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KIBS and Knowledge Dynamics in Client–Supplier Interaction

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1.1 Introduction

Knowledge-intensive business services (KIBS) apply knowledge to support their clients' business processes – to provide solutions to problems that the clients are encountering. How they do this can vary considerably, as will the extent to which knowledge is obtained from and transferred to the client.

It has been common to differentiate between the front-office and back-office activities of services, or as Glushko (2008, 2010) has it, their front and back stage processes. At the front, client-facing part of the service activity, product and process are often hard to differentiate, and the client is more or less closely engaged in producing the service. This provides opportunities for mutual learning. Back-office activities are more likely to remain invisible to the client. Learning on the part of the service organization may draw on, and work with, knowledge obtained from the client and through the interaction. But this will only be shared with clients through front-office activities; and is also potentially shared with other business partners in the course of these activities (where several different firms are "front stage" together), or via the business and professional networks in which KIBS and their professional workers are embedded (these might be called behind office encounters, and represent ways in which knowledge may be produced and reproduced in wider supply chains or value networks).

In all of these settings, the KIBS firm is applying (and often further developing) its domain knowledge – the knowledge relevant to the classes of problems confronted by its clients. This could be knowledge about management organization, information systems, legal affairs, market research, technical testing, or much more. We shall consider

distinctive knowledge domains later in this chapter, but at first will consider some relatively generic issues. Our focus will be on the individual KIBS firm and its client organization (which may be a public sector organization as well as a private firm from just about any sector – the "B" in KIBS really tells us that these services are providing solutions to problems in business processes, not just for business firms). We will not address the more complicated issues that frequently arise in complex service systems, where several service providers are often mobilized into providing a solution to the business problems of a client. In such cases there will often be mutual learning across different KIBS, and between KIBS and other business partners engaged in the service provision. The very important dynamics and opportunities that emerge in the course of encounters in multiparty service systems will have to be discussed elsewhere.

This chapter focuses on the learning that can occur in dyadic interchanges between KIBS and clients. Just as the firms are located in wider systems and networks of organizations, they are also themselves composed of systems of individuals – their professionals and other staff members. While there is much we can say about knowledge, learning and interaction at the firm level, these are largely processes that are mediated through and depend crucially on the agency and cognitive capacity of individuals. How these individuals are motivated, mobilized and equipped is extremely important, and we will need to touch on these themes, even though they are not the focus of this chapter. We frequently refer to skills and capabilities as well as to knowledge, and here we are implicitly pointing to the importance of tacit forms of knowledge (for instance, those deployed in interpersonal relationships and the like), in addition to the more accredited sorts of knowledge that appear as the product of formal education and involvement in on-the-job learning about problem-solving activity. These sorts of knowledge – these skills and capabilities – may themselves become the focus of staff training, though often it is assumed that they can be learned on the job or through mentoring.

To reiterate, we here focus on the learning that can occur in dyadic interchanges between KIBS and clients. There are many possible forms of learning, and also many failures to learn are commonly observed. It is important to avoid too rosy a view, since we often find good cases publicized, and have less documentation of more problematic ones. With this in mind, let us turn to some common instances of limited learning on the part of clients, before expounding in more depth on how learning can take place, and what is learned.

1.2 When clients learn little

KIBS bring their domain knowledge to bear in situations where clients lack this knowledge themselves – or lack the capacity to mobilize it. In the latter case, the problem could simply be that the relevant professionals within the client firm are too busy with other work to deal with the specific problems that the KIBS is brought in to address. Or, it may be that (the application of) external knowledge is seen as more valid, legitimate, or inspiring than drawing on internal resources would be. Consultants may be providing a point of view that senior managers wish to see promoted, but lack requisite authority; regulators may require accounting and auditing to be conducted by independent parties; it may be hoped that outsiders can introduce fresh ideas.

Thus it is not guaranteed that the KIBS will actually possess any knowledge that is not already wielded by at least some parts of the client. The effect of interaction with the KIBS may then not so much be a matter of learning new things as of being seen to be behaving in particular ways. Of course, some surprises may occur nevertheless. The service firm may reach unexpected conclusions, or bring unanticipated knowledge to bear.

In addition to the case where the KIBS is not really expected to possess any knowledge that the client lacks, there are at least three other situations where knowledge transfer from KIBS to client can be very limited. These are typically cases where the client has no interest in itself developing the knowledge base of the KIBS.

First, while we often focus on the bespoke or at least highly customized activities of KIBS, in practice some KIBS activities are very routine ones.[1] Some KIBS firms mainly undertake such routine work. This is often the case for smaller firms, serving local markets and often smaller clients in these markets. For example, many KIBS in the "long tail" of their sectors are preparing the accounts and tax statements of small businesses, customizing information systems for particular clients, and the like. In such cases, the same body of domain knowledge is often repeatedly brought into play in practically the same way. The client will typically treat such a service as a utility, providing inputs or functions that it has little interest in generating itself.[2]

Second, some KIBS operate with little interaction with individual customers, preparing multi-client reports and newsletters in a fairly standardized way, for example. Their knowledge is deployed to create information products from which clients can gain business insights, much as commodity software packages can be used by clients to

automate some clerical processes. The KIBS may be classified in the NACE 72–74 divisions, or they may be regarded as being engaged in publishing or other creative activities. As with many manufactures, the customer learning will mainly involve learning to absorb the material into their routines, and perhaps incidentally to recognize the "voice" of the particular KIBS supplier.

Third, KIBS may simply be engaged in activities that are seen by clients as being so far removed from the clients' core processes that there is no motivation to learn about these activities. This may be the case for example, not only with standardized services but also in many instances of facilities management, web design and hosting, logistics, and the like. The client may also lack "absorption capacity" for the knowledge or other aspects of the services provided by KIBS. There are cases of software commissions that have never been utilized by the clients, for instance,[3] perhaps because their requirements have changed, perhaps because it is feared that too much time will be required to master the software. It is not unknown for the individuals that originally commissioned the KIBS' work to have moved on, or for their priorities to have been reordered in the wake of business upsets, so that the original service requirement is off the radar.

Other circumstances may arise where learning is limited due to a range of difficulties that can be encountered in the course of service interactions. A lack of trust between KIBS and client staff may inhibit exchange of information necessary for effective service provision, or of information that is believed to be inessential but which might allow for either or both of the partners to set the service encounter into a wider context, and thus help to build better understanding of the nature of the service. We will later consider some factors that can lead to more effective sharing of information and building of knowledge.

1.3 KIBS relationships

Many KIBS activities are more closely tailored to specific clients than the standardized services mentioned above. They go well beyond minor customization. There may be novel configuration of components, there may be completely new service products created.

Tordoir (1996) distinguished between "sales", "jobbing" and "sparring" relationships between clients and professional services. Extremely standardized KIBS are engaging in sales relationships, where there is little interaction taking client specificities into account. In the "jobbing" relationship, the client defines the problems for the service firm, more or less

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thoroughly setting out the solution it wants implementing. Though the KIBS may have more elaborate views of the client problematique, these may be unheard or discounted by the client staff with whom the KIBS deals. In the "sparring" relationship, there is typically much more negotiation as to the nature of the problem, and the service to be provided. In effect, the service firm supplies knowledge as to the nature of the problem that confronts the client and the client can learn from this.

Likewise, the knowledge the KIBS are using may be routine knowledge exercised in routine ways, or it may be newly created (e.g. from some research process), or involve a new combination of knowledge from different sources. Knowledge of the client and the client problematique will typically be elicited in the course of designing and creating the service product. Often this involves a whole series of front-office encounters between key staff.

By *client problematique* we refer to the challenge which the client organization presents to the KIBS – not necessarily the problem as identified by the client. Sometimes a client will be very unsure of the nature of their problem, or of what underlying issue is signaled by a poor performance indicator, for example. We may know, or suspect, that sales or productivity growth are falling, or that environmental degradation or stakeholder criticisms are growing – but the reasons for this may be uncertain or contentious, so that the underlying problem that needs resolution is still unclear. Sometimes clients will be mistaken as to the nature of their problem. Data may be inaccurate or misunderstood (we know of cases where consultants discovered that a supposed poor performance is just a misinterpretation of data). Key players in the client organization may be too rigid to grasp changes that are underway. Sometimes the client has a reasonably accurate diagnosis, but there are features in the client organization that make it difficult for the KIBS to get to grips with the situation and/or to effectively get the message across about its solution. With such circumstances in mind, we see that the client is presenting a problematique, rather than just a simple – or, at least, simply stated – problem, to the KIBS.

The style of relationship between KIBS and client is intimately associated with the way in which the service is produced, and for the form and extent of client participation in service specification and (co-)production. These features affect the extent to which there is exchange of knowledge and mutual learning between the partners, and what sorts of knowledge and learning are involved.

"Sparring" relationships require alignment of understanding about the problematique and possible solutions. This alignment is likely to

feature mutual learning, and may thus induce profound change on both sides of the service relationship. The KIBS generates a new service and/or a new understanding of the sorts of solution that are relevant to particular problems and problematiques; the client acquires some understanding of how this service is addressing their situation, and of the nature of the business problems they confront. The KIBS firm may want to, or be contracted to, ensure that this sort of client learning is accomplished deeply and effectively (e.g. among the crucial professionals): in some circumstances (e.g. long-term service relationships) there are gains to both partners from such empowerment of clients.

Learning can and sometimes does take place in other types of KIBS relationship. The client can observe the practices of a "jobbing" service supplier and decide to emulate them – in self-provision of the service, or elsewhere. Furthermore, a "jobbing" BS can still be involved in delivering relevant information, intelligence and even skills. For example, a training company may be contracted to deliver a standard training package (an example is that involved in the European Computer Driving License), as opposed to one highly tailored to a specific client. This will by definition increase knowledge levels among the staff of the client in question, and require high levels of engagement by these staff members – even though the contractual relationship can be "jobbing" or even "sales" (e.g. with some online training). Higher levels of training will typically involve more "sparring" negotiation of the precise skills to be developed. In such cases, the KIBS is delivering content – knowledge of a specialized domain – through its service encounters, and the service itself is the application of KIBS knowledge about how to deliver such content. Employees of the client firm may learn something about the presentation skills and curricular organization that is required here by observing the KIBS performance in service encounters, so there can be scope for acquiring enough understanding of the service that it can later be internalized on the part of the client.

The service relationship is typically extended through time, especially in sparring relationships where there are a succession of encounters between KIBS and client, as visualized in Figure 1.1.[4] Different staff members are brought together at the various "touchpoints" that are depicted, and there are opportunities for different sorts of learning across these encounters. The learning may be as much about how the two partners operate – their internal organization, management of knowledge and personnel, ways of formulating and presenting their capabilities and problems – as about the specific knowledge domain that is implied by the problematique. The extension of the service relationship through

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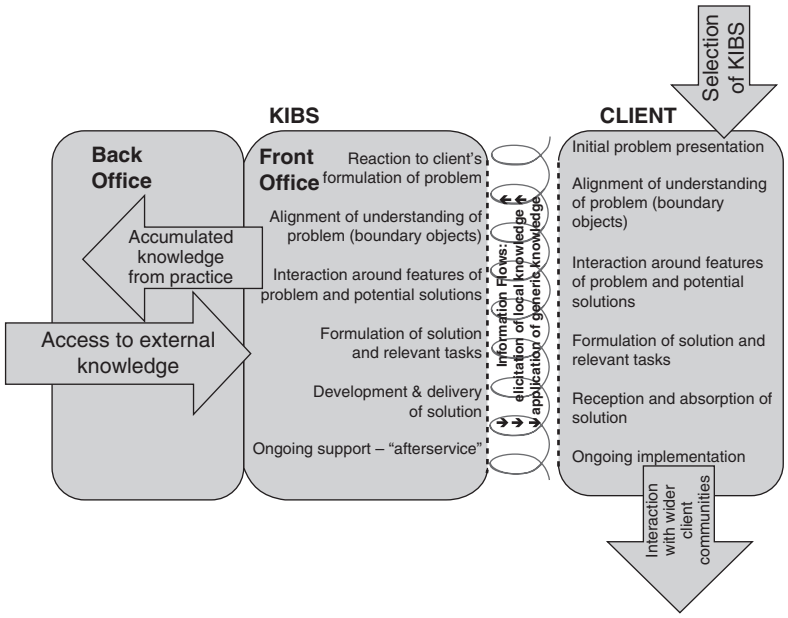

Figure 1.1 The KIBS–client relationship

time may also involve extension across a range of settings – in different premises and sometimes other physical environments, in virtual environments and telephone encounters, and so on. The client-intensity (interactivity, coproduction) and the extensivity (over space and time touchpoints) of services, is what makes service design so different a craft than conventional industrial product design.

The core knowledge possessed by the KIBS firm is the domain knowledge relevant to the business problems/problematiques confronted. The service may deploy this knowledge in various ways, providing a diagnosis of the problematique or intelligence that can be used for this purpose, identifying solutions, implementing or helping to implement solutions and managing the facilities that provide these solutions on an ongoing basis. We might expect that when KIBS are more involved in showing the clients how to produce a solution to the client problematique, there will be more acquisition of domain knowledge by the client than when the KIBS firm is simply providing or implementing a solution.

Figure 1.1 depicts the service relationship as a helix of interactions between KIBS and client, with information exchanges at numerous

points, in both directions. At these different "touchpoints", knowledge is required, and knowledge can be acquired. Capabilities need to be in place to deploy existing knowledge, and to develop and apply new knowledge.

At each stage we might ask of both KIBS firm and client:

- What is the knowledge required for successful completion of this stage of the service relationship?
- How far is this knowledge already possessed, and how much needs to be newly acquired?
- How far does the actor understand these knowledge requirements, and the requirements for knowledge of their partner in the service relationship?
- What ambitions do they have for gaining knowledge beyond that necessary for effective service provision? Do these ambitions extend beyond knowledge that might be helpful in future instances of this type of service relationship?
- What, and how far, are the capabilities possessed that can be used to attain the knowledge – and to support the business partner is attaining the knowledge they require?
- What are the actual outcomes, in terms of the development and application of knowledge in and through the service relationship?

Putting the questions in this form implies that when the outcomes in terms of knowledge development and use are less than those required for the service, the actual service relationship is liable to be unsuccessful – we might anticipate that the earlier such problems develop, the more difficulties there will be. This points to the importance of monitoring performance and building in opportunities for service recovery. If the outcomes are less than the ambitions for knowledge development and use, it may be that there will be disappointment on the part of one or both parties, even if service delivery is formally adequate.

The opportunities for information exchange and learning – which may be achieved through working together on problems, and is not necessarily a direct product of extraction of information from one or other party – vary over the course of the relationship. The precise staff members who may be engaged in such learning processes are also quite often liable to vary, with different staff being involved in commissioning and designing the service, from those involved in subsequent stages of service production and delivery, coproduction and absorption.

Many sorts of knowledge may be at stake. There is knowledge about the service itself and the subjects which it addresses, the business processes and problems it is meant to deal with. There is knowledge about the production and absorption of the service, and about the project management, business relationship techniques and work organization on sides of both KIBS and the client.

Many KIBS specialize in dealing with particular types of business problem – implementing IT or environmental solutions, organizing work effectively and developing robust risk assessment and management strategies, dealing with regulators, media and stakeholders, and so on. Most KIBS also focus on specific classes of clients – large corporations and transnationals, specific industrial sectors, firms in particular localities, etc. Thus they do not need to be encyclopedists, knowing everything (or a little bit about everything). They are typically knowledge specialists. They know a great deal about a few things, often having specialized knowledge that the client cannot afford to (or does not want to) develop or keep up to date in-house, and enough about surrounding things to be able to scan for emerging developments at the boundary of the client's attention. The knowledge possessed by different KIBS thus varies. Similarly, the sources and creation of new knowledge are diverse. Furthermore, the ways in which this knowledge is built into KIBS activities, and reproduced (or used to shape routines and artifacts) in the clients, are liable to take different forms.

1.4 Specialist domain knowledge

Knowledge domains are continually evolving, and can be categorized in a huge number of ways. The earlier versions of the standard NACE industrial classification give a good first impression of the range of domains covered by KIBS, and thus of associated domain knowledge requirements.[5] In NACE Rev.1, section K covered "Real Estate, Renting and Business Activities", and the "Business Activities" are divided into three (two-digit code level) divisions; KIBS have been widely identified as these NACE divisions 72–74 in the research literature. Division 72 was computer and related services, 73 R&D services and 74 other business activities (ranging from accountancy, advertising, market research and legal services, through architecture and engineering services, to personnel recruitment and industrial cleaning services). As the case of industrial cleaning suggests, these divisions do include a few operational, administrative services, that are less knowledge-intensive as assessed by a large share of university graduates in the workforce. Some

"creative industries" fit the KIBS definition but are not included in these divisions. In one case, "technical writing", some of the professionals involved vociferously criticize their being located along with entertainment and similar activities; but other media and design activities also support business and have many features of KIBS.

The KIBS literature has long distinguished between T-KIBS (the more technology-related KIBS, such as computer, engineering, R&D and testing services) and the more traditional P-KIBS (more professional KIBS, such as accountancy, legal and management consultancy services) (e.g. den Hertog, 2000, drawing on the work of the Si4s project during the 1990s). More recently C-KIBS have also been distinguished (creative KIBS, dealing with cultural and similar knowledge, such as advertising, graphic and some other sorts of design, and business-focused media services) (e.g. Miles, 2011). This reflects recognition of the fact that many firms in the so-called creative industries are not primarily in the business of delivering experiences to customers, as entertainment and related firms. Many are providing solutions to business problems of their clients – which may or may not require effecting experiences for end-users of these clients' products. Some C-KIBS have typically been assimilated into T- or P-KIBS, namely market research, architecture and the like,[6] but others were often hidden away in "services n.e.c." and the like.

T-KIBS tend to have high shares of science and engineering (S&E) graduates on their payrolls, reflecting the high level of involvement with external technologies and/or those more "intangible" technologies they develop themselves (computer software being the prime example). P-KIBS are deploying knowledge of regulations, administrative procedures and social affairs, while C-KIBS deploy knowledge of social affairs, cultural trends and aesthetics. Both have large shares of staff who are graduates in humanities and social sciences; available data makes it hard to be more precise about the specialisms they draw on.

In practice, all sectors (if not all KIBS firms) have *both* S&E and other graduates on their payrolls. Some firms are highly specialized, while others that are nominally in the same sector are much more broadly focused (for example, some firms specialize in diagnosing problems, others in recommending solutions, others in implementing and managing solutions and some cover all of these activities). Practically every KIBS sector, and every firm that has a broad focus within its sector, will need some combination of the three broad classes of domain knowledge implied by the three broad types of KIBS sectors. Indeed, many individual professionals will require some depth of knowledge in all three areas.

Despite this, we can attempt to roughly characterize KIBS sectors based on their typical positioning in terms of the three broad classes of knowledge. Figure 1.2 provides an impressionistic mapping of KIBS in terms of the extent to which their core activities require each of the three.[7] For reasons already outlined, we should not assume that the core domain knowledge used by a KIBS sector, or the presence of particular kinds of knowledge workers among its employees, is directly informative about the types of knowledge "transferred" between KIBS and their clients.

Classifying KIBS' knowledge into three broad classes in this way inevitably involves simplifications and creates ambiguities. For example, extremely different sorts of technical knowledge are required for state-of-the-art production of specific services. The technical knowledge required by architects is of a different order to that required by software engineers, just as that required by graphic designers differs from that of market researchers. We may see the classic forms of professional knowledge as involving understanding of the procedures of administrations and commercial organizations, but the contours of such knowledge will similarly vary across lawyers, accountants,

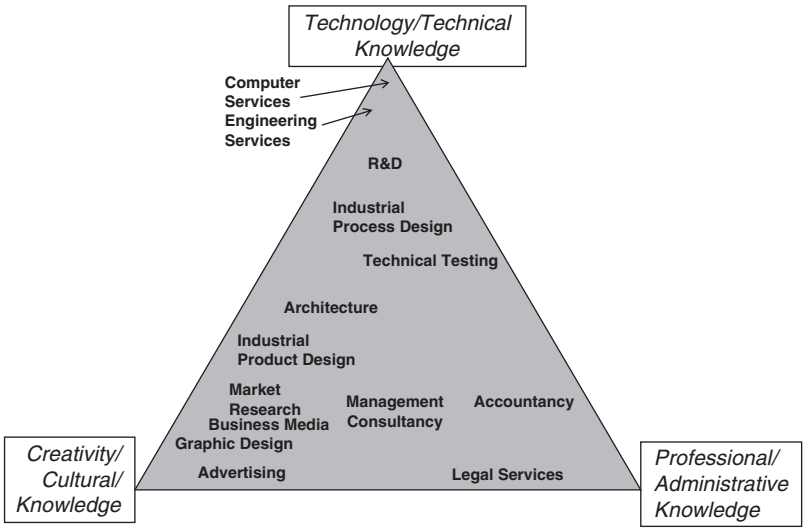

Figure 1.2 Impressionistic visualization of domain knowledge requirements for different KIBS types
Source: Miles, I. (2011) "Interactive innovation: Service innovation studies, coproduction – and KIBS" presentation to COPRODNET seminar, Manchester, January 20 2011.

management consultants – and that required to engage with clients and their sociolegal and commercial environments across KIBS of all types. The cultural/creativity/aesthetic nexus varies among design professions, as well as in the design and presentation elements of the services supplied by KIBS employees of other types.

Elaborating on this, practically all KIBS will need some degree of IT awareness – KIBS, after all, led the way in computer adoption. But firms conducting market research, for instance, will need to combine this with the knowledge of conducting surveys or focus groups, and to analyze and present the results of these studies, as well as knowledge of the issues that are being examined and the client's rationales for wanting this. This will be very different from the IT knowledge required for a computer services company to undertake systems integration, facilities management, software engineering – or any of a host of other quite different types of technology-related service. Each service activity will have some specialized knowledge, and related tools and techniques, that relevant KIBS will deploy in the course of service production. The three broad classes of knowledge are simply a convenient way of orienting ourselves in a complex landscape that is ever changing as new specialisms and combinations of specialist knowledge are developed (Abbot, 2001).

But domain knowledge is only one of the types of knowledge deployed by KIBS firms. We can approach this through thinking about the forms that innovation can take in KIBS. Here we are inspired by the approach adopted by den Hertog et al. (2010), but move away from their six-dimensional classification by considering the different locales in the KIBS business model framework where innovative practices may be adopted by the KIBS firm.

Figure 1.3 thus builds on Figure 1.1 to roughly indicate points at which novelty – innovation – may be introduced. Twelve points of action are suggested here, of which the service offering is only one. As in the den Hertog analysis – and some of the writings on business model innovation (and on disruptive innovation) – we stress that many innovations involve change at several of these points simultaneously. Thus a KIBS firm that is moving from a standardized service offering to one that is much more closely tailored to specific client requirements, is also likely to be marketing itself in new ways, to a new set of clients, whom it involves in new ways in service production, and so on.

This provides a springboard for thinking about the sorts of knowledge and capabilities that are required for the KIBS firm to introduce innovations, alongside the knowledge required to conduct operations in a routine way. Figure 1.4 outlines the types of knowledge associated with these points of action. We use the term "grasp" to indicate that the

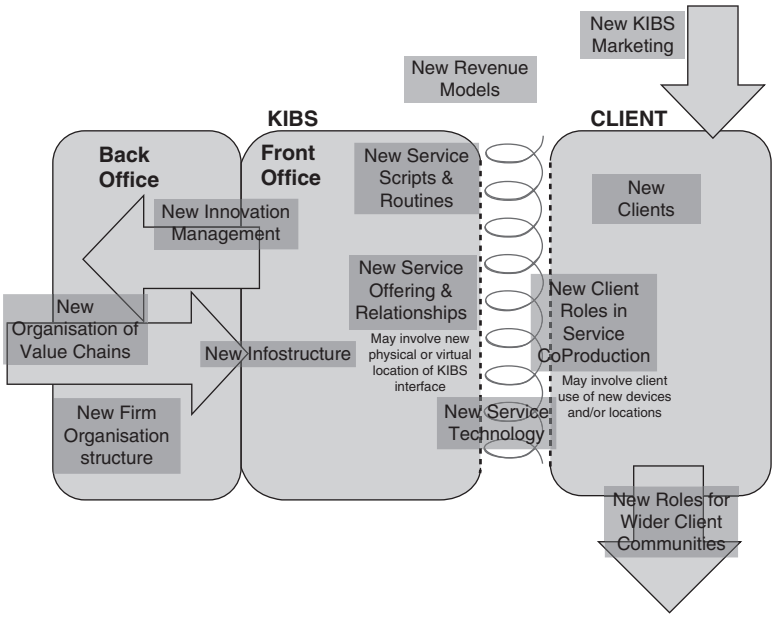

Figure 1.3 Different elements of KIBS innovation

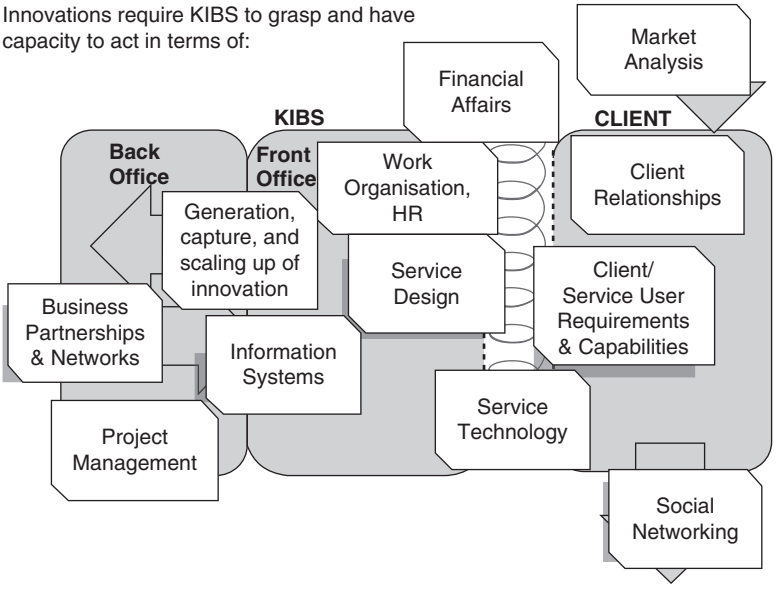

Figure 1.4 Knowledge and capabilities for KIBS innovation

understanding that is required is not just understanding of how things are at present but also of how they could be if opportunities are to be seized and threats confronted.

It is the combination of such diverse and potentially complex forms of knowledge that has led to growing attention to the skill requirements of knowledge-intensive service activities, the sorts of knowledge used by different types of KIBS worker and how this knowledge is acquired and mobilized (OECD, 2006a; Martinez-Fernandez et al., 2011). There are few detailed and systematic analyses of the competences (skill combinations) required of workers. Consoli and Elche-Hortelano (2010) use US Bureau of Labor Statistics data to explore the knowledge base of American KIBS. The data in question provide information on what industry experts consider to be the skills required of specific occupations, and employment statistics on the sectoral distribution of various types of job. The authors reported considerable variation across KIBS occupations and sectors. Professionals were associated with discretion and cognitive skills, interpreted as meaning that they confronted problems whose solutions were difficult to specify in advance, while some of the more technical KIBS feature less discretion and more standardized tasks.[8]

Probably the most effort in examining the skill requirements of specific KIBS professions has been undertaken in the IT services (for example, Petersen et al., 2004).[9] It is from these fields, too, that there have been vociferous formulations of the need for new types of workforce skill constellations – the famous T-shaped professional, in particular, with considerable specialist knowledge combined with sufficient understanding of adjacent areas of work and management, and sufficient development of interpersonal and operational skills, to be able to work together with professional from other backgrounds in complex projects (BT, HP and IBM, 2008).

The client, too, requires capabilities for coproduction to happen effectively. Kuusisto (2008) points out that the motivation to be involved in service production, and perhaps in service innovation, can be contingent on a range of factors. There may be different understandings about the importance of engagement for shaping the quality of the service outcomes and the effective functioning of the KIBS–client relationships. The extent to which there is a commitment to the KIBS firm and its staff – how important is the service and the ongoing service relationship to the client. The client's awareness of such issues will be affected by the availability of staff and time for the task, their innovation

knowledge and skills, and other such features. It would be possible to develop a mirror image of Figure 1.4, identifying requisite capabilities on the client side.

The competitiveness of KIBS, and the benefits that the economy derives from them will reflect the capabilities on both sides of the relationship. Päällysaho (2008) reviewed several studies to conclude that KIBS can benefit from coproduction and close relations with clients, and benefit in more ways than repeat business and stable partnerships. There is some evidence that service innovation occurs more often, and can be faster and more successful, under these circumstances. KIBS of all sorts require traditional project management skills (such as experience with and procedures for effective project organization and planning); these can ensure the meeting of deadlines and the early identification of problems. But the importance of coproduction and client inputs requires additional capabilities, and the KIBS firm needs to be able to select and support effective leaders. Such support may take the form of skilled staff, budgets and facilities, and the like.

The work routines and communication practices within KIBS are equally important resources for knowledge development. Thus Fosstenløkken et al. (2003) compared 20 professionals in two KIBS firms AQ5 working in different specialized areas – engineering design and communication consulting – and were struck by the similarity between firms in that both stressed the role of sophisticated and knowledgeable clients in the knowledge development process. The knowledge development of the individual professionals was, however, very dependent on face-to-face access to these clients; this could be limited by the KIBS' managers and other senior professionals (who, conversely, can take steps to maximize the scope for junior colleagues to develop knowledge). The implication for KIBS managers is that they should take the scope for improving knowledge development throughout the organization by fostering such links; individual professionals may themselves seek to acquire such links and use them effectively. Of course, conflicts of interest may emerge, and the KIBS firm may be worried about staff members who may depart, carrying with them considerable knowledge about, and working relationships with, clients.

Skills in developing and managing the service relationship with clients come to the fore. Bettencourt et al. (2002) address the challenge for KIBS providers of ensuring that their clients have the requisite capabilities for service quality. They should know what is expected of them (there is role clarity); that they are motivated to engage in these

ways, and that they have the necessary knowledge and skills to do so. KIBS firms can work toward these aims by:

- Being selective where it comes to clients – rather than taking on all clients, applying a set of criteria to decide which to work with and which to avoid. These criteria can include features of the service – its urgency, criticality and features of the client – what is known of the firm's philosophy and organization, its treatment of business partners, its dedication of client resources to the project.
- Being proactive where it comes to client capabilities – providing where necessary training and education; socializing the client in terms of expectation management, trust-building, organization of joint planning and explicating client roles; and allowing for interpersonal links to be created (e.g. by building opportunities for project leaders to meet informally).
- Monitoring and assessing the service process – applying project leadership (e.g. by rewarding transformational leadership and partnership building), and mutual evaluation of performance evaluation with the client (matching authority levels in the staff on both sides, stimulating self-evaluation and evaluation of and from clients at the point of project completion).

Just as individual professionals' interests in gaining knowledge may reflect their own interests and not necessarily those of the firm, or the demands of the specific service relationship, so there may be tensions between KIBS and client. Bitner et al. (1997) note that clients can be more than coproducers; they can also be competitors to the service organization, even within a specific service system, and quite possibly across a sequence of relationships. KIBS firms exist within a business ecology in which business partners are likely to take on different roles over time, and each service relationship should be embarked upon in awareness of this.

1.5 Client knowledge and organization

So, what does the client learn, what knowledge is gained by which staff members in the client organization, and how may it be retained and mobilized? We can speculate about when and how learning might be more readily accomplished, not only in relation to the types of interaction and service relationship that are constructed but also in terms of the closeness of the knowledge base of the KIBS firm and its

client. The knowledge domains possessed by KIBS and the client can be very close indeed. Often KIBS firms are serving other KIBS firms, contributing elements of the overall solution package for a client, or enabling the primary KIBS form to generate this service without itself deploying all of the knowledge that is required for the service system to operate. In such a case the knowledge may be easily acquired by the client, if it wishes to – and the KIBS provider may need to use various ways of protecting its core knowledge. A similar situation arises when the KIBS is producing services that are complementary to physical products, and is in a long-term relationship with some of the manufacturers in question – for example, when software firms are working for, or in close conjunction with, manufacturers of hardware like computers and mobile phones.

Other conditions that affect the learning process relate to the organization of client relations with the KIBS: how the interface is managed, which individuals engage in which relationships and share what experience with other members of the client. Several studies indicate that client strategies can have major influence on what is learned in the course of the service relationship. For instance, Sjøholt (2001) concluded that at least some unsatisfactory experiences with transnational consultants were recognized by the clients themselves to result from a lack of focus and/or preparedness to utilize the KIBS capabilities. Norwegian clients that made better use of these KIBS deployed capabilities to formulate their problems (at the outset of the relationship and during the service relationship); to establish long-term "sparring" relations with the KIBS suppliers; and to assess and absorb inputs from these suppliers. Problems often derived from the composition of the teams organized to relate to the KIBS, which needed to be appropriate to the problematique. (Organizational and strategic issues require transdisciplinary teams; some tasks are suited to generalist approaches; others are better suited for specialized professionals – for example, for managing relatively "routinized" KIBS relationships). The nature of the problematique was also important: success was most likely and learning more systemic when tasks were well-defined and controllable; problems were commoner when the problems were more strategic, raising broader and less tangible issues.

The importance of client contributions to service coproduction is stressed in other studies, too, including Hislop (2002). He reported on a study of four organizations which were using consultancies to support their implementation of similar technological innovations with consultancy support. The service relationships and their outcomes were very

much shaped by the clients' orientation to the activity – which was in turn influenced by their routines and heritage, the KIBS organizational cultures and their staff's social networks. We might anticipate considerable variation across countries and sectors here – there is anecdotal evidence suggesting that KIBS are handled very differently by clients even across Northern European areas of the EU, for example, in terms of whether sparring or jobbing relationships are required. As well as variations across cases of service relationships, however, there can be variations in experience within the relationships.

PricewaterhouseCoopers (2006) explored the use of consultancies in the UK (in a study that is itself more of a consultancy report than an academic paper). PricewaterhouseCoopers argued for practical steps to improve knowledge exchange, such as setting up joint teams and "ensuring that the people who work side by side with the consultants gain personally from the experience" (p. 5). They reported that managers typically claimed that success factors included credibility, a clear sense of purpose, good communication and ensuring commitment and buy-in. But this study also reported on reactions from different staff types in the client organizations. Respondents in lower levels of the project hierarchy in client firms were likely to be less satisfied with the KIBS service results – 48 per cent of decision-makers were "completely satisfied with the project" and 45 per cent of influencers, but this dropped to 28 per cent of project managers, and down to 11 per cent of people seconded to the project, and 17 per cent of end-users. The decision-makers were more likely, too, to believe that communication between themselves and the consultants was open and honest (a warning to researchers who rely on interviewing only managers in exploring KIBS-client relationships!). Most decision-makers (over 80 per cent) claimed to be clear about why the consultants had been hired and who was responsible for what; this dropped to less than 60 percent of those seconded to the project, a substantial minority of whom were unclear as to what the consultants were doing. The exception was where the consultants had been called in for political reasons, when those seconded to the project reported a deeper understanding of the service process than their managers. In such projects, client staff were less likely to feel that the consultants had listened to them properly than in other types of project, too (it was also the case that people felt less listened too in large-scale projects).

Lateral relationships between the consultants and the client staff involved in the project emerged as important success factors. Most respondents from successful projects believed their work with consultants represented genuine partnership working. Very few dissatisfied

clients did. Successful projects almost always involved joint KIBS-client teams. Two-thirds of satisfied clients (as compared to less than a third of dissatisfied clients) reported that the team work had been so effective that it was hard to distinguish between employees and consultants. Managers asked what they would do were they to run a particular project over again, the most common replies involved being clearer to their own staff about the rationale for bringing in the consultants and putting more effort into gaining internal commitment.

A number of other results from this study provide helpful confirmation to the claims about KIBS relationships that have emerged from case study research. PricewaterhouseCoopers (2006) found that learning on the part of individuals was important for success: 70 percent of satisfied clients report having also gained personally from the experience, while only 6 percent of those who were dissatisfied reported this. Clients who were satisfied with their consultants overwhelmingly said they had been listened to; dissatisfied clients never believed this. Poor communication was reported far more often in less successful projects (and was more common in larger projects). Lack of knowledge on the part of the KIBS was a predictable background to failure – 74 percent of those satisfied with the service thought their consultants knew what they were talking about, as compared to only 17 percent of dissatisfied clients, who were liable to believe that they did the bulk of the coproduction (to be more precise, that they had to do work that they saw really as the consultants' responsibility). Finally, confirming a suggestion that is often made by KIBS staff (and also by academic researchers), problem relationships often emerged when the client went back over the proposal that the KIBS had prepared at the start of a project, and when the client had no clear business case for the project (quantifying its expected benefits, for instance). In contrast, completely satisfied clients more frequently invested effort at the start of the relationship, ensuring the consultants were able to hit the ground running, and seriously addressing how to measure progress and value the KIBS' contribution.

So what can KIBS do to build client engagement? Client inputs of knowledge are required for the KIBS to design, produce and deliver the service solution, and client motivations and capabilities for its successful absorption. Often, the exact nature of the requisite inputs is highly uncertain at the outset of the service relationship (an exception is when there has been a long business partnership and little staff turnover). Even if efforts are made to design the coproduction roles at the earliest stages, these will need to be elaborated and quite possibly reinvented in the course of a relationship.

Bettencourt et al. (2002) discuss the situation of KIBS providing complex and highly customized services, which have high requirements for such engagement. They identified six features of the client roles that are required for the effective coproduction of the service solution, with the KIBS firm. Summarizing their extensive analysis, these are (1) communication openness (sharing pertinent information with the service provider in honest and timely fashion); (2) shared problem solving (taking initiatives to identify and resolve problems, sharing responsibilities); (3) tolerance, accommodation (patience and understanding in the event of minor problems); (4) advocacy (the sponsoring individuals promote the project within the client organization); (5) involvement in project governance (such as monitoring of progress); and (6) personal dedication (being conscientious and responsive). As mentioned earlier, this analysis has implications for the skills that KIBS must apply in developing and managing the service relationship with clients and the practices necessitated in terms of client selection and training, expectation management, and the like.

1.6 Conclusions: What is to be learned?

This chapter has drawn attention to the many forms of knowledge involved in the KIBS–client relationship, and early on we noted that among the most important types of knowledge deployed are those that are often see as tacit knowledge – skills and competences in interpersonal communication and relationship building, in networking and establishing trust, and the like. Such capabilities are in large part a matter of individual attitudes, motives and experiences but can also have organizational dimensions in that some cultures (and some service relationships) are more conducive to mutual learning than are others.

While the development of knowledge in the service relationship is a crucial part of KIBS operations, and a successful relationship is liable to result in enduring knowledge on the part of both KIBS and client, it will often be difficult for the parties to know in advance what this will be. Apart from the inevitable uncertainties associated with new knowledge, there may be different interests and ambitions across the partners. These features make the more rigid type of knowledge management tool quite impractical, so that what we will often see is a combination of the use of some standard instruments such as secrecy, commercial confidentiality and Intellectual Property agreements, together with extensive use of more informal methods of helping the partners determine where the individuals are that they need to work with in order to access and

deepen knowledge. There will be need for individuals that can engage productively in such relationships, and for organizational structures that can permit them to do so in a timely and systematic way. This means challenges for education and training of professionals and managers, and for users as well as suppliers of KIBS. It means the use of social networking tools alongside more traditional databases and archives; of face-to-face mentoring alongside more or less standardized training.

The challenges here are magnified by the globalization of industry and internationalization of many KIBS – cross-cultural variations in style will have to be confronted. However, there will also be opportunities for learning from the practice of KIBS and KIBS service relationships in other cultures, and professionals with cross-cultural experience may be particularly valued. Cultural, administrative and technical knowledge continue to be combined in intricate ways in service relationships and the resulting business solutions. Knowledge management practice, in accepting this reality, will deploy a wide range of formal and informal means that can enable KIBS and clients alike to forge ahead and deal with turbulent social and economic environments.

Notes

1. Using data from German firms in the 1990s, Hipp et al. (2000) reported that as many as 6 per cent of Software regarded their activities as "wholly standardized", and 33 per cent as "largely standardized"; for Technical Services the figures were respectively 11 per cent and 35 per cent, and for Other Business Services 18 per cent and 45 per cent. In contrast, the respective figures for "customized" and "bespoke" were: Software 44 per cent and 18 per cent; Technical Services 28 per cent and 27 per cent; Business Services 28 per cent and 10 per cent.
2. Even so, we will sometimes find clients who realize that their business knowledge might be brought to bear on the sorts of service provided by the KIBS. They may then start to find out more about this service in order to provide innovative ideas to the KIBS firm, or perhaps to enter into the market with a disruptive innovation.
3. One study touching on this is Fleck et al. (1990).
4. Note that this figure simplifies matters considerably, for example by not taking into account the wider systems of service providers that may be cooperating to provide the client with a solution, for not including the likelihood that KIBS firms are selecting among possible clients, etc.
5. The most recent revision of NACER moves some KIBS into an "Information" category. See Eurostat (2008) for NACE Rev.2 and details of its relations to NACE Rev1.1 and other industrial classifications.
6. We are reluctant to go along with the common definition of software as a creative industry, for reasons outlined in Miles and Green (2008).

7. It would obviously be helpful to locate or create relevant indicators to substantiate the location of services in terms of the kinds of knowledge used. One option would be a credentials-based approach (e.g. types of qualification of employees); occupational titles might also be used, especially if information on the activity or skill content of jobs could be brought into play; and other approaches are conceivable (for use of data to similarly differentiating among service sectors in terms of their focus on processing physical artifacts, human beings, or data, using input-outputs statistics, see Miles 2008). We can very roughly differentiate between different economic sectors, including various KIBS, using Community Innovation Survey (CIS) data. These show all sectors to employ some Science and Engineering graduates, and some "Other" Graduates. The pattern roughly corresponds to expectations: KIBS are much more graduate-intensive (as a share of employment) than other sectors; the T-KIBS have high shares of Science and Engineering graduates; but all KIBS sectors (if not all firms) employ a mix of both broad classes of graduate (Miles, 2008). It would be interesting to explore data that would give more precision as to the sorts of graduate employed. While such data would be able to give more or less precise estimates of the average characteristics of a particular sector at a given point in time, there is always going to be a dispersion of results – big and small firms differ, sectoral classifications actually mask many different types of activity, and so on. It would also be valuable to establish the dispersion of cases within sectors in terms of the three knowledge classes. Subsectors with distinct features might be delineated. There might also be revealing patterns in the relationships between each of the three at a sectoral level.
8. Similar rich data which could enable detailed examination of specific occupations and of the skill implications of changes in occupational structure is possibly available from other sources, for example in the UK health system, the Knowledge and Skills Framework (NHS, 2005) provides skill profiles for each of a huge number of jobs. This suggests the possibility of exploring the skill composition of specific workgroups and organizations, and changes over time. An alternative approach involves workforce surveys, where people in specific jobs and sectors are asked about the skills they use and the tasks they perform (as well as about their discretion, technology use, etc.); for a review of such data, confirming, for example, that professional workers do confront problems to solve with high frequency, see Miles and Martinez-Fernandez, 2011 – a key set of results they examine are taken from Feldstead et al., 2007, who describe occupations in terms of the extent to which various skills are reported as being utilized).
9. This study identifies a range of specialist skills associated with particular types of technical knowledge, and also more generic skills in areas such as "Behavioral and personal skills"; "Cross section and basic work and technical skills"; and "Soft and method skills"; each of these broad headings is further described in terms of s series of far more concrete capabilities.

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