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Competence Building by Incorporating Clients into the Development of a Business Service Firm's Knowledge Base

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In a business service context, client alliances may provide an important way to build the competences of the service firm. The close interaction with the client in service delivery offers an opportunity for a business service firm to absorb knowledge from the client. This chapter adds to our understanding of managing the process of learning and knowledge transfer by looking at how clients can contribute to the development of the knowledge base of knowledge-intensive business service firms. Combining insights from the resource-based literature, this chapter develops a model of competence building through knowledge management in downstream alliances.

1 INTRODUCTION

The development and deployment of knowledge allow firms to gain competitive advantage by serving as the foundation of their capabilities

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and competences. The ability to develop a knowledge base is increasingly seen as a fundamental process of competence building. Business service firms in particular rely on their knowledge base, because in addition to transforming production factors to services, specific forms of knowledge may often be an input and an output in service delivery processes. Therefore, both scholars and managers need to understand how firms, and in particular business service firms, can develop their knowledge bases more effectively.

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The knowledge base of a company can be examined at two levels: knowledge as a specific *content* resource, and knowledge that serves as the basis for the firm's ability to integrate the *processes* of knowledge creation and development. Resource base, dynamic capabilities and competence-based competition theory address various aspects of this issue. Resource-based theory suggests the properties that are required for knowledge to become a rent-generating resource (Dierickx and Cool, 1989; Peteraf, 1993). Dynamic capabilities theory views the development of a knowledge base as a learning process (Lane, 1994; Teece, Pisano and Shuen, 1994). Competence-based competition theory extends both of these theories by incorporating managers' ability to manage knowledge effectively in building and leveraging competencies (Sanchez, Heene and Thomas, 1996). These theories jointly contribute to our understanding of the development of a knowledge base. They suggest that the knowledge base can be developed both internally and within an alliance (Penrose, 1959; Cohen and Levinthal, 1990; Badaracco, 1991; Hamel, 1991). The internal development of knowledge, organizational learning and the use of external knowledge are all being actively researched.

Some research has focused on learning in alliances with other firms, but little is known about learning from clients. There is some evidence that users or clients can be an important source of innovation (Von Hippel, 1988; Rothwell, 1986). The research on marketing of services has revealed that durable relationships between business service firms and clients provides opportunities for the service provider to absorb and utilize the client's knowledge (Sharma, 1991). Given the importance of the development of a knowledge base in business service firms, it is remarkable that the client, as an important source of knowledge, has largely been neglected. The often active role of clients in service delivery suggests that a client might be an important source and partner in the development of a knowledge base. This is already recognized in some of the leading business service firms (e.g. Fluor Daniel, Annual Report, 1992). However, in present theories, this competence-building routine has not been adequately recognized. In this chapter we attempt to remedy this situation.

The main aim of this chapter is to analyse the role of client alliances in the development of a knowledge base and from this analysis to propose a model of knowledge management for business service firms aimed at creating new capabilities in knowledge base development. Combining insights from the above-mentioned theories with research on knowledge, learning, innovation and relationships, this chapter examines how the development and deployment of the knowledge base can be of strategic importance to business service firms (Section 2); proposes a preliminary model of knowledge management in downstream alliances (Section 3); and summarizes the opportunities for creating new capabilities by incorporating clients into the development of the business service firm's knowledge base (Section 4).

2 Development and Deployment of Knowledge in Business Service Firms

Knowledge has been suggested to be the most important resource that contributes to the success of the firm (Grant, 1994). However, it is not only knowledge as a resource that contributes to the success of the firm. Managerial knowledge also *coordinates* the knowledge processes of a firm (creation, development, maintenance and deployment of knowledge). This implies that the knowledge base of the company may be viewed at two levels, namely, knowledge as a specific content resource and knowledge as a capability that integrates the activities of the firm at the organizational level and influences the processes of knowledge creation and development.

There are a number of ways to classify and describe the characteristics of the knowledge of the firm. A common way of describing the characteristics of knowledge is to divide it into explicit and tacit knowledge as classified by Polanyi (1966). Hayek (1945) provided a similar classification by dividing knowledge into scientific and practical knowledge of "time and place". Penrose (1959) made a distinction between objective and experiential knowledge, whereas Badaracco (1991) discerns migratory and embedded knowledge. These four classifications point out the difference between codified knowledge and other forms of knowledge that has tacit (difficult to articulate), circumstantial (context dependent) or experiential (acquired or transferred by active participation) characteristics. Explicit knowledge is more easily acquired and transferred than tacit knowledge (Sanchez 1996, in this volume). Explicit knowledge may be associated with the notion of information as "organized data" (Davis and Botkin, 1994) and may be found in tangible sources: databanks, manuals, directives or professional journals. Tacit knowledge, on the other hand, is closer to a notion of knowledge as an applied, context-dependent source of information. It is typically difficult to articulate and codify and thus difficult to transfer. The transfer of tacit knowledge requires activity and participation (Nonaka, 1994; Nonaka and Takeuchi, 1995). Tacit knowledge is thus people dependent (Hall, 1992) and it may be embedded in the skills and expertise of the employees. Tacit knowledge has also been suggested to be stored in organizational routines (Nelson and Winter, 1982). Cooperation between partners may also create routines that embody tacit knowledge from previous engagements. The knowledge embodied in the members of both organizations participating in service delivery together forms a part of the network knowledge base (Sharma, 1992).

Sharma (1992) has argued that the major source of tacit knowledge in a business service firm may be its activities in networks. Network knowledge may be (1) industry specific, (2) technology specific, (3) function specific or (4) client specific. The tacitness of network knowledge and the tendency for membership in one network to limit membership in another competitive network (Sharma, 1992) suggests that network knowledge has the properties of being difficult to imitate by competitors and difficult to acquire from factor markets. These properties of network knowledge may make it a strategically important resource that has all the properties required for a rent-generating resource: (1) idiosyncrasy (firm specific or network specific, unique), (2) non-imitability, (3) superiority (low cost, high quality) (Teece, Pisano and Shuen, 1994), (4) scarcity (Peteraf, 1993) and (5) non-tradeability (resource endowments do not equilibrate through factor markets) (Dierickx and Cool, 1989). Network knowledge may thus allow a firm to gain a competitive advantage. To make this competitive advantage sustainable, the managers of a business service firm need to create a context that supports continuous processes for the absorption of network knowledge. The continuous enhancement of relationships with clients and the enlargement of client contacts may sustain the competitive advantage by offering opportunities for knowledge development and transfer. To achieve this requires superior managerial cognition, coordination ability and abilities to manage knowledge development effectively (Sanchez, Heene and Thomas, 1996).

Our *typology of knowledge-related activities* in a business service firm, shown in Figure 7.1, combines two dimensions: the type of activity and the locality of activity. The type of activity refers to either the deployment of the existing knowledge base or the development of the knowledge base of the company. The deployment of knowledge is affected by internal managerial services (Penrose, 1959) that influence the flow of knowledge within a business service firm and between firms that are linked by business relationships. The development of knowledge refers to changes in the knowledge base of the company (possessed by employees, embodied in services, or embedded in managerial systems). The second dimension, the locality of activity, makes a distinction between activities that take place within the boundaries of the organization and those that are taking place in an interface context with other firms, for example, clients. In managing interfaces it is interesting to recognize that different aspects of the activities presented in Figure 7.1 are interlinked. Cohen and Levinthal (1990) and others have proposed that the internal development of a knowledge base facilitates a firm's ability to absorb and exploit extramural knowledge. Internal linkages between transfer and development of knowledge (see some recent contributions, Bartlett and Ghoshal, 1993; Nonaka, 1994; Hedlund, 1994; Von Krogh and Slocum, 1994) are not considered here in order to focus on the development of the knowledge base of a firm by utilizing external sources of knowledge.

Internal managerial capabilities provide a context for the vertical and horizontal transfer of knowledge, and support everyday operations within the business service firm and in its service delivery. Service delivery activities may consist of: (1) extension (Hedlund, 1994) as a service that embodies components of knowledge that are transferred from a business service firm to a client and (2) the utilization of a client's knowledge in service delivery. In the first case, a more formal trade of knowledge takes place. This, however, does not diminish the knowledge base of the company, since knowledge, typically, does not deteriorate when

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TYPE OF ACTIVITY	LOCALITY OF ACTIVITY internal	 interface
transfer of knowledge	BACK OFFICE 1. vertical 2. horizontal	SERVICE DELIVERY 1. extension 2. utilization of client's knowledge in service delivery
development of knowledge base	INTERNAL DEVELOPMENT OF KNOWLEDGE BASE 1. R&D 2. Training	INTERFACE DEVELOPMENT OF KNOWLEDGE BASE 1. cooperative development 2. absorption 3. development by pressure

FIGURE 7.1 Typology of Knowledge-related Activities in a Business Service Firm

used (Dierickx and Cool, 1989). The second case implies a client's more active participation in service delivery through a combination of the business service firm's knowledge and the client's knowledge. Client participation in service delivery—for example by providing employees for project organization—does not necessarily influence the knowledge base of the business service firm directly.

As depicted in Figure 7.1, the knowledge base of the business service firm may be developed both internally and externally. R&D and training activities influence the development of the knowledge base internally. The horizontal integration of knowledge in an organization may further develop organizational knowledge (Bartlett and Ghoshal, 1993; Grant, 1994). The knowledge base of the company may be influenced by external sources in at least two ways: cooperative development of knowledge in alliances and the absorption of knowledge from a client. The second mode of knowledge development is the informal trading of knowledge (Von Hippel, 1988). The absorption of knowledge takes place simultaneously with the formal trading of knowledge (extension) as the employees of both firms intermingle in service delivery. This is due to the basic characteristic of services: the production and consumption of the service are often inseparable (Mills and Moberg, 1990). The research on marketing of services has revealed that the relationships between a business service firm and a client are often durable (Sharma, 1991) and thus may offer a basis for continuous knowledge exchange and learning.

Based on these arguments, close interaction with a client provides opportunities for (1) the utilization of a client's knowledge in service delivery, (2) the absorption of a client's knowledge, (3) the cooperative development of knowledge, and (4) learning-by-doing and other dynamic effects of business relationships. The last mode of knowledge development means that the business relationship with a client may have dynamic effects on the knowledge base of the company in addition to the effect of cooperation already mentioned. A demanding client, for example, may pressurize a business service firm to develop knowledge internally in order to satisfy the client. The last argument reflects Gardiners and Rothwell's (1985) proposition that "tough" clients may play a role in stimulating innovation. Rothwell (1986) suggested a more active role for the client in knowledge development and pointed out the need for greater recognition of the importance of users as active participants in innovation processes. The *active role of a client* in a service delivery situation suggests that a service client may be an even more important source of knowledge and partner for knowledge development than users of physical products in manufacturing industries.

It should be noted that as client alliances aim at providing cost efficient and high quality services for clients, knowledge absorption from the client alliance may be regarded by the business service firm's management as a mere by-product that does not directly contribute to the development of the knowledge base of the firm. As a firm's efforts to create new capabilities are guided by managers' cognitions, it is important to such managerial perceptions. To create new patterns of action, both employees and managers must be involved at all levels of analysis of the client relationship. In the model developed in the next section, we investigate the elements of a strategic logic (Sanchez and Heene, 1996) of learning from client relationships.

3 Towards a Model of Knowledge Management in Downstream Alliances

In this section, key determinants of knowledge transfer in downstream alliances are identified. Second, we propose a model of knowledge management in downstream alliances.

Determinants of Knowledge Transfer in Downstream Alliances

communicatie modellen

Three factors influence the magnitude and the direction of knowledge flows in a downstream alliance: (1) the transferability of knowledge, (2) a client's willingness to share its knowledge, and (3) a business service firm's willingness and capacity to absorb external knowledge. The transferability of various forms of knowledge was commented upon earlier in this chapter. In this section we focus on the remaining two determinants of knowledge transfer. Some empirically grounded theories have been developed about knowledge transfer in horizontal alliances (Hamel, 1991) and the impacts of internal knowledge development on a firm's absorptive capacity (Cohen and Levinthal, 1990). Analogical similarities support the application of these results in our model. (For earlier approaches see Van den Bosch *et al.* 1994 and Sivula *et al.* 1995.) Hamel's (1991) research on the internalization of knowledge in alliances helps to identify the factors that determine the penetrability of a client's knowledge base. Cohen and Levinthal (1990), on the other hand, contribute to the issue by focusing on the internal determinants of knowledge absorption. *The determinants of a firm's absorptive capacity for external knowledge* will be formulated by combining Hamel's (1991) and Cohen and Levinthal's (1990) research on knowledge absorption from external sources, as summarized in Table 7.1.

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TABLE 7.1 Dependent Variables of Model of Knowledge Management in Downstream Alliances

Dependent Variables	Determinants	Managerial Coordination
A INTERNAL		
1. Receptivity (Hamel, 1991; Cohen and Levinthal, 1990)	1.a. Active: • development of prior knowledge • organizational factors and mechanisms (team building and cross-functional linkages) • communication systems 1.b. Passive: • learning specific factors	1. Organizational incentives (Reve, 1990) 2. Culture (Reve, 1990) 3. Routines (Teece, Pisano and Shuen, 1994) 4. Direction (Grant, 1994) 5. Managerial roles (Bartlett and Ghoshal, 1993)
B INTERFACE		
1. Transparency of client (Hamel, 1991)	1.a. Active: • gatekeeping • number of people involved in a project • restriction in collaboration agreement • site selection 1.b. Passive: • social context • tacitness of knowledge and skills • relative pace of skill building	1. Interorganizational incentives (Reve, 1990) 2. Structure of cooperation 3. Routines of cooperation

Sources: Bartlett and Ghoshal, 1993: Cohen and Levinthal, 1990; Grant, 1994; Hamel, 1991; Reve, 1990 and Teece, Pisano and Shuen, 1994.

Transparency of a partner affects the potential for learning (Hamel, 1991). In our model transparency is essentially a property of the client. Different types of clients may be distinguished by their mode of involvement, their knowledge base and their preference for different types of projects (piecemeal or whole). Also, the special nature of the relationship between the client and the business service firm may affect the opportunity for the absorption of knowledge from client alliances. Clients need to feel secure that client-specific knowledge will not be used in ways that could diminish their competitive position. This implies that there may be factors that limit the opportunity for knowledge absorption from client alliances. On the other hand, business services may be delivered in such a way that some components of knowledge based on experience from previous engagements may not be used to full effect for a new client, because the knowledge is a co-specialized asset useful in the context of a specific client's problems. In that sense, the deployment of knowledge from previous clients may not harm them, but may generally improve the service.

Hamel (1991) divided the determinants of transparency into active and passive factors. *Active factors* may be influenced by the client. A client may limit the transparency in a variety of ways. One or more individuals may be charged with monitoring knowledge flows across the boundaries of a firm (gatekeeping). This gatekeeping is an important activity of interface management from the client's perspective. The nature of joint tasks also affects the transparency. The more people involved with cooperation and the more intermingling needed in a service delivery, the more transparent an organization becomes. The scope of a collaborative agreement also affects the transparency. If only a narrow range of products or markets is involved in the joint task, the transparency will be limited. Site selection and control may also be used for limiting transparency. Performing the joint tasks at the client's site may increase the transparency of the client.

Passive factors are related to the social context of the client, tacitness of knowledge and the nature of the relationship (competition versus cooperation). Passive barriers to transparency may be even more efficient than active measures (Hamel, 1991). The business service firm may find it difficult to learn how to penetrate the client's social context, in which case different cultures and a defensive attitude towards outsiders may be barriers to transparency. Creating trust could mitigate this, and we touch upon the role of trust at the end of this section. As noted earlier, the nature of knowledge may also be a natural barrier to transparency. Tacit knowledge is more difficult to encode and transfer than more explicit knowledge (Hamel, 1991).

Receptivity determines the firm's capacity to learn (Hamel, 1991). This concept is close to Cohen and Levinthal's (1990) notion of absorptive capacity. Absorptive capacity, however, is defined more broadly to include the capacity to evaluate and utilize outside knowledge in addition to assimilating external knowledge. Receptivity of the firm has active and passive determinants similar to those affecting transparency. *Active determinants* of receptivity are related to the development of prior-related knowledge (R&D) and training that facilitates the absorption of external knowledge. Also, organizational factors like team building, the establishment of cross-functional linkages and communication systems will increase the receptivity of the firm internally (Cohen and Levinthal, 1990).

A competence perspective by the management of the firm may also contribute to the receptivity of the firm.

Hamel (1991) presented the *passive determinants* of receptivity in three paradoxes: (1) learning often requires unlearning, (2) a small crisis abets learning and a big crisis limits learning and (3) the greater the need to learn, the higher the barriers to receptivity (1991: 97). Hamel's third paradox is similar to Cohen and Levinthal's focus on prior-related knowledge in a firm's capability of absorbing extramural knowledge.

Model

Two central features in the resource-based view of the firm can be discerned: the firm as an integrator of resources and the firm as a developer of resources (Teece, Pisano and Shuen, 1994). These two features will be combined in our model. The integrating perspective will be adapted from Reve's (1990) model in which a firm influences its resource base and its business environment and combines its core resources with the partner's complementary resources by establishing strategic alliances. The downstream alliance is a meaningful arrangement for both parties if (i) the complementary resources and skills are needed in a service delivery or (ii) if these skills and resources facilitate cooperative knowledge development. We examine the development perspective by focusing on creating new capabilities in developing the knowledge base of the firm.

Before presenting the model of knowledge transfer, we will briefly identify four key *knowledge flows* between the business service firm and the client, as shown in Figure 7.2 (see arrows 1, 2, 3 and 4). At the organizational level, cooperative projects or client alliances contribute to the experience and the knowledge base of the business service firm (see arrow 1) through direct absorption of knowledge, the cooperative development of knowledge or the dynamic effects of a demanding client that induce the internal development of knowledge. Internal managerial services support and provide a context for the knowledge-intensive service delivery (see arrow 2). These are closely associated with the coordination mechanisms of the firm. At the project level, business services (embodying knowledge components) are provided in cooperation with the client (see arrow 3). This implies that a client's knowledge may be partly utilized in service delivery. The close interaction and the actual process of delivering a service offers an opportunity for knowledge absorption and learning-by-doing both at the level of the individual and the project team (see arrow 4). From a competence-based perspective, the managerial challenge in these four knowledge flows is to create *new capabilities* in developing the firm's knowledge base—that is, new abilities to sustain the coordinated development of knowledge assets in ways that help the firm achieve its goals (Sanchez, Heene and Thomas, 1996).

Figure 7.2 presents a model that shows the determinants of knowledge absorption from downstream alliances with clients and associated coordination mechanisms. *Three basic patterns of activities* for knowledge transfer and development for a business service firm may be identified: (1) the current knowledge base *supports* extension (a service that transfers knowledge), (2) internal development activities (training, R&D) *facilitate* the absorption of knowledge from downstream alliances and (3) internal development and the absorption of knowledge combine together to *develop* the knowledge base of the business service firm. Figure 7.2 depicts these three basic patterns of activities with corresponding arrows. The factor markets have also been suggested as being a source of knowledge for a business service firm (Sharma, 1992). However, the resource-based view of the firm suggests that in creating rent-generating

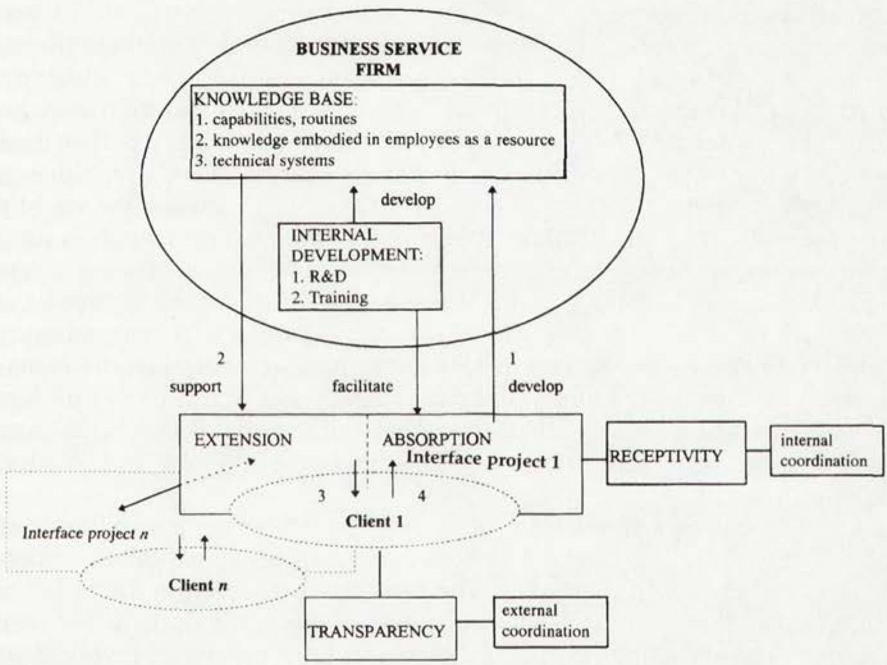

FIGURE 7.2 Model of Knowledge Management in Downstream Alliance

resources, market mechanisms for knowledge acquisition may be less effective than the internal development of resources.

The focus on downstream alliances suggests two ways of influencing the development of the knowledge base of the firm: the internal development of knowledge through the absorption of knowledge from alliances and the internal development of the firm's knowledge base (see the box within the business service firm in Figure 7.2) by the training of employees or by conducting R&D activities. Not only does this develop the knowledge base of the firm directly, but as indicated above, it indirectly facilitates the firm's absorptive capacity. Internal coordination mechanisms, see Table 7.1, include organizational incentives and culture (Reve, 1990). The focus on knowledge as a resource suggests at least three other mechanisms for the coordination of knowledge as well. First, the utilization of a firm's routines (Teece, Pisano and Shuen, 1994), second, direction in terms of rules, guidelines, standard operating procedures (Grant, 1994), and third, managerial roles (Bartlett and Ghoshal, 1993) in managing the knowledge flows and creating new patterns of action in the use of these flows (Sanchez, Heene and Thomas, 1996). The relationship with the client requires external coordination due to the lack of formal control. The interface coordination mechanisms, see Table 7.1, are mainly based on interorganizational incentives like negotiations (Reve, 1990). Negotiations between the potential partners that aim at achieving a contract that specifies the content and context of cooperation may be used for influencing the transparency of the client. Contracts that deal with a wide range of issues and give access to the client's employees, documents, site and other sources of information increase the client's transparency (Hamel, 1991). In this respect, interface coordination may also be used for influencing client's transparency. Even if a business service firm can only influence the transparency of the client indirectly, a firm may be able to identify the problems associated with transparency and try to reduce them. For instance, the passive factors in the transparency of the client, may require the development of commonly understood roles and interaction patterns. These routines of cooperation may facilitate the communication of tacit knowledge (Nelson and Winter, 1982).

For deliberately *creating new capabilities*, the creation of new patterns of action in combining existing knowledge with newly absorbed knowledge from the client is needed. The typology presented in Table 7.1 of determinants and managerial coordination mechanisms is *a first step towards theory building* regarding the managerial processes involved in creating new capabilities and competence building. These managerial processes deserve more attention in present theories of competence-based competition.

Projects with Clients

In case studies aimed at this kind of theory building in business service firms, *project management* to enhance competence building deserves close attention. In project management, managerial tools and instruments can be developed to facilitate new combinations of resources and capabilities scattered both *within the firm* and *in the variety of projects* performed with clients.

The *connections between projects*, for example between 1 and *n* as depicted in Figure 7.2, may be viewed to be *parallel* or *sequential*. In the first case, knowledge may be transferred through people or codified knowledge (Sanchez 1996, in this volume) between different projects that are related in some respect (horizontal integration of knowledge). This may support the extension or development of knowledge in the projects involved. The sequential case, however, refers to past or future projects. If the cooperative project *n* is with the same client 1, the earlier assignments and the associated learning from the cooperation may be argued to be beneficial for this client in terms of efficient and improved services. Prior knowledge about the client and industry and their established routines help to make cooperation smooth and fast. However, if the future cooperative project *n* is with a different client, client 1 may feel threatened, since the potential knowledge transfer to competitors may erode the competitive edge of client 1. The result may be the limitation of transparency or the refusal of repeat engagements. On the other hand, client 1 may also benefit from the service provider's earlier assignments with different clients. This is especially the case when relevant network knowledge is utilized, for example in the customization of services. As Elfring and Baven have noted: "Customization can be achieved faster and better when the service supplier has prior knowledge of the industry in which the customer operates. As a result, clients increasingly require a degree of knowledge from service suppliers about the industry concerned" (1994: 47). Finding the right balance between offering client benefits from network knowledge and creating the fear of diffusion of knowledge to competitors, is a dilemma facing providers of knowledge-intensive business services that is difficult to overcome, but has to be managed. A business service firm that is aiming at aggressive knowledge absorption may find it difficult to establish a downstream alliance if the client feels that the business service firm is exploiting client's resources. In this respect, a business service firm's managers and employees must be able to create trust (for a recent attempt to define trust, see Hosmer, 1995: 399) and consensus in client alliances about the mutual benefits from cooperative knowledge development and transfer.

Other factors that hinder the absorption of knowledge from client alliances may be *internal to the firm*. The employees of the business service firm may feel that they do not have anything to learn from the client. Alvesson (1994) provided interesting evidence for this. He studied Swedish advertising agencies and found that: "The advertising people seldom think of the client's suggestions as expressions of knowledge or insightful evaluation. The client is someone who is always wrong, if he is not in agreement with the advertising people" (1994: 549). Consequently, creating new capabilities in the knowledge base development of firms may require efforts to assume the attitude of a student rather than that of a teacher.

4 Summary and Conclusions

In this chapter we have analysed the development of the knowledge base of the knowledge-intensive business service firms with regard to client alliances. To this end, we identify determinants of knowledge transfer between a business service firm and a client. Based on these determinants we propose a preliminary model of knowledge management aimed at creating new capabilities in knowledge base development. The model contains the determinants of knowledge absorption from downstream alliances and associated managerial coordination mechanisms. We hope to contribute to the better management of knowledge-intensive business service firms by focusing on the context-specific source of competitive advantage: *developing the business service firm's knowledge base by learning from the close interaction with the clients.* This approach may help to overcome the problem of infinite regress in analysing capabilities or competences as sources of competitive advantage in general (Collis, 1994).

The first step in this theory-building effort was taken by proposing a typology of knowledge-related activities in client relationships. We use this typology to make a distinction between internal and interface activities on the one hand and between static and dynamic influences of knowledge-related activities on the other hand. The typology helped us to clarify these concepts by positioning them, showing their boundaries, and using this framework to suggest the usability of concepts from different streams of research. To show the relationships between the concepts, we propose a preliminary model for managing knowledge base development in client alliances. With the help of this model, we have identified a paradox in providing knowledge-intensive services and stressed the necessity of creating trust in client alliances to overcome a potential client dilemma in participating in the development of a business service firm's knowledge base.

However, further theoretical and empirical research is needed. Especially, the managerial aspects of our model and the building up of managerial coordination activities over time deserve more attention. Detailed longitudinal case studies in knowledge-intensive business service firms such as engineering consultancy firms and management consultancy firms are needed to improve the proposed model and to address the issues raised through further research. It will be a challenge for empirical research to discover managerial coordination mechanisms for knowledge transfer in client relationships and to determine whether the discovered mechanisms will be useful in a more general sense as well. However, the question arises if all service provider–client interactions are a fruitful platform for competence building?

In this connection we would like to stress the importance of (i) identifying *different types of clients* for the development of the knowledge base and competence building of the business service firm and (ii) strategies for dealing with these different types of clients. Looking at the client relationships from the perspective of competence building may provide a novel insight into practice. It may be useful for managers in knowledge-intensive business firms to analyse their client base as a source of knowledge and identify the potential learning partners. One way to approach the problem is to focus on the transparency of the client as an indication of learning potential. The other factor in analysing the client base that deserves attention is the position of the clients in terms of knowledge. The clients with leading positions in their industry, or which are otherwise known as innovative, may be the best sources of external knowledge. The competence-based competition between knowledge-intensive business service firms requires that managers have the ability to incorporate strategically important clients into knowledge base development and coordinate the knowledge transfer process in client alliances. Those knowledge-intensive business service firms that focus on more effective management of learning processes with clients may be building competitive advantage over others.

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