

# Recognizing opportunities: initiating service innovation in PSFs

Alban Fischer



Alban Fischer is a PhD student at the Department of Management, Technology and Economics, ETH Zurich, Zurich, Switzerland.

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## Abstract

**Purpose** – The purpose of this paper is to shed more light on the crucial initiation stage of service innovation in professional service firms (PSFs) by individual professionals and the implications for knowledge management.

**Design/methodology/approach** – The paper builds theory, based on an in-depth review of the relevant literature. The developed theory is illustrated with a case study of PricewaterhouseCoopers AG (PwC), one of the Big Four accounting and consulting firms. Formal and informal interviews about innovation, learning in client interactions, and knowledge management were held with more than 70 employees of PwC over a three-year period.

**Findings** – The paper shows that entrepreneurial opportunity recognition is a suitable framework to explain the initiation of service innovation in PSFs. Prior knowledge, alertness and search are identified as bases for the recognition of opportunities and hence the initiation of service innovation in PSFs. Therefore, the author argues that knowledge management should raise the alertness of individual professionals to engage in opportunity recognition and also provide a fruitful environment to enable active search for opportunities on the basis of relevant prior knowledge at hand.

**Practical implications** – The findings aim to help managers in PSFs to understand better the initiation of innovation in their companies and enable fostering of innovation through the application of dedicated knowledge management initiatives.

**Originality/value** – Previous research has not yet taken an in-depth look at the initiation stage of service innovation by individual professionals in PSFs. In this paper, entrepreneurial opportunity recognition is presented and applied for the first time as a framework to explain the activity of professionals in the initiation of service innovation in PSFs. In doing this, the paper also contributes to the understanding of the under-researched corporate entrepreneurial role of professionals in PSFs.

**Keywords** Service innovation, Professional service firm, Knowledge management, Corporate entrepreneurship, Opportunity recognition, Entrepreneurialism

**Paper type** Case study

## 1. Introduction

The term professional service firm (PSF) is often used interchangeably with knowledge-intensive business services (KIBS) firms (Starbuck, 1992). However, von Nordenflycht (2010) argues that PSFs, such as accounting, law and consulting firms, form only a subgroup of KIBS, characterized by high knowledge-intensity, low capital-intensity, and a professionalized workforce. Studying innovation in PSFs is relevant for three main reasons:

First, in the past few decades, knowledge in organizations and how it is handled has attracted increased research interest. Innovation in particular is considered a knowledge-intensive business activity (Nonaka and Takeuchi, 1995). Studying the innovation behavior of PSFs, as recognized examples of knowledge-intensive firms, may

provide us with insights that can be applied to other sectors of the economy, i.e. the high-technology sector (Castellacci, 2008).

Second, PSFs play an important role as innovation intermediaries in an economy (den Hertog, 2000; Muller and Zenker, 2001; Simmie and Strambach, 2006). PSFs enable tacit and explicit knowledge to be transferred from one firm to another. The transfer and conversion of knowledge is the basis for the creation of new knowledge (Nonaka, 1994; Nonaka *et al.*, 2006). Hence, den Hertog (2000) argues that PSFs can act as “co-creators” of innovation. How PSFs create, obtain, and reproduce knowledge is therefore of interest for policy makers who are concerned with fostering the innovation performance of an economy to increase competitiveness.

Third, PSFs contribute to macroeconomic growth via the growth of their sector, their internal innovation, and their highly challenging work environments (Muller and Zenker, 2001). Over time, many PSFs have changed from relatively loosely controlled consortiums of independent partners into more “business-like” organizations (Pinnington and Morris, 2003). This development is accompanied by practitioners’ need and demand for either new management practices or a better understanding of organically grown practices. Understanding innovation in PSFs is in itself highly relevant.

Although the relevance and importance of service innovation is recognized, a literature review reveals that there is no expedient theoretical framework to explain the crucial initiation of service innovation by individual professionals in PSFs. Because knowledge is a key resource for PSFs (Morris and Empson, 1998; von Nordenflycht, 2010; Werr and Stjernberg, 2003), a suitable theoretical framework should also enable us to identify implications for knowledge management to foster the initiation of service innovation in PSFs.

In this article, the author argues that contemporary developments in the market for PSFs (Hitt *et al.*, 2001; Pinnington and Morris, 2003; Stumpf *et al.*, 2002) have led PSFs to become more entrepreneurial. Entrepreneurial firms are characterized by their autonomous, risk-taking, innovative, and proactive behavior (Barringer and Bluedorn, 1999; Lumpkin and Dess, 1996). This “entrepreneurial spirit” is primarily embodied by individual professionals in a PSF who act as entrepreneurs (Sundbo and Gallouj, 2000). Due to the “autonomous strategic initiatives of individuals at the operational levels in the organization”, the author adapts the term “corporate entrepreneurship” (Burgelman, 1983, p. 241) to the PSF context. Consequently, corporate entrepreneurial activities performed by individual professionals are the basis and driving force for the initiation of service innovation in PSFs. To shed more light on corporate entrepreneurial activities the author uses “opportunity recognition” (Baron, 2006; Eckhardt and Shane, 2003; Grégoire *et al.*, 2010) from the (corporate) entrepreneurship literature as a theoretical framework. Prior knowledge, alertness, and search were identified as bases for the recognition of opportunities and hence the initiation of service innovation in PSFs.

The rest of this article is structured as follows. In the next section the existing literature on service innovation in PSFs is reviewed. Subsequently, the author elaborates on the role of corporate entrepreneurship and opportunity recognition in PSFs to develop a theoretical framework and deduct propositions. Then, the theoretical framework is presented with an explanatory case study. Finally, the author discusses his findings and concludes.

## 2. Prior literature

Innovation in PSFs is approached from two major streams. The first is part of the wider literature on innovation in the service industry, where PSFs and KIBS are treated as a particular segment of the service sector. The second emerges from the literature on the management and organization of PSFs, where innovation is treated as a necessary activity for enabling growth and competitive advantage. In this section, a short overview of these two research streams is given and the research question is presented.

In recent decades, research on innovation in the service industry has grown fast. The most prominent contributions were made in the Lille school (de Vries, 2006; Gallouj and Weinstein,

1997; Sundbo and Gallouj, 2000; Toivonen and Tuominen, 2009) and the more empirical and policy oriented Manchester school (den Hertog, 2000; Miles, 2005; Tether and Tajar, 2008). In their comprehensive literature review, Droege *et al.* (2009) identify five distinct research fields within service innovation research:

1. taxonomies of service firms in an industry;
2. innovation classification frameworks on an organizational level;
3. organizational success factors for service innovation;
4. organizational antecedents of different degrees of novelty; and
5. similarities and differences between new service and product innovation.

In other words, previous studies in this stream have already looked at forms of service innovation in distinct service firm types and how service innovation can be managed on an organizational and industry level. However, the study of innovation, particularly within the professional service industry, is still under-researched (Miles, 2005) and due to the focus on the organizational and industry level the crucial initiation phase of service innovation by individual professionals of a PSF has not yet been addressed in this literature stream.

An exception is Sundbo and Gallouj (2000), who identify and describe typical patterns in service innovation. They suggest two distinct patterns to explain innovation in PSFs:

1. the “service professional” pattern, applicable to medium-sized firms; and
2. the “organized strategic innovation” pattern, applicable to larger, more mature firms.

In general, both patterns consider individual professionals as “corporate entrepreneurs” (Burgelman, 1983; Guth and Ginsberg, 1990) who participate in a collective innovation process. Although Sundbo and Gallouj (2000) recognize the important role of individual professionals for service innovation and encourage taking an entrepreneurial perspective, analyzing how individual professionals initiate service innovation is not within their scope. In addition, even though the importance of knowledge for service innovation is mentioned in several articles of this literature stream, the role of knowledge management in the service innovation process is still under-researched (Droege *et al.*, 2009).

The second literature stream deals with an analysis of PSFs that aims for a better understanding of their organizational form and management. Although the research interest in PSFs is growing rapidly, previous research on their organization and innovation is still relatively scant (Leiponen, 2005). The strategic context of many PSFs has changed profoundly over the past few years. Competition between PSFs has intensified (Hitt *et al.*, 2006; Stumpf *et al.*, 2002) and client managers have become increasingly demanding about the quality and price of professional services (Leicht and Fennell, 2001). This has changed the conservative behavior of many PSFs and led them to be more entrepreneurial. Many PSFs have started to diversify into related professions and become “multidisciplinary practices” (Greenwood and Suddaby, 2006), have merged or acquired competitors in order to develop the PSF’s capabilities and client base (Empson, 2001; Stumpf *et al.*, 2002), have internationalized (Hitt *et al.*, 2006; Segal-Horn and Dean, 2007; Stumpf *et al.*, 2002) and have started strategizing (Løwendahl, 2005; Maister, 1993).

Besides these organization-level responses to changes in strategic context, other factors that impact individual professionals in developing new practice areas have recently been investigated to explain the organic growth of PSFs (Anand *et al.*, 2007; Gardner *et al.*, 2008). While this research explains how organizational structures enable entrepreneurial professionals to replicate and commercialize new ideas in order to create innovation, it neglects the factors that impact professionals to identify ideas in the first place. Although acknowledging an “idea stage,” in which entrepreneurship should be encouraged, at the beginning of service innovation, Smedlund’s (2008, p. 876) service innovation model, which builds on the premise that service innovation can be categorized according to client relationship strength and the incremental-radical nature of innovation, also fails to shed more light on this crucial stage. So, too, do earlier articles that address knowledge-systems in

PSFs (Morris and Empson, 1998; Werr and Stjernberg, 2003), the creation of new knowledge and competences in the interaction with clients (Bettencourt *et al.*, 2002; Fosstenlökken *et al.*, 2003) and the internal management of knowledge (Hansen *et al.*, 1999), which do not provide a comprehensive framework to explain the initiation of service innovation by individual professionals.

Based on the identified research gap in the literature, this article addresses the following research question: how is service innovation in a PSF initiated by individual professionals and how can knowledge management support this process?

### 3. The Initiation of service innovation as opportunity recognition

To address this research gap, four propositions are deduced by elaborating further on the idea that professionals in a PSF act as corporate entrepreneurs (Gardner *et al.*, 2008; Sundbo and Gallouj, 2000). The author builds the argument that corporate entrepreneurial activities create the basis for service innovation in PSFs and that the initiation of service innovation can be explained by the recognition of opportunities, as an entrepreneurial activity. Hence a framework of opportunity recognition is presented to explain the initiation of service innovation in PSFs and deduce some implications for knowledge management.

#### 3.1 Corporate entrepreneurship in PSFs

Corporate entrepreneurship, as a process of corporate renewal, is initiated in established firms to increase profitability (Zahra, 1991), to enable strategic renewal (Guth and Ginsberg, 1990) and to foster innovativeness (Baden-Fuller, 1995). Based on other researchers, Hornsby *et al.* (2002, p. 254) conceptualize "corporate entrepreneurship as embodying entrepreneurial efforts that require organizational sanctions and resource commitments for the purpose of carrying out innovative activities in the form of product, process, and organizational innovations." Corporate entrepreneurship has generated considerable research interest because of its importance to corporate vitality and wealth creation in today's global economy (Dess *et al.*, 2003).

By putting factors that foster corporate entrepreneurship (Lumpkin and Dess, 1996; Miller, 1983; Zahra, 1991) in a PSF context, the applicability of the corporate entrepreneurship construct in PSFs is analyzed. The growth and complexification of organizations are the main drivers that involve the majority of the workforce in activities leading to organizational renewal, innovation, and constructive risk-taking and by extension promoting corporate entrepreneurship (Miller, 1983). Corporate entrepreneurial firms pursue a "grand strategy" embracing growth, or at least stability (Zahra, 1991). Complexification is a result of differentiation and the delegation of authority to lower-level personnel as a response to heterogeneous (customer) markets and an unpredictable, changing environment leading to entrepreneurial, "organic" firms (Miller, 1983).

In the present PSF context, growth and diversification are critical (Gardner *et al.*, 2008) to the ability to serve more globalized, diverse, and demanding clients and to attract sufficient talents by giving them a career perspective without endangering existing business (Anand *et al.*, 2007; Gardner *et al.*, 2008; Stumpf *et al.*, 2002). In addition, the partnership as governance form of most PSFs is predestined to support the corporate entrepreneurial behavior of their professionals. In a partnership, the individual partners are the owners of the company and therefore have a long-term interest in the growth of the firm (Greenwood *et al.*, 2007; Greenwood and Empson, 2003). According to agency theory, ownership affects managers' willingness to take risks and is hence positively associated with corporate entrepreneurship (Zahra, 1996).

Furthermore, the career path to entering into a partnership ensures favorable selection. In most PSFs, improving business development skills and generating new business are necessary preconditions for a professional wanting to advance on the career path. Only entrepreneurial employees who have proven able to generate new business will be elected by the other partners to join the partnership (Anand *et al.*, 2007; Maister, 1993; Morris and Pinnington, 1998). Hence, the author concludes that the factors fostering corporate

entrepreneurship are applicable for PSFs and summarizes the theoretical arguments above in the following two propositions:

*P1a.* Today's dynamic business context promotes corporate entrepreneurship in PSFs.

*P1b.* The partnership as governance form promotes corporate entrepreneurship in PSFs.

There is wide consensus in the literature that innovation and corporate entrepreneurship are closely linked (Covin and Miles, 1999; Stopford and Baden-Fuller, 1994). McFadzean *et al.* (2005) argue that the attitudes and activities of corporate entrepreneurs encourage innovation. Entrepreneurial activities that promote innovation are the assessment of potential new opportunities, alignment of resources, and the exploitation and commercialization of these opportunities (McFadzean *et al.*, 2005). Zahra *et al.* (1999) argue that corporate entrepreneurial activities are influenced by opportunities in the external environmental and internal organizational variables. Following this argument, innovation in corporate entrepreneurial firms is initiated by individual employees through the identification and pursuit of opportunities. This argument can be summarized for PSFs in the following proposition:

*P2.* Professionals in PSFs initiate service innovation by recognizing opportunities.

### **3.2 Opportunity recognition**

In order to shed light on the crucial initiation stage of service innovation in PSFs, it is necessary to gain a better understanding of the recognition of opportunities. Over the last decade, a stream of entrepreneurship research into precisely this field has developed (Baron, 2006; Baron and Ensley, 2006; Grégoire *et al.*, 2010; Hsieh *et al.*, 2007; Shane, 2000). At first, research on opportunity recognition was primarily focused on differences between individuals, examining why some recognize opportunities and others do not. However, recent work has determined that opportunity recognition generally requires choices involving a wide range of knowledge and multiple actors (Hsieh *et al.*, 2007). In other words, there is both an individual and an organizational side to opportunity recognition.

Recent literature suggests that the theoretical term "opportunity recognition" can be divided into two nested phases: The identification and definition of an opportunity (Grégoire *et al.*, 2010), also referred to as formulation of the problem (Hsieh *et al.*, 2007); and the evaluation of the opportunity with respect to the possible value of taking it (Grégoire *et al.*, 2010), also referred to as solution seeking (Hsieh *et al.*, 2007). In Schumpeter's (1912) terminology, the recognition of an opportunity could initiate an invention – but is not an innovation in itself. A business opportunity only becomes an innovation once it is followed-up and commercialized.

Based on previously published literature, Eckhardt and Shane (2003, p. 336) define entrepreneurial opportunities as "situations in which new goods, services, raw materials, markets and organizational methods can be introduced through the formation of new means, ends or means-end relationships". A frequent condition for the existence of an opportunity is a disagreement between actors about the value of a resource at a given point in time. The disagreement may be based on information asymmetry, i.e. one actor has more information or expert knowledge about a situation than the other, or due to exogenous shifts of the business environment, e.g. the introduction of a new regulation or an economic crisis that provides a new environment for all (Eckhardt and Shane, 2003).

A prominent attempt to explain the process of opportunity recognition has recently been undertaken by Baron (2006, p. 104), who suggests a model of pattern recognition, or an entrepreneur's ability to "connect the dots" between changing conditions in the environment. In Baron's model, events, trends, and changes are perceived and interpreted on the basis of past knowledge and experience. If this process is accompanied by strong alertness and/or an active search, the individual will see patterns in events, trends, and changes that can either be followed – leading to a business opportunity – or ignored. Baron integrates in one basic framework three factors that have been proven relevant for opportunity recognition in previous studies: prior knowledge,

alertness to, and search for opportunities. If professionals initiate service innovation by recognizing opportunities, as stated in proposition 2, and these three factors enable professionals to recognize opportunities, the following proposition can be deduced:

- P3. Prior knowledge, alertness, and search build the basis for the initiation of service innovation by individual professionals in a PSF.

### 3.3 Implications for knowledge management in a PSF

In this section, the author investigates the three factors enabling opportunity recognition – prior knowledge, alertness, and search – and the implications for knowledge management in PSFs.

According to Shane (2000), not everyone is equally likely to recognize opportunities; prior distribution of knowledge influences who discovers which opportunities. Prior knowledge about customer problems, markets, and how to serve them influences the selection of markets to enter, the way markets are served, and the invention of products and services to exploit new technologies. These findings show that prior knowledge is used to “connect the dots” and draw meaningful conclusions from observed events, trends, and changes (Baron, 2006; Grégoire *et al.*, 2010; Shane, 2000). In the light that knowledge is defined as justified true belief, the capacity to define a situation and act accordingly, and is explicit and tacit (Nonaka *et al.*, 2006), it is not surprising that prior knowledge influences opportunity recognition. Indeed, opportunity recognition can be considered a knowledge creation process in itself.

While prior knowledge can be an advantage to exploit a field, it can also be a curse when it comes to recognizing new opportunities that may lead to breakthrough inventions (Ahuja and Lampert, 2001). Ahuja and Lampert argue that established firms face three traps constraining their ability to create breakthrough inventions, all due to significant immediate benefits from exploiting existing knowledge: the familiarity trap, the maturity trap, and the propinquity trap. Tightened budget pressure and increased focus on billable hours magnify the problem even more in PSFs (Taminiau *et al.*, 2009), which have actively to find ways out of these traps.

Apart from the transfer of existing explicit and tacit knowledge through a codification or personalization knowledge strategy (Hansen *et al.*, 1999), knowledge management in a PSF should also actively foster the acquisition and creation of new knowledge outside the existing knowledge domain. To acquire and create cutting-edge knowledge, PSFs have to enter into a dialogue with their environment and connect to a wider knowledge base, such as universities, governments, or professional associations. The main mechanism for transferring knowledge from other third parties to the service firm is by incorporating new members with different backgrounds into the organization (Whelan *et al.*, 2010). However, in this respect it is important to note that too much diversity in the workforce of a PSF can be harmful because people may not be able to relate to each other and become difficult to manage (Hitt *et al.*, 2001; Mors, 2010). In addition, knowledge management should provide the right climate to create new knowledge internally. A growing body of literature discusses how this can be done, for example, by applying care in organizational relationships (von Krogh, 1998) or by creating a shared space for emerging relationships (Nonaka and Konno, 1998). To sum up, knowledge management should help establish individual professionals’ individual learning trajectories but should also allow them to depart from that path to enter new fields. This results in a balancing act. In addition, knowledge management should fight corporate inertia by enabling the creation and inflow of new knowledge into the PSF.

Baron (2006) distinguishes between alertness and search as factors that mediate opportunity recognition. Alertness refers to the capacity to recognize opportunities when they exist and is a passive state. Search, on the other hand, is an active process for identifying events, trends and changes and looking for links between them. Baron (2006) argues that the two factors are interdependent, i.e. if alertness is high, no additional search is needed, and vice versa.

If professionals are not aware of, interested in, or curious about environmental signals – or even unable to see them – they will seldom recognize the events, changes, and trends in their surroundings. It should therefore be a key leadership task in a PSF to raise the alertness of its professionals to possible opportunities. Alertness can be stimulated through an articulated call to action (O'Connor and Rice, 2001), i.e. the need to be innovative and to look out for (breakthrough) ideas needs to be communicated from top management or be a part of the firm's culture. Knowledge management in a PSF can support top management in these efforts, for example, by running campaigns to increase alertness. In addition, professionals have to remain open-minded and stay alert to topics and knowledge that are not directly contingent to their field of expertise. A major contingency to alertness is excessive workload and wrong incentives (Taminiau *et al.*, 2009). If professionals work long hours on specific detailed tasks to meet their billable hours targets and satisfy their clients, their alertness to possible opportunities may vanish.

Search is an active means of promoting opportunity recognition. According to Baron (2006), the search task is twofold in nature. First, it is essential to acquire knowledge about the environment and changes within it. Professionals in a PSF should actively scan the environment, collect data, and be trained in triage between important and less significant environmental signals. In this respect, interaction with clients plays a crucial role (Fosstenlökken *et al.*, 2003). The PSF needs to provide a tool or method to enable professionals to store and share knowledge in order to be able to recognize patterns in the collected data later on. To avoid a "data graveyard", someone within the PSF should take ownership of the data collected and ensure their transparency, so that patterns can be easily identified. Second, an active search requires the detection of potential links between events, changes, and trends. Hence knowledge management should take care that data are not only collected but also properly analyzed in order to find valuable opportunities.

In general, opportunities are not usually recognized by one person working in a vacuum. In order to find interesting links that reveal high-value opportunities, diverse knowledge is needed from a variety of actors engaged in cognitive search (Hsieh *et al.*, 2007). Collective knowledge needs to be created through knowledge-sharing and transfer (Nonaka, 1994). Knowledge management should actively enable and foster collective cognitive search. To enable trust and efficient knowledge flows in an organization, O'Connor and Rice (2001) and Taminiau *et al.* (2009) suggest promoting and nurturing informal networks. In addition, von Krogh (1998) emphasizes the value of cultivating a culture of care to enable collective knowledge creation and avoid too strong reliance on self-interested behavior. These hazards will be reduced when exchanges between professionals are more collaborative and less competitive.

## 4. An illustrative case

### 4.1 Methods

To illustrate these propositions in a real-life context, an explanatory case study design is presented (Siggelkow, 2007; Yin, 2002). The case study was carried out with PricewaterhouseCoopers Switzerland (PwC), one of the "Big Four" accounting, law, and consulting networks. A "Big Four" company was studied as a canonical example of a contemporary PSF (Greenwood and Suddaby, 2006), because the selection of a representative case suits best the illustrative purpose. As a national network firm, PwC has more than 2,600 employees, net revenue of more than US\$600 million, and is legally organized as a partnership. The case is built on 15 interviews about service innovation in general, 33 interviews about acquiring knowledge in client interactions, and 16 interviews about the organization of knowledge management with employees from all hierarchical levels and different practice areas. All these semi-structured, in-depth interviews lasted 45-60 minutes and were fully transcribed. The formal interviews and several additional informal interviews/meetings were conducted during a three-year research project between 2008 and 2010. During this period, the author worked at the company, participated in the internal communication and internal training program, and was in constant interaction with his colleagues in the firm. Numerous relevant firm documents were collected as well. To build

up the case presented, all interview scripts were analyzed by applying a predefined coding schema (Miles and Huberman, 1994). On the one hand this was concerned with displaying evidence for the corporate entrepreneurial nature of PSF, and on the other with displaying actual knowledge management practices used by individual professionals to recognize opportunities. The latter coding was subcategorized according to Baron's (2006) opportunity recognition model in prior knowledge, alertness, and search (e.g. sources of prior knowledge or ways to scan the environment).

#### *4.2 Illustrative examples*

PwC pursues a growth strategy and fostering innovation ranks high on the strategic agenda of the service firm's top management team. The firm provides a wide variety of services to clients of different sizes (from medium-sized to multinational companies), in different industries, and in different regional markets. Changes in its clients' environment, such as new regulations, economic trends, competitive pressure, or changes in its own regulatory and competitive environment directly lead to changes for the PSF. Hence, the firm needs to be organically adaptive and is therefore differentiated in three service lines each consisting of different sub-practice areas to serve the fast-changing needs of its heterogeneous client base. The firm's leadership recognizes that the individual professional is the driving force for developing and selling new services and hence innovation. Employees at all levels are encouraged to build their own "business case". Individual professionals within the PSF have autonomy to serve their clients and exploit their own expertise through the creation of new client offers, as long as they operate within the firm's risk management framework and strategy. For instance, risk management forbids professionals to serve audit clients with some other consulting services, for independence reasons, or to provide services to dubious clients, for reasons of reputation.

The partnership of the PSF puts a strong focus on entrepreneurial business development skills in its evaluation of new partner candidates. As one partner put it in a speech to a group of new employees:

In our firm you start as a technical expert and you have to develop into a business developer with technical expertise if you want to reach the top.

Another senior partner rose in a meeting to ask explicitly:

How can we turn our younger employees into "little" entrepreneurs?

and involve them more in the attainment of the firm's growth ambitions.

The analysis of the interviews revealed numerous illustrative examples of how prior knowledge is used, alertness created, and search encouraged to recognize opportunities. A comprehensive list of practices is provided in Table I, while some examples are discussed in more detail. For instance, one senior partner explicitly stresses the importance of prior knowledge in the form of:

knowledge about the industry, knowledge about a particular client in an industry, and broad knowledge about competences of the own PSF

for the successful recognition of opportunities in the market. The firm has recently introduced a powerful client relationship management database that helps professionals quickly to gain an overview of previously delivered services and background information about a particular client. Furthermore, employees are expected to acquire new knowledge through extensive learning and development programs or by taking a sabbatical to pursue their own project. PwC is fully aware of the value of knowledge in a PSF. Through continuous internal communication, presentations, training, and knowledge fairs, the transfer of knowledge is determinedly encouraged and supported by the organization. The firm has even made "sharing and collaborating" with colleagues and clients a core corporate value.

In order to raise the alertness of the professionals within the firm and force them to keep their eyes open for new opportunities, the firm launched an internal innovation alertness campaign with the provocative slogan that two-thirds of the services that would be provided



**Table I** Opportunity recognition in PSFs

<i>Contingencies</i>	<i>Examples from the studied PSF</i>
<i>Prior knowledge</i>	
Familiarity trap	Internal knowledge exchange (e.g. in team meetings)
Maturity trap	Collaboration with research institutions (e.g. universities)
Proximity trap	Extensive learning and development programs
	Fostering staff diversity
	Support for sabbaticals
	Project databases
	Client relationship management database
<i>Alertness</i>	
Lack of alertness	Innovation initiative
Lack of capacity due to workload (billable hours pressure)	Strong leadership
	Curiosity and genuine interest in the client's business/industry
	Enabling a knowledge-sharing culture
	Reward new ideas
<i>Search</i>	
Unsystematic knowledge collection	Reading newspaper and professional articles
Knowledge overflow	Participating in a professional association
Professionals' incentives to extract value from individual knowledge for themselves	Cultivating formal/informal client exchanges
Limited cognitive search in favor of individual knowledge	Business intelligence team
	Proactive client problem diagnosis
	Thought leadership research (e.g. CEO survey)
	Cultivating formal/informal (trust-based) networks
	Continuously analyzing service delivery processes
	Brainstorming meetings
	Freedom to pursue own ideas

to clients in ten years' time had not yet been invented. Employees are prompted to help close this gap by identifying new opportunities.

Having a genuine interest in the client's business is a successful strategy for seeking new opportunities. One partner in the consulting practice described his curiosity and interest in his client's business issues:

I'm very keen to learn about these business models and that's very interesting and people somehow like to talk about it but they don't feel they have to explain this to me, they actually appreciate that there's a real interest and this is actually good and I just enjoy talking about these things and really understanding and digging deep.

Another way to search new opportunities was described by a senior manager:

[W]e have those brainstorming meetings where we really sit together for three hours with experts from all lines of services present and we discuss the situation the client [is facing].

Taking time out and brainstorming outside the box in teams with differentiated knowledge backgrounds enables individual professionals actively to spot possible opportunities in their client organization.

## 5. Discussion and conclusion

The aim of this paper is to shed light on the initiation of service innovation in a PSF by individual professionals and to deduce implications for knowledge management. It is emphasized that contemporary developments in the market and industry drive PSFs to be entrepreneurial and that PSFs strongly support corporate entrepreneurship through their corporate governance and organizational structure. In order to explain the entrepreneurial behavior of individual professionals in the initiation of service innovation, the author introduces and applies an opportunity recognition framework consisting of prior knowledge, alertness, and search. Opportunity recognition attempts to explain how individuals can make sense of signals in the environment and the development of suitable measures to seize opportunities.

Beside this theoretical contribution, there are three practical implications of using opportunity recognition to explain service innovation by individual professionals. First, if knowledge management in PSFs takes into account that professionals' prior knowledge influences the recognition of opportunities and hence innovation, it can actively manage the collection, storage, and processing of prior knowledge in order to direct the recognition process to the most valuable opportunities. Particular care has to be taken not to miss fruitful opportunities by simply exploiting close and existing knowledge. Second, by activating the alertness for opportunity recognition of its professionals, PSFs' leadership may foster the desired behavior. Third, innovation performance can also be influenced by engaging the professionals within a PSF in active search for new opportunities. It is important to overcome the billable-hours pressure present in most PSFs. This article explains the initiation of service innovation in PSFs for the first time using entrepreneurial opportunity recognition.

Future research should discuss this argument further and develop additional implications for knowledge management. The interaction between professionals and clients in particular may provide fruitful avenues for more fine-grained insights on the recognition of opportunities in PSFs.

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### About the author

Alban Fischer is a PhD student under the supervision of Professor Georg von Krogh at the Department of Management, Technology and Economics, ETH Zurich and has worked for several years for PricewaterhouseCoopers AG in Switzerland. He received his MA degree from the University of Zurich, Switzerland. His dissertation research focuses on service innovation in PSF and PSF-client interactions. Alban Fischer can be contacted at: [albfisch@student.ethz.ch](mailto:albfisch@student.ethz.ch)

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