

# Crossing boundaries

Professional adoption of multidisciplinary innovations in health care

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## Abstract

The purpose of this research was to investigate the position of professionals in the adoption of multidisciplinary organizational innovations in health care. The need for organizational innovation in this sector is growing. Service delivery has to be efficient, effective and needs to be responsive to multi-problem situations of patients. Therefore, organizational innovations are increasingly demanded to be *multidisciplinary*. Contemporary policy and scientific research often assumes a top-down approach on innovations: policy makers and managers as decision-makers. We argue that the position of professionals is important to consider in the adoption process. This is because their exclusive and autonomous position in service delivery. Professionals are assumed to be a barrier to establish multidisciplinary innovations. Multidisciplinary innovations cross the boundaries of professional domains. Each profession has its specialization, demarcated by boundaries of expert knowledge and skills. Because of strong demarcations of the specialized domains, one would expect that multidisciplinary innovations do not take place in professional settings. However, unexpectedly they do happen. The central question is *why professionals adopt multidisciplinary organizational innovations*. This research explored the use of an interplay approach, incorporating both a functionalist and interpretative paradigm. A nested-case study method provided an answer to the central question. Three regional networks of ParkinsonNet, a multidisciplinary innovation for care of Parkinson's disease patients, were studied. Nineteen semi-structured interviews with adopters of the innovation were held in combination with observations and document-analysis.

The results revealed a paradoxical relationship between professionalism and multidisciplinary innovations. Specialization of professionals is a barrier and enabler for the adoption of multidisciplinary innovations. Adopters of the ParkinsonNet innovation expect to increase their specialization: more knowledge improved methods and connections with other expert health care providers involved in the delivery of care to Parkinson's disease patients. For them, adoption is a way to demarcate professional 'exclusiveness'. Increased specialization is regarded as important to distinguish oneself as a professional. This study demonstrated that specialization is part of the legitimizing strategy of professionals. Legitimization implies showing knowledge, skills and specific norms and values, in exchange for trust and confidence of managers and health care insurers. Tendencies of marketization and bureaucratization increase the need for professionals to legitimize the expert position. Furthermore, this research found that the organizer of the innovation is able to connect professional disciplines by spreading knowledge about the innovation. In conclusion, a focus on 'boundary crossing' by professionals seems a valuable perspective to understand and improve multidisciplinary practices in health care.

## Preface

*“Travelling is one expression of the desire to cross boundaries”*<sup>1</sup> That innovation is like travelling was expressed by a group of knowledgeable scientists, who presented innovation as a journey (Van de Ven, Polley, Garud, & Venkataraman, 1999). They said that innovations are processes, that go forth and back. Innovation is a complex and bumpy road, often it is unsure whether the desired outcomes will be reached. Just like innovation, writing a thesis is a journey. It takes you to new worlds -such as the region of Twente- and crosses intellectual boundaries by discovering new fields of research. You never know where or when it ends, and sometimes you think (or fear) that it never does.

The good thing about traveling is meeting people. During this thesis-journey, I met many persons who provided me with new insights, introduced me in new worlds and gave me ideas for other expeditions. First, I would like to thank Mirko Noordegraaf for his excellent guidance and Victor Bekkers for his supervision during thesis-writing. Their constructive feedback helped me to discover the worlds of professionalism and public sector innovations. Furthermore, I would like to thank my supervisor at the RVZ, Pieter Vos, for introducing me in the world of health care and giving me opportunities to explore this interesting sector. Next to them, I thank Marten Munneke of ParkinsonNet for allowing me to study ‘his’ innovation and Martijn van der Eijk, for the pleasant cooperation during the interviews in Twente. Special thanks to my dear friends and family, especially my grandmother and sister Sabine, and to my colleagues and fellow-students for inspiring and supporting me. Without you, this journey would not be such a valuable and (sometimes even) fun experience. Foremost, I am grateful to all innovative professionals for their contribution to my research. Their willingness to participate in the interviews and to share their adoption process, helped me to accomplish this study.

Last, I would like to thank my parents for their confidence and unconditional support. Not only for ‘buying’ my backpack, but even more for encouraging me to discover new worlds.

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# 1. Introduction

*July 2010. For the first time in Dutch history, doctors went on strike. The cause was a plan of the minister of Health Care to reduce budgets for specialist care in hospitals. It included the expansion of the authority of the Board of Directors of hospitals to determine the salary of medical specialists with a capping to 180.000 euro per year for regular doctors and 285.000 euro for top-qualified specialists. According to the doctors, this would lead to “disappearance of the professional autonomy with severe consequences for medical practice”.<sup>2</sup>*

The intentions of the minister are not new. For years, the position of professionals is subject of discussion. Professionals are a special category of service-sector occupations (Evetts, 2003). They deliver public services, such as education, health care and justice. They are different. They possess specialized knowledge and skills that distinguish them from laymen. They intervene in people’s lives; decide about illness and health, about injustice and justice, about life and death. The quality of their services is valued according to internal criteria, defined by professional associations. As the newspaper article showed, professionals are relatively autonomous in relation to political and organizational actors, such as ministers and Boards of Directors. Moreover, professionals have knowledge and expertise, but also morality and authority to deal with social problems. This makes them special. As Freidson states: *“Professionals have a claim of license to balance the public good against the needs and demands of the immediate clients or employers”* (Freidson, 2001: 222). This specialist position of professionals in the delivery of public services is the theme of this research.

However, the delivery of public services is subject of reforms. This is first because the public sector is changing. The rise of New Public Management (NPM) has strengthened the rationalizing role of management. Public sector managers ‘reform’ nations in performance-orientated units of production, especially in times where cuts in public expenditure are high on political agendas (Pollitt & Bouckaert, 2004). Secondly, demand for social services changes. Demand rises, for example in health care, as a consequence of the ageing society. This is accompanied by a rise in the educational level of citizens reducing the traditional gap between professionals and laymen.

Contemporary service delivery has to adapt to these changes: they have to be improved. This implies that the delivery-process of existing services is altered and that new services are developed. However, service delivery is dependent on professionals. What happens to their exclusive position when service delivery is changed?

## 1.1. Innovation, the magic spell

The previous paragraph has made clear that public services thus have to improve: more efficient and effective professional practices. Quality has to rise; transparency and accountability have to increase. *Innovation* is regarded as the key mean to reach this. It is ‘the magic spell’. Although the concept of innovation is surrounded by theoretical ambiguity, it can be seen as a discontinuity, or disruption, of former practices, mostly promised to be quality enhancing and efficiency increasing (Robinson, 1999). It may be technical, such as the development of new doctor’s instruments and ICT systems for bureaucratic processes. Either, it may be organizational, directed to the

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<sup>2</sup> NRC Handelsblad. (2010). *Klink: ‘Perk de lonen van de medisch specialist in’*. Published at: 13-07-2010

organization of service-delivery. The focus is on what parties are included and how they cooperate (Van Linge, 2006). The latter are subject of this research.

Increasingly, organizational innovations are supposed to be *multidisciplinary*. The emphasis is on cooperation and integration between elements in the delivery process. This is emphasized for two reasons: problems in society become more complex and public expenditures are rising. First, problems are not restricted to one field; attention rises for multi-problem situations. For example in health care, patients (especially elderly) have multiple diseases at one time, which are chronic and have co-morbidities. Increasingly, chronic illness implies not only a biomedical problem, but has also consequences for labor market participation and social-psychological wellbeing. Second, next to changes in problem situations of clients, multidisciplinary innovations are supported for their promise to increase efficiency and effectiveness. More cooperation and integration of services is believed to improve expensive and slow service delivery in the public sector. Hence, it may reduce governmental expenditures.

Multidisciplinary innovations seem *the* solution. There is only one problem. Public services rarely innovate, especially not in ways that include multiple disciplines. As the Dutch Court of Audit signals on innovation in health care: “*health care providers do not experience innovations as (financially) rewarding*” (Algemene Rekenkamer, 2009). A lack of innovation is often assigned to a deficit of knowledge development. The government argues for ‘knowledge-societies’ and for increase of R&D resources (KIA, 2010(former 'Innovatieplatform')). However, as the WRR denotes, not just development of knowledge is problematic, rather the dilemma is how knowledge is turned into practice (WRR, 2008). The explanation is sought in insufficient financial resources and availability of ICT applications (WRR, 2008; Ottes, 2010; Schrijvers, van der Steeg, Schaaf, Hemrika, & Gussinklo, 2010). However, it is questionable whether these reasons are the core of the problems for improvement of public service delivery.

## 1.2. Professionals and innovation?

Multidisciplinary innovations are thus demanded, but complicated. In scientific publications, innovation is a key topic. Most studies focus on innovative practices in the private sector. These studies are directed to organizations, regarding managers and directors as ‘entrepreneurs’, as decision-makers in the innovation process (Schumpeter, 1934; Zaltman, Duncan, & Holbek, 1973; Rogers, 2003; Osborne & Brown, 2005; Fagerberg, Mowery, & Nelson, 2006). Recently, either innovations in the public sector received attention. Scholars emphasized the ways in which this innovation differs from its private sector equivalent (Korteland & Bekkers, 2008; Moore & Hartley, 2008; Windrum & Koch, 2008). As Hartley summarizes: “*The drivers in the public sector are to achieve widespread improvements in governance and service performance, including efficiencies, in order to increase public value*” (Hartley, 2005: 27).

However, contemporary policy and scientific research regard innovation as a top-down process, emphasizing the role of management and policy-makers who may enforce innovative practices. They overlook the role of professionals in innovation. This is interesting, considering the important and autonomous position of professionals in the delivery of public services. Their participation is a prerequisite for successful innovation. Therefore, it is interesting to regard innovation from their perspective.

The role of professionals in *multidisciplinary* innovations is especially of interest. This type of innovation is rather unexpected from professionals. Professionals have a special position in society, as the introduction paragraph emphasized. Professionalism implies differentness. They own ‘exclusivity’, namely expert knowledge and skills

(Bucher & Strauss, 1961; Wilensky, 1964; Abbott, 1988; Fournier, 2000). Exclusiveness implies demarcation of the professional discipline from other occupations and from laymen. It requires the constitution of a domain of specialization. The establishment of 'professional boundaries', which demarcate expert knowledge and skills, constitutes this domain (Fournier, 2000). The establishment of multidisciplinary innovations is assumed difficult, because every domain, and subdomain, has its own boundaries that demarcate expertise and specialization. Every domain has constituted its own idea why the domain is 'exclusive'. They have their own ideas about knowledge, appropriate methods and about social norms that have to be followed. Innovation in the professional domain is thus rather *monodisciplinary*: it takes place within the professional domains to improve the specialization. Professional innovation does not cross the professional boundaries.

Therefore, not only lacks of knowledge development, financial resources or ICT applications are the problem. To understand the process of multidisciplinary innovation, we have to look to actors that are in the center of the innovation process: the professionals. This perspective is not much researched. Studies on professional innovation focus on innovation *within* the professional domain (Coleman, Katz, & Menzel, 1957; Daft, 1978; Robertson, Swan, & Newell, 1996) or they take an *ex post* perspective on innovation, i.e. emphasizing the consequences for the professional when he or she is already involved in innovative practices (Molleman, Broekhuis, Stoffels, & Jaspers, 2008). However, the focus should be on the establishment of innovations. Unless processes alter existing boundaries, domains are not connected and innovations not established. Professionals are thus not only a prerequisite, but also a barrier for multidisciplinary innovations.

### **1.3. Research problem**

This study emphasizes the role of professionals in multidisciplinary innovations. Practitioners and scientists often assume a top-down approach of innovation: policy-makers and management as decision-makers. However, the previous paragraph showed that this approach neglects the important position of professionals. Professionals are assumed to be a barrier for the establishment of multidisciplinary innovations. Existing domains of specialization have to be crossed to establish this type of innovations. Because of the strong demarcations of the domains, one would thus expect that multidisciplinary innovations do not take place in professional settings. However, unexpectedly, they *do* happen. There are situations in which professionals are open for multidisciplinary innovations. Nevertheless, not much is known about these situations.

#### **1.3.1. Objective**

The objective of this study is to understand the position of professionals in the process of multidisciplinary innovations. The aim is to get insight in the motivations and factors that influence the innovation process. Neither practical experiences, nor existing theories in private and public sector literature, have succeeded in providing a useful framework to explicate the relation between professionalism and multidisciplinary innovation. Growing demand for multidisciplinary practices requires this knowledge, both for practical as theoretical considerations. The focus in this study is on one specific step in the innovation process: adoption, i.e. the decision to engage in a certain innovation.

### 1.3.2. Research question

To bridge this lack of knowledge about innovation processes from a professional perspective, this research examines the relation between multidisciplinary organizational innovations and professionalism. Although multidisciplinary innovations are unexpected due to the boundaries of the professional domains, they do take place. The study will focus on health care, because of the strongly developed professionalism and the high demand for multidisciplinary practices in this sector. The central question posed is:

*Why do medical professionals adopt multidisciplinary organizational innovations?*

### 1.3.3. Subquestions

Six subquestions are distinguished to answer this central question. The next section presents these questions and briefly discusses them. The first three questions are answered by theoretical insights, the fourth and fifth question by empirical research and the latter combines both perspectives. The questions this research seeks to find an answer to are:

1. *What are multidisciplinary organizational innovations?*

In the previous paragraphs, multidisciplinary innovations were introduced. What does this special type of innovations constitute? This research emphasizes the diversity among multidisciplinary practices that are described in literature. A typology is developed based on different objectives of multidisciplinary innovations and on the used coordination structures.

2. *What are professional boundaries?*

The second question focuses on boundaries. Boundaries were presented as demarcations of professional domains. The answer of this question has two parts. The first part focuses on how theoretical insights have changed over time about the role of professional domains and professional boundaries. The second part focuses on the appearances of professional boundaries, distinguishing three dimensions.

3. *How do professional boundaries affect the adoption of multidisciplinary innovations?*

This theoretical question attends the adoption process. Assumed is that professionals have to perceive a problem to change behavior. This implies that they have to regard the contemporary situation as suboptimal and have expectations about the optimal situation. This is presented as a 'performance gap'. This question deals with the role of professional boundaries in the perception of the performance gap. It looks to how this affects the adoption process, and on what other factors influence this.

4. *How does professional adoption of multidisciplinary innovations take place in health care?*

For the empirical research, a case study approach was used to study multidisciplinary innovations in practice. ParkinsonNet, a successful example of multidisciplinary innovation in health care, was chosen as case. Because of the success of this innovation, it is a useful example to learn more about adoption of multidisciplinary innovations by professionals.

5. *How can the adoption of multidisciplinary innovations in health care be explained?*

The second empirical question aims to understand the adoption process. Whereas the previous question describes the adoption process, this question addresses the explaining factors. Central are the roles of boundaries and the contextual tendencies, as well as the processes that connect the multiple domains.

#### 6. How can adoption of multidisciplinary innovations be improved?

This prescriptive question addresses the practical side of this research. Demand for multidisciplinary innovations rises because of the increased complexity of problems and the need to develop more efficient and effective practices. This question deals with the implications of the two main concepts, multidisciplinary innovations and professionalism, for the development of this type of innovations in the future.

### 1.4. Research model

The research questions already illustrated the followed approach. This approach is based on a research model, presented in figure 1.1. This research model is constituted by combining literature about (multidisciplinary) innovations and professionalism.

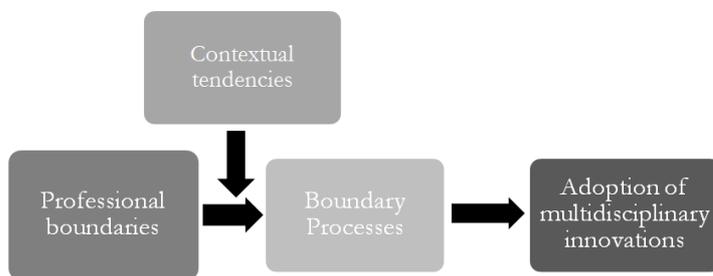


Figure 1.1: Research Model

The research model consists of four variables. It is considered that these variables influence the adoption of multidisciplinary innovations.

On the left, professional boundaries, i.e. the borders of the professional domains are the starting point of the research model. The boundaries demarcate the professional domains (Bucher & Strauss, 1961; Abbott, 1988; Freidson, 2001; Nancarrow & Borthwick, 2005). Moreover, it may be argued that these boundaries *constitute* the professional domain (Abbott, 1995). It is assumed that the professional domains influence the decision about adoption of an innovation.

As figure 1.2. shows, these boundaries are constituted around professional disciplines, as well around smaller professional segments, i.e. sub-professions. Boundary construction takes place in different spheres: towards society, towards other professions, within the profession and towards management (Bucher & Strauss, 1961; Abbott, 1988; Freidson, 2001).

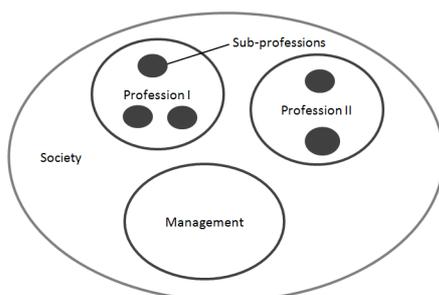


Figure 1.2: Professional boundaries

The adoption of a multidisciplinary innovation is the dependent variable. Based on literature about innovations in both the public and private sector, adoption is regarded as the decision to engage in an innovation. Adoption is an action of a professional. The focus on adoption means that neither actions in developing an innovation (invention), nor actions that are directed to use the innovation (implementation) are included in this research. However, as will be shown in the following chapter, these stages are often intertwined and difficult to isolate.

As the introduction showed, professional service delivery is under external pressure of government and management. It shows that contextual tendencies influence professionalism. Two tendencies in the context of professionals are considered to see their influence on the adoption process: Marketization and bureaucratization. These tendencies are regarded as influencing to the adoption process, because they are supposed to support values of client-responsiveness, efficiency and effectiveness. These values are considered as arguments in favor of multidisciplinary innovations.

Since is considered that professional domains will not naturally collide, something has to connect professional domains in order to establish multidisciplinary innovations. This ‘something’ may be objects, interactions and individuals. They are labeled ‘boundary processes’. Assumed is that boundary processes have a mediating role in professional adoption.

## **1.5. Relevance**

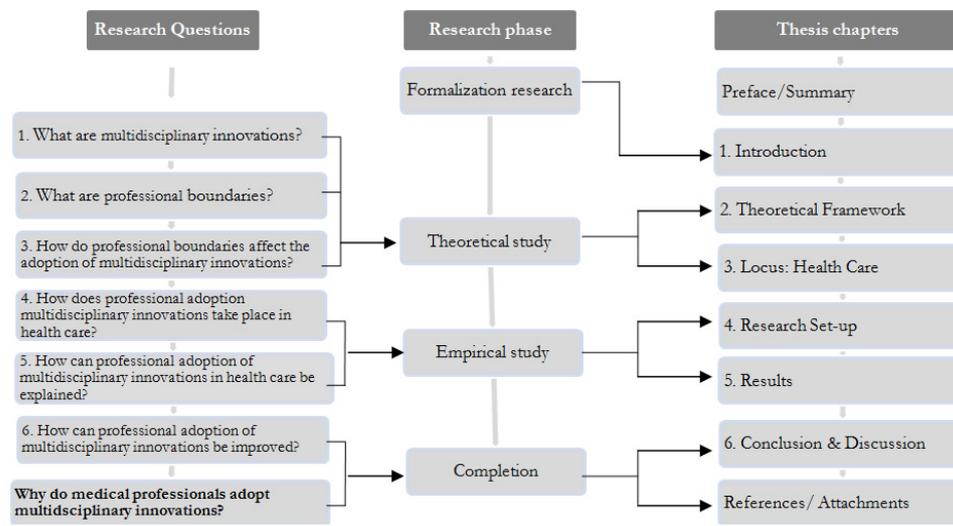
This research has both theoretical, as practical relevance. Theoretically, this study attributes to insights about innovation. Much is already known about private sector innovations. Innovations in the public sector are relatively underexposed. This study contributes to existing knowledge by focusing on the role of professionals in the innovation process. Aimed is to present a comprehensive picture about innovation in public service delivery. This is done by combining private and public sector insights on innovation, with literature about professionalism. The emphasis is on motivations and factors that influence the adoption decision from a professional perspective.

From this point, this research either contributes to contemporary knowledge about professionalism. It provides knowledge about professionals under pressure of businesses and markets. By providing empirical evidence, this study contributes to the debate about decline of professionalism -deprofessionalization- versus revival of professional values, i.e. ‘reprofessionalization’. This study adds insights about the dynamics in the professional domain and the boundaries that distinguish the domain from other professional domains and from management and society.

Practical relevance of this study is to give insight in the motivations and factors that influence multidisciplinary practices in the health care sector. The health care sector has to deal with changing demand, for example the increase of multi-problem situations because of the graying society. Either the pressure is high to cut health care expenditures. Because demand for multidisciplinary innovations is high, this study can be used to improve the adoption process of these innovations in the sector. Insights may be used by health care practitioners and policy makers to stimulate new, multidisciplinary approaches for the delivery of health care.

## 1.6. Thesis structure

Figure 1.3 presents the structure of this thesis. It provides an overview how the research questions are addressed in the different stages of the research process and are answered in this report.



**Figure 1.3: Thesis structure**

Chapter 2 presents the theoretical framework of this study. It provides an elaboration on the central concepts that figure 1.1 presented. First, it addresses innovation literature of the private and public sector. Second, it presents the most important insights about professionalism and professional boundaries. Furthermore, it deals with contextual tendencies and presents the theoretical perspectives on boundary processes. The paragraph concludes with the presentation of a conceptual framework.

Chapter 3 discusses the locus of this research: the health care sector. It provides insights in the characteristics of the Dutch health care system, as well as on the challenges this sector has to deal with. It furthermore describes the appearances of multidisciplinary innovations in health care and the theoretical insights on the role of boundaries and context in this sector.

Chapter 4 describes the choices in the research set-up. It will discuss the interplay approach, which is used in this study. This approach combines both functionalist as interpretative research perspectives. Then, this chapter deals with the operationalization of the core concepts. It concludes with the description of the methodology and research quality.

Chapter 5 presents the case-study results. It illuminates how professionals perceive a ‘performance gap’ between the suboptimal and optimal situation. It elaborates on the perception of this performance gap by describing the role of professional boundaries, contextual tendencies and boundary processes in the case of ParkinsonNet.

Chapter 6 is the conclusion and discussion part. It summarizes the most important findings of this study, by answering the subquestions and central question. The discussion part of this chapter elaborates on the practical and theoretical implications of this research and the consequences of the interplay approach.

## 2. Theoretical framework

This chapter presents the theoretical framework of this research. This study assumes that a professional makes a decision about adoption of a multidisciplinary innovation according to the gap in performance he or she perceives. This chapter elaborates on the various concepts that influence the perception of this performance gap. It starts with the outcome: adoption of multidisciplinary innovations (§2.1). These innovations are complex because they unite several professional domains. To understand the process of adoption, the focus in the second paragraph is on the concept that complicates the adoption process, namely professional boundaries (§2.2). It is argued that boundaries constitute the professional framework on which adoption-decisions are made. This framework is considered in its bigger picture, by discussing tendencies in the context of the professional domain (§2.3). The adoption of multidisciplinary innovations requires that professional domains are connected. What makes boundaries permeable to be open for differing insights? The last chapter discusses boundary processes that connect professional domains (§2.4). The chapter is concluded with a conceptual framework that the relation between these concepts presents (§2.5). The chapter is concluded with a brief conclusion.

### 2.1. Multidisciplinary innovations

Innovation is one of the buzzwords in scientific studies and practice that has to lead to more efficient and better quality products and services (Greenhalgh, et al., 2004; Fagerberg, et al., 2006; Rye & Kimberly, 2007). It requires invention, adoption and implementation to establish an innovation. Assumed is that the decision to adopt an innovation is based on the performance gap, as this is perceived by the decision-maker. For the adoption decision about multidisciplinary innovations from a professional perspective, this performance gap is complex to determine. This section first discusses the characteristics of innovation. Then it elaborates on the specific type of multidisciplinary innovations. It ends by conceptualizing the process of adoption.

#### 2.1.1. Innovation as positive change

When is something innovative? Scholars have addressed this question for decades and there are multiple ways to answer it. A general assumption is that innovation is a change in a positive direction. *“There is an assumption of an inherent benefit in innovation in many studies”* (Osborne & Brown, 2005: 129). Newman refers to the ‘discourse of innovation’, which tells the narrative of *“past failure and future possibilities”* (Newman, 2000: 48). This positive nature was an incentive for many scholars to clarify what innovation is, what improvements may be reached and under which conditions. Osborne and Brown (2005) summarized them in four elements that are central aspects of innovation, namely:

- Newness
- Its relationship to invention
- Being a process and/or an outcome of a process
- Discontinuity with the prevailing organizational, product/service or market paradigm

First, although most scholars agree that an innovation refers to a new situation or process (Suchman, 2002; Waterman, et al., 2007), what ‘newness’ means differs. Kimberly (1981) suggested that ‘newness’ has an objective and

subjective side. The former refers to a literal 'first use'. The subjective side of newness of an innovation refers to a relative perception of 'new', i.e. what is regarded as new by 'a proportion of the stakeholders' (Kimberly, 1981; Greenhalgh, Robert, Bate, MacFarlane, & Kyriakidou, 2005). Rye and Kimberly further explicate this by differentiating between newness based on 'differentness' and 'recency'. Differentness is the '*extent of departure from the status quo*', whereas recency is '*the amount of time a practice has been in the world*' (Rye & Kimberly, 2007: 238-239).

Next, Osborne and Brown notice an explicit difference between innovation and invention. Invention is the generation of new ideas. As Schumpeter explicated, the role of the entrepreneur as inventor is decisive for change in economic life (Schumpeter, 1942). However, as several scholars emphasize, innovation is not just about new ideas, but new practices (Hartley, 2005; Osborne & Brown, 2005). Moreover, it is about the process of adoption and implementation of new ideas instead of generating them. Osborne and Brown explicitly exclude invention from the innovation process. They distinguish stages of invention, adoption and implementation, but only the last two are part of the innovation process. However, inclusion of 'invention' might be useful, especially for understanding spread (diffusion) of innovations. When innovations spread among society, a degree of (re-) invention enables adoption of the innovation, as will be explained in §2.1.3 (Rogers, 2003). Therefore, we do not neglect the generation of a new idea, but include it in the decisions about adoption and implementation of an innovation.

Third, there is theoretical discussion whether innovation is outcome of a process or a process in itself. When innovation is an outcome, the focus is the introduction of a new product or service. Innovation as process emphasizes the road to come to a certain practice. The dichotomy between product and process innovation may have drawbacks: the line between the two is thin. For example, the introduction of electronic banking can be regarded as a new service for customers, thus a product-innovation. However, simultaneously, it can be argued that it is a rearrangement of existing services using internet. The core service is still money transfer (Economist, 2004). Nevertheless, the distinction between product and process innovation may be useful when considered in isolation, as will be shown in this thesis.

The last element of innovation is that it constructs a qualitative break with the past. Innovation is not just change, but also a disruption of previous practices. Moreover, it is a discontinuity with prevailing products, services or ideas about production and service delivery.

Several definitions of innovations incorporate these elements. Rogers describes innovations in his influential work as "*an idea, practice, or object that is perceived as new by an individual or other unit of adoption*" (Rogers, 2003: 12). However, this definition is based on one, isolated, decision-maker and does not imply the ambiguities of 'newness'. To incorporate these characteristics of innovation, in this study the definition of Rye and Kimberly is used as a starting point. They identify an innovation as: "*any discrete material artifact or practice that represents a significant departure from currently embodied knowledge content, as determined by the collective judgment of knowledgeable persons in the field at the time it first appears*" (Rye & Kimberly, 2007: 240).

### **2.1.2. Multidisciplinary innovations**

Multidisciplinary innovations are a special kind of innovations. They imply collaboration between a more or less defined groups of actors. Unfortunately, often (empirical) studies do not feel the necessity to specify the meaning of the word. They refer to 'multiprofessional settings' (Ferlie, Fitzgerald, Wood, & Hawkins, 2005) or 'multidisciplinary teams' (Robinson & Cottrell, 2005). What they exactly constitute is ambiguous. The term can refer to a team of

different occupations, such as a team of engineers, developers and marketers. Either, multidisciplinary may involve participants of different sectors, such as scientists of multiple faculties collaborating in a project. To increase complexity, the term is often interchangeably used with similar terms as inter- and transdisciplinarity. Instead of a clear concept, it is thus a “*terminological quagmire*”, as Leathard described (Leathard, 1994). Therefore, a nuanced view to ‘multidisciplinary innovations’ is useful to show the differences in this type of innovations and to clarify the topic this study is about. Classifications of innovations are a useful starting point to do this.

Many scholars attempted to classify the varying appearances of innovations. Besides the traditional dichotomy between product and process innovations, scholars tried to present other comprehensive categorizations of innovations. Zaltman et al. (1973) added three categories to the classic dichotomy, distinguishing product, process, organizational, personnel and policy innovations (Zaltman, et al., 1973). Hartley makes another useful classification, resulting in seven categories:

- Product innovations: new products
- Service innovations: new services or new ways in which they are provided
- Process innovations: new ways in which organizational processes are designed
- Position innovations: new contexts
- Strategic innovation: New goals or purposes for the organization
- Rhetorical innovation: New language and new concepts
- Governance innovation: New forms of citizen engagement

Especially the latter innovation is a useful attribute to existing innovation literature for innovations in the public sector. Governance innovations cross boundaries of organizations, altering decision-making structures and coordination. For example, they result in new decision-making mechanisms of sequential or parallel. This type of innovations is a fruitful starting point to discuss multidisciplinary innovations.

However, as Hartley expresses the perception of this classification should not be too rigid. Multidisciplinary innovations may incorporate multiple characteristics. They imply an innovation in governance, but either they may constitute a new service or restructure a production process. Hence, Hartley argues the different items should be regarded as dimensions instead of rigid categories.

Based on the suggestions of Hartley, we can characterize multidisciplinary innovations by two dimensions. First dimension is the *objective* of the innovation. Based on the classic division between outcome and process of innovation, the objective may be the development of a new good or service, or it the improvement of a process of production or service delivery. Since multidisciplinary innovations are considered organizational, they are regarded as services instead of products.

The second dimension is *structure* of the innovation. It emphasizes how multidisciplinary is organized and coordinated. Roughly, there are two options: sequential or parallel coordination (see for example: Thompson, 2004). Sequential coordination can be visualized by a chain, as a successive series of practices. It is based on standardization of processes, expressed in mapping of activities and responsibilities. Parties are only dependent on the previous actor in the chain. They are not responsible for the continuity of the whole process. Integration of the disciplines in the innovation is therefore nearly absent. Purposes are not shared and there is no reciprocity. Everybody is working on

their own link in the chain. On the other hand, parallel coordination involves multiple connections between the different actors. It can be visualized as a network. In this form of multidisciplinary, parties have multiple relations. These relations are not always clearly ordered as in a sequence. Interdependencies are not just sequential, but reciprocal. Interventions in a network are therefore dependent on mechanisms of ‘mutual adjustment’. This is the adaptation of different parties to each other during work progresses (Glouberman & Mintzberg, 2001).

**Table 2.1: Different types of multidisciplinary innovations**

		Objective	
		<i>Proces</i>	<i>Service</i>
Structure	<i>Sequential Coordination</i>	Standardized procedures	Standardized services
	<i>Parallel Coordination</i>	Integrated procedures	Integrated services

This differentiation leads to four types of multidisciplinary innovations (table 2.1). The *standardized procedures* refer to a rearrangement of process aiming for the standardization of a service. The most classic example is the Tayloristic division of labour, organizing various disciplines in a sequential way. The assembly line of Ford’s automobile production is a striking example of a standardized procedure. It organizes the multiple disciplines involved in production.

On the other hand, Volvo has proved that the coordination of disciplines in the car producing industry can be arranged in a very different manner. In the lower left of table 2.1, this is described as *integrated procedures*. In the beginning of the seventies, Volvo decided to rearrange the production processes in their factory in Kalmar. Instead of the chain-like production of Ford, Volvo organized the production of cars in teams. These teams were responsible for the production of a whole car. This created a more holistic approach and created shared goals among the various employees. Coordination was not longer hierarchical and sequential, but parallel, based on networks of specialized engineers.

The right side of the table refers to multidisciplinary performances that aim to establish a new service. In a sequential manner, services are developed by various actors in a chainlike production system. Each actor has a separate attribution to the new good or service and cooperation is limited. This type is described as *standardized services*.

When parallel coordinated, the attributions of actors are more integrated and aligned. Think about the establishment of a new multidisciplinary study program where technical and economical inputs are combined. The additional value of the program is not just offering courses in technical subjects and economics. Moreover, it is the ability of students to combine these forms of knowledge. This requires parallel –network- coordination of the disciplines involved and mutual understanding.

This study aims to explain why multidisciplinary innovations are established. To do this, we focus on a specific step in the innovation process: adoption.

### 2.1.3. Adoption of innovations

Chapter 1 presented three phases of the innovation process: invention, adoption and implementation. In classic innovation literature, this process is linear, moving from the invention of an idea, to the decision to use it, to the utilization of the new practice. However, this approach is criticized for being oversimplified. Scholars have argued that the innovation process is non-linear; often adoption is intertwined in complex processes (Van de Ven, et al., 1999; Rogers, 2003; Ferlie, et al., 2005; Greenhalgh, et al., 2005; Waterman, et al., 2007). In a non-linear approach, stages of (re)invention, adoption and implementation are continuously present in the innovation process. In this non-linear approach, the different stages are not abandoned, but the emphasis is on the non-sequential order of the phases. Innovation is a journey as Van de Ven et al. have argued (Van de Ven, et al., 1999). This approach is the starting point for our discussion of adoption.

Although difficult to isolate, for analytical purposes it is useful to distinguish adoption as a specific stage in the innovation process. Rogers defined adoption as “*the decision to make full use of the innovation as the best course of action available*” (Rogers, 2003: 21). This definition implies that an individual in an organization rationally chooses to engage in a new practice. This decision is regarded as a single event, which takes place at a certain moment in time. As Greenhalgh et al. emphasize, adoption is rather a lengthy process than an event (Greenhalgh, et al., 2005). Scholars have divided this process in several stages. E.g. Zaltman et al. (1973) have presented three phases of the adoption process:

- the knowledge awareness phase
- the formation of attitudes towards the innovation phase
- the decision phase

Each stage implies different actions, such as information seeking and testing of assumptions and preliminary ideas about the innovation. The focus in this study is on *why* adoption takes place. In other words, why the different phases in the adoption process lead to a positive decision. Classic literature about innovation assumes that adoption is the consequence of a suboptimal perception of the contemporary situation, compared to ideas about an optimal state (March & Simon, 1958; Zaltman, et al., 1973). This suboptimal perception, based on expectations how the optimal situation in the future should be, is defined as the ‘performance gap’. Ideas about the existence of a performance gap are criticized for having a too simplified perception of organizational life, assuming the possibility that organizations can transform from one steady state to another (Hage, 1999; Van de Ven, et al., 1999).

However, the perception of a performance gap may be a fruitful starting point for this study, especially when it is combined with more advanced understandings of adoption processes. Insights are based on two streams of literature. The first stream presumes a functionalist research tradition, which is often emphasized in private sector literature. This approach assumes that adopters already have prior preferences about an optimal situation, which determines the attitude towards the innovation. A second stream of literature takes a more interpretative approach. This approach, which is often advocated in research on public sector innovations, assumes that the formation of an attitude towards an innovation is the consequence of a social construction of the performance gap in a specific context.

However, both existing streams of literature emphasize a top-down approach, regarding managers as decision-makers. Therefore, we argue that we need a third approach to understand professional adoption of multidisciplinary innovations. Before we turn to this third approach, we elaborate on the two other streams of adoption literature.

#### *Functionalist perspective on adoption*

From functionalist perspective is assumed that adoption is based on prior preferences. The adopter is a rational individual who deliberately weights the attributes of the innovation to his prior preferences about an optimal situation. In classic (private sector) literature about adoption of innovations is presupposed that the perceived performance gap is based upon *organizational* performance (Zaltman, et al., 1973). Organizational performance is determined by values of efficiency, effectiveness and flexibility. The meaning of an innovation is derived from these values (Rogers, 2003). Rogers distinguishes six attributes of innovations that influence the degree to which an innovation is regarded as able to bridge the performance gap.

- Relative advantage, the degree to which an innovation is perceived as better (economically or social prestige)
- Compatibility, the degree to which an innovation is consistent with existing norms & values
- Complexity, the degree to which an innovation is perceived as difficult to understand and use
- Triability, the possibilities for experiment
- Observability, the degree to which the innovation is visible for its potential users
- Reinvention, the degree to which an innovation can be modified in the process of adoption and implementation

Based on March (1994), Korteland and Bekkers defined this functionalist reasoning as *'the logic of consequence'*: the assumption that the organization makes choices based on prior preferences (March, 1994; Korteland & Bekkers, 2008). In this functionalist approach to innovation, a top-down decision-making process is presumed. This implies that *management* is in charge about the adoption decision (e.g. Tidd, 2001; Rogers, 2003). Managers and directors are the decision-makers, who decides about (funding for) invention, adoption and implementation of new practices (Fagerberg, et al., 2006).

#### *Interpretative perspective on adoption*

From an interpretative perspective, adoption is based upon a social construction of the performance gap. This approach to adoption is often advocated in public sector innovation literature (Korteland & Bekkers, 2008). Recently, attention has grown for innovation in this sector. Studies emphasize the distinctiveness of the public sector in innovation. They argue that the objectives and the range of innovation differ from the private sector (Hartley, 2005). Contrary to the private equivalent, public sector innovations are not driven by motives of enhanced organizational performance and improved economical positions of the organization (Hartley, 2005). Rather, public sector innovations have collective objectives, such as increasing transparency or improving accountability of public organizations. These objectives are inspired by distinctive public values as fairness and justice. Hence, the scope of public sector innovations goes beyond the organizational borders. 'Governance innovations', as were distinguished by Hartley, are an exemplary example of distinctive public sector innovation (Hartley, 2005; Moore & Hartley, 2008).

The perceived performance gap of public sector innovations is dependent on collective values and the improvements an innovation will bring for society. The broad scope of public sector innovations makes that not only the organization and its environmental characteristics have to be taken into account. Moreover, the innovation should be regarded in its complete context. To do this, public sector scholars advocate that the meaning of an innovation is a

social construction, rather than the sum of some attributes. It is constructed in the context, that defines the social problems which have to be solved (March & Olson, 1989; Powell & DiMaggio, 1991). The performance gap is not derived from 'prior preferences' of the organization, but rather from a perceived social problem that is constructed in a specific societal context. Adoption is not based on consequence, but on *appropriateness* (Korteland & Bekkers, 2008). As Korteland & Bekkers state: "*Adoption decisions are not so much based on 'economical fitness', but on 'social fitness' or considerations of legitimacy, symbolism and fashion*" (Korteland & Bekkers, 2008: 74). Legitimacy is politically defined as "*the process through which a social system is justified by its members, i.e. the rulers are given the power to rule by the ruled*" (Svensson, 2006: 580). In social terms, it relates to social trust and confidence in public institutions and practices (Svensson, 2006).

However, also public sector scholars emphasize a top-down approach on innovation. They assume that politicians, policy-makers or public sector managers make the decisions in the innovation process (Osborne & Brown, 2005; Korteland & Bekkers, 2008; Moore & Hartley, 2008). However, the delivery of many public and semi-public services takes place in professional settings. Professionals have a relatively autonomous and self-regulating position. To understand innovation in these settings, a top-down approach seems not sufficient.

#### *Professional perspective on adoption*

The introduction-chapter shed light on the role of professionals in delivery of social services in public or semi-public organizations. Adoption literature of the public and private sector fails to provide a comprehensive explanation about adoption of professionals. These streams of literature focus on the role of management, politicians and policy-makers. We argue for a third perspective on adoption: the professional perspective (table 2.2).

We need this third perspective for three reasons. First, based on their specific knowledge and skills, government allows professionals a high degree of autonomy and self-regulation. This applies on the macro-level, allowing professionals their own codes of conduct and laws. On the meso-level, it provides professionals with a special position in organizations. This position undermines the traditional hierarchical structures, on which innovation literature is build. In professional settings, management or policy-makers are not the only decision makers; they have to cooperate with professionals. This brings us to the second point. Central object in the study of professional innovation processes should thus not be the organization or the public sphere. Rather, central in the professional perspective is the professional association, which spans over the organizational borders of courts, universities and hospitals. Third, values driving professional innovation are different from the values assumed in private and public sector literature. Not organizational efficiency and effectiveness, nor transparency or accountability are motives for innovation. Rather, the specific cognitive, technical and social framework of the professional is leading. The meaning of an innovation is based on expertise knowledge, years of experience and a long socialization process to know what is appropriate in the professional environment. This does not mean that professional values are disconnected from public values, such as fairness and justice. However, the meaning of these values, and hence the meaning of innovation, is based on the specific framework of the professional. Professional innovation focuses on the specific professional domains, instead of broader societal aims or organizational interests.

Professional adoption of innovations is based upon the 'professional logic'. Translated to the phases of adoption as Zaltman et al. presented; the awareness of the innovation, the formation of an attitude and decision-making are all made according to the professional standards of knowledge, skills and social norms. In other words, the professional adopter's framework determines the perception of the performance gap. For example, the perception of a lack of

knowledge or insufficient technical abilities leads to the desire to improve the contemporary situation. Furthermore, the innovation has to correspond to the professional environment and what is perceived as appropriate to the professional peers.

**Table 2.2: Three perspectives on adoption**

	<b>Functionalist perspective</b>	<b>Interpretative perspective</b>	<b>Professional perspective</b>
<i><b>Decision-maker</b></i>	Management	Policy-makers, politicians, public management	Professional
<i><b>Values</b></i>	Organizational values: Efficiency, effectiveness, flexibility	Collective values: transparency, accountability	Professional values: knowledge, skills, social norms
<i><b>Adoption-framework</b></i>	'Logic of consequence'	'Logic of appropriateness'	'Professional logic'

This professional 'logic' may be regarded as functionalist character, i.e. the professional has prior preferences about the optimal situation. Either, it may be interpretative, assuming that the professional construct a performance gap. However, not much is known about this professional perspective in innovation theory, as the introduction chapter made clear. To understand the professional perspective, we combine adoption literature with theories of professionalism. The next paragraph elaborates on the exclusive position of professionals and the meaning of professionalism in contemporary society and organizations.

## **2.2. Professional boundaries**

Professionals have a specific framework to judge about the meaning of an innovation. This framework is constituted by boundaries that distinguish what is good knowledge, high-quality techniques and what is socially appropriate. To understand this framework, this paragraph elaborates on the concept of professionalism and the special position professionals in the delivery of social services. It will show that professionalism is a continuously changing concept, both in daily language as scientific research. This paragraph portrays the history of professionalism and the theoretical establishment of professional boundaries. Whereas "to be or not to be a professional" seemed to be the question that dominated the theoretical debate about professionalism in the first part of the 20<sup>th</sup> century, the contemporary focus is rather on professionalism as legitimization strategy.

### **2.2.1. 1950-1970: Boundaries as neutral divisions**

In the foundation of modern social sciences, Durkheim has established the attention for the role of professionals in the delivery of social services. For Durkheim, professionalism was closely related to morality, depicting professionals as a moral community, based on occupational membership (Durkheim, 1957). This perspective reassembles the positive ethos that surrounded professionalism in the first decades after World War II. The status, authority and privileges of professionals flourished by the idea that they were worth the trust of laymen. This trust was based on

their expertise, knowledge and skills. This is the basis for the creation of exclusive 'professional identities', "*a sense of common experiences, understandings and expertise, shared ways of perceiving problems and their possible solutions* (Evetts, 2003: 401). As Evetts emphasizes, socialization in education, professional training, vocational experiences and professional associations develops and maintains this common identity (Evetts, 2003).

In these decades after World War II, government regulation was limited to conditional rules, encouraging professional autonomy. The control of these autonomous professional practices was increasingly in the hands of professional associations, exhibiting self-regulation (Freidson, 2001; WRR, 2004). In medicine, which is often treated as the example of classic professionalism, this was regarded as 'the Golden Age of Medicine' (Freidson, 2001; Harrison, 2009). Doctors deserved this public confidence to the success of increasing medical knowledge, which strengthened their exclusive position in society.

In this "Golden Age", the sociology and structure of professions became subject of research. Most studies focused on the defining characteristics of a profession (Wilensky, 1964; Evetts, 2003). The main question seemed to be whether an occupation could be defined as a profession: 'to be or not to be a professional'. The focus was on the demarcation of the borders of professions, on finding the specifics that distinguishes them from other occupations.

Bucher and Strauss were among the first to emphasize the difficulties of defining the characteristics of a profession. They emphasized the differentiation *within* professions, showing that a profession was actually comprised of different, competing segments (Bucher & Strauss, 1961). They referred to this as 'intra-professional boundary struggles'. To see these intra-professional struggles, the focus was shifted from defining the boundaries of professions as a whole, to the dynamics within the professional community.

Although the approach of Bucher and Strauss showed some of the conflict and differentiation within the professional community, it did not question the position, status and authority of professionals in general. Hence, the perspective on professional boundaries was merely defined in a neutral or positive manner: a line to differentiate the knowledge and skills of one profession from the expertise of other professions or occupations. However, this concept of professionalism was criticized in the 1970s and 1980s, both in science as in society.

### **2.2.2. 1970-1990: Boundaries for professional closure**

The optimistic perception of professionalism turned in the 1970s. Critical reactions stressed the self-interested character of professionals. Professional domains were regarded as powerful monopolies with reduced service ethic. They were accused for their internal focus and neglecting their responsibilities towards society. In this period of skepticism, the establishment of a monopoly-position, resulting in professional 'closure', was depicted as the ultimate aim for professionals (Larson, 1977). Professional closure implied that professionals were self-interested and isolated from their environment. The road to 'closure' was described by Larson as 'the professional project', aiming to secure status and dominance in society (Larson, 1977).

In this period of critical reconsideration of the professional status, Abbott developed the concept of 'the professional project' further by his analysis of professional domains. His nuanced discussion provides insight in the relations between professional domains. Abbott regards professionalism as a precarious ecological system, 'the system of professions'. In this system different professions compete about the control over professional work (Abbott, 1988: 33). He argues that instead of intra-professional struggles, the focus should be on inter-professional competition, on the struggles between various professional monopolies. The source of professional monopolies are jurisdictions, i.e.

privileges based on knowledge and autonomy (Abbott, 1988). Boundaries close professional domains from other domains, isolating the professionals from their environment. They demarcate jurisdictions and protect the power and privileges of the professional group.

The concept of boundaries in Abbott's approach is different from the perspective of Bucher and Strauss. Abbott's analysis focuses on *closure* and *control*, which is typical for this period of criticism. Unlike Bucher and Strauss, it is not Abbott's aim to show only differentiation within 'the' professional community. Rather, his emphasis is on *how* this differentiation is established by distribution of dominance and power. Abbott's boundaries are defensive, aiming to protect specific cognitive, technical and social resources.

This criticism on the control of professionalism was assigned by government and society. It made space for other controlling mechanisms as bureaucracy and market structures (J. C. Robinson, 1999; Freidson, 2001; Kremer & Tonkens, 2006). This is illustrated by the introduction of general management and outcome measurement in the British NHS (Harrison, 1999), and by the more bureaucratic organizational forms in the Netherlands (WRR, 2004). Because of the decline of dominance and authority of professionals, this movement is sometimes explained as a process of deprofessionalization (Haug, 1973; Ritzer & Walczak, 1988; Brint 1994; Broadbent, Dietrich, & Roberts, 1997). However, more recent perspectives on professionalism argue that this negative perspective is exaggerated, and open the possibility for a more cautious and balanced re-appraisal of professionalism in public service delivery.

### 2.2.3. 1990-now: Legitimizing professionalism

Despite the calls for deprofessionalization, from the 1990s scholars began to revalue the significance of professionalism and professional boundaries. Countertrends of expanding knowledge-based occupations (Evetts, 2003; Noordegraaf, 2007) and strengthening of professional values in the workplace (Lupton, 1997; Duyvendak, Knijn, & Kremer, 2006) are visible, regaining the respect for and trust in the professional logic. This is described as a process of re-professionalization (Lupton, 1997).

However, studies to contemporary professionalism are different from the post-war period. Contemporary professionalism has another form than the classic, or pure variant which mainly focused on "*applying, general scientific knowledge to specific cases in rigorous and therefore routinized or institutionalized ways*" (Noordegraaf, 2007). Professionalism is not longer studied in isolation. Under influence of NPM, the rise of bureaucratization and marketization has resulted in an emphasis on organizational aims as efficiency, effectiveness, accountability and transparency. Freidson characterized this as the struggle between the logics of market, business and professionalism (Freidson, 2001). This struggle is different from the struggles between professions and professional segments that Bucher and Strauss (1961) and Abbott (1988) emphasized. They are increasingly between professionals and management or market parties. The struggles are about demarcating 'exclusiveness'. Professionals have to show that they deserve an autonomous position in the organization and autonomy to make decisions about service delivery. The focus in the discussion on professionalism is on the *legitimization strategies* used by professionals, rather than defining the characteristics of the profession or describing the distribution of power between professions. As Svensson states, contemporary professionalism is a contextual competence, rather than a general capability (Svensson, 2006).

This changed perspective on professionalism, resulted in a renewed focus on professional boundaries. Whereas the previous period took an outsiders perspective to criticize the professional, the contemporary perception rather looks to boundary construction process by professionals themselves. From this perspective, boundaries are becoming

important as demarcations of the exclusive professional identity. This is not only by differentiating knowledge and skills, but also by providing a communal identity to make them special. Contrary to earlier approaches where boundaries were treated as given and protected borders of the professional domain, the renewed focus on professionalism allows professional to actively construct and use boundaries. They are a tool for professionals to distinguish the professional ideology from market and business ideologies and to show the professional *raison d'être* within the organizational and social environment. *"The constitution of the professional field within a discipline into an independent, autonomous and self-contained area of knowledge is [...] achieved by constructing boundaries in three distinct arenas that separates the profession from other professions, clients and markets"* (Fournier, 2000: 69).

However, what has not changed are that professional boundaries are still used to define a group which relies on extensive training, education and expertise, and who is controlling to a large extent their own practices. *"The development of a specialized body of formal knowledge and skills requires a group of like-minded people who learn and practice it, distinguish it from other disciplines, recognize each other as colleagues by virtue of their common training and experience with some common set of tasks, techniques, concepts, and working problems, and inclined to seek each other's company"* (Freidson, 2001). What has changed is that professional boundaries have a social and symbolic function in providing a expert-identity. Fournier summarizes two functions of boundary construction (Fournier, 2000):

1. Constitution of an independent and self-contained field of knowledge as basis upon which professions can build their authority and exclusivity.
2. A division of labor that goes into erecting and maintaining boundaries between professions and various other groups.

#### **2.2.4. Dimensions of professional boundaries**

The previous paragraphs showed that the theoretical perspective on professional boundaries has changed over time into an ambiguous, multifaceted concept. Central in professionalism are two core elements, i.e. a body of specialized knowledge and skills and an institutionalized environment that controls this expertise (Abbott, 1988; Freidson, 2001). Boundaries demarcate these central elements. They differentiate the body of specialized knowledge and skills and define the institutionalized environment. As Dopson and Fitzgerald define: *"boundaries are a [...] frontier between different occupational groups that impact on the spread of new work practices"* (Dopson & Fitzgerald, 2005: 117). This paragraphs elaborate on the appearances of professional boundaries.

The core elements of professionalism show that the concept, and hence its boundaries, are constituted on *two* interrelated levels. Translated to what Giddens has described as 'the duality of structure' (Giddens, 1984), these two levels are distinguished as the institutional (structure) and the individual (agent) level. The duality implies that structure and agent are dependent entities, in which structure is created by the action of the agent. Boundary construction, as Fournier presented as legitimization strategies is thus a product of both individual actions as predetermined structures. As Abbott emphasizes: *"the actual conduct of professional work determines the parameters of interprofessional competition"* (Abbott, 1988: 58).

The institutional level can be considered as the level of control of the profession (Harrison, 2009). It determines the norms, values, procedures and roles which are characteristic for the profession and distinguish it from their environment (Giddens, 1984). It includes the profession's educational institutions and the membership of professional and scientific associations. These institutional boundaries are embedded in a judicial and financial

system, approved by government for the delivery of social services. As Giddens states: “According to the notion of the duality of structure, the structural properties of social systems are both medium and outcome of the practices they recursively organize” (Giddens, 1984: 25). From this perspective, professional boundaries on the institutional level are constituted by activities of individual professionals. These activities are enabled and constrained by the arrangements in the institutionalized professional system. Institutions do not arise ‘out of nowhere’, but are the consequences of institutionalizing acts of individuals. Institutional boundaries are thus constituted in and translated to the daily reality of professionals. This is a dynamic process. Professionals act according to what they consider to be legitimized and accepted to do within the professional structure. By acting, they can alter what is considered as legitimated and accepted.

To understand adoption behavior of professionals, we should regard the professional framework as an institutionalized structure, which can be altered by individual action. Individual action implies that boundaries can be actively constructed. As Fournier denotes: “Professional knowledge is malleable and expandable, it is constitutive of its field of knowledge rather than bound by it, it may contain the possibility of being reconstituted to claim broader, newer expertise which map onto concerns of enterprise and the market” (Fournier, 2000: 83). This individual action is the key to understand the adoption of multidisciplinary innovations. Adoption requires that boundaries can be altered, as § 2.4 will explain.

The boundaries for individual professional behavior consist of both explicit, as inexplicit (tacit) knowledge. The first refers to the more formal and observable attributes, the latter to less transparent practices (Epstein & Hundert, 2002). As the previous paragraphs indicate, they are either built upon specific cognitive knowledge, technical competences, as on social behavior. Together these dimensions build the structure, the institutional boundaries. To be able to see the functioning of these boundaries in the adoption process of multidisciplinary innovations, the three dimensions of individual boundaries –cognitive, technical and social – are operationalized in more day-to-day notions (table 2.3).

**Table 2.3: Overview dimensions and indicators of professional boundaries**

Dimensions	Indicators
<i>Cognitive boundaries</i>	<ul style="list-style-type: none"> <li>• Knowledge &amp; skills</li> <li>• Scientific foundation</li> <li>• Specialized Expertise</li> <li>• Patient-view</li> </ul>
<i>Technical boundaries</i>	<ul style="list-style-type: none"> <li>• Specific methods</li> <li>• Clinical guidelines/standards</li> <li>• Competences</li> </ul>
<i>Social boundaries</i>	<ul style="list-style-type: none"> <li>• Day-to-day interaction</li> <li>• Professional associations</li> <li>• Codes of conduct</li> <li>• Education &amp; Post-educational training</li> </ul>

The cognitive dimension comprises the possession of specific knowledge and skills to solve practical problems. Often, this has a strong ideological grounding, for example in health care. In the sociology of medicine, this grounding is referred to as 'the bio-medical model of illness' advocated by doctors. It regards ill-health as consequence of clinical identifiable pathological causes, abstracted from the individual patient (Harrison, 2009).

The ideological grounding has influenced the cognitive perception of professionals and the value of this dimension. Acceptable and legitimized forms of scientific knowledge are important, for example in the development of evidence-based medicine (Dopson, 2007; Sanders & Harrison, 2008). However, what legitimized knowledge is, is dependent on the community of practice a professional is in. As Ferlie et al. state: "*Professions display different research cultures, agendas and questions*" (Ferlie, et al., 2005: 130). In the professionalization project, this constituency of a scientific base is important cornerstone of the professional domain (Wilensky, 1964). The professional identity is grounded in this scientific foundation. It is based on specific knowledge and skills, on the establishment of professional associations, on the distinctive specialized expertise, and on the specific patient-view a professional holds.

The second, technical dimension focuses on the application of knowledge and skills. This may be guidelines for how to do scientific research for scholars, techniques for investigation for policemen, or surgical procedures for physicians (Epstein & Hundert, 2002). This dimension is expressed in specific methods, guidelines and standards, and competences. These skills are not all documented. Characteristic is the professional 'fingerspitzengefühl'. This is the intuition that helps professionals to distillate the right action out of many uncoordinated signals (Gastelaars, 2006). This technical dimension is related to the previous dimension, since in a professionalized setting practices are grounded in a (scientific) knowledge base.

The social dimension is probably the least observable. Partly it is derived from formal codes of conduct, although often it is based on tacit knowledge of social behavior. The social boundaries are taught during education and post-education. As Hafferty and Frank state, medical education is because of the high workload and large part of practical experience an intensive socialization process. This is regarded as the 'hidden curriculum' (Hafferty & Franks, 1994). Social boundaries are the norms and values of what is accepted social behavior, as well as the determination of who the social environment is. In professional communities loyalty to peers and peer group references are an important value, expressed in the professional networks and a system of training and post-experience learning. This dimension may be reinforced by cognitive and technical boundaries, because when knowledge and skills are not shared with others, this is a barrier to establish social relationships (Dopson & Fitzgerald, 2005). "*The presence of strong professional roles and identities makes it even less likely that knowledge will flow across social boundaries*" (Ferlie, et al., 2005: 129).

In sum, the professional framework exists of a cognitive, technical and social dimension. These dimensions distinguish specific professional practices from other practices. The notion of boundaries implies that there is a division between an inside, the professional domain, and an outside. The next paragraph elaborates on what is outside: the context of the professional.

### **2.3. The bigger picture: Tendencies in the context of the professional**

The previous paragraph made clear that we should not study professionals in isolation. To understand the adoption process of multidisciplinary innovations, we should take the environment into account. Contingency theories, especially in private sector literature, have identified many contextual factors that should be regarded when analyzing the adoption decision (Zaltman, et al., 1973; Rogers, 2003). For example, size of the organization and hostility of the environment are important considerations to explain the innovative capacities of organizations (Greenhalgh, et al., 2005; Fagerberg, et al., 2006). However, how this environment should be considered regarding professional adoption of multidisciplinary innovations is ambiguous. On one hand, based on a functionalist approach, scholars often assume an objective context ‘out there’, which incorporates opportunities, threats and constraints. This corresponds to the contingency-approaches to innovation. On the other hand, interpretative scholars have emphasized that a separate objective environment does not exist, but is constructed by individuals (Burrell & Morgan, 1979). This corresponds to the ‘logic of appropriateness’ approach, stressed in public sector literature on innovation (Korteland & Bekkers, 2008). There are thus roughly two possibilities to regard context: As an independent external entity or as a specific set of events and actions that are meaningful by a specific set of actors (Smircich & Stubbart, 1985).

The previous discussion on professionalism made clear that professionalism is rather a construction than an objective factor in the innovation process. It is a dynamic concept, actively constructed by professionals in order to legitimize their practices. This approach towards professionalism argues for a ‘logic of appropriateness’ approach towards professional adoption of multidisciplinary innovations. Therefore, instead of focusing on objective factors in the professional environment, we focus on ‘tendencies’ in the context of the professional. This is the bigger picture of professionalism. Within this bigger picture, professionals have to deal with these tendencies in local situations. The previous paragraph indicated two important tendencies that challenge professional practices: marketization and bureaucratization.

#### **2.3.1. The context of the professional**

Scholars in professionalism are increasingly aware that professionalism should be studied in its context. The first approaches in the 1950s and 1960s focused on the characteristics of the professional domain in isolation, determining what is a profession and what is not. However, contemporary perspectives consider professionalism as a legitimization strategy. As Svensson presented, professionalism is a ‘contextual competence’ (Svensson, 2006). Contextual approaches to professionalism focus on two tendencies in the environment of professionals: market coordination and organizational control by managers.

There has been much debate to what extent market and managerial techniques may improve professional services (e.g. Flynn 1999). As Flynn has emphasized, the core of the tension in public service delivery is on who has control over resource allocation decisions. The question is whether professionals are this or managers, clients and purchaser parties. Traditionally, professionals have control over the execution of tasks and self-regulation. However, this assumes that resources are available. When these become scarce, such as public money to finance professional services, the professional authority to make decisions on resource allocation is pressured. The crucial issue is whether in these times, professionals should determine resource allocation, or that other coordination mechanisms have to be applied. As Flynn states: *“In the public sector and especially in quasi-markets, professionals’ abilities to set their own pay, terms and conditions of employment, and to control task performance, are largely constrained, or strongly influenced by governmental regulation and increasingly by managerial authority”* (Flynn 1999: 30).

The increasing influence of markets and organizations makes professionals 'reflective practitioners' as Noordegraaf has argued (Noordegraaf, 2007). Professionals have to be aware of demands of other parties. These other parties may be managers, as consequence of bureaucratization tendencies, or rather clients and purchaser organizations, who act out of interests of the clients. Claims of professionalism are made *towards* these organizations as the previous paragraph showed. Professionalism has become a strategy to legitimize decisions in times where professionals are increasingly part of bureaucratic organizations and market systems. This either applies for adoption-decisions.

This does not imply that tendencies happen independently of professional practices. As Giddens has emphasized, professional boundaries are institutionalized in society. Professional boundaries are formalized in financial schemes and juridical arrangements, as §2.2.4 emphasized. Therefore, tendencies in the context of professionals may influence professional practices, but are also dependent on existing professional divisions of work. This makes it unlikely that professional autonomy, execution of specialized tasks will completely vanish, i.e. that professionals will de-professionalize. Rather, we should focus on how claims of professionalism are made to maintain professional autonomy and authority over execution of practices. As Fournier denotes: "*the consideration [should be on] the possibilities that remain, or that are created, for professionals to remake themselves*" (Fournier, 2000: 84).

### **2.3.2. Tendencies: Marketization and bureaucratization**

We argued that two tendencies influence professional practices and are hence argued to influence the professional perspective on innovations: marketization and bureaucratization. Since professionals were criticized for being 'closed' to environmental influences, governments and organizations have attempted to interfere in the professional domains. They have introduced new bureaucratic mechanisms to control professional practices (Fournier, 2000; Noordegraaf, 2004). The days that the professional was an autonomous and self-governing actor in society are over. As Fournier denotes: "*In the last years it has become a commonplace to question the future of the professions in the context of current trends of economic, technological and organisational change?*" (Fournier, 2000: 67). To understand the influences of these tendencies on the professional perspective, we discuss briefly the tendencies of marketization and bureaucratization.

#### *Marketization*

Governments increasingly advocate markets as coordination-mechanism for public services. Freidson defines the 'logic of the market' as: "*those circumstances in which consumers control the work people do*" (Freidson, 2001: 12). Government policies are increasingly driven by ideas of marketization: by decentralization and deregulation. Under influence of NPM, governments emphasize performance, transparency and accountability in the public sector (Pollitt & Bouckaert, 2004). Although there are doubts whether marketization of policy spheres will reach these aims and whether marketization is possible because of information asymmetry and entry barriers (e.g. Flynn 1999), the believe that public reform by allowing market coordination will improve public service delivery (Pollitt & Bouckaert, 2004).

Market coordination alters two existing relationships in professional practices: relationships between deliverers and receivers of services and between delivering organizations. Market coordination assumes that the first is based on a relationship between supply and demand. Classic economic theory assumes that price mechanisms will lead to an optimal equilibrium of supply and demand. This has consequences for the delivery of professional services. Marketization strengthens the client perspective, and challenges the classic demarcations between laymen and professionals (Pollitt & Bouckaert, 2004; Duyvendak, et al., 2006). As Flynn denotes, not only the relationship between consumers and providers may be altered. Equally, the relationship between providers and purchasers. Purchasers are organizations that act on the behalf of clients, and negotiate for contracts. These contracts will have

effect on execution of services by professional provides. Traditionally, professionals claim to have the exclusive knowledge and skills to determine clients' demand. Now have to share this demand-determination with purchasing organizations.

The second relationship that market coordination alters is the relationship between delivering organizations. Marketization implies that competition will lead to increased efficiency and user-responsiveness (Pollitt & Bouckaert, 2004). Professionals, traditionally, claim to serve their clients with their expert knowledge and skills, and to be user-responsive. However, in a market climate organizations increasingly have to compete for favors of consumers. Not only professional aims have to be served, but increasingly organizational objectives as efficiency and performance of the organization. Professionals are increasingly regarded as a part of organizations that have to compete for favors of consumers. Hence, market coordination pressures professional service delivery. As Fournier denotes: *"There is a clear distinction between the field of the professions and the market. The professional service is not sold, but rendered. The activities of the professional stand outside the commodity market"* (Fournier, 2000: 76). Fournier argues that market mechanisms advocate transparency, accountability and, 'boundarylessness' (Fournier, 2000). They challenge the traditional division and demarcations of specialized work of professionals. Competition may increase the need for cooperation across existing professional boundaries. Next to this, the market mechanism emphasizes transparency and accountability in service delivery, which may conflict with the abstract professional knowledge and skills. To reduce information asymmetry, consumers need information about professional service delivery. The traditional perception of professionalism is based on the idea that these are too complex to understand for people without the specific expertise and this is why professionals control is executed within the professional domain. As a consequence, tension may rise between market and professional coordination (Flynn 1999).

#### *Bureaucratization*

Not only on the system-level are mechanisms changing. Either on the level of organizations, professionals are influenced. As § 2.2.2. presented, management of organizations is attempting to control professional practices, as a reaction on the critical movement towards professionalism. NPM has emphasized rationalization and strengthened the position of managers in (professional) public organizations to effectuate this (Noordegraaf, 2004; Pollitt & Bouckaert, 2004; Harrison, 2009). Formerly, the role of management in professional organizations was limited. The tendency of organizational control has resulted in strengthening the position of managers in these organizations. Freidson has defined this as the 'logic of business', where idealtypically, management determines content and organization of practices. This logic emphasizes organizational efficiency and cost-effectiveness. The debate between professionalism and managerialism is extensive. Van der Meulen emphasizes: *"Professionals, like doctors and judges, have to take organizational and financial aims into account: they have to cut costs, work efficiently, deliver 'value-for-money', and are consumer-orientated"* (Van der Meulen, 2009: 61). Professionals are increasingly incorporated in organizations as a consequence of marketization strategies of governments. This leads to a *"constant questioning of roles of, and boundaries between, managers and professionals in the public sector"* (Flynn 1999: 21). However, management of professionals is a complex task (Freidson, 2001; Noordegraaf, 2004). Traditionally, professionals determine content and organizations of work, not managers. Management of professional organizations demands special tools to assure that professionals are both loyal to their professional associations and standards *and* to the organizations they are employed (Exworthy & Halford, 1999). Either, it may imply that management is professionalizing themselves to assure legitimacy (Noordegraaf & Van der Meulen, 2008; Van der Meulen, 2009).

### 2.3.3. Indicators of marketization and bureaucratization

Tendencies of marketization and bureaucratization influence thus professional practices. As § 2.2 has argued, the tendencies in the context of the professional are not likely to lead to vanishing of professionalism, i.e. de-professionalization. Rather we have to understand how professionalism is maintained and constructed in this environment. To understand how these possibilities are used in the adoption of multidisciplinary innovations, we need a deliberate description of the influence of the tendencies on the professional domain. Therefore, these tendencies are divided in several indicators to see their influence on professional practices, and hence on the professional adopter's framework (table 2.4).

#### *Marketization*

Marketization refers thus to the coordination mechanism that alters the relationship between demand and supply and changing relations between delivering organizations. Market tendencies have three indicators. The first are financing schemes. Marketization implies economical coordination, where financing structures have to lead to an equilibrium in demand and supply. In public service delivery, it is more appropriate to regard markets as quasi-markets, since provider agencies are non-profit and tax-funded (Flynn 1999). The first indicator focuses on the specific financial regulation mechanisms of the government that aim to establish a quasi-market.

Second, the assumed relationship between supply and demand by market coordination challenges the position of professionals in service delivery, as was explained in the previous paragraph. Professionals are argued to be experts, who decide about what demand is and how services are supplied, based on their expert knowledge and skills. This special position may be challenged by strengthening the position of clients and, perhaps more important, purchasing parties. The second indicator is the degree of 'demand-focus' of service deliverers, i.e. the degree to which professionals are user-orientated and deal with 'purchasers' of their provided service.

The third indicator focuses on the changes in relationships between organizations. This tendency towards marketization is indicated by improved feelings of 'competition' between delivery-organizations.

#### *Bureaucratization*

The tendency of increased organizational control is summarized by four indicators. The first is the role of management in influencing organizational practices (Flynn 1999). It is likely that standardization and control of professional work by managers, changes professional practice. Rationalization of practices, stimulated by the NPM movement, has emphasized the role of management in organizations. Professionals are not just autonomous practitioners, but are increasingly incorporated in organizations. Tensions arise in the control over work: to what extent professionals or managers decide how resources are allocated.

Next to this, organizational loyalty indicates a tendency of bureaucratization. Professionals may vary in the degree to which they are autonomous and have demarcated their exclusive domain. Some may be more subordinated to managers and thus loyal to organizational objectives and more responsive to organizational aims, as efficiency and effectiveness than other professionals.

The last indicator is dependency of technical possibilities. This indicator is directed to use of Information and Communication Technologies (ICT). These may be informing or automating practices (Zuboff, 1988). The first implies standardization and formalization of processes, the latter refers to ICT that "*generate information about the underlying productive and administrative processes through which an organization accomplishes its work. It provides a deeper level of*

*transparency to activities that had been either partially or completely opaque*” (Zuboff, 1988: 9). The degree to which professional practices are determined by technical possibilities indicates tendencies of bureaucratization. ICT structures may alter existing structures and influence autonomy and the position of professional knowledge and skills (Zuurmond, 1994; Zouridis, 2000; Tummers, Bekkers, & Steijn, 2009). However, the effect of technology may be limited, since it often reflects existing (professional) divisions of work and control. As Jorna states: *“Applications and databases are developed out of an existing hierarchy of values, hence not adequate to bridge tensions between different norms, attitudes and values that are present in organizations* (Jorna, 2009: 246). Technologies may be institutionalized in professional boundary structures.

**Table 2.4: Overview tendencies and their indicators in the context of professionals**

<b>Tendencies</b>	<b>Indicators</b>
<i>Marketization</i>	<ul style="list-style-type: none"> <li>• Financing schemes</li> <li>• Demand-focus</li> <li>• Competition</li> </ul>
<i>Bureaucratization</i>	<ul style="list-style-type: none"> <li>• Management control</li> <li>• Organizational loyalty</li> <li>• Technical possibilities</li> </ul>

## 2.4. From professional closure to professional opening

From an interpretative perspective, the adopter’s framework is constituted by professional boundaries and the contextual tendencies. This framework influences the professional perspective on adoption. However, since every professional has its own perspective on the world, mechanisms have to be present that connect multiple professional perspectives. These connecting mechanisms are determined as ‘boundary processes’.

### 2.4.1. Professional opening

Before the appearance and meaning of boundary processes is discussed, the question is addressed why these boundary processes are necessary. Why is it important in the adoption process that professionals have a (to some degree) shared perspective on the performance gap and hence the innovation?

The need for a shared perspective is dependent on the type of multidisciplinary innovation. The start of this chapter distinguished four types of innovations: (1) standardized procedures, (2) standardized services, (3) integrated procedures and (4) integrated services. Every innovation has a different degree to which the innovation requires a change in the primary process. The more an innovation demands a change in the core of the professional’s tasks, the more a collective framework for adoption is required.

The adoption of standardized procedures requires only modest changes in the primary processes of professional domains. Since their objective is to standardize work processes and methods between disciplines in a sequential manner, changes are external to the professional domain. Not content, but process is reorganized. A similar argumentation applies for the development of standardized services. Although, new services have to be developed,

collective cooperation between domains is limited since it still requires only sequential cooperation. However, parallel coordination has a reciprocal and dependent character. It requires a shared focus of participating domains on the innovation. In other words, professionals equally have to regard the contemporary situation as suboptimal and have alike expectations about the optimal situation to participate in the establishment of a new service. These types of innovations involve reciprocity and dependency, and thus a change in the content of the primary process of the professionals involved. This is most demanding for the development of new services, since these are a radical disruption from past practices.

It is thus argued that a collective perspective is required for the adoption of more integrated types of multidisciplinary innovations. Establishment of this perspective means that permeability of the existing professional boundaries has to increase. Adoption demands that professional boundaries are permeable and are open for other cognitive, technological and social insights. It implies that bridges have to be built between professional domains. These innovations requires 'professional opening' instead of 'professional closure'.

Especially in comparison to other (not professionalized) sectors, this is complicated. Boundaries have an institutionalized and individual component, as was showed in §2.2.4. As Ferlie et al. remark: "*They [professional boundaries] are less fluid and permeable than other communities of practice and do not readily allow for multiple membership or fluid participation*" (Ferlie, et al., 2005: 131). However, action of individual agents alters the boundary structure. This action may increase permeability of boundaries. Especially for the establishment of the 'integrated service' type of multidisciplinary innovations, this action is important.

What establishes this shared perspective on an innovation? Up to now, we have focused on external influences that determine the innovation decision, as the professional framework and the contextual pressure. To understand connections between professional domains, we should either focus on what innovations have to offer. Based on theories about diffusion policies and 'communities of practice', we argue that the bonding-value of domains is internal to the innovation. Innovations have the ability to connect domains.

#### **2.4.2. Boundary processes**

Multidisciplinary innovations require connections between domains. They require that existing professional boundaries become permeable in order to establish a collective perspective. Therefore, for the establishment of multidisciplinary innovations, and especially the integrated service type of innovation, the focus should be on how permeability of boundaries is increased to the extent that adoption takes place. However, how are bridges between domains build?

Not much is known why professional domains are connected. Ferlie et al. suggest that shared cognitive or social boundaries, such as shared scientific insights, establish 'multiprofessional communities of practice', although the situations that boundaries collide seem to be scarce: professionalism is more about determining what makes them 'special' than what is shared (Ferlie, et al., 2005). Communities of practice-literature has demonstrated that symbolic connections may increase the permeability of boundaries. They are known as 'boundary processes': "*activities that weave systems more tightly together*" (Wenger, 2000: 234-235).

Wenger distinguishes three types of processes, which have the capacity to bridge different professional domains and enable the adoption of multidisciplinary innovations by their symbolic virtues. These are:

- Boundary objects
- Interactions
- Brokers

#### *Boundary objects*

Boundary objects are artifacts, documents or concepts that are shared or sharable across different problem solving contexts. They enhance the crossing or spanning of established boundaries providing a shared framework for action (Wenger, 2000; Carlile, 2002). Based on Star (1989), Carlile categorizes the boundary objects in

- repositories, such as common reference points in data or shared data sets
- standardized forms and methods
- objects or models used for representation of a situation or problem
- maps of boundaries, as work flow matrices and process maps

Boundary objects have many different appearances in daily life. They can be a shared client file, where different departments record their client information or a document displaying a new organizational structure. ICT applications may have an important (symbolic) function as boundary object. Semantically, a boundary object is a concrete mean for individuals to specify and learn about responsibilities and dependencies of different domains. Pragmatically, it facilitates a process for the transformation of knowledge (Carlile, 2002). However, Carlile's interest in boundary objects is from a cognitive and technical perspective: how can knowledge be transferred from one domain to another? Wenger complements this view with a social perspective. Objects could serve as a 'social bonding' mechanism. Objects can symbolize a shared practice of experience and unite or bond different actors. Hence, boundary objects are believed to have the ability to bridge different dimensions of professional boundaries.

#### *Interaction*

Second, interaction is regarded as a bridge between different professional 'communities of practice'. This could be random encounters between actors or a consciously undertaken action to establish boundary crossing (Wenger, 2000). However, not every interaction is a boundary process. Interactions have to be meaningful. Actors have to undertake action that enables boundary crossing. "*It is about informal meetings in the halls, about networking in general and championing in particular, also about quasiformal arrangements such as teams, task forces, and other work groups*" (Glouberman & Mintzberg, 2001: 75). Sometimes interaction involves a broker or an object to make an interaction meaningful. Sometimes this is a more or less spontaneous emerging process between actors.

#### *Brokering*

The last type of connection, brokering, requires people who establish a connection between one domain and another. "*Brokers are able to make new connections across communities of practice, enable coordination, and –if they are good brokers– open new possibilities for meaning*" (Wenger, 2000: 109). Brokers can be regarded as opinion leaders. They are able to connect different professional groups and management. However, as Wenger argues, the task of a broker is complex. It requires translation, coordination and alignment of different perspectives. It also requires legitimacy to influence practices and people (Wenger, 2000).

When the theories about boundary processes is translated to the practice of innovations, we see that they have much in common with another concept: Diffusion policies. Korteland and Bekkers have suggested that diffusion policy may influence the decision to adopt an innovation. They have the ability to frame the performance gap. This is interesting considering that for the adoption of (integrated types) of multidisciplinary innovations, professionals of various disciplines need to have a shared perception of the adoption gap. They all have to perceive the contemporary situation as suboptimal and have shared expectations about the optimal situation. Diffusion policies may contribute to this perception.

Diffusion policies are strategies that spread knowledge about the innovation. This attributes to the different stages of adoption: it provides information on the first stage, but also may alter the formation of an attitude towards the innovation in the second stage. Hence, it influences the performance gap and the adoption-decision. Although diffusion policies are relatively underexposed, Korteland and Bekkers suggest that *“inventors, (early) adopters and intermediary organizations can play an important role in spreading an innovation”* (Korteland & Bekkers, 2008: 77). For the adoption of multidisciplinary innovations, four diffusion strategies are important:

- Codification and distribution of knowledge, for example by brochures, protocols and project plans
- Creation of a mutual process of communication and learning
- The use of ambassadors or ‘entrepreneurs’, which are individuals that actively promote the adoption of an innovation
- The attention of media

The impact of these strategies is dependent on the degree to which the organizing organization is willing and able to share knowledge about the experience of the organization and thus is willing to apply these diffusion strategies (Korteland & Bekkers, 2008).

The discussion of ‘boundary processes’ has much resemblance with the perspective of diffusion policy as enabler of adoption. As table 2.5 shows, combination of both insights provides a comprehensive framework of characteristics of diffusion policies on one side and their possible connecting effects on the other. Brochures and project plans, which are purposefully launched as codification and distribution strategy may function as symbolic objects to connect a group of potential adopters. The role of media is either regarded as a boundary object, for example an award, which supports the establishment of a shared meaning. Interactions may be meaningful when organizing organizations create learning environments where insights are shared and a common understanding and group feeling is established. Last, entrepreneurs and ambassadors with a high-status and legitimated position, may be brokers that have a *liaison* function in connecting different domains.

**Table 2.5: Boundary processes & diffusion policies**

Boundary processes	Diffusion policies
Boundary Objects	<ul style="list-style-type: none"> <li>• Codification &amp; distribution strategies</li> <li>• Attention of media</li> </ul>
Interactions	<ul style="list-style-type: none"> <li>• Mutual processes of education and learning</li> </ul>
Brokers	<ul style="list-style-type: none"> <li>• Entrepreneurs &amp; ambassadors</li> </ul>

## 2.5. Towards a conceptual framework

The described theories are applicable to the research problem we have addressed in the introduction. Figure 2.1 graphically shows how theories relate and how these are used to answer the central question. Literature about the private sector has emphasized that adoption takes place when decision-makers regard the contemporary situation as suboptimal and expect that this can be improved. This is the *performance gap*. Theoretical insights differ on how the construction of the performance gap should be studied. Traditionally, functionalist streams of literature use a ‘logic of consequence’ approach. They emphasize that the performance gap is based on prior preferences about organizational performance, on values of efficiency and effectiveness. In this stream of literature, it is the manager who judges the gap in performance and decides about adoption of an innovation. Recently, public sector literature advocated an interpretative perspective on the performance gap. This literature stresses that politicians and policy-makers *construct* the performance gap in a social context. A ‘logic of appropriateness’ approach to innovation is advocated. The performance gap is determined by values of collective efficiency and effectiveness, and by improvements in transparency and accountability in service delivery. The difference with the functionalist approach is that this gap is not ‘out there’ waiting to be discovered, but constructed by decision-makers.

The conceptual framework in figure 2.1 exemplifies these relationships. The first stages in the adoption process, the awareness and attitude formation phase, are determined by the adopter’s framework and the perceived performance gap. Based on the theoretical discussion, we assume that the adopter’s framework of professionals is established by boundaries that demarcate the professional domain, as well as by reaction towards tendencies in the context of the professional. This adopter’s framework influences the perceived performance gap. Since adoption of multidisciplinary innovation requires that boundaries are permeable to insights of other professional disciplines, domains have to be connected. Boundary processes are factors that connect different perspectives and establish a shared perception of the performance gap.

The third phase of the adoption process, the decision phase, is derived from this perception of the performance gap. Since we are interested in situations where professionals decide to adopt, we consider only the positive outcome of decision-making and do not consider situations where innovations are rejected.

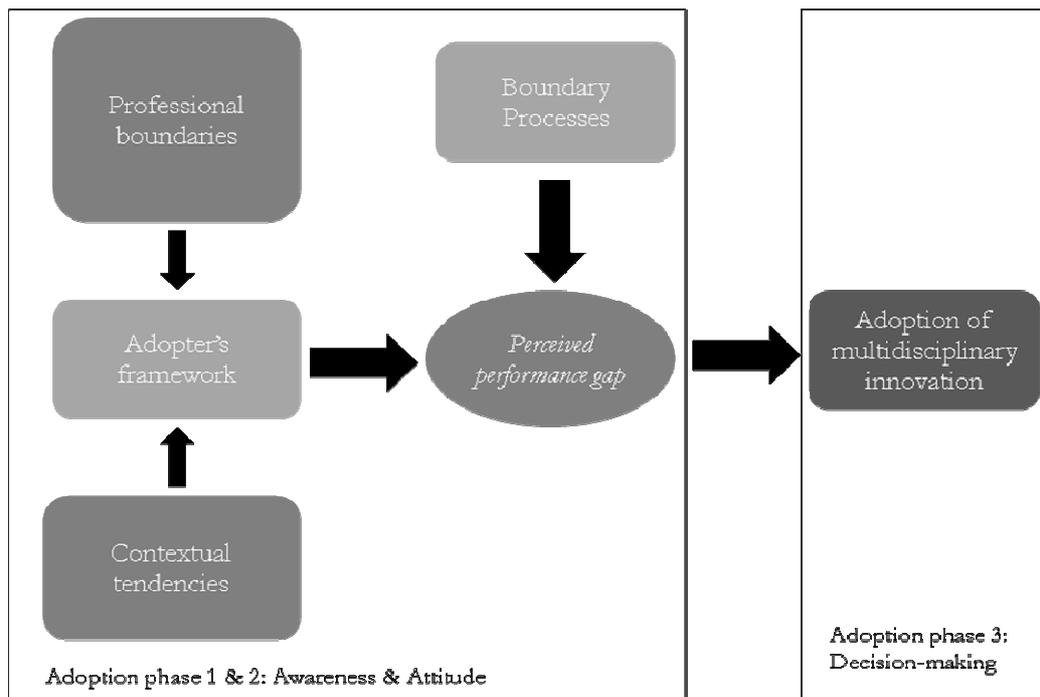


Figure 2.1.: Conceptual framework

## 2.6. Conclusion

This chapter presented the theoretical framework of this research. It explored literature about the central concepts. As is demonstrated, innovation is a complex phenomenon. It is a new practice, which involves not just invention of a new idea, but also adoption and implementation. It may be a process or the outcome of a process. Above all, it is a disruption, a departure of the status quo. Scholars attempted to categorize innovations, based on the objective an innovation may have, such as development of new processes, products or services. Based on existing classifications of innovations and multidisciplinary practices, we have built a typology. This typology has two dimensions. The first is the objective of the innovation. This may be a process or a service (since we consider improvements in social service delivery, the focus is on services instead of products). The second dimension is the coordination-structure of the innovation, the organization of multidisciplinary. This can be sequential, aimed to standardize practices, or parallel, aimed to integrate practices. Four types of multidisciplinary innovations are distinguished: ‘standardized procedures’, ‘standardized services’, ‘integrated procedures’ and ‘integrated services’. The last type is considered as most intensive because this type requires an integrated approach and a shared attitude for development of a new service.

The performance gap between the suboptimal and the optimal situation is considered as the central mechanisms for adoption. Theoretical insights differ on how this performance gap should be studied. Functionalist approaches assume prior preferences about the optimal situation. Interpretative approaches argue that ideas about the optimal situation are constructed in a specific context and are dependent on the perception of this context.

The theoretical discussion shows that the position of professionals in adoption literature is underexposed. Prior theories assumed a top-down approach, emphasizing the role of managers and policy-makers in the adoption decision. Considering the autonomous and exclusive position of professionals in society and in organizations, it is

unlikely that managers or policy-makers can enforce adoption of innovation by professionals. Therefore, these approaches are insufficient to understand the professional adoption process. This study introduced a third adopter's framework: the 'professional logic', determined by the boundaries of the profession. Literature about professionalism showed that professional domains are demarcated by professional boundaries. These boundaries have three dimensions: a cognitive dimension, distinguishing specific knowledge, a technical dimension that stresses the technical abilities, methods and competences, and a social dimension. This last dimension determines the social norms and values that have to be followed, which are determined by professional associations and taught in (post-) education programs. Boundaries demarcate the exclusiveness of the professional domains. They demarcate professional domains from other professions (inter-professional struggles), from other professional segments (intra-professional struggles) and from other actors as managers and market parties.

This chapter showed that ideas about professionalism have changed over time. The first attempts in the 1950s and 1960s treated the professional isolated from its context, by aiming to describe who was a professional and who not. Attention for contextual influences raised in the 1970s and 1980s when more critical approaches to professionalism were developed, emphasizing the dominant and uncontrollable position of professionals in organizations and in society. From the 1990s, context became a central aspect in studies of professionalism. Since this period, professionalism is increasingly discussed in comparison to other parties, as management and markets. Professionalism is regarded as a *legitimization-strategy*. Professionalism implies being different, 'exclusive', in a specific context. Professionals have to show managers and other market parties that they are legitimate to have an autonomous position in the organization and that they have the authority to make decisions about service delivery. The theoretical discussion shows that tendencies of marketization and bureaucratization increases the need to demarcate the professional domain. Some scholars have argued that this will result in de-professionalization, i.e. the vanishing of the exclusive position of professionals in society. However, others have stated that actually re-professionalization should be the focus in contemporary research: on how professionals construct their exclusiveness in this dynamic context. The latter seems to be more applicable to a world where knowledge-based occupations are expanding and professional values are increasingly strengthened in the work place. However, to understand the adopter's framework of professionals, one should thus consider both professional as contextual influences.

Theoretically arguing from the professional logic of adoption, multidisciplinary innovations will not be established because every domain (and segment) has its own insights about knowledge, appropriate methods and social norms and values. Because every domain regards itself as 'exclusive', they expect this 'exclusiveness' is incompatible with other domains. The adoption of multidisciplinary innovation requires that boundaries are permeable to insights from other domains. Moreover, it requires a shared perception of the performance gap, especially the adoption of the 'integrated service type' of innovation. Literature about 'communities of practice', argued that permeability might be raised by 'boundary processes'. Boundary processes have a symbolic value by connecting people of various domains. They have the ability to reframe the narrow professional perspectives into a shared perspective and hence establish a mutual perception of the 'performance gap'. They are bridges between the domains. A recent publication of Korteland and Bekkers emphasized that diffusion policies of the organizer of the innovation, may be beneficial to the adoption process: diffusion policies enable the spread of knowledge about the innovation. They may function as boundary processes, influencing the perception of the performance gap.

To make the concepts of this conceptual framework more concrete, they are applied in a specific locus: the health care sector. This sector is regarded as the classical example of professionalism. However, the 'Golden Age' for health care professionals is over. They have to deal with marketization and bureaucratization, because of severe challenges for the sector. Therefore, innovation and integration of professional domains are among the top priorities for efficient and high quality health care practices, as the next paragraph will show.

### 3. Health care: Where boundaries flourish

To study adoption of multidisciplinary innovations, the health care sector is the ultimate context to do this. “The Golden Age of Medicine” is *the* example of flourishing professional knowledge and autonomy. However, as in other sectors, the need for health care professionals to change is high. Changes in patient’s needs and limitations in supply are directing to more integrated and renewed health care. This chapter will describe the locus of this research. It starts with explaining the characteristics and challenges for the Dutch health care system (§3.1 & §3.2). Paragraph 3.3 discusses the appearances of multidisciplinary innovations. The last section provides an overview of the role of professional boundaries and contextual tendencies that influence this sector.

#### 3.1. The Dutch health care system

The World Health Organization (WHO) determines a health care system as “*all organizations, institutions and resources devoted to the production of actions whose primary intent is to improve health*” (WHO, 2010). A health system comprises four functions. Core business is (1) proficiency of care services. To be able to do this, a health system requires (2) generated resources, (3) financing and (4) stewardship, i.e. steering and monitoring of the system. In this paragraph, these functions are summarized in three elements of the Dutch health care system: organization, governance and finance.

##### 3.1.1. Organization

The ordering mechanism of the Dutch system is similar to other Western health care systems. The organization can be studied on the macrolevel of functions and on the mesolevel of organizations and professions (Dalnoij, Kulu Glasgow, Klazinga, & Custers, 2001). On the macro level, the functions of the system are divided in cure, care and prevention/public health. On the meso-level, the system is ordered by organizations and professions. Organizationally, different institutions characterize the system. The accessibility of these institutions varies. Since the 1970s, the Dutch system is divided in *echelons* of primary -easily accessible- and secondary –referred- care. In vertical and horizontal aspects, professions are clustered as well. Vertically, there is a hierarchy between medical specialists, paramedics and (specialized) nurses. Horizontal professional specialization is visible in medical disciplines, such as cardiology, neurology and physiotherapy.

##### 3.1.2. Governance

Governing such a complex organization is a difficult mission. After World War II the Dutch system was governed by two principles: professional self-regulation and government intervention (Bal, 2008). The first was the leading principle, giving space to professional autonomy. The ‘Structuurnota Hendriks’ of 1974 ended this Golden Age of professional autonomy. This led to increase of bureaucracy and centralization (Van der Grinten & Vos, 2004). Similar reactions were visible in other countries, for example in the British NHS (Harrison, 2009). An influencing report of the Commission Dekker in 1987 opened possibilities for market incentives in the system (Dekker, 1987). The current system is characterized as ‘regulated competition’. The governments regulates competition between institutions, professionals and health insurance companies (WRR, 2004). This is regarded as a *hybrid* system, combining different forms of steering mechanisms including public and private incentives. The system is a

precarious balance between health insurance companies, government, professionals and the civil society. The latter have the form of multiple united patient organizations and advisory boards in health care (Bal, 2008).

### **3.1.3. Finance**

The financing scheme of the Dutch health care system follows on this hybrid structure. On the first of January 2006 a new health care insurance system was installed. After years of political debate the division between a sickness fund scheme ('Ziekenfondswet') and private health insurance, was replaced by single mandatory legislation ('Zorgverzekeringswet') covering the entire population (Maarse & Bartholomé, 2007). The new system supports the market competition in health care. Market financing requires innovation to come to an equilibrium of high quality supply and demand. Health insurance companies are supposed to compete on premiums, services and health care plans to formulate demand. They negotiate with health care providers on prices, quality of service and volumes of care (Maarse & Bartholomé, 2007). Either for health care providers, market competition is incorporated in their financing schemes. Since 2005, payment for health care services is standardized in Diagnosis Treatment Combinations (DBC). Medical treatments are described and priced according to prefixed rates.

The Dutch health care system is thus in organization, governance and financing schemes focused upon (coordinated) market regulation and professionalized decentralization. Paragraph 3.4 will elaborate on the system from the perspective of professional boundaries and tendencies in public service delivery. However, first we discuss some radical challenges the health care system faces in the near future

## **3.2. Challenges for health care**

The description of the Dutch health care system showed that the organization of health care is subject of major reform. Moreover, under influence of external societal changes and political pressure, market and bureaucratic influences have been integrated in governance, daily practices and language. However, it is likely that in the near future the sector requires further reform because of societal changes that challenge the existing health care system. In the near future, patients are different, there are less financial resources and the workforce available for care is shrinking (RVZ, 2010b).

### **3.2.1. Changes in demand**

Most actors in health care seem to agree that demand for health care is changing in two ways. First, because of the graying society and changes in life style, more people need care. People are getting older, although not necessarily healthier. They increasingly chronic ill and often they have more than one disease (RIVM, 2010). Second, the position of patients changes. Anno 2010 this patient emancipation is either strengthened by developments on the internet. Autonomous of the changes in governance reorientations, the information position of the patient is changing because of the use of ICT (Gerads, Hooghiemstra, Arnold, & Heide, 2010). After a phase where internet was mainly used as information provider, nowadays the internet is much more than this: It is 'Health 2.0'. The core of this Health 2.0 movement lies in active participation of consumers or patients. *"It is a social development, whereby the users of online social networks (often based on Web 2.0 applications) determine the strength of those networks"* (RVZ, 2010a: 13). The strength is that it enables citizens or patients to manage their own health or disease. It may provide them an active role in their treatment.

### 3.2.2. Changes in supply

Besides this, either on the supply side changes are challenging professional practices. The challenges concentrate on finance and labor. According to estimations of the Institute for Public Health and Environment (RIVM) and the Bureau for Economic Policy Analysis (CPB), expenditures will rise to about 4 to 5% per year, taking into account the increases in demand for health care (CPB, 2010; RIVM, 2010). Although it is a political debate how much money is spent on health care, parties seem to agree that it is impossible to maintain the same growth rate in health care expenditures<sup>3</sup>. Growing demand for health care implies that the amount of people working in health care has to increase, especially the workforce of nurses. However, it is questionable if economic growth will be satisfying to find and pay these extra people. The labor force is shrinking in the coming years because the baby boom generation will retire. This will increase the pressure on productivity and hence, on wages. In the future, it will thus not only difficult to recruit people to work in the health care sector, but also to have enough money to pay them.

To conclude, these changes in demand and supply, are putting pressure on the contemporary health care delivery. However, they may enable opportunities for new ways of thinking and acting.

### 3.3. Innovations in health care

It is questionable if the delivery of more complex services, with fewer resources, will be constituted within the current setting in health care. The changes in demand are unavoidable: People *are* becoming older, less healthy and wiser because of internet-use. How to respond on the supply side? In politics as in the health care sector consensus is that innovation is *the* promising solution. Innovation is 'hot'; already 3% of health care expenditures are dedicated to innovation projects. In comparison, this is 20% more than in other sectors (RIVM, 2010). Often, innovation budgets are dedicated to technical improvements: new instruments and more advanced machinery.

Because of the limitations on the supply side, organizational innovations are becoming the center of political and organizational attention. Organizational innovations are regarded as the magic spell to economize the use of money and labor. These type of innovations promise more efficient and effective use of scarce resources. The Dutch Heroverwegingscommissie<sup>4</sup> recently appointed effectiveness on the microlevel of health care supply as one of the headlines in economic health care reform (Commissie Heroverweging Curatieve Zorg, 2010). The message is clear: Health care should be organized in a way that fewer resources lead to high quality outcomes.

Innovations leading to multidisciplinary practices seem thus be the 'perfect' answer to deal with the challenges that approach the health care sector. However, as in other sectors the establishment of innovative practices goes slow. Often the lack of innovation practices is assumed to be, because of financial restrictions. A recent advise about hospital care Schrijvers et al. report that "*it lacks financing for start up, research, development and implementation costs of innovations*" (Schrijvers, et al., 2010: 11). This paragraph presents the different appearances multidisciplinary innovations might have in the health care sector. The next paragraph will focus on the role of professional

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<sup>3</sup> Interesting is that because of the professionalized decentralization, the government has only little influence on *how* this money is spend

<sup>4</sup> In September 2009 the Dutch Government announced the assignment of 20 'Heroverwegingcommissies'. These task forces had to develop argumentations for cut backs on government expenditures for 20 policy sectors.

boundaries and the influences of business and market ideas in the context in which these innovations have to take place.

### 3.3.1. Four types of multidisciplinary innovations in health care

Paragraph 2.1.2. showed that multidisciplinary innovations focus on restructuring of existing practices or lead to the development of new services. To clarify the different opportunities for multidisciplinary innovations in health care, table 3.1. is applied to the specific locus of this research, providing examples on different types of multidisciplinary innovations in health care. They are structured around a certain disease or patient-type.

**Table 3.1: Different types of multidisciplinary innovations applied to health care**

		Objective	
		<i>Process</i>	<i>Service ("clinical")</i>
Structure	<i>Sequential Coordination</i>	Standardized procedures <i>Pathway for hip replacement</i>	Standardized services <i>New diagnostic of Lymphoedema</i>
	<i>Parallel Coordination</i>	Integrated procedures <i>Breast cancer treatment</i>	Integrated services <i>ParkinsonNet</i>

The four types have different appearances. Starting on the upper left, pathways are multidisciplinary innovations that are sequential structured. At first glance, they have much in common with Ford's assembly line. In this type of innovation, existing cure and care are systemized. They are developed for specific needs with relatively high organizational complexity (Oosterbrink, Raatgever, & Razenberg, 2010). An example is pathways for hip replacement. Ambitions behind this type of innovation are grounded in efficiency and cost-reduction. Often they are introduced by management (idem).

As Oosterbrink describes "*When duration and course of disease are unpredictable [...] a pathway on the individual level is more appropriate*" (Oosterbrink, et al., 2010). More complex diseases require thus a more integrated approach. Moreover, it asks for parallel coordination. This type of innovations involves delegation of tasks and re-clustering of activities. In oncological care this type of innovations is strongly developed. For the treatment of breast cancer, health care professionals cooperate intensively to make faster and more accurate diagnosis and treatment possible. Contrary to standardized procedures, professionals have to adjust to and depend on other professionals, because the disease is less predictable (see: Nationaal Programma Kankerbestrijding, 2010).

The innovations on the right of the table refer to practices that not existed before. However, as Schrijvers argues, in health care this type of innovation often involves also changes in processes. He calls them 'clinical innovations'. These innovations focus on improvements in diagnosis and treatment (Schrijvers, et al., 2010). Just as process-innovations, they may be sequentially or parallel coordinated. An example of *standardized services* is new

multidisciplinary diagnosis techniques for the Lymphoedema. This new technique uses the existing practices of disciplines, although combining them to diagnose Lymphoedema based on a new method (see: Schrijvers, et al., 2010).

New practices may also be developed in a network-structure, being *integrated services*. For example, this is done for dementia care. In this network, medical specialists, home care organizations, psychiatric institutions and other organizations related to care for elderly, are united. Each of them individually dealt with dementia patients before. However, in this system they are connected and working in a new organizational structure. They provide a new service for dementia patients and their family. Another example of this type of multidisciplinary innovations is ParkinsonNet. This is a (online) concept uniting different health care professionals working with Parkinson disease patients. It is presented as a network structure, which means that participants are interdependent. The complex and unpredictable clinical picture are the motivation for initiation of a more reciprocal and integrated approach (De Groot, Hout, Teeuwen, & Nauta, 2010).

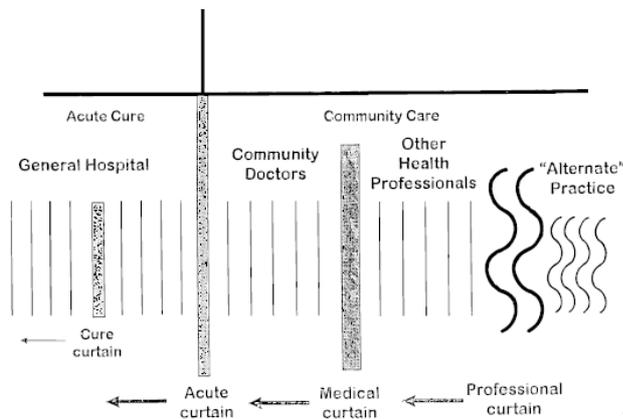
### **3.4. Adoption of multidisciplinary innovations in health care**

Paragraph 3.1 demonstrated that the Dutch health care system is characterized by complex organization, governance and financing mechanisms. Although multidisciplinary innovations are thus demanded to deal with the challenges on the demand and supply side, the characteristics the health care system are a barrier to the required integration and improvements in delivery of health care services. As the theoretical chapter has emphasized, to get a better understanding of the adoption process of multidisciplinary innovations, the focus should not be on the lack of technical abilities or financial incentives. Rather, we should focus on the central actors in these innovations: the professionals. Paragraph 3.1 made clear that the position of professionals in this sector is well established. However, market and management ideas are increasingly influencing professional behavior. This paragraph first discusses the role of professionals and professional boundaries in the health care sector. Second, it elaborates on the tendencies in the context of health care professionals.

#### **3.4.1. Professional boundaries in health care**

As presented, professionalism is strongly developed in health care. Domains are institutionalized in organizations, governance structures and financing schemes, as we have seen in §3.1. For example, the DBC financing schemes are developed per discipline. They financially demarcate the exclusiveness of the different disciplines. This well-established and institutionalized position of professional domains makes that in literature boundaries of disciplines are often displayed as static entities. For example, Mintzberg and Glouberman determined professional boundaries as ‘curtains’ (Glouberman & Mintzberg, 2001). These curtains reflect the organizational divisions discussed at the start of this paragraph. They are institutionalized boundaries. Specialized curtains are closed between ‘cure’, representing health care professionals that are focused on interventions, such as surgeons and cardiologist, and ‘care’, representing the ‘softer’ practices, such as nurses and therapists. More specifically, Mintzberg and Glouberman divide three curtains. The first is the acute curtain is based on institutions, distinguishing hospital care from other health care practices, for example in primary health care and nursing homes. Next, the medical curtain hangs between physicians, medical specialists and general practitioners, and other professionals, as nurses and therapists. Last, the professional curtain distinguishes in legal terms professionals from non-professionals. In the Netherlands this curtain is for example formally distinguished in act BIG, which determines *“actions towards the individual that aim to improve or*

preserve health care, as well as medical examination of individuals and provision of health advises” (Legemaate, Dute, Kastelein, Raas, & Van Veen, 2010).



**Figure 3.1: Curtains between professional domains in health care (Mintzberg & Glouberman, 2001)**

Static, institutionalized boundaries make it difficult to establish multidisciplinary innovations in the health care sector. However, boundaries either have an individual component, which makes them dynamic (Nancarrow & Borthwick, 2005; Sanders & Harrison, 2008). The studies of Nancarrow and Brothwick and Sanders and Harrison, have showed that societal changes and pressures in the local context of the professional may alter boundaries. Curtains may be opened, or permeable, to insights of other professionals.

### 3.4.2. Tendencies in the context of health care professionals

As §3.1. and 3.2. demonstrated, the tendencies of increased marketization and bureaucratization are also visible in the health care sector. The example in chapter 1 about the limitations on medical specialist’s budgets is striking. Based on existing literature, we will see what the impact is of marketization and bureaucratization in the health care sector.

#### *Marketization*

The Commission Dekker introduced in 1987 market coordination in health care governance, as §3.1.2. emphasized. This means that both public as private steering mechanisms are present, resulting in a decentralized system. Since the introduction, marketization has been consistently present in policy aims of the Dutch government (Van der Grinten, 2008). This tendency corresponds to other policy sectors where objectives of privatization in a neo-liberal climate are strongly stimulated. However, in comparison to other sectors, marketization in Dutch health care is strongly developed. As Van der Grinten has argued, this may be explained by the high degree of self-regulation, presence of private sector initiatives and the insurance mechanism (Van der Grinten, 2008).

Marketization in health care strongly aims to support demand-orientation of providers. The introduction of the new health care insurance scheme strengthened the role of insurers as purchasing organizations. This leads to tensions between health care providers and purchasers. Purchasers are increasing pressure who is in control of resource allocation and strengthening competition between health care providers. Although it is beyond the objective of this research to discuss the consequences of marketization in the health care sector in detail, what is striking is that government policies increasingly stimulate health care professionals to adapt their practices to the mechanism of

market coordination. However, at the first glance, marketization aims to cross boundaries of professional domains, but is also built upon existing professional divisions.

As the previous paragraph showed, as a consequence of institutionalization of professional boundaries, either new tendencies are not able to break existing boundary structures. Financing schemes that indicate marketization tendencies may obstruct incentives in the sector to cross professional domains. Although multidisciplinary financing schemes are developed, for example for care of Diabetes II patients, these developments are still in a preliminary phase and intended for the rewards of specific health care professionals. As a consequence, either in the market system, there are hardly structural financial incentives to cross existing professional domains.

#### *Bureaucratization*

Increasing bureaucratization of health care practices started in the 1970s by the Structuurnota Hendriks, as was emphasized in §3.1.2. The role of management of organizations increased, especially of hospitals, nursing homes and home care organizations. However, physical structures of health care organizations reflect to a high degree professional divisions of work. Hospitals are mostly structured around disciplines, reinforcing traditional boundary structures in brick walls. Metaphorically, hospitals may be regarded as an aggregation of multiple shops of various domains, such as 'shops' for cardiology, neurology and internal medicine. Next to this, the boundaries between primary and secondary care have a physical component. Hospitals often only provide secondary care, whereas the practices of general practitioners and other primary care professionals are located on separate locations.

Nevertheless, bureaucratization in health care has emphasized the clarification of roles and responsibilities in organizations (Hunter, 1996). Considering the challenges of §3.2 that often cross professional domains, management of health care organizations has the difficult tasks to align them in organizations and to secure efficiency and effectiveness. Although managers in this sector are strongly criticized, they became an essential part of organizations (Noordegraaf & Van der Meulen, 2008; Van der Meulen, 2009). Van der Meulen emphasizes that on one hand, managers have to assure that they have trust and respect of professionals. Hence, they are not able to implement government ideas, for example on integrated care, too stringent in the organization. On the other hand, when managers bend too much to the side of the health care professionals, they risk even more policy measures (Van der Meulen, 2009).

The consequences of increased bureaucratization are ambiguous. Although scholars have argued that incentives have led to increased incorporation of professionals in organizations, i.e. inculcation of managerial values and cognitive structures and increased organizational loyalty (e.g. Pollitt, 1993; Harrison, 1999), the tension between organizational and professional loyalty cannot be resolved. Attempts to incorporate professionals in health care organizations, for example as the Minister attempted in the case of limiting budget for medical specialist salaries, are still heavily fought by health care professionals, even with strikes.

As was argued in chapter 2, bureaucratization either has a technical side. Technical dependency of organizations is high concerning patient information for health care professionals. When multidisciplinary innovations are considered in the context of health care, the absence of a comprehensive national or regional system of health records (*Elektronisch Patienten Dossier*) is an important issue. This mechanism has to reduce dependency on organizational patient-information systems. Government and health care insurers argue that health care delivery will be more efficient and effective by a national system, although the establishment of such a system is (politically) complex.

Translated to the types of ICT of Zuboff, informing ICT to establish multidisciplinary innovations is missing (Zuboff, 1988). Although it is too complicated to discuss this technical (and highly political) issue in detail, the contemporary political debate and technological stance of the system, block the use of national trans-organizational system.

### **3.5. Conclusion**

This chapter presented the locus of this research: the health care sector. This sector faces radical challenges. The number of elderly people is rising because of the graying society. These people have often chronic and complex diseases. In addition, they are in situations that involve both medical as non-medical problems. Chronic illness and complex diseases increasingly require multidisciplinary solutions. Next to this, health care supply is under pressure. Supply is challenged by shortages in labor, especially of nurses, and a lack of financial resources. This is causing problems in times where demand is growing but public expenditures have to be reduced. More emphasis is placed by management and government on efficiency and effectiveness to secure accessibility and affordability of health care. This emphasis is translated in a call for multidisciplinary innovations. Among the different possibilities, the most promising option seems to be the *integrated service* type of innovation, where an integrated, reciprocal approach is a solution for more complicated and chronic demand for health care and efficient use of resources.

However, there is severe tension between the demand for this type of innovations in health care and the actual establishment. In health care delivery, professionals have a dominant position. Boundaries of various domains are strongly established. These demarcations are sunk in arrangements of governance in this sector, in organizations and financial structures. There are clear divisions between professionals and non-professionals, between medical specialists and nurses and between hospitals, primary care practices and nursing homes. As in other public sectors, in health care tendencies of marketization and bureaucratization are increasing putting pressure on professional practices. The Dutch health care system is governed by a mechanism of 'regulated competition'. In this system, the government is the regulator between supply, i.e. professionals and managers of organizations, and demand, i.e. individual patients represented by health care insurance companies. The role of management and purchaser parties, is growing. Health care insurers purchase health care service and negotiate about service delivery in behalf of patients. They organize 'demand'. Managers have to organize health care supply and thus have the complex task to 'manage' professionals.

Because of strong institutionalization of professional boundaries in health care, the abilities of management and health care insurers to enforce multidisciplinary innovation are limited. The system lacks structural incentives for innovation and integration of practices, especially to cross boundaries. However, considering the challenges for this sector, more multidisciplinary innovations are required to maintain affordable and accessible health care. Therefore, insight in what makes professional boundaries permeable in exceptional successful innovations is useful for future health care practice and policy.

## 4. Research Set-up

Since the main concepts of this study –innovation, adoption, professional boundaries, contextual tendencies and boundary processes- are explained, it is possible to focus on their empirical relation. This chapter focuses on the choices made in the empirical part of this study. First, the philosophical and methodological choices are explicated (§4.1). The second paragraph presents the operationalization of the core concepts: the performance gap, professional boundaries, contextual tendencies and boundary processes (§4.2). Third, the empirical research design is described in three activities: exploring, collecting and analyzing (§4.3). The chapter ends with a discussion how research quality is assured (§4.4).

### 4.1. Philosophical perspective: Interplay

Just as the professional system is divided in multiple domains and segments, on a meta-level the scientific world is fragmented. Researchers in organizational science distinguish a variety of domains. This differentiation was framed by Burrell and Morgan (1979) in four paradigms: the functionalist, interpretive, radical humanist and radical structuralist paradigm (Burrell & Morgan, 1979). The functionalist paradigm is characterized by generality, clarity and stability. It seeks explanations for social phenomena by defining ‘objective’ structures in society. Contrary, the interpretive paradigm, regards the social world as contextual, ambiguous and unstable. Subjective individual experiences are central in the research project, since the social world is “*an emergent process created by the individuals concerned*” (Burrell & Morgan, 1979: 114). The other two paradigms are based upon more emancipatory approaches of radical change. They focus on dominating structures that influence human beings. Whereas the radical humanist paradigm emphasizes the subjective side of human consciousness, the radical structuralist perspective makes structures of the social world its central object of research. As Burrell & Morgan argue, each domain has its own ontological and epistemological assumptions. Therefore, these paradigms are incommensurable.

The consequence is that each domain produces its own theoretical understandings. This implies that on one theme, various and sometimes conflicting insights are available. For the central theme in this research, different theoretical and epistemological understandings are presented. Insights differ on how these topics should be valued. They are multifaceted. For example, adoption may be understood from a functionalist perspective. Adoption is then determined by the ‘logic of consequence’ reasoning, emphasizing objective attributes and a rational decision maker. From interpretative stances, adoption is based on the ‘logic of appropriateness’, regarding sense making of an innovation as a social construction influenced by its context. A similar development is visible in the literature on professionalism. First, professionalism was based on a functionalist defining of objective aspects of the profession: ‘to be or not to be a professional’. In the last decades, this perspective has moved towards a more interpretative perspective, where professionalism is either regarded as a legitimization strategy.

#### 4.1.1. Multiparadigm research

From the perspective of Burrell and Morgan, it is impossible to connect these different perspectives. However, appreciation of both aspects instead of ignoring one perspective can attribute to the theoretical understanding of the question at hand. In this research, especially connections between functionalist and interpretative perspectives have the ability to generate new understandings.

In the past years, insights have risen that multiple paradigms can be utilized in one research design (Schultz & Hatch, 1996; Lewis & Grimes, 1999). To keep up the theme of this research: similar to professional boundaries, paradigm borders can be challenged and crossed. Paradigms are not necessarily incommensurable.

This perspective of multiple paradigms (meta-triangulation) offers interesting perspectives for this research. The use of these different perspectives can be sequential, where different paradigms are successively utilized, as well as parallel, where paradigms are compared (Schultz & Hatch, 1996). Schultz and Hatch offer two other possibilities for meta-triangulation. First, bridging is a possibility, where similarities between paradigms are emphasized. However, as scholars show, researchers have to be careful. The strength of paradigms is that they explicate underlying assumptions and worldview attached to the different understandings. As a researcher, ignoring these differences would undermine the potential of combining insights. To emphasize connections *and* to appreciate differences, Schultz and Hatch develop another perspective of meta-triangulation: 'Interplay'.

The interplay approach emphasizes the combination of paradigms in the analytical phase of research. Central to the interplay strategy is *"the maintenance of tensions between contrasts and connections"* (Schultz & Hatch, 1996: 534). Using a post-modernist approach, they argue that the functionalist and interpretive paradigm are connected since they are both based upon a modernist worldview. For example, they argue that 'culture' as topic of research, can be addressed from both perspectives. For the topic of culture, Schultz and Hatch argue that paradigms have three connections from a modernist perspective. Both the functionalist and the interpretative paradigm assume that culture is a pattern, which has essence and underlying assumptions. Second, in both perspectives culture is regarded as 'static'. The third connection lies in the observation that both research paradigms are focused on structures and processes. These three connections –seeing a phenomenon as a pattern, which has an essential meaning and static entities–, provides a starting point to combine the various understandings which are available in the field of professional adoption. Similar to culture, it is possible to study professional adoption from both perspectives. As was stated, professional adoption is regarded as a decision based on the perceived performance gap, coming forth of underlying assumptions and meanings. This is unlike more post-modern ideas, which advocate fragmentation and discontinuity, and absence of these underlying structures (Schultz & Hatch, 1996). Next to this, adoption is regarded as more or less static process, in which different elements are linked together.

#### **4.1.2. Appreciating differences**

Applying an interplay strategy requires not just valuation of connections between paradigms. Also, differences have to be appreciated. This process of 'paradigm bracketing' (Lewis & Grimes, 1999) is necessary to understand alternative points of view and establish an effective groundwork for data analysis. This implies that the phenomena of interest are defined in both perspectives. As Hatch and Schultz state, the differences between the paradigms should not be treated as contrasts that have to be resolved. Rather, they should be recognized in order to see their interdependence (Schultz & Hatch, 1996). They emphasize three tensions, based on assumptions of the functionalist and interpretative perspective. The first is the contrast between a generalist perspective and a contextual perspective on the topic. The second is the tension between a stable approach, implying that the topic of interest can be studied from any perspective with the same results, and an unstable approach. The interpretative paradigm advocates instability of concepts, which means that how a topic is seen is depending on the perspective. The last tension is between clarity and ambiguity. The first emphasizes the construction of reality by categorical analysis, whereas the latter stresses that this is impossible because concepts are ambiguous and local constructions.

For this research, adoption is defined in a functionalist way, by insights of private sector literature. From this perspective, the performance gap is determined by prior preferences of the adopter. However, from an interpretative perspective, the focus is on the construction of these prior preferences, based on the adopter's framework in the local context. This perception is argued to be influenced by professional boundaries and contextual influences.

#### **4.1.3. Qualitative research design**

The interplay perspective, combining a functionalist and interpretive strategy, requires a delicate research design. Differences and connections are emphasized in analysis of literature and data. To be able to combine the different insights in one research design, this study is based on a qualitative approach. Whereas a quantitative design aims for objective and measurable concepts, a qualitative research focuses on specific situations or people, stressing words instead of numbers (Maxwell, 2005). This makes it suitable to include both functionalist as interpretative perspectives.

Central in this study are the factors influencing the adoption process of multidisciplinary innovations and the meaning they have for professionals in health care. As the Handbook of Qualitative Research presents: "*Qualitative research is a situated activity that locates the observer in the world*" (Denzin & Lincoln, 2005: 3). From a functionalist perspective, this implies a more deductive approach of testing ideas about adoption of multidisciplinary innovations. From an interpretive perspective, it focuses on the construction of the social reality by the respondents. This is not problematic by using an interplay strategy, as long as the researcher is aware of the tensions and connections between the paradigms.

## **4.2. Operationalization**

Combining a functionalist with an interpretative perspective makes it more difficult to describe what is 'out there'. The different perspectives are united in the conceptual framework presented in §2.5. This framework is the foundation for data collection and analysis. To make the core concepts in this study concrete, they are operationalized in several items.

Operationalization displays the tensions and connections between the paradigms. On one hand, operationalization presumes that concepts are general, clear and stable and can be split in several dimension and indicators. On the other hand, from an interpretative point of view, concepts are local, ambiguous and instable. This study focuses on the paradigm connections as Schultz and Hatch have presented, to be able to create an operationalized outline for data collection and analysis. This paragraph presents an operationalization of the concept of 'the performance gap', 'professional boundaries', 'context' and 'boundary processes'. The aspects of each concept attributed to the construction of the topic list for semi-structured interviews. In analysis, they were used for selective coding.

#### **4.2.1. Perceived performance gap**

Based on available literature, adoption is in this study regarded as "*the decision of an individual actor to engage in an innovation based on the perceived performance gap*". We distinguished two ways to study the performance gap. From a functionalist perspective, it was assumed that a perceived performance gap is based on prior preferences of the adopter. Based on research of Ettlie (1983), operationalization of the performance gap was based on three elements:

- Unsatisfied conditions in the contemporary, pre-innovation, situation

- Expectations about how this situations should be improved in the future
- The perception of how the innovation will attribute to bridge this gap

Another approach is interpretative. This focuses on the construction of the performance gap. The same operationalization was regarded as appropriate, although the context in which the construction takes place, has to be taken into account.

#### **4.2.2. The adopter's framework: Professional boundaries and contextual tendencies**

When the performance gap is regarded as a construction, the factors that influence the construction are taken into account. We focus on two factors: professional boundaries and contextual tendencies.

##### Professional boundaries

Professional boundaries are the cognitive, technical and social demarcations to distinguish the exclusive professional domain from others. As was presented in §2.2.4, each dimension can be described by indicators. These indicators are not exclusive: they are connected and sometimes overlap. The operationalization of the dimensions is summarized in attachment 1.

##### *Cognitive boundaries*

Cognitive boundaries are knowledge-borders of the professional domain. Four items indicate them:

- The first indicator of the cognitive boundary is knowledge and skills. These are operationalized in knowledge claims and formal education. Knowledge claims are statements in which the professional expresses superior insights, which other professionals do not have. Formal education refers to the schooling at official institutions.
- Second indicator is the scientific foundation. Operationalization focuses on several aspects. Based on the study of Ferlie et al., the first part on the operationalization is scientific evidence for practice (Ferlie, et al., 2005). The second part is the existence of professional scientific associations. These are formal institutions that are responsible for development of scientific knowledge about the professional field. Another aspect, which is important for the process of professionalization, is the presence of an academic base. This is the existence of an academic faculty in the field of the professional discipline.
- Another indicator of this boundary is expertise. This is expert knowledge in a particular (sub)field. It is degree to which a professional exclusively treats patients with a specific characteristic or disease.
- Last, consumer view is an indicator of cognitive boundaries. Consumer view is the perspective a professional has towards the person that receives his service. An important distinction is between a biomedical patient view and an interpersonal perspective. Whereas the first focuses on the medical aspects of illness, the latter takes a more sociological perspective, emphasizing the interpersonal relationships. Moreover, this consumer view is expressed by the name of the consumer, i.e. 'patients', 'clients' or 'consumers'. Second, consumer view is determined on what is regarded as consumer's needs. This is about framing of consumer's demand.

##### *Technical boundaries*

Technical boundaries are the methods used, clinical guidelines and the demonstrated competences.

- The demonstration of specific methods and competences is captured in the respondent's role in treatment of Parkinson patients. Operationalization is made on techniques and specific therapies used for treatment.

- A guideline is a formal document formulated by the professional domain(s) that expresses the rules and principles that have to be followed in treatment. Operationalization of clinical guidelines emphasizes the availability of guidelines, whether respondents are aware of the existence of the guideline, and utilization in their treatment of Parkinson patients.
- Last indicator of technical boundaries is competences. These are the abilities to perform as a professional. These are characteristics, required for professional practices. We summarize them here as the professional ‘fingerspitzengefühl’, cooperation, empathy, rationality, social responsibility and organizational competences.

### *Social boundaries*

Social boundaries are comprised of four indicators: day-to-day interaction, professional based groups and associated networks, inter-professional meetings and education.

- Day-to-day interactions are the contacts a professional has in the intra-organizational situation. It is operationalized by the amount of meetings with organizational members of the same profession and meetings with organizational members of other professions.
- Professional associations are the cooperative links between people that have the same formal education. These associations are responsible for the spread of information about activities and developments in the professional domain. They are operationalized by membership and frequency of attendance of meetings.
- Codes of conduct are the formalized norms for how a professional should behave. They can be based upon professional and organizational standards. For physicians, the national medical association develops guidelines for professionals how to behave in specific circumstances. Either (larger) institutions have formalized codes of conduct for their personnel. This indicator is operationalized by compliance to these professional and organizational codes of conduct in daily practice.
- Last, education and post-educational training is another indicator of social boundaries. Education is the learning process professionals follow in order to gain their professional status. Post-educational training is done in order to maintain and improve this status. In the educational setting, actors meet their professional peers. Hence, it establishes the personal network of the professional, which may be important for work practices such as patient referral. Important is what education is followed, when and where.

### Contextual tendencies

Contextual tendencies are difficult to ‘measure’. However, the qualitative approach allows focusing on both presences of tendencies of marketization and bureaucratization, and on the other hand, to see what the impact of these tendencies is on the specific situation of the professional. Just as the professional boundaries, the contextual tendencies were divided in several indicators.

### *Marketization*

Tendencies of marketization are indicated by financing schemes, demand-focus and competition.

- Financing schemes are those economical and financial arrangements that establish a (regulated) quasi-market where demand and supply are balanced. It is operationalized by the dependency on payment schemes for service delivery. These payment schemes are DBC-schemes and AWBZ funding.
- Marketization assumes a ‘demand-focus’. The strong role of ‘demanding’ parties may conflict with the professional perspective on service delivery, where the professional determines the client’s needs. The

demand focus is operationalized by purchaser organizations, in the case of health care, the insurance companies. The focus is on whether professional are aware of the aspirations of purchaser organizations and to what extent this influences their practices and decisions.

- The Oxford Dictionary definition of competition is followed, by regarding it as “the activity or condition of striving to gain or win something by defeating or establishing superiority over others”. It is operationalized by feelings of rivalry between members of different organizations to be superior over others.

#### *Bureaucratization*

Tendencies of bureaucratization are indicated by the role of management, organizational loyalty and dependency on technical structures.

- The influence of management is here regarded as “the influence of a cooperative effort” (Noordegraaf & Van der Meulen, 2008). This indicator refers to an external party that attempts to influence practices. It is measured by to what extent respondents experience that an external party is influencing their behavior. Next to this, the influence of management is determined by the degree to which respondents adapted to the management discourse. This indicated by the terms respondents use which related to the management-perspective (§2.3.3.), such as efficiency, effectiveness and accountability.
- Organizational loyalty is the degree to which a professional feels connected to the organization he is employed. It is operationalized by the extent to which a professional feels committed to an organization. Commitment is seen as the situations when a professional does something for organizational purposes instead out of professional interests.
- The third indicator of bureaucratization is technical dependency. This is operationalized by the availability and use of informing and automating ICT. Informing ICT is based on information systems that deliver information about services, for example patient information (see the example of the national electronic health record in § 3.3.3). Automating ICT aims to standardize procedures and cooperation, for example patient tracking systems.

#### **4.2.3. Boundary processes**

Boundary processes are objects, people and events that have the ability to reframe the perceived performance gap, and establish a shared perspective among potential adopters. Diffusion policies may function as boundary processes. Based on Korteland and Bekkers, diffusion policies are regarded as strategies that spread knowledge about the innovation in behalf of the organizer of the innovation (Korteland & Bekkers, 2008). Not only presence of diffusion strategies is important for the perception of the performance gap. Rather, it is the impact these diffusion policies have. The symbolic meaning of diffusion policies, by enabling connections between multiple domains, is inspired on literature about the establishment of ‘communities of practice’. Star (1989) and Carlile (2002) provide useful insights about the operationalization of boundary processes.

- Boundary objects are those physical and digital artifacts that provide written information to potential adopters of the innovation, which stimulates the adoption process in a positive direction. Star and Carlile have presented them as repositories, standardized forms and methods, objects and models, and maps. In terms of diffusion policy, it is the presence of brochures, leaflets and digital information about the innovation, provided by the organizing organization.

- Interactions are described as meaningful encounters between actors, where a potential adopter receives information about the innovation. This may be a mutual learning process, as was suggested as part of the diffusion strategy (Korteland & Bekkers, 2008).
- Brokers are persons that initiate, facilitate and stimulate new connections and have a positive effect on adoption. They are identified as entrepreneurs or ambassadors that belong to the organization of the innovation or are connected to the organizer of the innovation.

The boundary processes are in three ways incorporated in the research process: *recognition* of one or more processes, the *relative importance* of each process and the *meaning* of a boundary process considering the construction of the performance gap.

### 4.3. Research Process

The interplay strategy has consequences for the research process. It requires that the researcher continuously moves back and forth between the two paradigms and is aware of their tensions and connections. The methodological part of this study was divided in three stages: (1) pilot interviews, (2) a nested-case study and (3) data analysis.

#### 4.3.1. First stage: Pilot interviews

The final design of this study was based upon pilot interviews. Aim of the interviews was inductively discovering the different perspectives on multidisciplinary innovations. Either they were an opportunity to test preliminary ideas of the theoretical analysis. In total, four formal interviews were held with six key figures in the health care sector: a medical specialist, a manager of large non-academic hospital, a director of a nursery school, board members the professional association for physicians (KNMG) and a consultant specialized in health care. Next to these formal pilot interviews, several informal conversations with employees of the RVZ were helpful to explore the research side. The formal and informal conversations showed on one hand the “*terminological quagmire*” of multidisciplinary innovations. On the other hand, they helped to pull the most important items out of the quagmire. They gave insight in ‘how things work’ within the professional domains and provided a fruitful framework to look to the empirical field. The information of the pilot interviews was used for operationalization of the key concepts in this study and the choices in case selection. Moreover, they provided insight in the world of health care professionals and were helpful to make sure that the interviews in the case study connected to the life world of the respondents.

#### 4.3.2. Second stage: Data collection

The empirical part of this research consists of a nested case study. This implies that multiple cases were selected of one innovation. Since ParkinsonNet is in a diffusion phase, it was possible to find three cases within one innovation. Information for case selection was gathered by information on internet, external reports, for example of De Groot et al. (2010) and by an interview with Dr. Munneke, director of ParkinsonNet. The case study is instrumental, because it is chosen to understand a broader phenomenon, i.e. professional adoption of multidisciplinary innovations. This is different from intrinsic case study designs, where cases are chosen because of their intrinsic interests in the particular case (Stake, 2005). This subparagraph answers methodological questions about this case study. What was the reason ParkinsonNet was chosen as an example of a multidisciplinary innovation? Why were Twente, Utrecht and Eemland selected as cases? Who were the respondents? And, how was interviewing organized?

### *The decision for ParkinsonNet*

Theory showed a wide variety of multidisciplinary innovations. The ‘integrated service’ type of innovations was regarded as most complex. It establishes a new service, which requires a shared focus including high dependency of actors in a network structure with limited possibilities to manage them ‘from above’. Because of this, adoption of this innovation requires a collective perception of the performance gap. To get insight in the complexity of professional adoption process of multidisciplinary innovations, an innovation was selected that approaches the ‘integrated service’ type innovation. Based on information by the organization, as information of external review (for example: De Groot, 2010), for four reasons ParkinsonNet was considered as an excellent example of an *integrated service-innovation*.

1. First, the innovation is set up as a network of health care professionals. Although there is a national coordinating organization, the innovation is presented as being an aggregation of autonomous regional networks.
2. Second, the scale of multidisciplinary is challenging. Chapter 3 showed that the health care sector is divided in many professional disciplines. Since many different professional disciplines are involved in these innovations, both in hospitals as in primary care settings, ParkinsonNet is an ambitious project. There are many bridges to be built and boundaries to cross.
3. Third, ParkinsonNet has an identifiable adoption process. Literature showed that it is difficult to isolate the phase of adoption. Invention, adoption and implementation are part of a continuous, non-linear process. However, to be able to identify the adoption phase, it is useful if the innovation is already established to a certain degree. In a later stage of diffusion, more information is available and uncertainty is reduced to some extent. The project is more concrete and adoption decisions are more deliberately taking. Therefore, isolating the adoption phase is easier in a later stage of diffusion.

ParkinsonNet is in this diffusion phase: In the past six years, 64 regional networks were established. The format is clear. It is known what the structure of the adoption and implementation is and what is expected from adopting professionals by the organization.

4. The last aspect to explain the decision for ParkinsonNet is derived from practical considerations. Interesting is that ParkinsonNet adapts to the Health 2.0 movement as was described in §3.2.1. Since (multidisciplinary) innovation in the future will probably be more and more related to web 2.0 -and the next 3.0 and 4.0 generations-, it is useful to take this significant social development into account when studying adoption of innovations in health care. Either, the presence of this ICT application could function as a boundary mechanism as §2.4.4. emphasized.

### ***ParkinsonNet***

*ParkinsonNet is an innovation that consists of regional networks of health care providers. The providers are specialized in treatment and care for people suffering Parkinson's disease. The network includes multiple professionals, such as physiotherapists, occupational therapists, speech therapists, medical specialists and Parkinson's Disease (PD) specialized nurses. The innovation is presented as 'new' by the organization, because it organizes care around the individual patient. The innovation includes a four-day training program about Parkinson's disease.*

*Based on: De Groot et al., 2010*

#### *The decision for three regional networks*

As was presented, ParkinsonNet exists in 2010 of 64 regional networks. Qualitative data was gathered from three networks in different parts of the Netherlands: Twente, Utrecht-Stad and Eemland. It was chosen to select respondents of three networks in order to be able to take the specific regional context into account. This is because the networks differ in scale, composition and moment of establishment.

The choice for three networks suited the instrumental purpose what ParkinsonNet was chosen for. Stake describes this approach of studying multiple cases as a collective case study: “[...] *it is believed that understanding [multiple cases] will lead to more comprehensive knowledge and, perhaps, better theorizing about a still larger collection of cases*” (Stake, 2005: 446).

In a collective case study, differences and similarities have to be valued. Therefore, a certain comparability of the cases was an important condition. Theorizing about the cases would not make sense when too many differences have to be taken into account. For this study, comparability was based upon three criteria:

- Moment of establishment
- Size of the network
- Composition of the network

First, the moment of establishment is an important factor in adoption. This factor was decisive in case selection. In the innovation decision process, potential adopters search for information about the innovation in order to reduce uncertainty (Rogers, 2003). Late adopters have more information about the innovation than early adopters. Knowledge about adoption and implementation in other networks is an important and often reliable source for new potential adopters. Hence, previous experiences with the innovation influence motivation to adopt or reject an innovation. Especially in professional communities with many communication channels, information spreads easily. It is thus assumed that the moment of adoption is influencing the motivation of adopters, because of the variation in information adopters have.

To take the information dissimilarities into account, it is decided to select cases which are established in the same time period. This period is set to eight months. Within this timeframe it is possible to take the other two criteria into account. Because it is not feasible to do real-time data collection, interviews are held in retrospective. This means that respondents are asked to reflect on events and their, now known, consequences. To limit the time participants have to go back in their memories, cases are selected which were established in a recent period. The establishment

of the innovation is measured to the start of the first training day. For the Utrecht and Eemland region, the education started in October 2009. For participants in the Twente case, the first day was in April 2010. However, since adoption is a *process*, the individual adoption process of awareness, attitude formation and decision making has started before.

Second, size of the network is determined by the national coordination team of ParkinsonNet. The prevalence of Parkinson's disease in a certain region determines how many health care professionals are necessary in the regional network. For comparable cases, regions with similar amounts of Parkinson disease patients were selected. The region of Twente is the first region that involves nutritionists, rehabilitation doctors, psychologists and social workers; therefore this region involves more therapists than the other regions. The Twente case involves 102 therapists, Utrecht, 32 and the Eemland case consists of 34 therapists.

The last condition is the composition of the network. Every network consists of physiotherapists, speech therapists, occupational therapists, nurses specialized in Parkinson disease and neurologists. The Twente region was the first region where this group of professionals was extended. To have true comparative cases, the amount of professionals of each discipline should be relatively similar. A prerequisite is to have equal conditions for both intra- and interprofessional competition. Based on Bucher and Strauss's struggles within the professional's domain, it is assumed that intra-disciplinary competition is determining behaviour of professionals. A similar approach accounts for inter-professional struggles, as were described by Abbott. Comparable sizes of various disciplines in each region are therefore a criterion for case selection in order to have similar situations of intra- and inter-professional competition. In the Twente case consists of 40 physiotherapists, 16 occupational therapists, and 11 speech therapists. The case of Utrecht consists of 18 physiotherapists, 7 occupational therapists and 7 speech therapists. The Eemland region comprises 21 physiotherapists, 6 occupational therapists and 7 speech therapists.

### *Sampling*

In total 19 informants were selected for the interviews. Of each discipline, one or two respondents were selected. This resulted in the selection of 10 professionals in Twente and 5 in Utrecht and 4 in Eemland.

The selection of the respondents in each network was random. Of each network in each discipline, a professional on the regional ParkinsonNet flyer was selected on number. This was considered a more appropriate method than selection by external parties, such as local coordinators of the network. The risk is that these local coordinators would only suggest close contacts and people with similar views to their own opinion.

In the Twente region, the interviews were done in cooperation with a PhD ParkinsonNet researcher of the Radboud University in Nijmegen. Because of this research project and the recency of the adoption process, more respondents were interviewed in the Twente region.

### *Semi-structured interviews*

Respondents were interviewed by using semi-structured interviews. In this approach, an *a priori* vision of a completely structured interview is combined with the openness of an open interview (Punch, 1998). The previously determined topics were guidelines for the interview. Within the topics, the respondent has the freedom to show his or her interpretation and to change the order of questions. Anticipation on the respondent is an important task for the researcher.

The interviews in the different regions were held between 31<sup>st</sup> of May and 26<sup>th</sup> of June 2010. For the Twente region, the interview guide was a coproduction of both involved researchers. The structure of the interview guide was based on the pre-ParkinsonNet situation (in Twente the contemporary situation), the adoption phase and the expectations of innovation for the future. These main categories remained unchanged for reasons of comparability. They were chosen to see what respondents expect from the future situation and what reasons and factors influence these expectations. After the first interviews, the focus and sub-themes were adjusted and refined. The interview-guide was either adjusted for the Utrecht en Eemland region. This was done to adapt to the timeframe of the respondents, since ParkinsonNet started already in October 2009. The topic lists are attached in attachment 2.

#### *Complementary methods*

Next to semi-structured interviews, data were collected in observation and document analysis. The possibilities for observation were limited, since this research was done in retrospective. However, there was one explicit observation moment during the multidisciplinary training day for professionals participating in the regional network of Twente. Next to this, observations were made during the interviews, for example to identify the physical structure of organizations.

The interviews were furthermore complemented with analysis of documents related to the ParkinsonNet innovation. Document analysis was based upon three sources: the multidisciplinary guideline of Parkinson's disease (2010), the regional flyers of ParkinsonNet and information available on the ParkinsonNet website.

#### **4.3.3. Third stage: Data analysis**

The data from the case study was recorded and transcribed. Observation-experiences were written down in detailed field notes.

#### *Coding data*

Data of the case study were analyzed by coding. According to Glaser and Strauss coding entails breaking down, interpreting and conceptualizing data (Glaser & Strauss, 1967). From an interplay perspective, data was analyzed with various interpretations of the research questions in mind. As Lewis and Grimes denote about multiparadigm coding: "*Interpretations become a combination of what researchers already know, what they read, and which lens they bring to the analysis*" (Lewis & Grimes, 1999: 682). Central in the analysis were the paradigm connections, which were presented by Hatch & Schultz (1996). Focus was on pattern, essence and static structures and processes. In this process, computer based analysis (MaxQDA) was helpful to structure the analytical stages and overview the data in a systematic, flexible and efficient manner (St. John & Johnson, 2000 ).

The trunk of the coding-tree was determined by the concepts of the conceptual framework in §2.5. The coding tree was elaborated by inductive analysis. The code tree is attached in attachment 3.

#### *Inductive versus deductive analysis*

The role of theory is a difficult issue in qualitative research. This especially applies when multiple paradigm lenses are used. Data analysis requires continuously moving back and forward between inductive and deductive approaches. From an interpretative perspective, inductive coding methods are used. This implies a process of open and selective coding (Boeije, 2010). Inductive coding is helpful to describe the adoption process. 'What do professionals do?' The interpretative approach allows emphasizing language and symbols to depict actor's sense making processes (Lewis & Grimes, 1999). This part of the analysis process describes the contextual, ambiguous and instable side of the

adoption process. This type of analysis was helpful to see the different meanings professionals attach to the adoption process of multidisciplinary innovation.

From a functionalist perspective, coding entailed analysis of manifestations of professional boundaries as were predefined in literature. Focus was on general patterns and stability in concepts over different cases. This deductive approach, based on the analytical framework, provided a tool for case comparison. As Miles and Huberman remark about this approach: *“the cases are ordered according to some variable of interest, so that you can easily see the differences [and] [...] patterns of more and less X in the cases”* (Miles & Huberman, 2004: 187). Combination of both interpretative understandings with functionalist insights, made it possible to see tension and connections between both paradigms.

#### *Case comparison*

A most-similar selection mechanism was leading in case selection. This is based on similarity of the independent variables, except one variable of interest (Seawright & Gerring, 2008). In this case, this was the influence of regional context. This selection was based on the assumption that local re-invention attributes to the adoption process (Rogers, 2003).

According to Miles and Huberman, in analysis case comparison of multiple cases can be case-orientated and variable-orientated (Miles & Huberman, 2004). Case-orientated analysis takes the case as analytical entity, looking to all aspects and associations within the case. Variable-orientated case analysis takes variables, derived from inductive and deductive analysis, as analytical entity (Miles & Huberman, 2004).

The first analytical steps were based on case-orientated analysis in order to study the different variables within the specific context. However, analysis showed that the similarities between regions were striking and regional re-invention did not take place. Conversely, differences between variables, such as professional disciplines and institutions were remarkable. This was not unexpected, since cases were mainly selected on basis of comparability. Although the moment of establishment, size and composition of the Twente network was slightly different from the other two regions, this did not strongly affect the narratives of the respondents. As a therapist in Utrecht states: *“I still have the feeling that I am at the start of something new”*.

In the variable-orientated analysis, the (operationalized) concepts of the conceptual framework were correlated to professions and organizations. This method for analysis allowed comparing boundary constructions, impact of contextual tendencies and the perception of boundary processes of various disciplines and various institutions in the local context of professions and institutions.

#### **4.4. Research quality**

Quality of research is difficult to determine by using an interplay strategy. From a functionalist perspective, validity and reliability can be measured. However, an interpretative paradigm complicates this quality check. Reliability, regarded as the standardization of measurements and possibilities for replication, is difficult because of the open-ended and dynamic character of interpretative studies. Validity, on the other hand, refers to the correctness of the measurement instruments. Since interpretative research does not assume an objective truth ‘out there’ to be discovered, the meaning of validity is questionable (Boeije, 2010). Hence, this study does not aim for statistical validity, based on accurateness and reliability of methods, but for analytical validity of the concepts used.

This does not imply that measures of reliability and validity are useless for this type of research. Adjusted to the specific nature of qualitative research, validity and reliability are either in qualitative designs useful concepts to secure the credibility of the results. The emphasis here is on the reflection on how the research process and the researcher's presence affect the findings (Boeije, 2010). The aim is not to present external validity of (statistical) generalizability. The results hold in the specific context of the case of ParkinsonNet, although further empirical testing may contribute to the conditions under which the results hold. In this research, research quality was assured in three ways: reflection on the researcher's role triangulation and participant reflection.

#### *The role of the researcher*

An important step to assure quality was reflection of the researcher's role. An interplay strategy requires that the researcher is critical and conscientious on its own position. The researcher has to stay sensitive when identifying paradigms and to shifts in perspective (Patton, 1999). Reflection on the role of the researcher was captured in observational, theoretical and methodological memos, which were gathered during the whole process. They present an overview of the considerations and choices during the research. This chapter is the summary of them.

#### *Methodological triangulation*

"Triangulation refers to the examination of a social phenomenon from different angles" (Boeije, 2010: 176). Methodological triangulation of interviews, observations and document analysis creates an image of the studied issue from multiple perspectives and a layered description (Boeije, 2010). Data of the semi-structured interviews were mirrored to the findings in observation and documents to test for consistency (Patton, 1999). Next to this, by using a collective case study, the issue is addressed in various contexts, making theorizing possible in a broader setting. The aim is not to statistically generalize the findings to a broader population, but rather to contribute to the development on theory on professional boundaries and mechanisms used in the adoption of innovations.

#### *Expert reflection*

Next to the use of multiple methods and cases, participants will have a possibility to reflect upon the findings during data collection. This is done by returning the transcript of the interview when desired by the respondent. The preliminary findings were discussed in expert meetings with the national project leader of ParkinsonNet, the ParkinsonNet researcher, involved in the Twente case and with experts from the RVZ. Participants did not necessarily have to agree with findings, since the researcher could have had access to different sources of information and another point of view. However, recognition of the constructed social reality was considered important to assure validity of the findings (Boeije, 2010).

## **4.5. Conclusion**

This chapter presented the research set up of this thesis. This research combines functionalist and interpretative paradigms in an interplay research strategy. This strategy emphasizes both connections as tensions between the different approaches. The paradigms are connected because they are both based on a modernist worldview. However, tensions arise between generality, stability and clarity, which are assumed, by the functionalist paradigm, and contextuality, instability and ambiguity, which are emphasized by the interpretative approach. This interplay-strategy is useful to combine analytical insights of both paradigms that are offered in available literature about innovation and professionalism. Operationalization of concepts is made to create useful indicators for the data

collection and analysis. This was based on the connections between the paradigms. The methodological part of this study was divided in three stages. *Exploration* of the research side was done by pilot interviews. The next step was *data collection*. This was done by a case study: ParkinsonNet. ParkinsonNet aims to establish a new service for Parkinson's disease treatment. The initiative is multidisciplinary, involving medical specialists, PD specialized nurses and therapists. Service delivery is regionally structured in networks. A multiple case study design was followed, using semi-structured interviews, documents and observation. On basis of moment of establishment, comparability of size of networks and composition of the networks, three cases were selected. Next, data was *analyzed* by computer-based analysis. Variables of different cases were compared in a variable-orientated case study approach. The interplay strategy combines functionalist and interpretive methods, which result in a continuously process of moving back and forth between inductive and deductive methods. Because of this interplay strategy, quality of the research deserves perhaps even more attention than in other research approaches. Central in the assurance of quality is a critical reflection on the role of the researcher in the process. Next to this, method triangulation and expert reflection assure that results are recognized in the field by health care experts.

## 5. Results

### 5.1. Introduction

*“I think patients benefit more by good organization of health care, than the next pill which evokes a marginal improvement”*  
(Neurologist).

This chapter presents the results of the empirical part of this study on the adoption of multidisciplinary innovations. Nineteen adopters of ParkinsonNet described their ideas, vision and beliefs of the innovation they adopted. Central is their adoption process. Do they perceive a performance gap? If so, what does it look like and what factors are influencing the perception of this gap? With these questions in mind, this chapter focuses on their expectations of the innovation (§5.2), the role of professional boundaries (§5.3), the influence of ‘the bigger picture’ (§5.4), and the influence of boundary processes (§5.5). Before the discussion about the adoption process starts, we elaborate on the innovation and its adopters.

#### 5.1.1. The story: a new perspective on Parkinson’s disease care

Parkinson’s disease is a neurological disorder. The disease has both motor symptoms, such as tremors and stiffness, and non-motor symptoms, as depression or cognitive decline. The disease is chronic and progressive. Anno 2010, the disease is impossible to cure. In 9 out of 10 cases, Parkinson’s disease reveals after age 40 (Zeben & Drent, 2009). This implies most patient are elderly. Because of the graying society, it is likely that prevalence of Parkinson’s disease will rise in the next decades.

Parkinson’s disease is subject of discussions about more integrated and multidisciplinary care. Internationally, there is increasing evidence that involving multiple professionals is beneficial for Parkinson treatment. Ideas are evoking that Parkinson treatment is more optimal when therapists, such as physiotherapists, occupational therapists and speech therapists are involved (Nijkraake, et al., 2010).

In 2004, Prof. dr. Bloem, professor in movement disorders, started with his colleague dr. Munneke an initiative to organize Parkinson’s disease care in a new manner. Prof. Bloem had already set up a multidisciplinary Parkinson screening center in the hospital in Nijmegen. Inspired by experiences with a rheumatology network for physiotherapists (‘Fyranet’) and funding of the Radboud University in Nijmegen, their next step was an innovation called ParkinsonNet (Groot, et al., 2010).

The ParkinsonNet innovation was established by a team of specialized therapists and medical specialists in movement disorders of the Radboud University in Nijmegen, where Bloem holds his academic chair. A recent scientific publication summarizes the aims of ParkinsonNet as *“(a) improve the expertise among professionals; (b) increase the patient volume per therapist, and (c) enhance collaboration between professionals”* (Nijkraake, et al., 2010). The innovation spreads quickly in the Netherlands. In 2010, ParkinsonNet consists of 64 networks. The national ParkinsonNet team decides about diffusion of the innovation, based on available funding. The innovation is funded by various initiatives, mainly by the Dutch Ministry of Health Care and the National Parkinson’s disease Foundation. The project has received several awards, among them the ‘ZonMw Parelstatus’ for promising innovations (source: [www.parkinsonnet.nl](http://www.parkinsonnet.nl)). The first diffusion phase was established because funding was available for scientific research on multidisciplinary

Parkinson's disease care. The next phase of diffusion started in cooperation with another external funding organization.

Participating in the project is exclusive, only a limited amount of therapists is allowed. Adopter's investment consists of an initial fee of €600 and a yearly contribution of €95. Adopters have to apply by completing an application form and writing a motivational letter to the national ParkinsonNet organization.

### **5.1.2. Mission statement**

The founders of ParkinsonNet have defined a clear statement about the innovation. This 'mission statement' is based on a lack of disease-specific knowledge and skills of professionals and high fragmentation in cooperation between the professionals involved in Parkinson's disease care. Hence, increasing expertise and experience and establishing an integrated network are important aims of the innovation.

In order to fulfill these aims, ParkinsonNet consists of two related projects: a monodisciplinary and a multidisciplinary project. Adopters of the innovation start with four days of education, which highlight both aspects. After these education days the innovation starts as what is defined as "*a community-based professional network*" (Munneke, et al., 2010). Aim of the project is to establish a network of allied health care professionals, which are specialized and experienced in treatment of Parkinson's disease patients (Groot, et al., 2010).

#### *Diffusion policy*

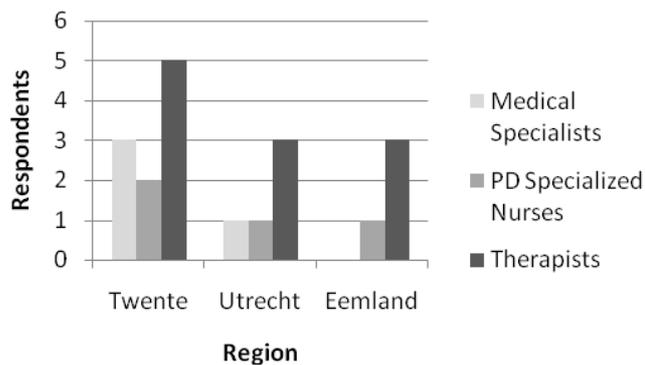
The organization of ParkinsonNet uses an extensive, formalized, diffusion policy to spread the innovation. The mission statement comprises a clearly defined 'performance gap' and is communicated by various strategies. The organization is very willing and able to share its knowledge with potential adopters. This is done by posters, invitation letters to potential adopters and brochures, which display general and regional information about the innovation. The story of the mission statement is supported by various scientific publications of the founding researchers (see: Munneke, et al., 2010; Nijkraake, et al., 2010). The codification strategy is completed with a logo and website, where participants can find information about the project and log on to a special 'participants-environment'. Media attention made the innovation widely known. Patient-groups are active in 'spreading the ParkinsonNet-word' (see for example: Parkinson Vereniging, 2009), and the innovation has won several awards, as was indicated in §5.1.1.

Processes of mutual learning during the mono- and multidisciplinary education phase are also part of the diffusion policy. Next to this, the national ParkinsonNet team, with Prof. Bloem and dr. Munneke as 'captains', is an important ambassador for the innovation. The team organizes information meetings for potential adopters, advocating the advantages of ParkinsonNet. The information meetings are part of the formal diffusion-plan, which is similar in every region where ParkinsonNet is introduced. Next to this, the national ParkinsonNet team functions as ambassadors by giving interviews in papers of professional groups and other media.

### **5.1.3. Adopting respondents**

The (scientific) publications about ParkinsonNet focus on the outcomes of the innovation, such as increase in patient volumes and guideline adherence (Nijkraake, et al., 2010). However, not much is known about the actors in this the innovation. Who are these anonymous adopters? This qualitative study makes them visible by focusing on their perspective of the innovation, rather than on their produced outcomes.

The respondents in this research work in three regions in the Netherlands: Utrecht, Eemland and Twente. In total 19 participants were selected. Among them are neurologist (3), PD specialized nurses (4), physiotherapists (4), occupational therapists (3), speech therapists (3), a rehabilitation specialist (1), and a nutritionist (1). Figure 5.1 presents the regional spread of the respondents based on profession. Five of the participants are male, 14 female. The therapists have some experience with care for Parkinson's disease patients. The amount of patient before adopting the ParkinsonNet innovation differs from one or two per year, to six or seven a year. For neurologists and specialized nurses, this amount rises to 350 patients.



**Figure 5.1: Spread of professions over regions**

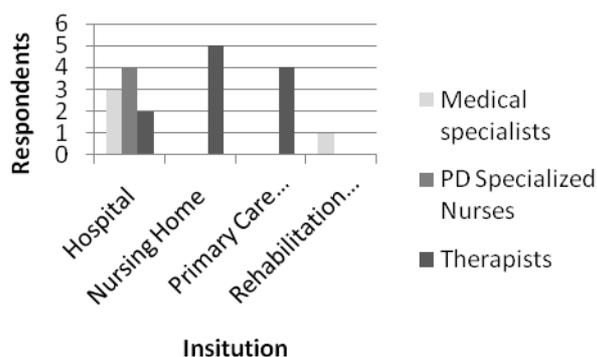
The respondents are employed by various organizations. The majority works in hospitals (9)<sup>5</sup>; others are employed by nursing homes (5) or work in individual or group primary care practices (4). One respondent is employed in a rehabilitation clinic. Figure 5.2 gives an overview of the employers of the professionals.

The employees of the nursing homes adopt the innovation to improve their services in primary care. This means care for non-hospitalized patients. Four respondents see in their daily work, both hospitalized patients as non-hospitalized patients. Only in one case, an employee of a nursing home treated only non-hospitalized patients. Since ParkinsonNet is principally a network for primary care professionals, the focus of the nursing home participants is on improving their services for non-hospitalized patients.

The primary care practices in this study are in three cases part of a primary care health center. These centers are situated in neighborhoods and occupy multiple primary care professionals, such as general practitioners, physiotherapists, speech therapists, psychologists, nutritionists, specialized nurses and social work.

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<sup>5</sup> The employers of PD specialized nurses differ: two nurses are employed by hospitals, two are employed by home-care organizations. In this case, they are all regarded as hospital-employees, since the hospital is their primary workplace.



**Figure 5.2. Institutional employment of respondents**

All respondents have to some degree experience with multidisciplinary cooperation. Their experience with multidisciplinary cooperation comes from intra-organizational initiatives or participation in other multidisciplinary projects for other diseases such as Diabetes or CVA. Intra-organizationally, participants are involved in multidisciplinary meetings (MDO), where patients are discussed with a diverse group of professionals.

Either largest the target group, elderly patients, is a population where respondents are familiar with. This is evident for respondents working in nursing homes, since most hospitalized patients are elderly. Also individual therapists working in neighborhood-practices report that they have experience with elderly people and have a professional interest to work with this group. Ten respondents followed specialized post-education training to improve their expertise with this group.

Because of these previous experiences, respondents are overall enthusiastic about multidisciplinary approaches and elderly care. *“Continuity of care is an important item, this multidisciplinary approach of complex services [...] it is a prerequisite for better health care”* (Physiotherapists). And, as a speech therapist remarks about her favorite patient group, *“elderly people are much more grateful”*.

#### 5.1.4. Different regions, similar views

Paragraph 4.3.3 addressed the issue of case comparability. Because of the perceived similarities in the cases, analysis was based on differences in variables, rather than on differences in cases. Respondents made categorizations on bases of profession (‘we’, occupational therapists versus ‘they’, physicians) and on institutions (‘our’ hospital team, versus ‘their’ primary care practice). Regional characteristics did not play an important role in the adoption process. Respondents did not regard themselves as different from other regions. Because of the striking regional similarities, the emphasis in the next paragraphs is on the differences in disciplines and institutions, rather than on differences in regional characteristics.

Nonetheless, besides the similarities, two regional components were important in the stories of the respondents: patient-perception and the presence of previous initiatives on Parkinson’s disease care. First, the respondents in Twente denote that patients in their regions are different from patients in other regions. They describe their patients as autarchic and commonsensible. *“The culture of this area is: ‘we will do, whatever we are able to,’ [...] they do not ask for help.”* And, *“this common-sense nature [...] it is regional, it is the sort of people living here”*. This ‘sort of people’ influences the work of the professionals. They argue that the autarchic nature makes it difficult to let patients accept the help they offer. Often they feel that they were too late involved in the disease process, when the problems are already severe.

Notable is that respondents of the other regions not denote these specific characteristics, nor other regional specific elements in patient-perception.

Another regional characteristic that was important in the case findings, were previous initiatives with Parkinson projects. These initiatives were determining the willingness of participants to adopt and their experiences with the network. An influencing pre-ParkinsonNet project is present in Eemland. It is an initiative on sharing knowledge about Parkinson, initiated by a nursing home. This project led to feelings of competition with some participants, who were not included in this previous established program. In the Twente area, an influencing pre-ParkinsonNet initiative is initiated by the local rehabilitation center. This is a strong actor in the region, which already developed a program on multidisciplinary care for Parkinson patients some years ago.

However, these differences were minor aspects in the narratives of the respondents. Therefore is decided to focus in the next chapter on disciplines and organizations, rather than regions.

## 5.2. Expectations of a multidisciplinary innovation

Based on the theoretical discussion, we regard the perception of a ‘performance gap’ between the contemporary suboptimal situation and an optimal situation, as the driving mechanism in adoption decisions. This paragraph explores on which grounds gaps in performance are denoted by the adopters of ParkinsonNet. The perceived performance gap is based on two situations, the contemporary, pre-innovation, situation and the expected future situation.

### 5.2.1. Gaps in optimal performance

The respondents of the ParkinsonNet innovation consider three performance gaps in the pre-innovation situation. They define performance by professional values, as treatment based on the latest knowledge and methods, and in businesslike terms, as efficient and effective use of resources. The different perceptions of the performance gaps are summarized in three motives to adopt an innovation: *lack of knowledge*, *lack on technical skills* and *fragmentation*.

Seven therapists denote a ‘lack of knowledge’ about Parkinson’s disease as attributing to the perceived suboptimal situation. However, this does not mean that the therapists totally lack knowledge about the disease. Most of them remark that they already know something about the illness. In fact, they would like to increase their knowledge about Parkinson and their experience with these patients.

Most respondents either describe a ‘lack of technical abilities’ as a gap in performance. Six therapists mention that they did not apply the most advanced, standardized methods available for Parkinson treatment. Next to this, others remark that they lack competences, such as determining about referrals and not enough coaching of patients, as they would like to do. Remarkable is that many respondents describe a lack of knowledge and abilities of *other* professionals. As a therapist states: *“In the past I doubted whether a patient would receive good therapy when I referred to another therapist”*. A neurologist describes: *“Some patients tell me that they are massaged, but this is absolutely not what Parkinson’s disease patients need”*. This displays distrust among professionals about the delivery of ‘good’ care in cognitive and technical terms. Nonetheless, the adopting professionals feel a collective responsibility to deliver good treatment to their patients. As a result, they personally perceive this lack of knowledge and abilities of others as a personal performance gap.

Last, most referred is to 'fragmentation'. As one respondent described: *"I felt that in that time [before ParkinsonNet] things were unstructured. It was fragmented. Everybody was focused on his own practice."* Only two respondents did not denote the lack of social cohesion among professionals involved in Parkinson's disease care. Fragmentation disturbs optimal patient treatment, both in professional as business terms. In professional terms this lack refers to *"not knowing who other involved therapists are"*, *"not knowing what other professionals do"*, *"no adjustment in treatment program's of various professionals"*. It is considered as a problem because it prohibits professionals to deliver care according to their professional standards. In business terms, professionals denote that the fragmented situation is suboptimal because it lacks efficiency and effectiveness. *"Treatment would be more efficient when you need less time to find the right professional to discuss your patient with"* (occupational therapist). Either, some participants perceive that they are too late involved in patient's care, when the disease is already in a severe stadium. Next to this, four out of 10 not-hospital workers, state that they have none or minimal contact with the PD specialized nurses and the neurologists and regard this as problematic for the delivery of good care. On the other side, the involved neurologists and PD specialized nurses felt they did not know which therapists were interested and capable of giving Parkinson's disease patients the right treatment, according to the professional principles.

### 5.2.2. Expectations

Based on these performance gaps, respondents formulated their expectations about the innovation. What do they hope the future will bring? The expectations are based on strengthening cognitive and technical abilities, by increasing knowledge and skills for Parkinson treatment. The aim is standardization of knowledge and skills for this specific disease. Most attention in the expectations of the participants receives the solution to the fragmentation gap. However, these expectations differ about how the fragmentation-gap should be solved. Three expectations are expressed: 'getting more contacts', 'more alignment' and 'developing a collective approach'.

#### I) *Contacts: Call me when something is wrong*

A first solution to reduce the perceived fragmentation in Parkinson treatment is establishing more connections between participants. These contacts do not necessarily imply discussions about content of the disease, sometimes just knowing a name and face is enough for participants to diminish fragmentation. As a respondent mentions: *"Just to know someone's face makes it easier to say 'call me when something is wrong'"*.

To reduce fragmentation meeting other professionals involved in Parkinson care is an important aspect for most participants. *"It makes a difference whether you know each other, it is easier to talk to somebody you know and when you know where to find him"*. Moreover, contact with other motivated and interested professionals is considered as an important solution for the disintegrated treatment. Respondents indicate that Parkinson's disease requires intensive treatment. They would like to meet alike thinking professionals. Knowing that others have the same interest is a binding factor and enables access to other health care professionals. *"The threshold to contact others is lower when you know everyone is motivated"* (PD specialized nurse).

#### II) *Alignment: Getting things done in a better way*

Seventeen respondents remark alignment as a solution to the fragmentation in Parkinson's disease care. The difference with the first expectation is that alignment requires a reciprocal approach. As a physiotherapist states: *"I think you can get things done in a better way when you know who you are, what you can do, what your abilities are and where you can get information"*. However, this category is an accumulation of various interpretations. First, more alignment means for

some respondents that they know what they can expect from other involved professionals: what are the knowledge and competences other professionals possess? For others, alignment refers to better information about which professionals to approach. This is for two reasons: First, therapists hope to receive more information about who are involved in a patient's treatment in general. Second, professionals hope to know better to whom they can refer patients, i.e. what therapists are interested and capable of providing Parkinson care according to the latest professional standards. This applies especially for professionals working in a hospital, who refer patients to professionals in primary care clinics. Third, for many professionals, more alignment either includes that people know better what information other professionals need. As a physiotherapist declares: *"In the past, I wrote in my letter to the neurologist about 'stress factors', a very general term. This places a little bomb at the medical specialists, since there is a large range of stress factors, without knowing what the actual cause is. However, I was not aware that this was a problem"*. Last, by increased alignment, people expect to improve communication channels between professionals. Not only what information another professional needs, either how information is communicated from one professional to another.

How the more aligned situation will be is ambiguous. Most professionals refer to meetings and consultations. In these meetings, general issues about Parkinson disease may be discussed, as well as specific patients. The expectations about frequency differ from weekly meetings, especially in intra-organizational settings, to several meetings a year. Some respondents plead for face-to-face meetings, others function well by communication by phone or e-mail.

### *III) Collective approach: Speaking the same language?*

A minority of the respondents suggest a collective approach as a solution for the fragmented situation. These respondents do not agree about the implementation of this approach. Some participants defined a collective approach in cognitive terms, by sharing the same knowledge base. They described it as 'speaking the same language'. Others defined this approach in social terms. A collective approach is manifested in the sentiment of being a 'group'.

Only a marginal group expresses a collective approach in a technical manner by a collective treatment plan or sessions. When this is done, it happens in organizational settings between health care professionals working for the same organization as a hospital or nursing home. Only in exceptional circumstances, respondents say that they would establish shared treatment programs with other professionals of other institutions.

#### **5.2.3. ParkinsonNet, an integrated service innovation**

The perceived gap was defined between the pre-innovation situation, which was characterized by a 'lack of knowledge', 'a lack of technical abilities' and 'fragmentation', and a future scenario in which professionals are more knowledgeable, equipped with technical capabilities and have (in one or another way) an integrated group. Participants in this study believe that ParkinsonNet will provide a bridge between these situations. Based on the three pillars of the performance gap, this ParkinsonNet-bridge is based on three expectations:

- First element is more knowledge, expertise and experience on Parkinson's disease is the first element of the bridge. The education-program is important for most therapists to increase their knowledge about this illness.

- Second expectation is better technical abilities to treat Parkinson's disease patients. ParkinsonNet is based on standardized methods for mono- and multidisciplinary treatment, which are taught during the four education days at the start of the regional network.
- Third, participants believe that the innovation attributes to bridge the performance gap by providing a *network*. The expectations of more contacts, more alignment and a collective approach are expected to be reached by being part of a disease-specific network. This network approach is important for participants: *"I think it is really important to be in a network, if you would like to continue with Parkinson care, you just have to be in it"*. Semantically, the cooperative attitude and group-feeling based on Parkinson's disease illustrates this importance: respondents denote in their narratives a difference between 'us' –the adopters, and experts in the field of Parkinson's disease- and 'they' –the non-adopters, and thus laymen-.

Considering these expectations, what type of multidisciplinary innovation is ParkinsonNet concerning the typology of table 2.2? Based on external literature and an interview with the organization, ParkinsonNet was considered as a 'integrated service' type of innovation. This vision is shared by the adopters of the innovation, as this paragraph has illustrated. The objective of the innovation is regarded as a new service. Respondents regard the innovation as a radical disruption with the previous situation. It is likely that this is influenced by the start of the innovation. The start includes a payment and a four-day training program, establishing the feeling that something *new* will happen.

The structure of a multidisciplinary innovation can be regarded as sequential or parallel. The network expectations may be diverse, but show a clear aim towards parallel coordination, in which respondents feel collectively responsible for the reduction of fragmentation in the contemporary situation. The network approach is trans-organizational, including hospitals, nursing homes and primary care practices. Next to this, respondents express a shared aim of improving Parkinson care according to professional and economical values.

However, as the previous paragraph showed, the insights differ about the realization of these collective aims. Therefore, many respondents formulated conditions for the network, by means of coordination. A difference exists between the patient-care-coordination and the professional-network-coordination, although many professionals do not mention this distinction explicitly. PD specialized nurses in Twente and Utrecht make a strong claim for being the coordinator of the patients-care network. They are *"a spider in a web"*. However, neurologists and some therapists claim (part of) the coordination of patient's care. Interesting is that most health care professionals do not regard the patient as network-coordinator, because of a lack of its knowledge and abilities. An exception is a neurologist who entitles the patient as *"expert of its own disease"*.

The first step to understand the adoption process was to see what the 'performance gap' looks like. As functionalist streams of literature suggest, closure of the performance gap is dependent on the attributes of the innovation. When the innovation is good enough according to prior ideas about the optimal situation, an innovation will be adopted. This was denoted as a 'logic of consequence' perspective. The next paragraph describes this functional meaning of ParkinsonNet, as this is perceived by the adopters.

#### **5.2.4. Functionalist perspective: Innovation attributes**

To understand the construction of the performance gap implies a focus on the meaning of the innovation for the adopter. From a functionalist perspective, intrinsic attributes of the innovation are decisive meaning makers in the adoption process. These attributes are the relative advantage, compatibility, complexity, triability and observability of

the innovation and the possibilities for reinvention. As the previous paragraphs made clear, respondents denote a clear ‘relative advantage’ of ParkinsonNet. The characteristics of the innovation, providing education and a network, accomplish the desires of the professionals to become more knowledgeable and competent to care for Parkinson’s disease patients, as well to reduce the perceived fragmentation in patient’s treatment. However, it may be argued that the diffusion policy have had a significant role in the perception of the relative advantage of the ParkinsonNet innovation. Since the organization presents a clear mission statement and uses many strategies to communicate this, it is likely that the construction of the performance gap is influenced by the ParkinsonNet organization. In other words, it may be that the respondents were less aware of the performance gap until they heard about ParkinsonNet. This argument will be further elaborated in §5.5. Either, it is likely that the diffusion strategy has influenced the perception of the other attributes of the innovation. For example, respondents denote low complexity of the innovation. They state that ParkinsonNet is a clear concept that reduces the complexity of Parkinson’s disease. A clear mission statement may contribute to this perceived low degree of complexity. Either observability of the innovation is high, since ParkinsonNet is open about information of other regional networks and uses several sources to spread this information, for example on their website and in information meetings.

However, triability and possibilities for reinvention are low. ParkinsonNet is a closed network, which means that there is no free entrance and exit. Adopters have to pay a fee to be part of it and there is no try-before-buy stage. Next to this, the introduction of a new regional network happens according to a previously defined program. As the study of De Groot et al. about the ParkinsonNet innovation emphasizes: *“the organization is flexible in regional implementation of the network, but persistent in the content of the project”* (Groot, et al., 2010: 13). This implies that the possibilities for re-invention in the adoption phase are low. Participants have the responsibility of the implementation of the network, but they have no influence over the adoption process. However, possibilities for re-invention may reduce the clarity of the mission statement and the concept. This is for many respondents an appealing attribute of ParkinsonNet, at least in the adoption phase. Thus, low possibilities for re-invention may either be positive in the adoption phase.

The attributes of the innovation present only one way to explain why adopters adopt an innovation. It does not tell much about the foundations of the judgment. As the previous paragraphs showed, the professional adoption of innovation is based on professional values of cognitive, technical and social ideas. The functional perspective does not take the specific framework of the adopter into account. It does not tell why professional adopters regard ParkinsonNet as a relative advantage. To learn more about multidisciplinary innovations, we should know why they construct the performance gap as they do. To understand this, we look to the role of the professional frameworks that are involved in the ParkinsonNet innovation.

### **5.3. Professional boundaries**

We studied adoption from the perspective of professionals. The meaning of an innovation for professionals is based on ‘the professional logic’, i.e. what is regarded as appropriate in the professional environment. It was argued that this judgment is made on expertise knowledge, years of experience and a long socialization process. As the previous paragraph described, such professional considerations are visible in the adoption motives of adopters of the ParkinsonNet innovation. To be able to understand why professionals come to this judgment, the functionalist perspective seems not sufficient. The following paragraph will describe the adoption process from an interpretative

standpoint, considering meaning as a social construction. This requires elaboration on the various professional frameworks involved. This paragraph discusses the professional frameworks by exploring the role of professional boundaries in the adoption process. The next paragraph elaborates on the tensions that influence boundary construction.

### 5.3.1. Professional islands

Professional domains have an important role in multidisciplinary innovations. As was stated, participants experienced the pre-ParkinsonNet situation as problematic, because of the low integration between the various domains, describing situation as “*fragmented*”, “*disconnected*”, and located at “*islands*”. As one of the therapists said: “*Professionals differ in interpretation of their practices [...], often you see that people protect their own islands [...], they stuck to their own business.*” In the pre-innovation situation, professionals experience either strong distrust to other professionals on cognitive and technical grounds. “*You do not know whether a therapist will give your patient the right treatment*” (PD specialized nurse).

To get more insight on what happens on the professional islands, the corresponding frameworks are addressed by what makes them different from other frameworks. What boundaries are constructed between domains?

This description is based on two distinctions: divisions between professions and between organizations. The first distinguishes three domains: the domain of the medical specialist, the domain of the PD specialized nurses and the domain of therapists. The second distinguishes between organizations, between hospitals, nursing homes and primary care practices. The categorization between organizations implies that professionals of the same profession distinguish their profession into various professional segments

### 5.3.2. Boundary constructions: Between professions

#### *Medical specialists*

The domain of the medical specialist is well established. Cognitive, technical and social boundaries are well defined and respected by other disciplines. They are the ‘classic professionals’, with authority and autonomy. The most distinctive boundary is formulated by the role of the specialist in diagnosis and prescriptions of medication, “*medication is not our domain*” (physiotherapist). The pharmaceutical knowledge distinguishes either the domain of the specialists from that of the PD specialized nurse, although this boundary is dependent on the relationship between the nurse and the physician, because the tasks of the PD specialized nurse are determined by the physician. Next to this, social boundaries are strongly developed. The professional peers are important in determining in ‘how to do the job’. The social boundaries are constituted during education, specialization and during conferences. Either, social boundaries determine communication channels, although one neurologist mentions that innovations like ParkinsonNet are not items that are subject of discussion in peer group meetings.

#### *PD specialized nurses*

The domain of the PD specialized nurses is cognitively not as well defined as that of the medical specialists. Their discipline has no strong scientific grounding and their knowledge is not seen as distinctive by other professionals. However, cognitive boundaries are strongly developed on patient’s view. The PD nurses present their patient view as distinctive from other disciplines, especially from that of neurologists. “*The neurologist diagnosis the patient and regulates medication, we take care for them until they die...*” (PD specialized nurse) and as another nurse describes: “*Your focus is on human beings, not patients*”. The technical boundaries are used to distinguish the domain from medical specialists, using methods that correspond to the coaching and caring role of the nurses. However, this boundary is not collectively

defined: in each case the technical domain of the PD nurse was defined differently. Some nurses emphasize their organizational competences, whereas others stress their medical skills. A metaphor used to distinguish the organizational competences is that of a 'spider in the web' or a 'broker'. This metaphor stresses the competences of the PD specialized nurse on coordination of care and on connecting health care professionals. In the Utrecht region, this function is strongly developed. The PD specialized nurses there have an important role in establishing alignment by linking different professionals. This function is less evident in other networks, since the specialized nurses in Twente en Eemland do not see all Parkinson patients and coordinate all care. Other PD nurses combine this task with more medical related competences, such as providing information about medication. Striking is that the social aspect of the professional domain of the PD nurses is strongly developed. All nurses refer to the professional PD-nurses-network as 'we' and feel strong group-connections. They find education and meetings with professional groups an important aspect of their jobs. The professional network is described as "*intensive*" and "*committed*". The network is important for gaining knowledge about Parkinson's disease, as well as to stay in touch with other nurses.

### *Therapists*

The field of therapists includes multiple domains: physiotherapist, occupational therapists, speech therapists and nutritionists. Often medical specialists refer to them as being one group, although they are aware of the specific characteristics of each discipline. Boundaries of the domain are constructed between professions and between organizations.

Inter-professionally, thus between different therapists, the domains distinguish themselves strongly on technical aspects. They stress the specific competences and methods of their profession. An example of an occupational therapist is illustrative: "*There was a client with a problem to get in and out the bed [...], I recommended a device to help him, and the physiotherapist had to practice it with the client*". In some cases, methods of physiotherapists and occupational therapists are conflicting. Almost all therapists refer to the situation of 'transfers': the movement from a standing to a sitting position and vice versa. Both physiotherapists and occupational therapists use methods to practice transfers, sometimes without knowing from each other that they do the same exercise. According to the occupational therapists, this has grown since physiotherapists developed a more 'functionalistic' approach, which focuses more on daily functioning instead of massages. This explanation shows that technical boundaries are supported by cognitive boundaries. They are based on what knowledge is regarded as legitimate in the professional discipline. Next to, scientific grounding of the therapeutical domains is becoming more important: often therapists refer to scientific research. Evidence-based research is influencing practices, and is an important tool to legitimize practices. As an occupational therapists says: "*There have been studies, evidence-based research, which proved that you have to motivate people during daily practices [...] first we did card games to train cognition, now we learn people how to make coffee in the kitchen.*" An important differentiation on the cognitive dimension is on patient views. Whereas physiotherapists refer to 'patients', occupational therapists talk about 'clients', and speech therapists use both terms. Next to this, the social boundaries of the professional domains are important for all respondents. For example, the professional association is an important information channel. Most respondents were informed about ParkinsonNet by their professional association. Either, they have meetings with their professional group, both national and regional.

### **5.3.3. Boundary constructions: Between organizations**

Intra-professional boundaries divide professional domains into multiple segments. In the case of ParkinsonNet organizations seemed to be an important mechanism to divide domains. Boundaries are constituted between (departments of) hospitals, nursing homes and primary care practices. This applies especially *between* professionals of

the same profession, working in different organizations, e.g. between physiotherapists working in hospitals and nursing homes. These intra-professional boundaries are expressed in cognitive and technical aspects, such as special expertise and competences. “*Speech therapists in primary care practices have to know a bit of everything, our surplus is that we only treat elderly people, that is our expertise*” (speech therapists, working in nursing home). And “*what we can offer is a multidisciplinary approach [...] screening and coaching [...], that is something a therapist at the corner cannot do*” (speech therapist, working in a hospital). In two cases, ‘otherness’ within the professional discipline was even defined in terms of competition. In these cases, the respondents regarded their professional-equivalents in other organizations as competitors. They remarked that they would not consult these professionals for domain-bounded questions, nor for patient-referral. This was especially evident in regions where previous initiatives for Parkinson’s disease care had been developed. Outsiders of the previous projects felt competition towards the initiators of the previous initiatives.

Remarkable is that *within* organizations, such as hospitals, nursing homes and primary care practices, boundaries between therapeutical domains are weaker. Organizational loyalty is high, as the next paragraph will explain. When professionals of different disciplines work in the same institutional setting, they feel more connected to other domains and feel less pressure to distinguish themselves from other professions. This is striking in nursing homes and hospitals. Often these institutions have their own multidisciplinary projects. Respondents working in nursing homes refer to ‘colleagues’ when they speak about other disciplines in their organization. “*The surplus value is that we can treat patients in one organization*” (therapist working in a nursing home, emphasis added). Therapists working in hospitals or in primary care centers do not refer to ‘colleagues’, although they all feel strong connections towards other professionals in the same organization. A physiotherapist working in a primary care center illustrates: “*Because you are all working in the same organization, you share a risk and because of that, you are loyal to each other*”. Respondents denote that this intensive cooperation is mainly because social boundaries between professions are less significant: people interact within institutions in multidisciplinary meetings and in day-to-day interactions. In the institutions, they create their own norms and values, which surpass the social boundaries of the professional disciplines.

#### 5.3.4. Boundary struggles

The previous description may suggest that boundaries are static entities between professional domains and segments. However, as was presented, boundaries are dynamic constructs that are actively used by professionals to legitimize their practices. The interviews show that the respondents are strongly aware that they have to legitimize their professionalism towards other professionals and towards clients and organizations. Showing your contribution to the delivery process is important. This is especially when domains overlap or new professions are in place. For example, the case between physiotherapists and occupational therapists about who executes the ‘transfer’-treatment. And in other cases tension is visible between the domain of the neurologists and the PD specialized nurses, for example on medication, patient view and technical abilities. These tensions are labeled as boundary struggles. They take place between professions and within professions.

Remarkable is that this legitimization applies strongly for therapists and PD specialized nurses, and not for neurologists. Boundary struggles are fought to profile the profession or the professional segment. The example of the speech therapists in the previous subparagraph is illustrative. The speech therapist working in the nursing home emphasizes her expertise in the field of elderly care, whereas the hospital speech therapist emphasizes their technical strengths on screening and coaching. Interesting is that professionals use similar legitimization strategies to show their professional *raison d’être*, to show that they deserve professional autonomy. As the previous paragraph showed, for therapists and PD specialized nurses, specific methodologies and competences are a manner to distinguish

themselves from other professionals. Their strategies are very similar to the classic professionalization processes as were described by (Wilensky, 1964). For example, a scientific foundation is important for treatment, as several therapists denoted. Either, the social peer group is an important framework in determining what is appropriate or not and a significant communication channel. Remarkable is that in the case of ParkinsonNet this seems less noteworthy for medical specialists. Although neurologists heard about the innovation through informal contacts with other physicians, they denoted that it is not subject of discussion in official meetings of the professional association.

### 5.3.5. ParkinsonNet: stake in boundary struggles

What is the role of ParkinsonNet in these boundary struggles? As §5.2 made clear the expectations of adopters are based on better knowledge, better skills and standardized methods, as well as an integrated network approach. After the discussion of the boundary constructions of the domains, we have a better understanding of these expectations.

Empirical data about the ParkinsonNet case show that boundary struggles explain why the perceived performance gap is translated into innovated practices: ParkinsonNet is stake in boundary struggles. Participants hope that adopting the ParkinsonNet innovation strengthens the cognitive, technical and social boundaries of their domain, because it offers *specialization* on the specific field of Parkinson's disease. ParkinsonNet establishes a new service in health care delivery for Parkinson's disease patients. Participating in ParkinsonNet is the way to demarcate the position of a professional in this process of service delivery. Hence, professionals can use this demarcation by specialization to legitimize their practices towards other professionals, and either towards management and market parties, as the next paragraph will show. By regarding the boundary struggles between professional domains and segments, we are able to understand the three expectations of §5.2.2.

First, respondents hoped that ParkinsonNet innovation will provide them with expertise knowledge about Parkinson's disease. This strengthens the cognitive boundary of the professional domain. As a professional states: *"If you want to underline your professionalism, the knowledge has to be present"*. Second, participants expected to learn techniques to treat Parkinson's disease patients. This contributes to the technical dimension of boundaries by learning the methods that are regarded as the 'best' practices for Parkinson's disease care. This strengthens the expert-position of the professional. Standardization of the methods is an important aspect of the attractiveness of the ParkinsonNet innovation. Because methods are standardized, based on protocols and questionnaires, it becomes easier to show the specialist position on Parkinson's disease to others. As a therapist states: *"I hoped that the education program offered me more structured methods [...] I did not know when my treatment was effective, how I could measure this and justify it to patients"*. The third expectation respondents had was a network structure as coordination mechanism between the different health care professionals involved in delivery of Parkinson's disease treatment. This social network supports the special status of participating professionals. When therapists distinguish themselves from their peers, they look for new social structures that can function as a social framework. To social arrangements that underline their expert position. This means for example, that when a therapist becomes expert in a certain disease type, not every co-therapist will have an answer to his questions. Hence, he searches for other structures in which professionals are involved with the same expertise to support this expert status. This can explain the desire for 'contacts' in the network. However, the expectations of the social framework are moving beyond getting contacts. They either imply more alignment by advocating an integrated approach. In professional sense, these integrated approaches have a technical nature, for example by being able to find therapists that deliver Parkinson treatment based on 'the best standards'. Either, as was demonstrated, more integrated practices were based on increasing efficiency and effectiveness, by being reducing time for coordination and more effective treatment because of cooperation of multiple professionals.

Thus, boundary struggles are a motive to adopt the ParkinsonNet innovation. What is the gain in these struggles? The answer to this question is simple: patients. More patients are part of the legitimacy of professional. The amount of patients is easier to measure than abstract instruments as 'quality of care'. A large patient group emphasizes experience and expertise on a certain field. Hence, patients are a useful instrument for professionals to prove that they deserve trust and confidence. Respondents denote that getting more patients is a reason to participate in ParkinsonNet. The promise of more patients is furthermore made in the mission statement of the organization, motivated that an increase of patients will increase experience and thus expertise. As a therapist presents: *"When there is a metaphorical flag of ParkinsonNet in front of my door, others will know that I am knowledgeable and capable to provide the best care"*.

The question remains who are the 'others' in these quotation? Why is legitimizing professional knowledge and skills this important for professionals? The next paragraphs will elaborate on these questions by considering tendencies of marketization and bureaucratization and their influence on the adoption process of multidisciplinary innovations.

#### **5.4. The bigger picture: tendencies in the context of professionals**

The previous paragraph focused on the professional domains of adopters of a multidisciplinary innovation. As the theoretical framework made clear, in contemporary society, professionals do not only have to legitimize their professional practices towards their peers, but moreover towards external actors, such as management and market parties.

##### **5.4.1. Tendencies: marketization and bureaucratization**

To understand legitimization strategies of professionals, we have to focus on the bigger picture of the professional domains. Take a step back and see the tendencies that influence professional practices.

###### *Tendencies of marketization*

Chapter 3 demonstrated that marketization in the health care sector is strongly developed. It was indicated by financial schemes, the importance of 'demand'-factors and feelings of competition.

The influence of market mechanisms on the adoption decision is remarkable. Respondents are strongly aware of the mechanism of demand and supply. Therapists refer to terms of 'demand-orientated care'. They see this as responsiveness to needs of individual patients. Next to this, participants are strongly aware of the desires of purchaser parties, namely health care insurance companies. Several respondents, especially those in primary care practices, emphasize the influence of the health care insurers. As §3.1.3. presented, in the system of regulated competition and with the introduction of the *Zorgverzekeringswet* in 2006, health insurers have a dominant role in the system. Therapists are aware that health insurers advocate sequential and parallel coordinated health care projects and specialization. *"It becomes the aim of health insurers [...] we will get contracts which necessitates specialization"* (Primary care practice therapist). Another therapist mentions: *"My motivation [of adopting ParkinsonNet] is improving my treatment and intensify the network I am working in. However, you have to be realistic. When you consider the role of the health insurers, you have to prove them the benefits of your practices."* (Occupational therapist). Financial considerations, such as contracts with health care insurers, are positively influencing the decision to adopt a multidisciplinary innovation. Respondents denote that health care insurers promote more flexible and efficient ways of working and hence advocate multidisciplinary collaboration and specialization. This is not only for ParkinsonNet care, but also for other disorders, as Diabetes and

CVA. Professionals experience that multidisciplinary network collaboration is the norm for health care insurers. *"We have to be part of integrated care projects. I think we need to, it improves quality of care"* (therapist working in primary practice).

Either, respondents experience a stronger urge to show transparency towards health care insurers and clients. This is explicated by standardization of knowledge and methods. Participants value standardized questionnaires, structured treatments and protocols, which are part of the multidisciplinary innovation. *"It supports your treatment, provides a framework of what you are doing. I think it helps to make clear what you are doing, how you can measure progress and what your objective is"* (Medical specialist).

However, financial schemes for health care provision are regarded as a blockade for effective network practices instead of an enabler of innovation. Respondents remark that this aspect is influencing the adoption decision. A therapist denotes that the product-based DBC structures do not compensate meetings and consultation moments, which implies that only the monodisciplinary activities are rewarded. This financial dependency is especially complicated for self-employed practitioners working in primary care practices. They have to organize non-paid meetings. Another type of funding, AWBZ-funding is based on another principle: on indices for a type of care, such as rehabilitation of nursing home care, and not on treatment. Hence, respondents remark that within these institutions multidisciplinary cooperation is easier to establish. Nevertheless, none of the adopters said that limitations in structural financial possibilities changed their decision to adopt the innovation.

We have seen that some professional struggles between organizations were interpreted as 'competition'. As one of the respondents says *"I don't like rivalry, but it feels like that. I have a colleague around the corner, she is competition"*. A nursing home therapist remarks: *"We just have competition of other nursing homes, there is nothing wrong with that, but we should adapt to it"*. The presence of feelings of 'competition' shows strong tendencies of marketization in the professional framework. As the previous paragraph showed, these feelings are either important in the adoption decision. They are part of boundary struggles between segments of a profession. Feelings of competition strengthen the necessity to profile oneself in the delivery process of Parkinson's disease care.

#### *Tendencies of bureaucratization*

The tendency of bureaucratization is not new in the health care sector. However, the tension between organizational and professional practices is still relevant considering the adoption of multidisciplinary innovations. Bureaucratization was indicated by the role of management, organizational loyalty and dependency of technical applications.

The influence of management on professional practices in this case is striking, especially for respondents who work in a hospital or nursery home. These are often large-scale organizations, established by mergers and acquisitions. An example are the cooperative institutions that include nursery homes, home care, old people's homes and clinics for babies and toddlers. Respondents working in cooperative institutions indicate that management is regulating their activities. *"Approval of the Board of Directors is ever required to organize something differently and receive money for your plans [...] it is always negotiating"* (therapist working in a hospital). In most cases financing of adoption, i.e. the payment of the fee to belong to ParkinsonNet, is often an organizational concern. Management provides funding for the innovation. The regulation of management advocates and obstructs multidisciplinary innovations. On one hand, management takes strategic decisions about the content of the work. A respondent gives the example of the decision of management to work more in primary care settings, since management believes that this is more profitable than

treatment of hospitalized-patients. This decision stimulated multidisciplinary practices, since it implied that professionals had to profile themselves strongly in this market by participating in primary-care networks. The opportunity of adoption of ParkinsonNet was thus not only considered from the 'professional logic', but also from a managerial perspective, of finding new markets to deliver services. On the other hand, respondents denote that management blocks their ideas to work in multidisciplinary settings. As a respondent working in a hospital states: *"In the past years I have learned to be careful. You can develop many ideas, but if the hospital management is not in favor, it stops."* What is interesting is that the motives of management for adoption are strictly organizational. When management gives their approval to adoption, their main aim is to strengthen practices of their employees, not to stimulate extra-organizational network cooperation. This is conflicting to the expectations about more social cohesion outside the organization.

Significant is that managerial language and practices are adopted by the health care professionals. Professionals talk in terms of 'products', 'selling' and 'negotiations'. *"Just as in business, in health care you have to sell your products"* (hospital-therapist). An occupational therapist gave an example a product on slip and trip prevention, which the profession developed within their organization. *"It is a description of what occupational therapy can attribute [...] to show other professionals and patients what you can do"*. As we thus see, 'the logic of management' as Freidson (2001) denoted, is thus not only present in financial structures, but either in professional reasoning, by defining what is 'efficient' and 'effective' use of resources.

Organizational loyalty is another indicator of bureaucratization. Paragraph 5.3. showed that intra-organizational processes are important for determining boundary structures. Social boundaries between professionals are more open in the organizational context. Therapists and PD specialized nurses are remarkably loyal to their organizations. Contrary to classical theories about innovations, professionals are committed to organizational purposes. Participants of multiple disciplines that work in the same organization know each other and feel connected. Some participants hope that the intra-organizational collaboration will even be more intensive in the future. Organizational aims are guiding their professional behavior. For example, an occupational therapists states: *"In my organization happens a lot at the moment [...] as department you have to cooperate in these reorganization projects and pinpoint [to management] the consequences this has for our profession"*. Neurologists and PD specialized nurses are less committed to the organization. The nurses feel strongly connected to the professional staff at the neurology department and feel strong ties to their professional association. Either neurologists feel less connected to the organization, which is likely because their autonomous position is stronger developed and demarcated than the other professionals.

Because of strong organizational loyalty, establishment of trans-organizational cooperation between institutions, is proven more difficult. Bureaucratization is thus highly influential on the establishment of multidisciplinary cooperation *between* organizations, as the ParkinsonNet innovation aims. High organizational loyalty results in that many respondents define the benefits of the ParkinsonNet innovation in terms of their own organization: they expect more contact, more alignment and a collective approach *within* the institutions. They only expect to cross organizational borders for referral to, for example, neighborhood therapists.

Third indicator was dependency on technical applications. Respondents denote that there is already much informing and automating ICT available within organizations, especially in hospitals. For example, these are systems to structure patient information or digital forms supporting the financing schemes. However, technical applications on the trans-organizational level are scarce and not much used, although they are considered as required

for multidisciplinary cooperation. As §5.1 stated, ParkinsonNet has a website with information and a secured environment for professionals. This is a digital discussion forum on the website, where therapists can share information of patients and ask disease related questions to other professionals. The website can be considered as ‘informating ICT’. The digital platform is known by participants, although not used in the adoption decision. The only thing that was considered as appealing to adopters was the application on the website to find telephone numbers and addresses of other involved professionals. Especially PD specialized nurses considered this as an attractive element of the innovation. However, this element was not decisive in the adoption decision. *“In general, a website and electronic health records are a prerequisite for good cooperation, [...] but here I already have my own patient’s files and it is too much effort to fill them in both”*. Some respondents argue the incompatibility of existing organizational systems is a thread to the existence of the network. *“Since it is yet impossible to connect ICT systems, it is a barrier for effective standardized cooperation”*. One participant expects that the development of the required ICT systems for multidisciplinary cooperation will happen in the near future, although others are more skeptical: *“I doubt whether we will witness this development during our lives...”*. This coincides by Jorna’s comment about the infeasibility of ICT systems to bridge existing norms, attitudes and values (Jorna, 2009). Bridges between domains are not ‘automatically’ established.

In sum, we see that tendencies of marketization and bureaucratization influence professional behavior, and thus professional decision-making. The tendencies strengthen the need for professionals to take other parties into account as managers and health care insurers. On one hand, contracts of health care insurers stimulate multidisciplinary practices and pressure of management in organizations increases the need to legitimize professional authority and autonomy, by specialization. However, on the other hand, the influence of these tendencies is often based upon existing professional boundaries. Tendencies in the context of professionals cannot enforce boundary crossing, as the limitations of financial schemes and technical applications shows.

## **5.5. Boundary processes**

Only one question has not been answered yet. Now we know that legitimizing strategies are part of the adoption strategy of professionals, what makes professional domains actually connect? Management has only influence about the intra-organizational situation, which cannot explain the adoption of an extra-organizational network. As an occupational therapist metaphorically described: *“what bridges the professional islands”*?

Paragraph 5.1. described the diffusion policy used by the national ParkinsonNet team. The organization presents a clear mission statement and uses several strategies to spread information about the innovation. These diffusion policies may be important in the adoption process, functioning as ‘boundary processes’. Therefore, not only presence of certain strategies is important, rather is the meaning of the strategies for the potential adopters. Based on boundary processes of objects, brokers, and interactions, this paragraph describes how adopters perceive diffusion policies and how they influence their adoption process.

### **5.5.1. Function of boundary processes**

#### *Objects*

Diffusion strategies of the ParkinsonNet organization include various objects. The message about the innovation is codified and distributed by flyers, invitation letters and a website. The invitation letter to potential adopters describes: *“Parkinson’s disease patients meet multiple health care providers during their disease. There are significant bottlenecks in this*

*process of health care delivery. Various research projects show that many health care providers consider that they have not enough expertise to treat Parkinson's disease patients [...]. Recent research shows that these bottlenecks are reduced when health care providers cooperate in an organized transmurial network (ParkinsonNet).*" Because of the comprehensive mission statement, the ParkinsonNet concept may be regarded as a boundary object in itself. The objects attribute to the definition of the performance gap by the adopters, as §5.1. mentioned. Most respondents reproduce the mission statement precisely. One professional even was unsecure to give a 'wrong' answer, when she was asked what the ParkinsonNet concept means. Although most respondents are familiar with the ParkinsonNet mission, there was confusion about the concept itself. Some respondents confuse the network with the specialized multidisciplinary Parkinson's disease screening center in Nijmegen. Others associate it with another Nijmegen-initiative, Mijn ZorgNet, an online patients-professionals platform. However, this confusion is not at the heart of the innovation, since the underlying performance gaps are to a high degree similar.

The symbolic meaning of the concept goes beyond defining the performance gap. Either, participants experience that the concept evokes a 'desire to be part of it'. Since the respondents were all late-adopters, many of them had heard about the innovation before. As one respondent in Twente illustrates: *"I heard about ParkinsonNet some years ago and asked 'when can we start?' [...] then Doetinchem and Deventer got the education. I was afraid that they would forget the rest of the eastern region!".* And, as a professional in Utrecht states: *"We craved it for such a long time, I am very glad they finally came to Utrecht."* These quotations show that the ParkinsonNet is a desired service for the adopting health care professionals. They strongly feel the need to close the performance gap. Some even expect that they will not get Parkinson's disease patients when they are not part of the network. Hence, ParkinsonNet symbolizes a shared problem and a shared solution. The concept connects people in a network in which many people desire to participate.

#### *Interactions*

Interactions were described as meaningful encounters between health care professionals. Mutual processes of communication and learning are for example a meaningful interaction. ParkinsonNet effectively used learning processes, by starting the implementation (or ending the adoption phase), with a four-day training program, as §5.1. has showed. The observations during a training day support the view that this education program is more than only transfer of knowledge and learning of methods about Parkinson's disease care. Moreover, it has a symbolic value, by establishing a group-feeling and alliance. A therapist in Utrecht says: *"That you start this education program as a team is an eye opener. Not just that you learn really new things, but more that you all have the same perspective."*

The influence of this education program on the adoption process is significant. First, it provides a bridge to the performance gap by providing knowledge and skills. More important, all respondents, except two who did not experience a fragmentation-gap, believe that the training-days are a first step to get more contacts and make agreements about more alignment and a collective approach to patients.

Next to the education program, meetings in the professional association were meaningful to increase the permeability of boundaries. Paragraph 5.3. already described that social boundaries, defined in professional organizations and education, are important for the diffusion of the innovation. Eighteen respondents have heard about ParkinsonNet by professional peers of some communication channel of the professional organization, such as trade papers and newsletters. The spread of written information by the professional associations was either part of the organization's diffusion policy. Participants denote that because they got the information from other

professionals of their discipline this increased their willingness to adopt, and hence it attributed to increasing permeability of professional boundaries.

#### *Brokers*

Brokers are people that unite professional groups and management. Besides specific competences to coordinate and align different people, it requires legitimacy to be a broker and to be able to influence people. The founders of ParkinsonNet have a broker-function in this innovation, especially Prof. Bloem. He is a well-known professor in neurology, who has a high status among his professional peers. As one of the neurologists explains: “*Bas [Bloem] introduced the concept [...] he worked hard and is admired, that combination makes that his name is connected to ParkinsonNet. [...] It makes a difference for me that he is the initiator, it is not just a concept.*” The role of Prof. Bloem in Parkinson care is significant, for example as chairman of the guideline-committee, which makes him a reliable broker.

The broker function is expanded to the national ParkinsonNet team in Nijmegen. Respondents are familiar with the Nijmegen-initiatives. The people in this team are admired for their knowledge and organizational skills on Parkinson’s disease. A physiotherapist says that he would “*rather consult the Parkinson-team in Nijmegen, than any other professional from another organization.*” The founder and its team are thus connecting different domains. Important is that the respondents regard them as knowledgeable and trustworthy, ‘if they say so, it must be good’. The national team motivates people to build the bridges between the islands and to cooperate with others.

#### **5.5.2. The influence of boundary processes on the ‘performance gap’**

Considering the described professional boundaries in §5.3, the functioning of these boundaries processes can be explained. Exemplifying is the role of the ParkinsonNet concept. As the beginning of this chapter described, the concept has a clear mission statement. It emphasizes a lack of expertise, experience and collaboration in existing health care practices. The interviews made clear that this results in the situation that many respondents are strongly aware that they have not enough knowledge, not the right skills and not enough contacts to treat Parkinson’s disease patients in an optimal way. A consequence is that therapists do not just experience their expertise and work practices as insufficient, but either that of other practitioners. This created distrust between professionals, especially towards professionals whom boundaries are not as strongly demarcated, or which overlap with their own boundaries as in the case of physiotherapists and occupational therapists.

However, the function of the concept is not just to increase distrust among professionals. The next step is to strengthen professional trust. From a functionalist perspective, the concept and its diffusion policy determine that the innovation is perceived as very reliable and is considered as a ‘best practice’ where respondents desire to be part of. The concept thus both increases distrust as trust among a specific group of professionals that are part of it. Hence, the attributes of the innovation may be positively judged. The innovation is regarded as a ‘relative advantage’, with high observability and which is easy to understand. The other described boundary processes support this development. Interaction in the education program is described as meaningful by bonding professionals. It increases feelings of trust between professionals. Participants feel that because all have the same education process, they can prove to be knowledgeable enough to deserve professional trust and capable to treat Parkinson’s disease patients in the most optimal way. Trust in capability is increased by the use of standardized methods for treatment of Parkinson’s disease patients, although this is restricted to the monodisciplinary level.

Reliability of the program is furthermore strengthened by the broker role. This is fulfilled by a high-reputation medical specialist and a team that is regarded as ‘experts’ on Parkinson’s disease. These brokers do not just convince potential adopters to adopt, but either show that the innovation is ‘a good thing to do’, or perhaps even a ‘necessary’ step. Hence, the broker role supports the other boundary objects and interactions.

## 5.6. Conclusion

This chapter presented the results of the empirical part of this research. Parkinson’s disease is a chronic and progressive illness. The disease is complex, involving both motor as non-motor symptoms. ParkinsonNet aims to improve care for patients suffering Parkinson’s disease. ParkinsonNet is an innovative service, establishing a network for health care providers involved in treatment, supported by a special website and online forum and a four-day training program. Data show that the innovation is a well defined concept, presenting a clear mission statement and diffusion policy.

Two research questions were leading in the empirical part of this study. The first question was *‘how adoption of multidisciplinary innovation takes place in health care?’*. Data demonstrated that adoption of ParkinsonNet is determined by a perceived performance gap that is built on three experiences. First, respondents experience a lack of knowledge about Parkinson’s disease. Second experience is a lack of technical abilities and methods to provide treatment, and the third experience is fragmentation among health care providers involved in health care delivery. Respondents regard treatment of Parkinson’s disease patients as suboptimal because of these three aspects. To bridge the gap between the suboptimal and the optimal situation, respondents expect that cognitive insights about Parkinson’s disease have to be increased and more (standardized) methods have to be learned. Ideas differ about how the fragmentation-gap should be overcome. Some respondents argue for more contacts, others advocate more intensive and reciprocal approaches, as increased alignment and a collective approach in treatment.

The second question in the empirical study was *“how the adoption of multidisciplinary innovations in health care can be explained”*. As we have seen, a performance gap is more than objective prior preferences of the adopter that are waiting to be discovered. It is a construction influenced by many factors, as the research model in chapter 1 and the theoretical framework in chapter 2 already showed. The research model (figure 5.3) distinguished three influencing factors: professional boundaries, contextual tendencies and boundary processes.

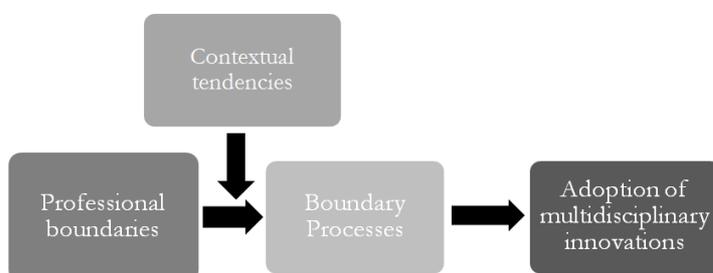


Figure 5.3: Reconsidering the research model

The role of *professional boundaries* is eminent in the case of ParkinsonNet. The experienced fragmentation suggests that the professionals involved in the ParkinsonNet are divided in multiple domains and segments. They are “*professional islands*”. Professionals categorized themselves according to two dimensions, which cause fragmentation: categories of professions and categories of organizations. The first consists of medical specialists, Parkinson’s disease specialized nurses and therapists (physiotherapists, occupational therapists and speech therapists), the latter of hospitals, nursing-homes and primary care practices. Each profession has its own domain that is demarcated by cognitive, technical and social boundaries. Boundaries distinguish a professional domain from other domains, as well as from professional segments. The latter implies differentiation *within* the professional domain, between professionals of the same profession working in different organizations. The need to demarcate a domain or segment is the consequence of inter- and intra-professional ‘boundary struggles’. Domains and segments overlap in the delivery process of Parkinson’s disease treatment, for example that of physiotherapists and occupational therapists. Either, between professional segments respondents experience rivalry, regarding other professionals of the same discipline as ‘competitors’ instead of peers. Boundary struggles emphasize the need to distinguish your domain from other domains. They stress the need to demarcate the contribution of a professional to the delivery process. Hence, boundary struggles are important for the adoption of ParkinsonNet.

Adoption of ParkinsonNet is a way to demarcate the contribution of a professional to the delivery of care for a specific group of patients. Respondents expect by adoption to gain more knowledge, more skills and social cohesion among involved professionals. In other words, they expect *specialization*, i.e. adoption is a way to remain ‘exclusive’. In this way, professional adoption is paradoxical: specialization of professionals is a barrier and at the same time enabler for adoption. The ParkinsonNet case showed that this especially applies for therapists and specialized nurses. Their domain is not historically as well established, as that of medical specialists. They have a lower degree of autonomy and are stronger dependent on organizations. They believe that adoption of ParkinsonNet will attribute to specialization by strengthening cognitive, technical and social aspect of their expert domains, which will give them legitimacy and autonomy.

The case of ParkinsonNet supported the theoretical observation that *contextual tendencies* influence professional practices. These tendencies emphasize the need to show specialization. Data illustrated that management and market ideas are becoming stronger implemented in daily practices of professional. Tendencies of marketization and bureaucratization are both an enabler as barrier for the adoption of multidisciplinary innovations. On one hand, boundary constructions are institutionalized in organizations and financial schemes. This makes it more difficult to integrate professional domains and make existing boundaries permeable. On the other hand, health care insurers and management have a stimulating effect on multidisciplinary practices. Professionals are aware that they have to show their expertise to these parties. They regard this as necessary to legitimize their professional practices, i.e. to deserve autonomy and authority to make decisions about service delivery: about what services are delivered and how treatment is given. A way to show legitimacy is by patient-volume. This is easy to measure and thus a good ‘proof’ of expertise to health care insurers and management.

The last aspect is whether and how *boundary processes* influence the adoption of multidisciplinary innovations. Diffusion policies may function as boundary processes as was emphasized in the theoretical chapter. To understand the adoption process, we should not only focus on the presence of diffusion policies, but rather on the meaning these processes have for adoption. In other words, on how diffusion policies increase the permeability of professional boundaries. ParkinsonNet displays a strong diffusion policy, which spreads their mission statement. It is

based on codification and distribution of the concept in flyers, invitation letters and a website. It includes a training-program and has multiple high-status professionals that provide information about the innovation to potential adopters. The different practices have a symbolic value. They increase reliability of the solution ParkinsonNet offers. What makes the diffusion policy of ParkinsonNet interesting is that it also *constructs* a problem situation. The mission statement provides a clear presentation about why the contemporary situation is suboptimal. They construct a performance gap. Data shows that because this information is spread by a reliable diffusion policy, and because this performance gap corresponds to pressures of demarcating exclusiveness towards other professionals, management and health care insurers, respondents feel that they have to adopt the innovation. This observation shows that diffusion strategies establish feelings of connectedness and trustworthiness of the innovation. Moreover, they create an innovation that adopters 'crave to be part of it'.

## 6. Conclusion and discussion

This thesis is about an unexpected phenomenon: the professional adoption of multidisciplinary innovations. These innovations aim to improve public service delivery by increased cooperation and integration between the different actors in the delivery process. Multidisciplinary innovations promise to solve complex multi-problem situations in an efficient and effective, and therefore cost-reducing, way. Although necessary, multidisciplinary innovations are rarely established. Barriers for establishment are sought in a lack of knowledge-development, financial resources and/or ICT applications. However, as this study showed, to understand and improve the establishment of these innovations, the focus should be on the central actors: the professionals. They deliver social services and therefore are required for the establishment of multidisciplinary innovations. However, they are either a barrier for establishment of multidisciplinary innovations.

Multidisciplinary innovation is uncommon for professionals. Professionals have an exclusive position in society and organizations, because of their expert knowledge and skills. They demarcate their exclusiveness with professional boundaries, which distinguish them from other professional domains, but also from management and society. Professionalism implies differentness. It involves a division in domains. Each domain has its own perspective on expertise: on knowledge, on appropriate methods and on social norms that have to be followed. This complicates cooperation and integration of multiple disciplines in innovation. From the perspective of the professional, multidisciplinary innovations are thus not expected. However, contra-intuitive, there are situations in which professionals are open to the adoption of these practices. These situations were the subject of this research.

This study revealed a paradoxical relationship between professionalism and multidisciplinary innovations in the case of ParkinsonNet. On one hand, professionalism thus implies the demarcation of exclusive domains of knowledge and skills, which prohibits the establishment of these innovations. On the other hand, the adoption of these innovations is *used* to demarcate exclusiveness. This is because multidisciplinary innovations involve specialization: the expansion of exclusive knowledge and skills in a specific field of service delivery. Adoption of multidisciplinary innovations is an opportunity for the professional to demarcate its position in the delivery-process. The following paragraphs elaborate on this paradox. Paragraph 6.1 and 6.2 answer the subquestions and central question that were leading in this study. The practical implications for health care practitioners and policy-makers are discussed in §6.3. The next paragraph elaborates on the theoretical implications. The last paragraph presents the final remarks of this thesis.

### 6.1. Sub-conclusions

The aim of this study was to learn more about the adoption process of professionals for theoretical and practical purposes. The central question in this study was:

*“Why do health care professionals adopt multidisciplinary organizational innovations?”*

Answering the subquestions leads to the answer of this central question.

### **6.1.1. What are multidisciplinary organizational innovations?**

Literature about innovation regards it as a practice that is new and that is more than just an invention of an idea. It may be a process or the outcome of a process, but above all a discontinuity of prevailing practices. Scholars have distinguished multiple types of innovations, which go up to seven categories, as Hartley provided us ((Hartley, 2005). Therefore, we cannot speak about *the* multidisciplinary innovation. There are multiple types. We developed a four-type typology based on the objective and the structure of the innovation. Most demanding is the ‘integrated service’ type, which establishes a new service and core task, based on parallel coordination mechanisms. This type of multidisciplinary innovation requires that multiple adopters have a collective framework and cooperate in developing the new service. The adoption process is more intensive than e.g. sequential types of multidisciplinary innovations, since these do only demand standardization of the delivery process and not a change of the core tasks of the adopter.

### **6.1.2. What are professional boundaries?**

Professional boundaries demarcate the professional domain. The theoretical study demonstrated that the role of professional domains and boundaries has changed over time. The first interest on professionalism in the 1950s and 1960s, focused on the demarcation of ‘the profession’, by determining which professions were exclusive and which were not. ‘To be or not to be’ a professional seemed to be the question. From the 1970s, critical approaches emphasized the monopoly position of professionals. Theories about professional closure stressed the negative sides of self-regulation and dominance. It was argued that domains were out of organizational and governmental control. Boundaries were regarded as hermetically closed frontiers and sources for abuse of power. In the 1990s, this critical perception of professionalism turned. Since then, knowledge-based occupations expand and professional values in the workplace are strengthened. This led to a new perception of professional boundaries. They were not longer regarded as defense of a monopolist power position, but rather as symbolic demarcations to legitimize practices executed by experts.

From this last perspective, it may be argued that boundaries are actively constituted to establish an exclusive field of knowledge and authority. They are the consequence of individual action. However, as the ‘duality of structure’ theory emphasized, boundaries are not only individual, but also either institutionalized in education systems, professional associations and financial structures (see: Giddens, 1984). These institutionalized structures are difficult to change. However, adoption of multidisciplinary innovations requires permeability and flexibility of boundaries. Professionals have to be open for insights of other domains to establish multidisciplinary innovations. Therefore, the empirical research focused on this individual side of professional boundaries, regarding boundary construction as action of individual professionals influenced by institutionalized structures.

Boundary construction has multiple appearances. Three dimensions were distinguished: the cognitive, technical and social dimension. The cognitive dimension emphasizes the expert knowledge of a professional. The technical dimension stresses the specific methodologies and competences and social boundaries focus on the applied social norms and values in the professional domain. These three boundaries demarcate exclusiveness of the professional and attribute to legitimization of its practices.

### **6.1.3. How do professional boundaries affect the adoption of multidisciplinary innovations?**

Private sector literature on innovations has emphasized that innovations take place when the contemporary situation is perceived as suboptimal. Adopters of an innovation expect that this situation can be improved. This gap between

the suboptimal and the expected optimal situation is the *performance gap*. The adoption decision is dependent on the perception of this performance gap.

The theoretical study on innovation and adoption emphasized that in private and public sector literature often a top-down approach is considered. These studies focus on the role of managers and policy-makers, assuming that they can enforce innovation. According to functionalist streams of literature, adoption is determined on a 'logic of consequence'. This implies that the adoption-decision is made upon prior preferences, which are presented in terms of efficiency and effectiveness. The performance gap is constituted between a suboptimal, inefficient and ineffective situation and an expected optimal state of business. Interpretative streams of literature present another way to determine the situation between the contemporary and preferred situation. In public sector studies an interpretative 'logic of appropriateness' is advocated for adoption decisions. This means that adoption is based on a perceived social problem constructed in a specific context. The performance gap is determined by terms of *collective* efficiency and effectiveness, but either by benefits of increased transparency and accountability.

Considering the 'exclusive' and autonomous position of professionals in society and in organizations, it seems that contemporary academic insights are insufficient to understand the adoption process of *professionals*. Therefore, this research introduced the 'professional logic' as adoption framework. Contrary to private and public sector studies, this logic puts the professional in the center of the innovation process. Determination of the performance gap is based on the cognitive, technical and social framework of a professional. Demarcations by professional boundaries construct this framework. The meaning of an innovation is determined according to this construction, this means that a professional will judge an innovation on whether it will be an improvement in knowledge and methods and it suits to the profession's social norms and values.

To understand the professional logic of adoption, the focus has to be on what influences this professional perspective. As was previously stated, the professional logic implies a division of domains in different fields of expertise. Professions do not cooperate or integrate *because* every professional field has its own 'exclusive' domain. This implies that the adoption decision, based on the professional logic, will not be similar for every domain: whereas some domains will regard the innovation as an improvement, others will not.

We argued for two other factors that affect the role of professional boundaries in the adoption process based on literature of professionalism. The first are tendencies in the context of the professional. These are marketization, i.e. professionals have to act in a system of market coordination, and bureaucratization, i.e. the influence of the organization and organizational practices. Managers, governments and other market parties, as health care insurers, aim to influence professional practices to become more efficient, effective, accountable and transparent. However, these parties are dependent on institutionalization of existing professional boundaries. The second factor is the role of boundary processes. These processes aim connect multiple domains. Boundary processes are necessary to establish a mutual perception of the problem situation and the future expectations. It are objects, interactions or individuals that have the ability to reframe the narrow professional perspective into a shared perspective and hence, a mutual perception of the performance gap. Diffusion policies of the organizing organization of the innovation may function as boundary processes and hence attribute to establish this shared perspective.

Because of the multiple influences on the adoption process, the 'professional logic', is combined with the private sector ideas about a 'logic of consequence' and the public sector ideas of a 'logic of appropriateness'. Because this

approach analytically combines on the meta-theoretical level functionalist and interpretative paradigms, an interplay strategy was used. This approach allows to value tensions and connections between these paradigms.

#### **6.1.4. How does professional adoption of multidisciplinary innovations take place in health care?**

To answer this question a case-study approach was used. ParkinsonNet is a successful example of a multidisciplinary innovation. A case in health care was chosen because this sector faces radical challenges for the future. Multidisciplinary practices are necessary in this sector to deal with these challenges. Next to this, the health care sector was chosen because traditionally, professionalism in this sector is strongly developed.

The ParkinsonNet case supported the assumption that professionals base their adoption-decision on a performance gap. This performance gap has three pillars. The contemporary situation is considered as suboptimal because of a (1) lack of knowledge, (2) a lack of (standardized) methods and (3) fragmentation in health care delivery. The respondents regard the ParkinsonNet as a solution to this suboptimal situation. It is believed solve the cognitive and technical problem of a lack of knowledge and methods by providing education and training in the field of Parkinson's disease. Furthermore, it reduces social fragmentation, by providing an integrated network of health care professionals. However, the presupposed benefits of the innovation are unclear. Some respondents have low expectations of the network. Their expectation is just that it will provide them contact with other health care providers. Others have (either) higher expectations about reciprocity in the network. They expect more alignment or even possibilities for a collective plan for treatment.

The empirical study confirms the assumption that the professional adoption is based upon a distinctive professional logic. The different phases of adoption (awareness, attitude formation and decision-making) are strongly influenced by the professional framework and the tendencies that influence this framework. Awareness is in most cases created by the professional association, whereas attitude formation and decision-making is based on the improvements in expertise knowledge and skills.

At first glance, the description of the performance gap implies that respondents have prior preferences about quality of care, in terms of the expertise of the service deliverers. It implies a 'logic of consequence' mechanism of adoption. However, this description does not provide a comprehensive answer to our central question. The 'logic of consequence' does not open the black box of *why* professionals, contra-intuitively, decide to engage in an innovation that integrates them with multiple disciplines.

#### **6.1.5. How can the adoption process of multidisciplinary innovations in health care be explained?**

The adoption process is explained by a paradox. Multidisciplinary innovations (re)structure a service-delivery process. In the case of ParkinsonNet, this is the delivery of care to Parkinson's disease patients. Adoption of a multidisciplinary innovation is a chance to show the contribution of a health care professional in this process. The answer to subquestion four made clear that respondents expect to become more knowledgeable and skillful by adopting the innovation. In addition, the innovations provides them a new social environment that supports the expert position. In other words is an opportunity to demarcate 'exclusiveness', in the field of Parkinson's disease. It strengthens professional boundaries.

Pressure to strengthen the boundaries is internal and external to the professional domains. Internal boundary struggles between professions are a motivation to emphasize the professional position. Professional domains overlap, for example the practices of physiotherapists and occupational therapists. Next to this, new domains are established, such as that of the PD specialized nurse. This requires that professionals show their contribution to the care-delivery process, in comparison to other professionals. In other words, they have to legitimize their position. From the professional's perspective, legitimacy is important because participants in the innovations have affinity with Parkinson's disease patients or elderly patients in general, and aim to continue their services to these patients.

Either, forces external to the professional domain influence the adoption-decision. Tendencies of marketization and bureaucratization make showing legitimacy of authority and autonomy required. Adopters of ParkinsonNet experience that management and health care insurers threaten their 'exclusiveness'. They have to show them that they are legitimate to make decisions about service-delivery: about what services they deliver and how this is done. Specialization by adoption of multidisciplinary innovations contributes to the legitimization-strategy of professionals. It demarcates a professional (sub)domain and hence the position of the professional in the delivery process of Parkinson's disease care. Remarkable is that the professionals with less developed cognitive, technical and social boundaries feel a stronger urge to cross existing boundaries and adopt multidisciplinary innovations. As the description on boundary struggles makes clear, this is not because they see more similarities between health care professionals, but rather because they feel a stronger need to demarcate that they are 'professional'. They feel that they have to show other professionals, management and market parties that they deserve to continue their practices and to claim autonomy and authority.

Another factor that was taken into account was the role of boundary processes. These are processes that connect multiple domains. This research showed that the organizer of an innovation contributes to these boundary processes. The ParkinsonNet organization effectively influenced the need for legitimization strategies among professionals and supported the professional judgment to what extent the innovation may contribute to legitimization. The organization has not only a role in presenting the solution for a problem, but also in the construction of the problem situation. The ParkinsonNet innovation emphasized the need for multidisciplinary innovation, in stimulating awareness of the problem by a clear mission statement. This was done by successful diffusion policy. This included symbolic objects, such as scientific publications, interactions by information meetings and education, support of professional associations and of respected individuals that fulfill a broker-role as *liaison* between multiple disciplines. What made this diffusion policy successful is that it adapts to the professional logic of adoption. It does not only present improvements of the innovation in terms of efficiency and effectiveness, but either in professional terms, such as quality of care by increased expertise of service deliverers. The use of a 'reliable' diffusion policy successfully contributes to the adoption of multidisciplinary innovations by multiple professional domains.

#### **6.1.6. How can adoption of multidisciplinary innovations be improved?**

Although the implications of this research will be discussed in §6.3, some considerations about the innovation process are presented here. First, this research shows that multidisciplinary innovations cannot only be enforced by management or market parties without considering the professional perspective. Innovation may be necessary to improve public service delivery, but just 'demand' is not enough. Neither, it is sufficient to consider only a lack of knowledge development, financial resources or ICT applications as blockades for innovation. As this study shows, a focus on the professional is required. Not only to understand the adoption process, but also to improve it. Advocates of multidisciplinary innovations should be aware of the considerations of professionals. Although this

study showed that professionals are conscious about management-ideas of efficiency and effectiveness, their ‘professional logic’ is the determinant for the decision to adopt an innovation. Their logic is based on their cognitive, technical and social framework. This framework is the core of professionalism: it distinguishes professionals from management and market parties. Advocates of multidisciplinary innovations should consider ‘what is in’ for professionals, in terms of strengthening and legitimizing their expert position.

## **6.2. The paradox of professional adoption of multidisciplinary innovations**

The central question was why professionals adopt multidisciplinary innovations. Considering the previous subquestions, the answer to this central question is paradoxical. Specialization of professionals is a barrier and enabler for the adoption of multidisciplinary innovations. Although specialization complicates connections between domains, adopters of the ParkinsonNet innovation expect to increase their specialization: more knowledge improved methods and connections with other expert health care providers involved in the delivery of care to Parkinson’s disease patients. For them, adoption is a way to demarcate professional ‘exclusiveness’. Increased specialization is regarded as important to distinguish oneself as a professional. This study demonstrated that specialization is part of the legitimizing strategy of professionals. Participating in a multidisciplinary innovation makes them *more* exclusive. It underlines differentness. However, this does not mean that domains naturally collide. The contextual tendencies and boundary processes play an important role. Professionals feel that management and market parties increasingly demand ‘exclusiveness’. Management of organizations and health care insurers demand that professionals legitimize their autonomous position in the process of service delivery. Furthermore, boundary processes, which may be influenced by the organizer of an innovation, connect domains. The entrepreneur is able to construct a problem and a solution by effective diffusion policy that corresponds to the professional perspective on adoption.

To conclude, this research argued that a functionalist ‘logic of consequence’ perspective is unable to open the black box of professional adoption of multidisciplinary innovations. Understanding goes beyond the description of the performance gap. To understand the position of professionals, the ‘professional logic’ has to be considered. In addition, the establishment of a comprehensive picture requires the reflection of the context in which innovation takes place. Public sector literature has described this as ‘the logic of appropriateness’. This empirical research contributes to this ‘logic of appropriateness’ approach to innovation. It extends the contemporary ideas about this logic by adding the professional perspective. Appropriateness in this study implies insight in the pressure on professionals to demonstrate ‘exclusivity’ towards professional peers, management and market parties. The combination of the three logics helped to understand how professionals constitute the performance gap and why the need to close this gap is translated to innovative action. Moreover, it helps to understand professional struggles about exclusiveness, legitimacy and, in the end... patients.

## **6.3. Practical discussion: implications of multidisciplinary innovations**

The health care sector faces radical challenges for the future. First, because of the graying society, the amount of elderly people is rising. This implies more people with chronic and complex diseases, such as Parkinson’s disease. These people are often in a situation that involves multiple problems both in the medical, as non-medical sphere. Second, multidisciplinary innovations are the solution to solve the challenges in health care supply. Shortages in labor

supply, especially of nurses, and rising expenditures in times of economic crisis, require efficient and effective processes for service delivery. Multidisciplinary innovations are the ‘magic spell’ to deal with these challenges.

The practical purpose of this research was to give insight in motivations and factors that influence adoption of multidisciplinary innovations in the health care sector. The previous chapters indicate that this is research has implications for the health care practitioners (professionals, managers, entrepreneurs) and policy makers.

### **6.3.1. Health care practitioners**

This research placed the position of professionals central in the adoption process of multidisciplinary innovations. It showed that professionals may benefit from adoption. Often professionals do not integrate or cooperate with other professions because they believe that other professionals have differing insights about knowledge, appropriate methods and social norms. This study showed that adoption of multidisciplinary innovations contributes to *emphasizing* existing professional values. The shared goal of increased ‘exclusiveness’ connects professionals, instead of dividing them. Adoption is a way to show what a professional contributes to the service delivery process. Furthermore, accordingly to the professional logic, it is a chance to increase quality of care by increased expertise of the service deliverers, i.e. the professionals. For the adopters of ParkinsonNet, participation in a multidisciplinary network, i.e. putting a ‘ParkinsonNet flag’ in front of their organizations, is a way to show quality and hence attracts patients. Patient-volumes are an easy measurement of legitimacy. Therefore, adoption of a multidisciplinary innovation, including participating in a specialist network, is beneficial for the exclusive position of professionals.

Although managers of organizations did not physically participated in this research, the results either do have implications for them. Contemporary developments of marketization and bureaucratization strengthen the position of external parties to control professionals. The introduction about the doctor’s strike is exemplifying for the tensions between professionals on one hand, and managers and government on the other. The ParkinsonNet case underlined this tension. This research emphasized that to improve organizational practices, managers should not only regard the financial benefits of innovations in terms of efficiency and effectiveness. One should consider what is in for professionals to establish improvements in service delivery. However, as this study illustrates, neither professionals, nor managers are in charge of the adoption-decision. Multidisciplinary innovation is a complex process in which both managers and professionals have to cooperate.

Organizations that invent and distribute innovations may learn from this research. Organizations should be aware of the symbolic effects of their diffusion policy. To cross professional boundaries, entrepreneurs should emphasize the problem construction in terms of efficiency and effectiveness, but foremost in professional values as improvement of quality by increased expertise. The ParkinsonNet case is a clarifying example: by scientific publications, a clear mission statement, education program and brokers from within the professional domain, they succeeded to establish and distribute a multidisciplinary innovation.

Two concluding thoughts remain about the implications for health care practitioners. The ParkinsonNet case showed that coordination of multidisciplinary networks is problematic. Networks that cross professional *and* organizational boundaries are believed to establish an optimal situation to deal with the challenges for the health care sector. In this situation, hospital care is combined with follow-up care in nursing homes and primary care practices. However, coordination of these multi-professional and multi-organizational networks is complicated. The ParkinsonNet case showed that many professionals regard themselves as coordinator: doctors, PD specialized

nurses, and even some therapists. This is understandable, because being the coordinator implies an important position in the delivery of health care, and hence contributes to legitimacy of the professional position. Nevertheless, there is tension between coordination on one hand and specialization on the other. Coordination requires a ‘generalist’ perspective, whereas specialization implies a narrow view. In some cases, this is solved by the introduction of the specialized nurse, although their positions may differ from case to case and they are often orientated on hospital-care as the example of ParkinsonNet showed.

This brings us to a second consideration. Health care practitioners neglect the person that has the best ‘generalist’ view over the disease and its complete context, namely the patient. The patient constitutes an important part of the professional perspective. Knowledge, methods and social norms are agreed to serve ‘the patient’. However, in the case of ParkinsonNet this patient was a passive object for professionals. Although market regulation requires a stronger role of the patient, it is still undervalued as active actor in the delivery process. A proposition may be that to solve the coordination problem, health care practitioners should value the position of the patient as active actor, giving them a central role in service delivery and provide them with the multi-professional care they need.

### **6.3.2. Policy makers**

This study provides policy makers in the health care sector insight about innovation and adoption in the sector. As was considered, the government has only limited possibilities to interfere in the health care sector, where market parties are the governing institutions. However, the challenges of changing demand and supply are a political issue, since the Dutch Constitution determines that proficiency of accessible and affordable health care is a public task. The instruments to fulfill this task are limited, especially when it comes to innovation. Innovation is an activity that takes place ‘at the market’, initiated by suppliers and mediating parties such as health care insurers. The government can stimulate, but not enforce health care practitioners to innovate.

However, the system of *regulated* competition implies that the government has the ability to influence the parties on the market: professionals, managers and health care insurers. The government is able to create incentives for the different parties to innovate and to establish cooperation and integration. A suggestion of stimulation is the support for diffusion policies of entrepreneurs. For example, the awards that ParkinsonNet won were a stimulus to increase reliability of the innovation. Hence, it increased its symbolic ability to connect professional domains. However, financial incentives for innovation may disturb the market mechanism and therefore the government should be cautious to stimulate parties in this manner, especially because these will not solve the core of the innovation-problem.

## **6.4. Theoretical discussion: a professional perspective on innovation**

Theoretically, the role of professionals in the development of innovations, especially in multidisciplinary types, is underexposed. This is remarkable since the stock of knowledge about innovation seems to be inexhaustible, both in private as in public sector literature. This study advocates a reappraisal of professionalism, especially in innovation research. It shows that professionalism is not diminishing, nor that professionals are ‘de-professionalizing’. Rather, the empirical case showed that in times where pressure of market and management rises, professionals aim to strengthen their professional position in unexpected ways as the adoption of multidisciplinary innovations. This would argue for ‘re-professionalization’. Attention for re-professionalization implies recognizing professionalism as

an important regulation mechanism in a knowledge-based society. The historical discussion about boundary theories made clear that professionalism nowadays is not just about occupational or organizational control (Duyvendak, et al., 2006; Noordegraaf, 2007). In complex societies, where market and business logics are becoming increasingly important, the focus should be on *why* a group of workers desires to be a professional and *what* actions they undertake to establish this professional status. Hence, professional innovation is not only a matter valuing professionalism. Theoretically, this study contributed to innovation studies by providing a third perspective on adoption processes. This perspective is different, because it does not assume a top-down approach. The case of ParkinsonNet showed that to understand the innovation process, researchers should not only consider the 'logic of consequence', but also, highly important, a *professional* 'logic of appropriateness' in adoption decisions.

#### **6.4.1. Suggestions for further research**

The focus on professionalism by a case-study approach contributed to understanding of the process for the adoption of ParkinsonNet. However, more research is necessary to see whether the insights of this study will hold future research in other contexts. First, more research is necessary to see to what extent legitimization strategies have a role in the adoption process of the other types of multidisciplinary innovations as were distinguished in our typology. The *integrated service* approach is considered as the most intensive option. Interesting to see is if the adoption of other multidisciplinary approaches is based on similar argumentation. Even when the innovation is based on existing services or on a more sequential structure.

Another field for future research is disengagement of multidisciplinary innovations. The focus in this study was on adopters. What about the professionals who decide not to engage in these innovations? What influences their decision to disengage from multidisciplinary innovations? Especially, longitudinal research would be interesting to study the process of disengagement to see how the adoption process of information seeking, attitude establishing and decision-making takes place.

Last, the conclusions of this research are bounded to the health care sector. This sector is an outstanding example of flourishing professionalism. However, research to implications of this research in other situations, where other contextual factors apply, would be useful to understand professionalization as a legitimization strategy.

#### **6.4.2. Meta-theoretical implications: Gains of an interplay approach**

This research project used an interplay approach to combine the strengths of a functionalist and interpretative perspective. It is argued that for a better understanding of the relationship between professionalism and innovation, not an *either-or* approach should be taken towards paradigms, but rather a *both-and* perspective. This study showed that the interplay approach, as described by Schultz and Hatch, offers several analytical advantages.

First, it allows that differing theoretical insights are combined into one conceptual framework, as was done in this study. Second, the interplay approach offers an opportunity to analyze empirical data from both perspectives. This was specifically insightful, because not only connections between the paradigms were emphasized, but also tensions between paradigms (table 6.1). This paragraph will elaborate on these tensions to accentuate the advantages of the interplay-strategy.

**Table 6.1. Tensions between the functionalist and interpretative paradigm**

<b>Functionalist</b>	<b>Interpretative</b>
Generality	Contextuality
Stability	Instability
Clarity	Ambiguity

*Generality - Contextuality*

The tension between generality and contextuality arises whether the adoption process can be regarded as a predefined generality or an emergent contextual construction. From a functionalist perspective, adoption is based on a 'logic of consequence' it assumes prior preferences of the adopter. It assumes that perception of a suboptimal situation, combined with expectations about an optimal situation, will lead to adoption. However, an interpretative standpoint values a contextual approach. It regards the performance gap as a social construction in a certain context. By regarding contextuality from a general point of view, we were able to understand the adoption mechanism in more detail. The legitimization-strategy, which this study denoted as the driver of adoption, is based on the general adoption mechanism. It starts with the perception of the performance gap. This is extended with the influence of 'contextual' elements. The reasoning is that when professionals become more aware of their environment, they become more aware of their professional exclusiveness and the need to legitimize this by showing knowledge and skills. As a consequence, tension between domains rises and adoption of multidisciplinary innovation becomes a more appealing solution. The local contextual construction of legitimization processes shows the content of the boundary struggles, between domains and professionals of different organizations. In the case of ParkinsonNet, these are the boundary struggles in local situations. For example, the struggles between physiotherapists and occupational therapists about the treatment of 'transfers', or the discussion whether PD specialized nurses are in charge of medical practices, as prescription of medication.

*Stability – Instability*

The connection between stability and instability is based on the acknowledgement that adoption is a relative stable process. Both paradigms regard adoption as a structure that can be studied from an outsider's perspective. The conflict in the research process arises whether this process is dependent on the perspective one takes. The functionalist paradigm assumes that the adoption process is the same from every perspective. It assumes the existence of an objective and *stable* performance gap. In the case of ParkinsonNet, this implies a lack of knowledge, methods and social cohesion. The interpretative approach assumes that the performance gap is influenced by its context. This implies that how the adoption process is seen, depends on the perspective, the perception is *unstable*. This study recognized instability from the position of stability. We started by describing the performance gap as a stable gap between a suboptimal and optimal situation. However, by opening the black box of adoption, we revealed instability in this process. This interpretative approach showed the significance of boundary constructions and contextual influences. For example, a medical specialist, who has a relatively strong professional domain, denotes the performance gap less strong than professionals, which lack this powerful position. Therapists and nurses feel more pressure to show their expertise and legitimize their position.

This tension was either visible in the discussion of ‘contextual tendencies’. From a functionalist perspective context is a stable list of objective characteristics. From an interpretative approach, context is unstable, dependent on the interpretation of the local actor. The tension between these two perception was appreciated by describing ‘tendencies’ in the context, i.e. developments in the environment which impact may vary in the local situation.

#### *Clarity – Ambiguity*

The third tension is between clarity and ambiguity. Clarity implies categorization, establishing a certain order to understand reality. The interpretative perspective emphasizes that the establishment of categories is based on associative thinking. There are multiple ways to categorize social reality, and the meaning of categories may differ.

This research interfered only at one moment in time. Therefore, it is difficult to see whether some ‘clear’ ideas about the world may be ambiguous when they are considered over a longer time, as Schultz and Hatch suggest. However the tension between these paradigms is visible, when we consider the inter- and intra-professional boundary struggles, which are the foundation for legitimization strategies. In this study categorization was used by respondents to clarify their position. We followed this categorization in this report by distinguishing between professions and between organizations. The interpretative approach showed ambiguity within these categories. Professions and organizations differ in professional and organizational history, in the role of management of different organizations, and in geographical location. Some hospitals and nursing homes had developed already multiple multidisciplinary initiatives, which influenced their perception of the performance gap. For example, some participants experienced stronger competition towards professionals who were already involved in a previous multidisciplinary initiative for Parkinson’s disease care. Either within professional disciplines differences arise. It makes a difference whether a professional works in a nursing home and is mostly involved in treatment of hospitalized patients or whether he is an owner of a primary practice. Whereas the first feels less pressure to actively recruit patients for legitimacy, since hospitalized patients will be there anyhow, for the practice-owner this is an important task. Hence, it influences their adoption-strategies and illustrates that, on the first sight, clear categories may be more ambiguous when an interpretative perspective is taken.

In sum, the interplay approach as suggested by Schultz and Hatch provides a useful framework for analysis. However, we should either consider its limitations for research. Commensurability of paradigms is based on connections. Only then paradigm-tensions may be valued. Data collection and writing require a shared ground. Schultz and Hatch have demonstrated that for the topic of culture it was possible to make these paradigm connections. This research showed this was also able for the field of innovation. However, for subjects and research question that lack these connections, an interplay approach seems to be unsuitable. Although Lewis and Grimes (1999) suggest that involvement of multiple paradigms is applicable for every topic, one should be aware that the gains of an interplay approach are a more comprehensive, instead of a more fragmented understanding of the subject. Therefore, we argue that paradigms are only commensurable in specific circumstances and when one is careful to see tensions between them.

## **6.5. To conclude**

To conclude, multidisciplinary innovations may offer many opportunities for researchers, professionals and patients. This research illustrated the complex relationship between the actors involved and their abilities and inabilities to establish multidisciplinary innovations. Cooperation and integration of actors in the service delivery process may contribute to deal with future challenges of more complex demand and the need to reduce public expenditures. This study showed that there is not one single answer to the central question *“Why do health care professionals adopt multidisciplinary organizational innovations?”*. However, it made clear that only ‘crossing boundaries’ by motivated professionals will lead to professional innovation, which is necessary for our future health care system.

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## Attachment 1: Operationalization

### *Professional Boundaries*

Cognitive boundaries	Knowledge & Skills	Knowledge claims
		Formal education
	Scientific foundation	Scientific evidence
		Professional scientific associations
		Academic base
	Expertise	Experience in treatment of specific characteristic or disease
	Consumer view	Biomedical vs. interpersonal
Consumer's name		
Consumer's demand		
Technical boundaries	Methods	Techniques
		Therapies
	Clinical guidelines	Availability
		Awareness
		Utilization
	Competences	Fingerspitzengefühl, cooperation, empathy, rationality, social responsibility and/or organizational competences.
Social boundaries	Day-to-day interactions	Meetings with organizational members of same profession
		Meetings with organizational members of other professions
	Professional associations	Membership
		Frequency of attendance of meetings
	Education	Formal education program
		Momentum of education

### *Tendencies in the context of the professional*

Marketization	Financial schemes	DBC-structures
		AWBZ-schemes
	Demand-focus	Purchaser organizations
	Competition	Feelings of rivalry between professionals
Bureaucratization	Management	Influence of managers on daily practices
		Management discours
	Organizational loyalty	Commitment to organization objectives
	Technical dependency	Informating ICT
Automating ICT		

## Attachment 2: Topic lists

### *Interview-guide Twente (in Dutch)*

#### **A. Algemene introductie**

- Voorstellen Martijn & Denise
- Duur van interview: 1 uur
- Verslaglegging/terugkoppeling
- Anonimiteit

#### **B. Topics**

1. Vertelt u eens over uzelf...
  - Functie, setting
  - Rol in zorg voor Parkinson patiënten, patiëntvolume
  
2. Hoe ziet de huidige zorg rondom patiënten met de ziekte van Parkinson eruit?
  - Organisatie van zorg: samenspel (taakverdeling, communicatie, verwijzen, richtlijnen)
  - Knelpunten/onvrede
  - Positieve punten
  
3. Welk beeld heeft u van ParkinsonNet?
  
4. Welk verstaat u onder multidisciplinair werken?
  
5. a) Welke redenen heeft u om zich aan te sluiten bij een multidisciplinair samenwerkingsverband?  
b) Waarom specifiek bij ParkinsonNet?
  - Waren er twijfels?c) Wat vindt u vernieuwend aan ParkinsonNet?  
d) Hoe zag het beslissingsproces eruit:
  - Hoe informatie gekregen?
  - Wanneer wist u dat u mee wilde doen?
  
6. In literatuur 'performance gap': het verschil tussen hoe situatie nu is en hoe je denkt dat het zou moeten zijn. In het geval van ParkinsonNet, ervaart u dit verschil?
  - Hoe ziet dit verschil eruit?
  - Waarop wordt dit gebaseerd?
  - Hoe zou de ideale situatie eruit zien?
  
7. Welke verwachtingen heeft u van ParkinsonNet?
  - Op het gebied van:
    - i. Samenwerking met andere zorgprofessionals

- ii. Andere invulling behandeling van patiënten/dagelijkse praktijk
- iii. Aantal/soort patiënten
- Welke belemmeringen voorziet u voor ParkinsonNet in de regio?

**C. Afsluiting**

Bedanken voor medewerking

Nog opmerkingen of vragen van respondent?

*Interview-guide Utrecht & Eemland (in Dutch)*

**A. Algemene introductie**

- a. Voorstellen; Duur (1u), Verslaglegging, Anonimiteit

**B. Topics**

- a. Vertelt u eens over uzelf...
  - b. Functie, setting
  - c. Rol in zorg voor Parkinson patiënten, patiëntvolume
2. Hoe zag de zorg rondom patiënten met de ziekte van Parkinson eruit voor ParkinsonNet?
    - a. Organisatie van zorg; samenspel (taakverdeling, coördinatie, communicatie, verwijzen, richtlijnen)
    - b. Knelpunten/onvrede
    - c. Positieve punten
  3. Welk beeld had u van ParkinsonNet?
    - a. Is dat veranderd?
  4. Welk verstaat u onder multidisciplinair werken?
    - a) Welke redenen heeft u om zich aan te sluiten bij een multidisciplinair samenwerkingsverband?
      - Rol van richtlijn (multidisciplinair)
    - b) Waarom specifiek bij ParkinsonNet?
      - Waren er twijfels?
    - c) Wat vindt u vernieuwend aan ParkinsonNet?
  5. Hoe zag het beslissingsproces eruit:
    - a. Hoe informatie gekregen?
    - b. Wanneer wist u dat u mee wilde doen?
  6. In literatuur 'performance gap': het verschil tussen hoe situatie nu is en hoe je denkt dat het zou moeten zijn. In het geval van ParkinsonNet, heeft u dit verschil ervaren?
    - a. Hoe zag dit verschil eruit?
    - b. Waarop werd dit gebaseerd?
    - c. Hoe zou de ideale situatie eruit zien?
  7. Welke verwachtingen had u van ParkinsonNet?
    - a. Op het gebied van:
      - i. Samenwerking met andere zorgprofessionals

- ii. Andere invulling behandeling van patiënten/dagelijkse praktijk
    - iii. Aantal/soort patiënten
  - b. Welke belemmeringen voor zag u voor ParkinsonNet in de regio?
- 8. Hoe is het afgelopen?
  - a. Verwachtingen waargemaakt?
  - b. Wat liep anders in positieve zin?
  - c. Wat viel tegen?
  - d. Nu zelfde besluit?

**C. Afsluiting: Bedanken + vragen/opmerkingen?**

## Attachment 3: Code tree

ParkinsonNet algemeen

Interesse in ziektebeeld

Rol van huisarts

### 2. Multidisciplinaire innovatie

Sociaal gat

Technisch gat

Cognitief gat

Netwerk

#### 2.1. Contacten

Vaste samenwerkingspartners

Bekende gezichten

Gemotiveerde deelnemers

Contacten

Lagere drempel

#### 2.2. Afstemming

Overleg

Korte(re) lijnen

Ziektegebonden informatie uitwisselen

Doorverwijzen

Afstemming

Informatie delen

Tijdsbesparing

Gestructureerd samenwerken

Weten wie wat doet

Weten bij wie je moet zijn

Weten wat je van elkaar wilt horen

#### 2.4. Gedeelde aanpak

Meedenken

Andere disciplines aanvullen

Overzicht

Gezamenlijk plan

1 lijn

Dezelfde taal

Gezamenlijk problemen verwoorden

Groepsgevoel

Gedeelde kennis

#### 2.5. Voorwaarden

Coördinatie

Feedback

Tekortkomingen aangeven

#### 2.6. Netwerk

Wederkerigheid/Wisselwerking

Netwerk

Onduidelijkheid

Monodisciplinair

Website

Verwachtingen van andere deelnemers

Tapijt uitgerold

Gewenste verhoudingen

### 3. Professional boundaries

Profilering

Intra-professioneel

Sociaal

Technisch

Methoden

Richtlijn

Competenties

Cognitief

- Wetenschappelijk onderzoek
    - Kennis & vaardigheden
    - Expertise
  - Inter-professioneel
    - Sociaal
      - Beroepsgroep
      - Contact met mensen uit opleiding
      - Extramurale contacten
        - Samenwerking
        - Terugkoppeling
        - Communicatie
      - Intramurale contacten
        - Aanspreekvorm
        - Communicatie
        - Gedragscodes
    - Technisch
      - Competenties
      - Methoden
    - Cognitief
      - Wetenschap
      - Patientbeeld
      - Kennis en vaardigheden
- 4. Context ontwikkelingen
  - Marktwerking
    - Ketenzorg
    - Vraaggericht werken
    - Financiering
    - Concurrentie
  - Bureaucratisering
    - Bedrijfsmatige invloeden
      - Fusies zorginstellingen
    - Gestandaardiseerd werken
    - Betrokkenheid bij organisatie
    - 'Democratisering in de zorg'
  - Eerste lijn
- 5. Boundary processen
  - Objects
    - Website ParkinsonNet
    - Uitnodigingsbrief
    - Flyers
  - Interactions
    - ParkinsonNet scholing
  - Brokers
    - Positie B. Bloem

## Samenvatting

Het doel van dit onderzoek was om de positie van professionals bij multidisciplinaire innovaties in dienstverlening te onderzoeken in de gezondheidszorg. Vernieuwing van professionele dienstverlening is noodzakelijk. De ouderwetse chirurgijn met zijn tangen en scharen is vervangen door een moderne specialist met laparoscopie. Maar ook de moderne professional dient bij te blijven. Gezondheidszorg moet efficiënter en effectiever. Ook dient de zorg een antwoord te bieden op de complexe, chronische, ziekteproblematiek van patiënten. Vernieuwing gaat om innovaties waarbij verschillende professionele disciplines betrokken zijn: multidisciplinaire innovaties.

Dit type innovaties is complex in de gezondheidszorg. De sector wordt gekenmerkt door gespecialiseerde beroepsgroepen. Specialisatie betekent 'exclusiviteit': anders zijn dan anderen dankzij specifieke kennis en kunde. Deze kennis en kunde begrenzen het domein van de professional. Multidisciplinaire innovaties overschrijden deze grenzen. Deze grenzen zijn een barrière om deze innovaties in de zorg te bewerkstelligen. In uitzonderlijke situaties vinden deze innovaties toch plaats. Dit onderzoek stelt daarbij de vraag: *Waarom participeren professionals in multidisciplinaire innovaties?*

Een relatief succesvol voorbeeld van multidisciplinaire innovaties is ParkinsonNet. Dit initiatief vormt regionale netwerken van zorgprofessionals (neurologen, gespecialiseerd verpleegkundigen, fysiotherapeuten, ergotherapeuten en logopedisten) betrokken in de behandeling van Parkinson patiënten. Door middel van interviews met 19 deelnemers aan deze innovatie, observaties en document-analyse, is geprobeerd de onderzoeksvraag te beantwoorden.

De resultaten van dit onderzoek laten zien dat de motivatie van betrokkenen in ParkinsonNet drievoudig is. De respondenten zien in ParkinsonNet een oplossing voor:

1. Gebrek aan kennis
2. Gebrek aan (standaard) methoden
3. Gebrek aan sociale samenhang tussen behandelaars

De oplossing ligt in specialisatie: in meer kennis en kunde over de ziekte van Parkinson en contact met andere experts op dit ziektegebied. Dit is eigenlijk paradoxaal. Terwijl specialisatie werd gezien als barrière, blijkt het *ook* een stimulans om multidisciplinaire innovaties te bewerkstelligen. Specialisatie is belangrijk voor professionals om zich te onderscheiden, om te laten zien wat de bijdrage is van een zorgprofessional aan het ziekteproces. Het laten zien van deze bijdrage wordt belangrijk gevonden, want professionele 'exclusiviteit' is dynamisch en staat onder druk. Dit is omdat professionele domeinen overlappen en nieuwe beroepen bij komen. Het onderscheid tussen de fysiotherapeut en de ergotherapeut is geen dikke lijn, maar een grijs gebied. Evenals de werkverdeling tussen de neuroloog en de gespecialiseerd verpleegkundige. En ook het onderscheid tussen professionals die werken in een ziekenhuis en in een praktijk op de hoek is niet eenduidig, zoals de deelnemers in ParkinsonNet aangeven.

De druk komt dus van 'binnen' het professionele domein. Maar meer nog van buiten. Daarbij gaat het om legitimatie van autoriteit en autonomie: 'wie heeft waarover de beslissingsmacht?'. Dit is de tweede reden waarom specialisatie belangrijk is voor professionals. De beslissingsmacht ligt namelijk niet meer alleen bij professionals. Professionals zijn onderdeel van organisaties en van een 'markt'. Zij moeten aan management en zorgverzekeraars laten zien dat zij

gelegitimeerd zijn om besluiten te mogen nemen. Dat ze meerwaarde hebben in het ziekteproces. Specialisatie draagt bij aan de legitimatiestrategie van professionals: Het begrenst expertise, autoriteit en autonomie.

De organisator van een innovatie draagt bij aan de redenen waarom zorgprofessionals meedoen aan multidisciplinaire innovatie. De organisatie brengt niet alleen een oplossing voor een probleem, maar maakt professionals ook bewust van een probleem. Het onderzoek naar ParkinsonNet laat zien dat bewustwording gestimuleerd kan worden. Dit kan bijvoorbeeld in informatie over de innovatie die verspreid wordt aan potentiële deelnemers. De bewustwording moet echter wel geloofwaardig en betrouwbaar zijn. Het geschetste probleem moet aansluiten bij de kennis, kunde en ervaring van professionals. Zoals een laparoscopie een waardige vervanging werd geacht voor messen en tangen, zo moet een multidisciplinaire aanpak een bewezen verbetering zijn van de bestaande werkmethode om door professionals te worden geadopteerd. De organisatie van ParkinsonNet heeft dit succesvol gedaan door het verspreiden van informatie via wetenschappelijke publicaties, voorlichtingsbijeenkomsten voor professionals, steun van beroepsverenigingen en via promotie door gerespecteerde personen die een *liaison*-functie kunnen vervullen tussen de professionele domeinen.

Deze bevindingen kunnen als volgt worden samengevat:

1. Multidisciplinaire innovaties dragen bij aan specialisatie van professionals. Meer kennis en kunde: onderstrepen wat je weet en kan. Specialisatie is belangrijk om je te onderscheiden als professional. Professionals zouden zich meer bewust moeten worden van de mogelijkheden die multidisciplinaire innovaties bieden op dit gebied.
2. Het onderscheidend vermogen wordt niet alleen door andere zorgprofessionals gevraagd. In toenemende mate moet verantwoording worden afgelegd aan managers en zorgverzekeraars. Het gaat om legitimatie van expertise, autoriteit en autonomie. Voor managers en zorgverzekeraars betekent dit dat zij zich meer op de belangen van de professionals zouden moeten richten om efficiëntere en effectievere zorg te bewerkstelligen, in plaats van alleen op de financiële overwegingen en organisatiebelangen.
3. De organisatie van een innovatie draagt bij aan adoptie van multidisciplinaire innovaties. Zij biedt niet alleen een oplossing, maar ook een probleem. De organisatie maakt professionals bewust hoe een multidisciplinaire innovatie bijdraagt aan specialisatie: aan meer kennis, betere methoden en sociale verbanden die dit onderschrijven. Dit vraagt om een goede en bewuste verspreidingsstrategie. De strategie van ParkinsonNet kan daarbij als voorbeeld dienen voor nieuwe initiatieven, die in de toekomst hoogst noodzakelijk zullen zijn.