledge assimilation by supporting collaboration (e.g. corporate knowledge directories), coordination (e.g. knowledge networks, intranets, or virtual teams), and communication (e.g. E-Mail) within organizations (Alavi and Leidner 2001; Jansen et al. 2005). Besides specific techniques for knowledge exchange, KMS pool information and thereby facilitate individual tasks like interpretation, comprehension, and learning. Increased possibilities to exchange and share knowledge as well as intensified interactions and individual support foster the understanding of new external knowledge and thus its assimilation. Therefore we propose:

P3: KMS have a positive effect on knowledge assimilation.

Contrary and complementary to knowledge assimilation, knowledge transformation refers to “a firm's capability to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge” (Zahra and George 2002, p. 190). This can be seen as an alternative process to assimilation “in the case where new situations or ideas cannot realistically be altered to fit the existing knowledge structures” (Todorova and Durisin 2007, p. 778). If recently acquired knowledge is substantially different from existing structures and patterns they have to be “transformed to adapt to an idea or a situation” (Todorova and Durisin 2007, p. 778). In this respect, “the coordination and conversion of specialized knowledge represents a fundamental aspect of transformation” (Gold et al. 2001, p. 195) which is supported by the use of information systems. Therefore, analogous to knowledge assimilation, information systems that support collaboration, coordination, communication and thus exchange of new knowledge and learning processes help the organization to understand the discrepancies. Once these differences and coherences have been identified, the organization can adapt its structures in order to foster internalization and conversion of new knowledge. Besides the techniques mentioned above, identification of internal experts with prior knowledge in a domain new to the organization (e.g. by yellow pages) can help individuals involved to understand and use the new knowledge more quickly and recombine it with existing knowledge.

P4: KMS have a positive effect on knowledge transformation.

The purpose of absorptive capacity – to create additional value – is finally achieved by knowledge exploitation, “an organizational capability […] based on the routines that allow firms to refine, extend, and leverage existing competencies or to create new ones by incorporating acquired and transformed knowledge into its operations” (Zahra and George 2002, p. 190). On the one side, available knowledge within units that share previous experiences results in faster learning curves of other organizational units (Alavi and Leidner 2001) and facilitates the versatile applicability of absorbed knowledge. On the other hand, effective management and availability of assimilated and transformed knowledge through KMS leads to faster reaction times and development cycles. Knowledge exploitation requires a firm to use and leverage the existing knowledge base. Effective storage and retrieval mechanisms might allow for quick and easy access of information (Gold et al. 2001). Moreover specialized systems like expert systems or decision support systems with codified decision rules can be employed to facilitate the application of knowledge (Alavi and Tiwana 2009).

P5: KMS have a positive effect on knowledge exploitation.

4 DATA AND METHODOLOGY

First, we briefly present the selected case study methodology, followed by a description of the study’s case environment. Subsequently, we outline the applied technique for data analysis.

4.1 Case study methodology

To investigate the posed question on how and why KMS affect ACAP, a case study approach appeared to be most adequate (Miles and Huberman 1994; Yin 2009). As our research objective is about examining a phenomenon within its complex real-life context and obtaining in-depth understanding, a holistic multiple case study design is the most appropriate design approach (Yin 2009). Although we test previously developed propositions, it is not the purpose of this study to achieve statistical generalizability as a quantitative approach would do, but rather to achieve analytic generalization by literal replication logic (Lee and Baskerville 2003; Yin 2009). The aim of literal replication logic – analogous to replication of experiments attempted to duplicate findings under equal conditions – is to select similar cases that are expected to yield the same results (Yin 2009). Therefore we investigate two similar law firms to gain more valid and robust results. In doing so, the study adopts a positivist case research approach and considers the guidelines on research design, data collection, and data analysis outlined by Dubé and Paré (2003) and Yin (2009).

4.2 Case environment

We focus on PSF since they are of increasing importance in recent economic development and furthermore strongly depend on the knowledge of their employees. This notion is also reflected by their knowledge intense activities, their employment of high educated staff, and the payment of salaries above average (Alvesson 2000; von Nordenflycht 2010). Since PSFs can be classified mainly into four different types, we limit our study to classic, regulated PSFs that are characterized by high knowledge intensity, low capital intensity, and a professionalized workforce (von Nordenflycht 2010). Analysis within this group enhances comparability due to the strong regulation of this profession and thus similar conditions for its members, and therefore provides a solid base for investigation (see von Nordenflycht 2010 for a detailed discussion on PSFs). Within this class we concentrate our analysis on international law firms and in particular on their so called “pitch process” as one typical form of acquiring new businesses and clients.

The development of new business for law firms basically follows two separate ways. On the one hand, new business can be acquired through existing relationships between an attorney and his clients or by recommendations of clients based on their experience. On the other hand, new business can be acquired by participating in open biddings or responding to requests for proposals for new work. Clients increasingly use a competitive bidding process and thereby foster competition among law firms. In the so called “pitch process”, law firms typically respond to requests for proposals. During this process, law firms need to demonstrate their qualifications, competencies, and expertise in order to win the business. To investigate the effects of KMS employment on ACAP, the pitch process has therefore been selected as object of analysis for several reasons: First of all, the process is a crucial element of law firm survival in an increasingly competitive environment. Secondly, the knowledge intensity of services and products provided during the pitch process is high and elemental to be successful; Thirdly, the pitch process is a quasi standardized process applied by all law firms; and finally, focusing on the pitch process limits external influence factors and isolates the phenomenon, as recommended by the literature (Barua et al. 1995; Mooney et al. 1996).

4.3 Data collection and analysis

To obtain the relevant data, in-depth interviews with six knowledge managers or persons with equivalent functions were conducted at German sites of different law firms. The law firms are engaged in the international legal market and maintain offices in different markets around the globe. The first law firm accounts for more than one billion dollars of revenue and is internationally ranked among the top 10 by revenue whereas the second law firm generates about 100 million dollars turnover per year. Both law firms started their KMS initiative several years ago and created dedicated departments,

concerned with this function. Several databases are maintained at both firms to guarantee quick and easy access to relevant external and internal knowledge pools.

The interviews were guided by a previously developed semi-structured questionnaire with open questions and lasted between two and three hours. Prior to the interviews, a pilot study allowed improving and sharpening the questions. Interviewees were selected by key-informant-approach (cf. Nelson and Cooprider 1996; Tallon et al. 2000) and belonged to knowledge management, business development or comparable departments. Lawyers in the proper sense were not interviewed. All interviews were conducted by two researchers and audio recorded for subsequent transcription.

The transcripts from the six interviews comprised a total of 105,694 words or 284 pages of text. The textual data was analyzed with NVivo 8, a computer aided qualitative data analysis (CAQDAS) tool for systematic content analysis. A coding scheme was developed and applied following the structural approach recommended by Miles and Huberman (1994). The coding procedure was conducted following the pattern matching technique described by Yin (2009). Therefore, two academic researchers of the team independently processed the interviews and coded text passages related to the underlying theoretical constructs. According to the proposed relationships, ACAP tree nodes were adopted from the model developed by Todorova and Durisin (2007). Mismatched codings were discussed with a third team member and finally determined based on consensus or relative majority.

5 RESULTS

A preliminary overview of the findings from our study is summarized in Table 1. Following our research model, the table is structured along the five ACAP dimensions and outlines the number of relevant findings from the interviews, our tendency regarding the support of the propositions, and typical quotes that reflect the influence of KMS in each stage. As all interviews were held in German, the quotes were carefully translated into English to enhance readability and comprehensibility.

Propositions	**No. of findings**	**Tendency**	**Quote**
P1: KMS have a positive effect on recognizing the value of new knowledge.	4	Partially supported	„To determine what we need, content is discussed within the team or specified by the lead partner.”
P2: KMS have a positive effect on knowledge acquisition.	34	Fully supported	“External databases are important, but I would consider internal databases such as the experience database and the pitch-database as much more important.”
P3: KMS have a positive effect on knowledge assimilation.	32	Fully supported	“I would say that there are many workshops that take place on a regular basis to share knowledge and experience about pitches. Web-Ex telephone calls with presentations are conducted frequently to make this happen.”
P4: KMS have a positive effect on knowledge transformation.	10	Partially supported	„We are frequently updating all databases to make sure we have access to knowledge about clients, branches and pitches.”
P5: KMS have a positive effect on knowledge exploitation.	6	Partially supported (each successful pitch depicts an example for knowledge exploitation per se)	“In order to finalize a pitch-process we have to hand over the pitch document to the partner. Sometimes the partner has some remarks and wants a revised version. If important information is missing he asks us to conduct another search. In this case we will use our knowledge management systems again.”

Table 1. Overview of propositions, main findings, and comments.

6 CONCLUSION AND LIMITATIONS

The interviews provide valuable empirical insights into how and why professional service firms, and in particular law firms, employ KMS within the pitch process to acquire, assimilate, transform, and exploit specific knowledge.

This study contributes to the relevant literature by extending research on ACAP and investigating KMS as an antecedent of ACAP. The analysis deepens the understanding of antecedents to ACAP and helps to reconcile prior findings. Therefore, the guiding question of this study was how and why knowledge management systems affect absorptive capacity of professional services firms.

The findings reveal that KMS employment within PSFs is highly developed and that ACAP processes, especially acquisition and assimilation of new knowledge, are positively affected by those systems (see Table 1). Employees primarily benefit from extensive but systematic access to digital resources such as contracts and documents. There is also evidence of positive influences of KMS on ACAP regarding the elements recognizing the value, knowledge transformation and knowledge exploitation. However, hitherto we could not find diverse statements supporting the proposed positive effect.

Nevertheless, a few limitations to this study have to be mentioned: First, using a case study approach we are not able to statistically generalize our findings and, furthermore the collected data might be limited for testing significance of the research model. In summary, using a case study approach our research study entails efforts to address complexity accepting that the object of study can be confusing and ambiguous. With this, however, we are able to put variables and categories in a context. This may be done less rigor than in traditional quantitative approaches, but with more realism and relevance (Dube and Pare 2003). Additionally, further secondary data (cf. reports, media articles, websites, and best practices from PSF's within the consulting area) are to be included for future analysis to provide additional sources for triangulation (Yin 2009).

Besides further research on output effects, a few other topics emerged. This includes a more detailed perspective on KMS, as various types of systems are implemented throughout the whole ACAP processes. This probably could yield different effects of KMS for different ACAP processes. Another point would be the extension to other PSFs besides law firms in order to be able to reproduce the findings and accomplish generalizability. As we deepen the understanding of the importance of KMS as an antecedent of ACAP, it would be appropriate to study the role of KMS in conjunction with other antecedents such as knowledge complementarity or experience (see Zahra and George 2002).

More research is needed specifically examining KMS within knowledge-intensive context. The KMS found in the interviewed firms allow managers to identify benefits of an IT-supported pitch process and to better understand the influence of knowledge management. Given the positive relation between KMS and ACAP, our findings so far do also indicate that KMS in PSF, and in particular in law firms, can be improved by finding more integrative solutions. As our interviews revealed, many law firms obviously use different KM tools and sources in their processes of acquiring new business instead of using one integrated KMS. Reflecting the different components of ACAP it may be worthwhile to develop e.g. an integrated KM tool for the pitch process covering all relevant parts like recognizing the value of new knowledge as well as acquiring, assimilating, transforming and exploiting of knowledge.

References

Alavi, M. and Leidner, D.E. (2001). Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, 25 (1), 107-136.

Alavi, M. and Tiwana, A. (2009). *Knowledge Management: The Information Technology Dimension*. In The Blackwell Handbook of Organizational Learning and Knowledge Management (M. Easterby-Smith and M.A. Lyles Eds.), pp. 104-121, Blackwell Publishing, Malden, MA.

Alvesson, M. (2000). Social Indentity and the Problem of Loyalty in Knowledge-Intensive Companies. *Journal of Management Studies*, 37 (8), 1101-1123.

Argote, L., McEvily, B., and Reagans, R. (2003). Managing Knowledge in Organizations: An Integrative Framework and Review of Emerging Themes. *Management Science*, 49 (4), 571-582.

Barua, A., Kriebel, C.H., and Mukhopadhyay, T. (1995). Information Technologies and Business Value: An Analytic and Empirical Investigation. *Information Systems Research*, 6 (1), 3-23.

Cantwell, J.A. (2002). *Innovation, Profits and Growth: Schumpeter and Penrose*. In The Theory of the Growth of the Firm: The Legacy of Edith Penrose (C.N. Pitelis Ed., pp. 215-248, Oxford University Press, Oxford.

Cohen, W.M. and Levinthal, D.A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35 (1), 128-152.

Daghfous, A. (2004). Absorptive Capacity and the Implementation of Knowledge-Intensive Best Practices. *SAM Advanced Management Journal*, 69 21-27.

Denrell, J., Arvidsson, N., and Zander, U. (2004). Managing Knowledge in the Dark: An Empirical Study of the Reliability of Capability Evaluations. *Management Science*, 50 (11), 1491-1503.

Dube, L. and Pare, G. (2003). Rigor in Information Systems Positivist Case Research: Current Practices, Trends, and Recommendations. *MIS Quarterly*, 27 (4), 597-635.

Eisenhardt, K.M. and Santos, F.M. (2002). *Knowledge-Based View: A New Theory of Strategy?* In Handbook of Strategy and Management (A.M. Pettigrew, T. Howard and R. Whittington Eds.), pp. 139-164, Sage Publications Ltd., London, Thousand Oaks, New Delhi.

Gold, A.H., Malhotra, A., and Segars, A.H. (2001). Knowledge Management: An Organizational Capabilities Perspective. *Journal of Management Information Systems*, 18 (1), 185-214.

Jansen, J.J.P., Van den Bosch, F.A.J., and Volberda, H.W. (2005). Managing Potential and Realized Absorptive Capacity: How Do Organizational Antecedents Matter? *Academy of Management Journal*, 48 (6), 999-1015.

Lane, P.J., Koka, B.R., and Pathak, S. (2006). The Reification of Absorptive Capacity: A Critical Review and Rejuvenation of the Construct. *Academy of Management Review*, 31 (4), 833-863.

Lane, P.J., Salk, J.E., and Lyles, M.A. (2001). Absorptive Capacity, Learning, and Performance in International Joint Ventures. *Strategic Management Journal*, 22 (12), 1139-1161.

Lee, A.S. and Baskerville, R.L. (2003). Generalizing Generalizability in Information Systems Research. *Information Systems Research*, 14 (3), 221-243.

Liao, S.-h., Fei, W.-C., and Chen, C.-C. (2007). Knowledge Sharing, Absorptive Capacity, and Innovation Capability: An Empirical Study of Taiwan's Knowledge Intensive Industries. *Journal of Information Science*, 33 (3), 340-359.

Miles, M.B. and Huberman, A.M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. Sage Publications Inc., Thousands Oaks, London, New Delhi.

Mooney, J.G., Gurbaxani, V., and Kraemer, K.L. (1996). A Process Oriented Framework for Assessing the Business Value of Information Technology. *The DATA BASE for Advances in Information Systems*, 27 (2), 68-81.

Nahapiet, J. and Ghoshal, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage. *Academy of Management Review*, 23 (2), 242-266.

Nelson, K.M. and Cooprider, J.G. (1996). The Contribution of Shared Knowledge to Is Group Performance. *MIS Quarterly*, 20 (4), 409-432.

Nelson, R.R. and Winter, S.G. (1982). *An Evolutionary Theory of Economic Change*. The Belknap Press of Harvard University Press, Cambridge (Mass.).

Rao, H. and Drazin, R. (2002). Overcoming Resource Constraints on Product Innovation by Recruiting Talent from Rivals: A Study of the Mutual Fund Industry, 1986-94. *Academy of Management Journal*, 45 (3), 491-507.

Roberts, N., Galluch, P.S., Dinger, M., and Grover, V. (forthcoming). Absorptive Capacity and Information Systems Research: Review, Synthesis, and Directions for Future Research. *MIS Quarterly*,

Spender, J.-C. (1996). Making Knowledge the Basis of a Dynamic Theory of the Firm. *Strategic Management Journal*, 17 (Special Issue: Knowledge and the Firm), 45-62.

Szulanski, G. (1996). Exploring Internal Stickiness: Impediments to the Transfer of Best Practice within the Firm. *Strategic Management Journal*, 17 (SI: Knowledge and the Firm), 27-43.

Tallon, P.P., Kraemer, K.L., and Gurbaxani, V. (2000). Executives' Perceptions of the Business Value of Information Technology: A Process-Oriented Approach. *Journal of Management Information Systems*, 16 (4), 145-173.

Todorova, G. and Durisin, B. (2007). Absorptive Capacity: Valuing a Reconceptualization. *Academy of Management Review*, 32 (3), 774-786.

Tsai, W. (2001). Knowledge Transfer in Intraorganizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance. *Academy of Management Journal*, 44 (5), 996-1004.

Van den Bosch, F.A.J., Volberda, H.W., and Boer, M.d. (1999). Co-Evolution of Firm Absorptive Capacity and Knowledge Environment: Organizational Forms and Combinative Capabilities. *Organization Science*, 10 (5), 551-568.

van Wijk, R., Jansen, J.J.P., and Lyles, M.A. (2008). Inter- and Intra-Organizational Knowledge Transfer: A Meta-Analytic Review and Assessment of Its Antecedents and Consequences. *Journal of Management Studies*, 45 (4), 830-853.

von Nordenflycht, A. (2010). What Is a Professional Service Firm? Toward a Theory and Taxonomy of Knowledge-Intensive Firms. *Academy of Management Review*, 35 (1), 155-174.

Yin, R.K. (2009). *Case Study Research: Design and Methods*. 4. Sage, Los Angeles, CA.

Zahra, S.A. and George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. *Academy of Management Review*, 27 (2), 185-203.