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# 1

# Setting the scene: introducing the topic of service innovation and its management

## 1.1 Introduction

Service innovations are ubiquitous and do affect our daily and business lives intensively. A few firm-level examples may illustrate our point.

In retailing IKEA has over the years developed a smart service concept of well designed Do-It-Yourself furniture at 'democratic' prices. Apart from the physical products, the IKEA experience is in fact a tremendously complex combination of design and outlays of stores, a new way of service delivery ranging from customers helping themselves in combination with empowered employees, smart pricing strategies and various tools and services to help customers solve their day-to-day problems. The recently launched 'design your own life' initiative further adds to the rich service dialogue IKEA has with its customers and in creating inspiring communities of customers from which both IKEA and the rest of the 'IKEA family' benefit.[1]

Dutch company Athlon Car Lease sells mobility rather than providing cars. It has developed various packages of services wrapped around car leasing. One of its typical service innovations is its sustainable mobility plan. In various steps corporate clients i.e. fleet-owners and their employees are offered a package of environmentally-friendly 'mobility solutions'. The need to travel is assessed, clients are offered the use of flexible meeting facilities and offices around the country, alternative modes of transport (railways) and mobile secretarial services. Clients are also 'seduced' to lease relatively environmentally-friendly cars and offered a motivational programme to drive more environmentally-friendly.

Philips Healthcare increasingly offers service solutions involving maintenance and remote services, education and training, design and lay-out in hospitals, utilization services (offering insight on how to optimize the use of expensive equipment i.e. workflow management), consultancy and finance. These service elements are offered in various combinations. Services are no longer add-ons to the physical products, but are increasingly sold as solutions in which expensive medical equipment is integrated.

These three examples – and there are many more in both the private and public domain – illustrate that service innovation does matter but can be complex. Service innovations are multi-dimensional and may require much more ingenuity to create and successfully introduce on the market than is often anticipated. At the same time we observe that we know little about service innovations and especially how to effectively manage service innovation at firm and policy level. This PhD thesis deals with service innovation and its management at firm and policy level.

1 The 'Design Your Own Life' initiative (www.ikea.com/ms/nl_NL/designyourownlife/home.html) challenges customers to share the designs they created using IKEA products and inspire other (potential) customers.

Fortunately, service innovation and its management is increasingly on the radar of industry, academia and policy-makers alike (see e.g. Coombs and Miles, 2000; van Ark et al., 2003; Gallouj, 2002; OECD, 2005a; European Commission, 2009). This is also mirrored in the steadily expanding literature on service management, service marketing and service innovation, the rise of the service-dominant logic perspective (Michel et al., 2008; Vargo and Lusch, 2004a and 2004b; Lusch et al., 2008), and global deliberations on a comprehensive service science (IfM and IBM, 2008; Ostrom et al., 2010).

However, this is not to say that the move towards an innovation paradigm in which services play a more pronounced role is smooth and easy. In section 1.2 we articulate two key problems in service innovation and its management and show how we address them, combining the service (innovation) management perspective and the Resource Based View/Dynamic Capabilities View of the firm (RBV/DCV).[2] In the remainder of this 'setting the scene' chapter we then briefly indicate how we interpret services in this thesis and define service innovation (section 1.3). We subsequently introduce the topic of service innovation further by briefly discussing why services and service innovations are so important (section 1.4) and why service innovation is difficult to assess fundamentally in practice (section 1.5). We continue by formulating the central research questions addressed here and present our approach and an outline of this thesis (section 1.6). Finally, we outline our contribution to the service innovation debate (section 1.7).

## 1.2 Two key problems addressed

In this thesis we address two key problems in relation to service innovation and its management at both firm and policy level. Firstly, most of our current understanding of service innovation and its processes is still biased towards the dominant paradigm of technological innovation in a manufacturing setting. The majority of innovation and management scholars, statisticians, policy-makers as well as the wider audience all too often still associate innovation predominantly with technological innovation in manufacturing firms where innovation is the result of a concentrated R&D effort and is basically a linear innovation process.[3] Innovation management textbooks for example are predominantly about managing technological innovation. Likewise technological definitions of innovation still dominate innovation surveys and we are only at the brink

2 By service (innovation) management literature we mean various traditions in service management, service marketing, service operations and New Service Development (NSD) studies and service innovation studies that contribute to analysing service innovation and its management. These traditions are discussed in section 1.6. The RBV/DCV is a popular approach in strategic management. A brief introduction into the RBV/DCV of the firm for non-specialists is included in annex 3.

3 This observation may be true for some firm managers, although many of them working in service-dominant firms are in practice already deeply involved in processes of service innovation.

of measuring innovation in services and more broadly non-technological innovation more fully. Similarly policy-makers learned over the years to design and implement tools and programmes aimed at furthering R&D and innovation in manufacturing industries and networks, but they are struggling with and seem hesitant to support innovation in services. Due to this myopic, yet dominant view it is not well enough appreciated that service innovation and underlying service innovation processes are at least partly idiosyncratic. As is evident from the three examples given in section 1.1, service innovations are multi-dimensional and involve numerous organizational dimensions next to technological dimensions.[4] Service innovation processes are non-linear and essentially 'distributed' i.e. are usually not the result of a concentrated R&D effort but involve various disciplines and departments spread over the organization (and even outside the organization) including strategy, business development, marketing and service operations.[5] As a result, and boldly stated, service innovation and service innovation processes cannot be analysed, managed and supported using models and tools that are basically developed for analysing, managing and furthering technological innovation in a manufacturing context.[6]

In our view the service (innovation) management community has to come up with dedicated approaches and new frameworks that do justice to the rich, multi-dimension and interdisciplinary character of service innovation.[7] This has already been underlined by various service (innovation) management scholars. Edvarsson et al. remarked that "new service development and innovation require their own framework and tools. We are still in the early stages in the development of concepts, models and theories to describe, analyze and explain prerequisites and mechanisms in new service development" (2007, p. 180). Similarly, Ganz recently observed that "...there is little knowledge about how to develop, design and model service driven innovation processes systematically" (2007, p. 226). Howells pointed out the need for more granulation when analysing the components that constitute service innovation as well as the "lack of adequate description and measurements of the processes, flows and transactions associated with service innovation" (2010, p. 75). Toivonen not only reminded us of the difficulty of applying generally used categories such as product and process innovations in services (2010, p. 221), she also observed that innovation processes at the level of service firms are not well

4 Earlier we referred to this as the soft side of innovation as opposed to the hard, technological side (den Hertog et al., 1997).

5 In multi-site organisations, rolling out a new service concept consistentlyand well enough adapted to the local market is a challenge in services and part and parcel of service innovation (see Winter & Szulanski, 2001).

6 A well known 'McLuhanism' that aptly describes this, is that we basically "look at the present through a rear-view mirror. We march into the future backwards" (McLuhan & Fiore, 1967).

7 The characteristics-based approach as developed in by Gallouj and colleagues (see e.g. Gallouj & Weinstein, 1997; Gallouj, 2002) is an early, but still rare example of a generic framework.

enough understood (2010, p. 247).[8] Innovation policy-makers are also struggling to adapt to an innovation paradigm in which services play a more pronounced role. A recent staff working document by the European Commission on service innovation policies in this context noted that "in recent years, the interest in services innovation policy has been increasing simultaneously with the growing economic weight and significance of services. At the same time, policies in support of services innovation have remained relatively underdeveloped in many Member States and regions" (2009, p. 2).

A second key problem is that we lack insight into effective organizational routines for managing service innovation at firm level. Due to this missing organizational, firm-level perspective on service innovation we lack prescription as how to manage service innovation at firm level in a more sustained fashion. Put differently, we need to gain more insight into the organisational routines[9] and capabilities needed to successfully introduce service innovation on the market repeatedly. Service innovation policies might also benefit from these more detailed insights as still most firm level analyses on service innovation are derived from incidental case studies or Community Innovation Survey (CIS) types of surveys that to an important extent are still biased towards measuring technological innovation. Much of the service (innovation) management literature does not analyse service innovation at the firm level or, if it does, adopts a product view of services as is evident in New Service Development (NSD) approaches. This is for example also observed by Droege et al. in their recent review of service innovation studies. They remark that "at the organisational level, research has mainly been focused on revealing the factors needed for the successful innovation of new service products. Yet, with regards to other innovation dimensions such as organisational innovations, only scarce research has started to present the drivers needed for successful innovation" (Droege et al., 2009, p. 150). Similarly, in a programming exercise for the Science of Services where service innovation was indicated to be among the top 10 research priorities, it was noted that there are still few insights on how to drive radical innovation in services" (Ostrom et al., 2010, p. 12). We further agree with Howells who stated that: "if we need a clearer conceptual framework on components and flows in the innovation process, we also need a clearer notion of the organizational routines

8 Sundbo goes even further and characterises the service innovation process as "labile, unpredictable and fluid" (2010, p. 297) and the innovation of services as a "complex and toilsome process" (Ibid, p. 297). He nevertheless suggests that "service research can contribute to this [i.e. best way to organise the service innovation process, PdH] by investigating the service innovation process and providing general models and tools" (2010, p. 298).

9 Jacobs & Snijders (2008, p. 3) when presenting their innovation penthalon use innovation routine as the title of their book to indicate – following Nelson & Winter (1982) – that organisations need routines which act as organisational memory and are embedded in a firm's DNA. Innovation routines may seem a paradox, but in our view indicate to what degree a firm is used to and has learned over the years to innovate and adapt to a changing environment or context. Applied to service innovation we will argue in chapter 6 that there is indeed a category of (dynamic) service innovation capabilities or routines that firms may master which can help them to become service innovators able to successfully introduce service innovation repeatedly.

that link them" (Howells, 2010, p. 76). In a similar fashion Miles remarked that "...it will be fruitful to examine relations among types of innovation and service innovation processes as well as the firm-level management of innovations" (Miles, 2008, p. 124-125). Exactly for the latter we find it important that we infuse the service (innovation) literature with insights derived from strategic management and specifically the RBV/DCV of the firm. Not because this literature is more service innovation focused, as this is not the case, but because it provides a firm-level perspective and so will be instrumental in analysing in detail what are the key firm level routines or (dynamic) capabilities for managing service innovation.

We address the first problem of a lack of appreciation of the partly idiosyncratic character of service innovation by developing a six dimensional service innovation framework. This framework is also used for defining service innovation more precisely. We further address this problem by pointing out the various service innovation patterns that can be identified. Many service innovations are the result of various actors (including customers) co-producing and co-innovating in more or less open systems of innovation. One of the service innovation patterns which illustrates this point in particular is the 'innovation through services' pattern. Here we additionally analyse the role Knowledge Intensive Business Services (KIBS) play in co-producing innovations for their clients and more widely in innovation systems. We also analyse at the level of individual firms to what extent and how services' R&D and innovation are managed. At policy level, we also address the myopic view on service innovation in various ways. We translate the assimilation, demarcation and synthesis view on service innovation, which is developing in the defacto standard for positioning the various contributions in service innovation studies (see Gallouj & Djellal, 2010), into three policy perspectives on service innovation. We subsequently formulate various policy options following these three perspectives. We also formulate a rationale for service innovation policy. For the latter we especially review what market and systemic arguments can be identified and to what extent these are relevant for defending service innovation policies. The various frameworks given have been developed on the basis of conceptual, empirical and policy research.

We address the second issue of a missing firm-level managerial perspective on service innovation by combining the service (innovation) management perspectives with those of the RBV/DCV of the firm. We introduce a set of six what we have coined dynamic service innovation capabilities. These are higher order management capabilities needed by service-dominant firms to sustainably (i.e. repeatedly as the opposite of being able to introduce service innovation once or incidentally) innovate their services. Although a better understanding of these capabilities might help innovation policy-makers to better understand the management of service innovation, these capabilities are most relevant at the firm level. These dynamic capabilities contribute to an overall integrated, firm-level framework for the strategic management of service innovation. This framework aims to help service firms and organizations to systematically reflect on and actually manage

service innovation more sustainably. We illustrate these dynamic capabilities in chapter 6 by linking these explicitly to the empirical results of the case and sectoral analyses to be presented in chapters 2-5.

In section 1.7 we will explain how by addressing these two key problems in service innovation and its management, we contribute to the service (innovation) management and RBV/DCV of the firm literature as well as service innovation policy studies.

## 1.3 Defining services and service innovation

### 1.3.1 A brief definition of services

According to Miles (2008, p. 115-166), service industries and firms can be defined as those industries and firms that have as their main function the provision of services. This is typically a service function or set of functions marketed as a commodity or public service. These are rarely material artefacts, such as goods, raw materials and buildings, although they may be embodied in such artefacts. We agree with Miles (2008, p. 116) that intangibility and interactivity/customer intensity are the two core characteristics or peculiarities setting service activities (and thus service innovation) apart from other economic activities (and thus goods-based innovation).[10]

As a result of the first characteristic of intangibility, services and service innovations are highly conceptual i.e. they are not necessarily embodied in a new product, but are predominantly intangible (new) ideas or combinations of existing elements that together constitute a mostly intangible (new) value proposition to a client.[11] The customer is in many cases uncertain of what will be experienced and what will be delivered (Parasuraman et al., 1985). Customers value reliability and the customer's uncertainty creates a strong need for the service provider to focus on communication and branding of new service concepts.

The second characteristic or peculiarity i.e. interactivity/customer intensity means that "many service processes require the presence and participation of the client" (Miles, 2008, p. 116). Worded differently: services show a shared process character and are co-produced between service provider and customer. The various roles customers play during service

10 I am indebted here to Dr. Wietze van der Aa for some of the wording of these two peculiarities.

11 This combinatory or architectural characteristic of most services and service innovations can be interpreted as an additional third peculiarity of service innovation. Although the notion of architectural innovation was introduced by Henderson and Clark (1990) in a somewhat different context, the notion refers to the idea that new configurations of existing elements can be new when combined in a new way or provided in a new context leading to new service experiences. As observed by van der Aa & Elfring (2002, p. 162) this type of innovation resembles Normann's concept of bundling (1990), Sundbo's concept of 'modulization' (1994) and the concept of 'recombinative innovation' of Gallouj & Weinstein (1997).

delivery and more specifically customer involvement in the development of new services are creating specific challenges and opportunities for service innovation (Alam, 2002; Magnussen et al., 2003; Matthing et al., 2004).

Both the intangibility and the customer intensity make services and service activities inherently different from pure manufacturing activities. In our view creating new service experiences and solutions, and thus the underlying organizational routines or dynamic capabilities for creating these repeatedly, are significantly idiosyncratic. We will argue in this thesis that service innovations are multi-dimensional (i.e. require new combinations of both technological, but above all non-technological dimensions), interdisciplinary (i.e. required resources and dynamic capabilities reside in various disciplines that need to be combined), multi-party (i.e. are created in interaction with customers and business partners) and often multi-site (i.e. need to be created in interaction with the customer at various locations). The resulting 'distributed character' of service innovation is in stark contrast with the archetype of central R&D model that is still more common in goods-dominant firms and industries. The service innovations at IKEA, Athlon Car Lease and Philips Healthcare in section 1.1 could not have been created by applying the concentrated R&D model of innovation. Firms that ignore this 'distributed character' of service innovation and apply the central R&D logic run the risk of creating new service products that are poorly received in the market rather than creating new service experiences and solutions that are valued by existing and new customers.

Defined in a more practical fashion of statistical NACE-rev 2 categories (see Eurostat, 2008), services typically range from wholesale and retail trade (part of section G to other service activities (section S), where sections G-N include predominantly private services, and sections O-S predominantly public services, although some sections are more mixed, such as healthcare (part of section Q) and Arts, entertainment and recreation (section R).[12] However, more and more service innovation is taking place in manufacturing firms as well. Differentiating value propositions by adding service functionalities and service innovations is a key business process that is relevant not only for pure play service firms, but also in manufacturing (see the Philips Healthcare example in section 1.1). Manufactured goods are increasingly 'encapsulated' by service functionality (Howells, 2001) or part of wider service solutions. Therefore, some of the dynamic service innovation capabilities to be introduced in chapter 6 might be useful in a manufacturing setting as well, especially for those manufacturing firms switching to more service-dominant business models.[13] When we use the notion of service firm or service-dominant firms in this thesis we include this latter type of firm.

12 In terms of SBI-classification as used in the Netherlands (see CBS, 2008, p. 95) we start with retail, hospitality and repair industries (SBI 50-55) up until environmental services (SBI 90) and services not classified elsewhere (SBI 80,4, 91 and 93). Subsidised education (SBI 80.1-3), a rest group (SBI 75, 85 and 95) and construction (SBI 45) are not included.

13 A process referred to as service infusion, see Strauss et al. (2009).

### 1.3.2 How we define service innovation

Service innovation is a multi-dimensional phenomenon. That implies that service innovations can take various forms and be linked to different parts of the value creation process of a service-dominant firm. In this thesis we differentiate between six dimensions for defining service innovation. Most of these dimensions have been described in one or more of the four traditions that we distinguish in the service (innovation) management literature (see section 1.7.1). However, most of the contributions to the latter are biased towards one or a few dimensions and seldom use these dimensions in an integrated fashion for defining service innovation more precisely.

Standing on the shoulders of the various scholars in the traditions to be outlined in section 1.7.1, we initially developed the 4D-service innovation model for mapping service innovations over the period 1997-2000. Here we used four dimensions of service innovation: 1) new service concept; 2) new client interface; 3) new service delivery system and; 4) new technological options. It signalled both the multi-dimensionality and the importance of non-technological dimensions in service innovation (see den Hertog et al., 1997; den Hertog & Bilderbeek, 1997; den Hertog, 2000). The 4D-model is an example of a combinatory or architectural innovation as most of the dimensions used were described earlier in the literature, although mostly differently and not in this particular mix aimed at mapping and understanding service innovation in more detail. The notion of service concept for example can be traced back to Heskett (see Heskett, 1986 and Heskett et al., 1997) and Normann (2002, and earlier editions of 1983 and 1991). Similarly the notion of service delivery system originated from the work of Heskett (1986) and has resonated in many textbooks since then. The client interface interaction – although worded differently – also featured prominently in the service marketing and service innovation literature (for example in Eiglier & Langeard, 1977; Lovelock, 1984; Grönroos, 1990; Edvardsson & Olsson, 1996; Zeithaml & Bitner, 2003; Gallouj & Weinstein, 1997; Miles, 1996).

Mostly as a result of testing the 4D-model in subsequent sectoral and case study research in the early and mid-2000s, the 4D-model was enhanced and eventually extended into a 6D-model.[14] The dimension 'new client interface' was changed to 'new customer interaction' in order to reflect the co-creation role of customers in the innovation and actual provision of new services more fully. The former 'technological options' dimension was rephrased 'new delivery system: technology' as technological options suggested too strongly that these options were readily available whereas some service innovators do actively invest in or benefit from new technologies especially to innovate the way they provide their service.[15] The

14 Here we benefitted in particular from discussions with and insights derived from Dr. Wietze van der Aa.

15 Although this is the dominant dimension through which the technological component enters the model, technology may also affect for example the new service concept, ways in which clients interact with the service provider and also type of relevant business partner as especially pure service players partner with 'technology partners' to offer their service innovations.

'new service delivery system' was renamed 'new delivery system: personnel, organization, culture'[16] to distinguish more markedly between the role technologies and 'softer' factors such as personnel, organization and culture play in realising new service innovations. We added the categories of 'new business partner' and 'new revenue model'. The 'new business partner' dimension reflects the insight gained that apart from co-producing and co-innovating with customers, service innovations may often require inputs from other firms and actors co-innovating in value chains and networks. The 'new revenue model' dimension[17] highlights the fact that some service innovations are basically new ways of pricing or creating revenues. We prefer to name this new revenue model as we like to refer to a renewal of all or a majority of dimensions in combination as business model innovation.[18] Finally, we included the creation of new service experiences and service solutions as the ultimate goal of service innovation for the 6D model and positioned this in the centre of the model. The idea that the essence of producing a service is to provide a solution or an experience can be traced to several authors (Gadrey et al.,1995; Goldstein et al., 2002; Gronroos, 2007; Pine & Gilmore ,1999). This applies to both services aimed at intermediate and final users.

Hence, our definition of service innovation[19] reads as follows:

> *A service innovation is a new service experience or service solution in one or several of the following dimensions: new service concept, new customer interaction, new value system/business partners, new revenue model, new organizational or technological service delivery system.*

More specifically, a new service experience or service solution in our view needs to meet the following criteria in order to be labelled as a service innovation:

1. It must consist of a new service, a new service portfolio and/or a new service process that individually or in combination defines a new way of creating value for and mostly with[20] customers;
2. It can be reproduced in some form (to prevent every unique client-specific solution being named a service innovation).

16 For the sake of brevity, mostly referred to as organisational service delivery system.

17 According to the suggestion first made by Päällysaho & Kuusisto (2008) when they introduced their five star model of service innovation which is again inspired by our 4D-model.

18 Chesbrough linked business model to especially open innovation, although not particularly to services, see Chesbrough (2003, p. XXIV; and 2006).

19 This is the definition of service innovation offered in this thesis. A rudimentary version coupled to the four dimensions of service innovation discerned at first was included in van Ark et al. (2003). As most of the content of chapters 2-5 and 7-8 is part of previously published work, some of other earlier version may be included in these chapters.

20 Most new service experiences and solutions are co-created by the client and the provider i.e. the shared process character of most services. Here we agree for example with Möller et al. (2008) who focused in detail on the service co-creation model and proposed a co-creation framework for client-provider services.

3. It must be the result of intentional and systematic efforts on the side of the providing firm. This implies that although a new service solution or service experience may be 'discovered' after it has been applied for the first time (see Toivonen and Tuominen, 2009), it can in our view only be labelled as a service innovation if it is then further developed and marketed as the result of a systematic effort by the service provider and turned into a service experience or service solution that can be reproduced;
4. It must involve a certain degree of newness (or radicalness) to the providing firm. The degree of novelty – as with goods-based innovation – may differ from new to the firm, new to the industry, new to the country or new to the world.
5. It must be introduced and diffused on the market with (some degree of) success in the market. This is mainly to prevent all sorts of internal and trivial changes to firm processes being labelled as service innovation.

Does the above imply that the frameworks and insights offered in this thesis apply to more than 70% of the economy, as in most developed economies more than 70% of value added (and even more in terms of jobs) is derived from service industries?[21] Although in theory it is, in practice, it applies to active (or potential) service innovators who have the resources and capabilities to take a step back and actively reflect on the various dimensions of service innovation and the capabilities needed to manage service innovations successfully. These are more likely to be the firms that are interested in the first place in dealing in a more or less systematic way with service innovation or are firms involved in a process of professionalising their service innovation management practices. Although we acknowledge the specificities of innovation in public service organizations (Windrum & Koch, 2008), we believe the frameworks offered in this thesis provide insight for public service organizations as well.

## 1.4 What makes services and service innovation so important?

The development towards a service economy has been underway for some decades already and has accelerated since the last quarter of the previous century in most developed market economies.[22] Market services contributed to approximately two-thirds of the increase in value added in OECD economies over the period 1990-2001 and in the second half of the 1990s accounted for the bulk of labour productivity growth in most OECD countries, including the Netherlands (OECD, 2005b, p. 7-9). It is further estimated that already in the mid 1990s for a set of 10 OECD countries including the Netherlands, on average 25% of the total value added of manufactured goods in final demand are services

21 Evidently, the frameworks, rationales and policy options for service innovation policies are in the first place relevant for innovation policy-makers.

22 For a good review of the various views on services and service innovation see Hauknes (1996).

i.e. services embodied in manufacturing[23] (OECD, 2005b, p. 7-8). More recent figures for the 27 EU member states indicate that nearly all of the employment growth over the period 1995-2007 was due to services alone. Annual growth rates of both employment and gross value added over the same period are the highest for the services grand sector (European Commission, 2009, p. 10-11). In our view this growth not only reflects the importance of services, but highlights the key role service innovation has to play in future economic growth (as it should be given future labour shortages). Again in our view, service innovation is directly linked to the combined trend of large scale service production, ongoing service specialisation and increased competitive pressure. These are explained briefly below.

*Large scale service production and increasing levels of service specialisation*

In both final market services (such as retailing, personal services and hospitality services) and intermediate or business services (both knowledge extensive and knowledge intensive varieties), a parallel trend towards large scale service production on the one hand and further specialization and differentiation on the other can be observed. The first trend results in services developing into commodities that are produced at a large scale in an almost manufacturing fashion. This is for example evident in the shop formulas rolled out in retailing, service experiences being created in hospitality firms operating worldwide and equally in both knowledge extensive (catering, cleaning, facilities management) and parts of knowledge intensive service industries that lend themselves to standardization (parts of computer services, accounting and consulting). The specialisation trend results in ever more specialized services or service functionality 'encapsulating' both manufactured and basic service products (Howells, 2001). Service encapsulation is increasingly needed to create a competitive value proposition and appeal to either final consumers (think of the service elements added in a modern wellness facility or an all-inclusive holiday) or intermediate users (think of the service elements in advanced HR or document management services).

Ever more specialized service firms are emerging in the market which can assist in, advise on or completely take over service functions. This is especially evident in business services. Although the growth of business services is not simply the result of outsourcing (i.e. a process of substitution) and an autonomous growth in this service category can be observed,[24] outsourcing has thrived since the early 90s of the previous century as

23 Remarkably so for the set of OECD countries included this percentage is amongst the lowest for the Netherlands where it increased from approximately 8% in the early 1970s to approximately 16% in the mid-1990s.

24 As explained by Toivonen (2004) in detail, this growth of (especially knowledge intensive) business services is due to ongoing specialization processes in combination with increased outsourcing of service activities on the one hand and autonomous growth of business services on the other.

the adagio of 'back to the core business' and similar management fashions gained momentum.[25] Both service and manufacturing firms have more explicitly addressed the make/use or outsource/insource trade-off and outsourced important parts of their existing service activities and sourced other new types of service functions (for example web design and similar ICT-based service functions) externally. The resulting intermediary service providers developed quickly into either fairly large, well sorted service supermarkets[26] (bundling of service offers), specialist service providers or service boutiques (unbundling of services).

*Increased competitive pressure in services*

During most of the 20th century, markets for consumer and business services were usually localised, not exposed that much to the 'gales of creative destruction' of international competition. This was mainly due to the real or perceived characteristics of services such as intangibility, perishability, heterogeneity, simultaneity and all too often regulation, resulting in services being more difficult to trade internationally as some of especially the personal services still are. However, more and more further standardization of services (such as in telecoms for example), the application of ICTs, the increasing liberalisation of service markets,[27] the rise of service multinationals and more conscious outsourcing/insourcing trade-offs[28] makes that competition in service markets is on the rise. This explains why the need for service-dominant firms to invest in service innovation or innovative service offerings[29] is also rising both within firms as well as in complex value networks.

In our opinion the two trends briefly outlined above explain why since approximately the early 1980s, and with some intervals, the topic of service innovation has gradually started to appear on the radar of senior management of both service and manufacturing firms.[30] There is simply a greater need and more space to innovate services. However, if this increased focus is combined with a still myopic view of service innovation (processes) and if deep insight into the organizational routines for managing service innovation

25 There are however important cultural differences between countries in terms of outsourcing of service functions. In Germany for example, service activities especially those surrounding capital goods are more heavily integrated in manufacturing firms than in most other countries.

26 Best known are financial supermarkets or consultancy supermarkets, where an entire range of financial respectively consultancy services can be purchased.

27 Due to services being included in successive rounds of international trade negotiations i.e. GATT/TRIPS and in the European Union, for example the implementation of the Services Directive.

28 See Toivonen (2004) for a fine description of factors that play a role in the outsourcing/insourcing trade-off.

29 Selecting an innovative service offer can be part of a cost-based or quality/differentiation-based firm strategy; similarly part of a specialisation/niche strategy or decision to offer a broad service portfolio.

30 As well as some enlightened innovation policy-makers.

is missing, firms and their clients may end up with mediocre service experiences and solutions. Eventually these service providers will lose their competitive advantage to firms that understand what it takes to co-produce or co-innovate service experiences and solutions and that have learned faster how to effectively manage these processes of service innovation.

## 1.5 Why is service innovation so difficult to assess in practice?

Discussing examples of service innovation and their importance in the introductory section suggests that a consensus exists on what service innovation entails, where service innovation stops and regular entrepreneurship or good housekeeping begins? It may also suggest that more generic models already exist for managing service innovation at firm level or that innovation policy-makers can pick and choose from an accepted and clear-cut menu with policy options to facilitate service innovation. All this is definitely not the case as clarity and a shared understanding (and metrics) of either concepts such as service innovation and service innovation management or an established policy framework for managing service innovation are relatively underdeveloped. In our view, various factors working in parallel have contributed to this lack of clarity and the resulting myopic view on service innovation, including:

- A too limited perspective on innovation. Probably one of the most powerful factors at work is simply the dominance of the current techno-manufacturing approach towards innovation. In the past few decades, communities of industrialists, scholars, statisticians and policy-makers have been trapped in the same dominant paradigm which reduces innovation to mostly technological innovation in the manufacturing industry.[31] This is all the more surprising as in the original definitions of innovation as provided by Schumpeter, this technologist reductionism is not present and non-technological factors are included (Schumpeter, 1934). As a result, service innovation is addressed using a vocabulary that is still biased towards technological innovation in manufacturing. Although a paradigm shift seems to be on its way and options for measuring and managing service innovation are being explored, this process is neither smooth, nor yet finalized.[32]
- A too broad perspective on service innovation. Innovation in both manufacturing and

31 See den Hertog (2010) for a discussion on the presence of triple helix dynamics in services innovation.

32 On the contrary, it is still gaining momentum. In recent years service innovations have been analyzed more often and new concepts and statistical indicators introduced. Increasing numbers of firms are also managing service innovation more explicitly. In a few vanguard countries innovation policy-makers have started to explore new, more services' innovation-friendly R&D and innovation schemes (den Hertog & Rubalcaba, 2010).

service industries interpreted as an invention new to the firm which is successfully introduced on the market requires much more than investment in a R&D facility or function (and quite often is not needed at all). As we will discuss in chapter 6 in detail, various types of (dynamic) capabilities are relevant for service innovations and especially for creating these repeatedly. However, not every change in a product (be it a service or goods) or business process is an innovation. Defining (service) innovation too broadly and including marginal changes in (service) products and business processes as innovations would imply that all sorts of regular business changes are counted as acts of innovation, leading us away from the original (already broad) Schumpeterian interpretation of innovation.[33]

- The observation that 'pure players' in both manufacturing and services are increasingly rare. We are witnessing a development in which goods and services are increasingly being combined or bundled and marketed accordingly as "solutions to problems" of clients. This implies that firms are now even more than in the past, collections of manufacturing-style and service-style firm processes, although the actual mix may differ per firm. Along with Vargo and Lusch (2004a; 2004b) and Lusch et al. (2008) we are in favour of discriminating between a goods-dominant and a services-dominant logic. However, as outlined in sections 1.1 and 1.3, the key point is not to associate service innovations with service industries exclusively.
- Many service-dominant firms have not focussed explicitly and systematically enough on service innovation. Previously the service innovation process was characterized as a loosely-coupled system spread over the firm (Sundbo & Gallouj, 2000). Additionally the decentralized delivery in many large service firms with a multi-site structure creates firms where cues for innovations and experiments with service innovations are distributed. Thus service innovations are usually not the result of a concentrated R&D effort in a specialist department managed as a traditional R&D process. Even with large and well respected service innovators, service innovation is often a distributed activity where various departments (typically marketing, business development, ICT and service operations) contribute to service innovations that are not necessarily explicitly managed or on the radar of top management.[34] As we will discuss in chapter 4 in more detail, experience with more formalized forms of service innovation management is limited.
- Years of ignorance in regular statistics make that services and service innovation are less well measured and described compared to manufacturing and technological

33 This is widely debated among service innovation researchers; see e.g. Drejer (2004) and Flikkema (2008).

34 This makes managing service innovation a demanding job and Sundbo (2010) for example speaks about a 'labile, unpredictable and fluid' process of what he calls the 'toilsome path of service innovation'.

innovation. This implies that we are still struggling with serious measurement problems and in innovation statistics for example, serious statistical underreporting of service innovation.[35]

In this thesis it will be argued that service innovation at both firm and policy level can be 'managed' more explicitly. Service-dominant firms would indeed benefit from approaches that pay greater attention to the peculiarities of service innovation and the service innovation process and provide guidance on how to manage service innovation at firm level.

## 1.6 Key questions, our approach and outline

### 1.6.1 Key questions

From the previous sections it is already evident that service innovation and its management is a highly relevant, intriguing, yet multi-facetted and sometimes difficult to grasp phenomenon in theory, in practice and in policy. This thesis is about developing a theoretically and empirically grounded view on service innovation and service innovation policies. The leading question addressed in this thesis reads as follows:

> "What are the key dynamic capabilities for managing service innovation at firm level?"

From the above, the following subquestions can be derived that will be dealt with in this thesis:

1. How can service innovation be defined?
2. What dimensions can be discerned for mapping service innovation?
3. What role do service firms play in innovation?
4. How is service R&D and innovation managed in practice?
5. How can service (innovation) management approaches and the RBV/DCV of the firm cross pollinate each other to better understand how to manage service innovation?
6. What are the key dynamic capabilities needed at firm level to more systematically and repeatedly develop service innovation and steer the process of service innovation?
7. How are service innovation dimensions and dynamic service innovation capabilities linked?

35 See den Hertog et al. (2006) for a discussion on the measurement issues regarding service innovation.

8. Is there a rationale for a services innovation policy?
9. What options do innovation policy-makers have to support service innovation in firms?
10. What role do knowledge intensive business services play in innovation systems in particular?

In the outline at the end of this section we will indicate in which chapter each of these subquestions is covered. Here we will also indicate to what extent these chapters have been codified in academic journals or peer-reviewed books.[36] We first explain our approach. This also helps to position the various chapters vis-à-vis each other.

### 1.6.2 Our approach

This thesis aims to contribute to academic, firm and policy thinking on service innovation. Most of the empirical and conceptual work used as an input to this thesis was produced in various waves and mostly in collaboration with co-workers over a period starting in 1992 (see Bilderbeek & den Hertog, 1992) up until March 2010 (see den Hertog et al., 2010). The most important empirical studies on which this thesis builds are:

- Two multi-annual research projects for DG Research of the European Commission named Services in Innovation, Innovation in Services (SI4S-project, 1996-1998, performed with research teams from a total of 10 countries, coordinated by Johan Hauknes, STEP, Norway), and its follow-up project Research and Technology Organizations in the Service Economy (RISE, 1998-2000, coordinated by Dr. Mike Hales, CENTRIM, UK).
- A multinational research project for the Dutch Ministry of Economic Affairs named Structural Information Provision on Innovation in Services (SIID, 1998-2003, conducted together with Groningen University and coordinated by Professor Bart van Ark, see van Ark et al., 2003).
- A sectoral innovation analysis of the Dutch hospitality industry for an organization named Bedrijfsschap Horeca en Catering (2004-2005, conducted in collaboration with Jeroen Segers, see Segers and den Hertog, 2005).
- A project for the European Commission, DG Internal Market and Services named Research and Development Needs of Business Related Service Firms (RENESER, 2005-2006, performed in collaboration with University of Manchester [Professor Ian Miles], Servilab at Alcala University [Professor Luis Rubalcaba] and Frauhofer IAO [Mr. Thomas Meiren], see den Hertog et al., 2006).

36 Where relevant we will indicate this more precisely at the beginning of the chapter.

These studies typically consisted of various mixes of the following methodological elements:

- Secondary data analysis of both published statistics and existing datasets. An example of the latter is the use of Community Innovation Survey data for the SIID and RENESER projects.
- Analyses of sectoral innovation patterns in diverse industries including hospitality, retail, transport and logistics, financial services, IT services and technical engineering. In practice this involved desk research, semi-structured interviews with business managers as well as industry specialists, and occasionally dedicated surveys such as the study on the Dutch hospitality industry.
- Firm-level case studies to understand service innovations and their management in detail. Especially as part of the RENESER project, detailed case studies were performed in amongst others four major firms based in the Netherlands (Ahold, Océ, Rabobank, Randstad). This typically involved approximately five semi-structured interviews per firm, desk research, case reports and small workshops.
- Policy-analysis which typically involved analysing policy schemes and their actual use, analysing policy mixes and argumentation as well as interviews and policy workshops with policy-makers themselves, industry, academics, and other specialists.

The results of these mostly descriptive and explorative empirical studies are given in chapters 2-5 and 7-8 of this thesis. In parallel to these more empirical studies (and in some cases on top of) more conceptual contributions were made. Some of these are included in this thesis mostly in chapters 1 (definition of service innovation), 2 (4D-model, sectoral innovation patterns), 6 (six dimensions of service innovation, six dynamic service innovation capabilities), 7 (rationale for and three approaches towards service innovation policies and related service innovation policy options) and 8 (role of knowledge intensive business services as co-innovators and alternative 'private knowledge infrastructure').

The added value of this thesis is therefore not so much in testing of hypotheses or theories, but in presenting an empirically grounded perspective on service innovation, developing an integrated framework for the strategic management of service innovation and a structured approach towards service innovation policy. It combines insights derived from service (innovation) management[37] and the RBV/DCV of the firm. In doing so it provides insight into the idiosyncrasies of service innovation along with a firm-level and policy-level perspective on strategically managing service innovation.

37 Here we include the innovation systems approach for analysing the role of services in innovation systems and developing a view on service innovation policies.

### 1.6.3 Outline

This thesis essentially consists of five parts. The first three subquestions are introductory and pave the way for discussing service innovation and options for service innovation policy in the first place. These three questions are mainly dealt with in the remainder of chapter 1 (section 1.7) where we define service innovation and most importantly chapters 2 and 6. In chapter 2 we introduce four dimensions of service innovation and the resulting 4D-model of service innovation as introduced in 2000 and five service innovation patterns. Chapter 2 is largely based on a combination of (parts of) articles in the *International Journal for Innovation Management* (den Hertog, 2000) and *De Economist* (den Hertog et al., 2003) and a peer reviewed book chapter (den Hertog, 2002). In chapter 6 (section 6.4) we will explain how we derived eventually at six – to an important degree new or differently phrased – dimensions of service innovation and present the resulting 6D-model of service innovation. A condensed version of this section was included in a paper in *Journal of Service Management* (den Hertog et al., 2010).

In the second part we mainly deal with subquestion 4, which mainly asks for providing empirical insight into service innovation. This will be dealt with in chapters 2-5 where both (a selection of) empirical sectoral and firm level analysis on service innovation are presented. The sectors covered in chapters 2 (second part) include the Dutch retailing, technical engineering, road transport and wholesale trade (which together form the "logistics" industry), financial services (with an emphasis on retail banking) and ICT services. In chapter 3 in a more detailed fashion the Dutch hospitality industry is covered. This chapter is based on a paper in *The Service Industries Journal* (den Hertog et al., 2011). Chapters 4 and 5 represent the firm-level. In chapter 4 the R&D and more widely the management of service innovation in a selection of 20 mostly large European service-dominant firms is analysed. This chapter draws on elements of a peer reviewed book chapter (Segers et al., 2007) and a key chapter in the final report for the European Commission (den Hertog et al., 2006). In chapter 5 in again a more detailed fashion the case of service innovation management in Dutch-based temporary staffing and HR service firm Randstad is presented. This chapter is based on a paper in the journal *Innovation: management, policy & practice* (den Hertog & de Jong, 2007).

In the third part we address subquestions 5-7 and reflect on the act of (managing) service innovation, combining service (innovation) management and RBV/DCV approaches. This key part of the thesis is presented in chapter 6. It is an attempt to address the two core problems in service innovation and its management i.e. the lacking appreciation of the partly idiosyncratic character of service innovation and the missing firm-level management perspective on service innovation. We address these two core problems by developing an integrated framework for the strategic management of service innovation. We do so by defining and describing in detail for the first time dynamic service innovation capabilities

and linking these to dimensions of the business process of service innovation. In fact where the service innovation literature and service management/strategic management literature can augment each other is on the topic of managing service innovation. At the same time it provides a framework from which in our view practitioners can benefit when strategically managing service innovation. A condensed version of chapter 6 was accepted for publication in *Journal of Services Management* (den Hertog et al., 2010).

The fourth part deals with the policy-oriented subquestions 8-10. This part has a more clear policy focus building on the innovation system tradition. Chapter 7 discusses the policy rationale for service innovation policies, introduces three approaches towards service innovation policies and presents some service innovation policy options for each approach. Chapter 7 is based on a chapter in a peer reviewed book (den Hertog & Rubalcaba, 2010), which is again based on an article in *International Journal of Service Technology and Management* (den Hertog et al., 2008). Chapter 8, which again is mostly conceptual, deals with subquestion 10, focusing on the role of a particular subcategory of service firms in innovation systems i.e. knowledge-intensive business service (KIBS) firms. It shares with chapter 7 its clear systemic approach to service innovation and also raises the issue whether KIBS function in practice as an alternative (private) 'knowledge infrastructure' next to the formal public knowledge infrastructure. Chapter 8 is mostly a combination of parts of an article in *International Journal for Innovation Management* (den Hertog, 2000) and two peer reviewed book chapters (den Hertog & Bilderbeek, 2000; den Hertog, 2002).

Finally, in concluding chapter 9 we briefly summarize the top-level conclusions of this thesis and present managerial implications. Additionally we identify promising research avenues to pursue in the next few years and give some policy implications and suggestions for policy research into service innovation.

## 1.7 Framing our contribution to the service innovation debate

By addressing the still dominant myopic view of service innovation (management) and the often missing firm-level managerial perspective on service innovation, we extend the service (innovation) management, RBV/DCV of the firm, and service innovation policy literature. In this section we briefly explain how this thesis augments the literature (subsections 1.7.1-1.7.3 below), thus contributing to the service innovation debate.

### 1.7.1 How we add to the service (innovation) management literature

The service (innovation) management literature is in fact a patchwork of various, partly overlapping, research traditions in which services and their management, but not

necessarily innovation, feature prominently. The resulting literature is highly interesting, but conveys mostly partial or biased views on services innovation which too often lack a management perspective. Below, we differentiate between four of these traditions and indicate how we benefit from and add to them.[38]

1. **Marketing and service management dominated tradition.** This tradition emphasises service quality, customer management, service management and operations management.[39] It has resulted in well known and widely used models, frameworks, and textbooks.[40] These contributions have in common that they offer management models for services and especially provide insight into the role of the customer and interaction with customers in services. Not so explicitly addressed, though, are service innovation, the service innovation process, and its management. Some of the dimensions that we use in our 6D-model such as service delivery system and new customer interaction are typically derived from this tradition. However, we extend this tradition in two ways. Firstly, by drawing attention to service innovation and service innovation management requiring detailed analysis. Secondly, by offering a more fine-grained and integrated set of six dimensions of service innovation (including their interlinkages). This set is not only an analytical tool that allows for a more detailed understanding of the peculiarities of service innovation, but can also help firm management in thinking through and managing multi-dimensional service innovations.

2. **New Service Development (NSD) tradition.** The NSD literature, building on the New Product Development (NPD) tradition, looks primarily into the determinants of successful NSD and forms a direct link to various measurements of firm performance. The NSD tradition further provides some frameworks and tools for managing the service innovation process.[41] Moreover the NSD tradition did inspire us to look closely at how to measure the performance of the service innovation business process. However, current NSD frameworks are in our view less well suited to understanding and managing the idiosyncratic character of both service innovation and its processes. We go beyond the predominant product focus of NSD by analysing (using the 6D-

38 A recent review of existing schools in NSD and service innovation research is included in Droege et al. (2009).

39 This tradition goes back to Levitt writing on the production line approach to services (Levitt, 1972).

40 They include for example the early work of Chase on customer contact points (Chase, 1981). the SERVQUAL model (Parasuraman et al., 1985; Berry & Parasuraman, 1991), the service profit chain by Heskett and collaborators (Heskett et al., 1997), the more strategic approach to service management by Quinn and collaborators (Quinn et al, 1990a & 1990b), the work of Grönroos on customer management (2007), the GAPS model of service quality (Zeithaml & Bitner, 2003), the framework for developing a services marketing strategy as presented by Lovelock and collaborators (Lovelock, 1984; Lovelock & Wirtz, 2007).

41 See for example De Brentani (1989; 2001), Oke (2007), Stevens & Dimitriadis (2005) and Tidd & Hull (2010). A review of the NSD literature over the period 1989-2005 is included in Flikkema (2008).

model of service innovation) in more detail what dimensions of a particular service are innovated, including the process elements of these (i.e. inter-disciplinarity). Many of the dimensions in our model refer to process attributes of new service experiences and solutions such as the ways in which the customer interaction or service delivery systems are shaped. We further extend the NSD perspective by pointing out the distributed and concurrent (rather than concentrated R&D-like and linear) character of the service innovation process where new service experiences and solutions are co-produced and co-innovated predominantly in mixed, inter-disciplinary settings together with business partners and clients (i.e. multi-party). We do so by introducing six dynamic service innovation capabilities. Analysing these provides insight into the partly idiosyncratic mix of organizational routines and inter-disciplinary capabilities needed to not only introduce new service experiences and solutions on the market once (though spread over the organization as most service innovations need to be rolled out and created close to the client i.e. are multi-site), but to do this repeatedly.

3. **Service innovation tradition.** The service innovation tradition, although focusing more explicitly than the first tradition on service innovation, is mostly analytical and descriptive, rather than prescriptive. The most comprehensive approaches have been practiced in the Lille and what may be coined the Manchester School. In the former the so named characteristics-based approach was developed by Gallouj and collaborators.[42] In the latter an innovation systems approach to services is combined with empirical and policy-oriented analyses.[43] This tradition has contributed considerably in identifying the peculiarities of service innovation and in putting service innovation policies on agenda. We draw on this tradition for identifying and describing some of the dimensions in our 6D-service innovation model, for identifying peculiarities of the service innovation process and for developing our three perspectives on service innovation policies. We add to this tradition in various ways. The 6D service innovation model provides a much more fine-grained framework that allows scholars, firm managers and policy-makers to discuss basic building blocks or components of service innovation and their interlinkages at firm level. The five patterns of service innovation we will introduce help to show how service firms often play more varied and autonomous roles in innovation processes vis-à-vis especially suppliers than usually anticipated.[44] The more prescriptive framework of six dynamic service innovation capabilities adds to this tradition by linking service innovation management explicitly to organizational routines and capabilities at firm level. This may help firms to assess directly what organizational routines and practices they can develop and nurture to become sustained service innovators.

42 See for example Gallouj & Weinstein (1997); Gallouj (2002); de Vries (2006); Gallouj & Toivonen (2008) and Toivonen (2010).

43 See Miles (1993); Miles (1996), Howells & Tether (2004), Tether (2005) and Tether & Tajar (2008).

44 A clear exception being Soete & Miozzo (1989).

4. **Inter-disciplinary tradition.**[45] It may be too early to speak of a fully fledged inter-disciplinary tradition, the more so as the other three traditions show signs of inter-disciplinarity as well. However, some established scholars (Edvarsson, Sundbo, Normann) have crossed the various disciplinary traditions quite early on. These scholars mostly combine a service marketing, service management or strategic management hat with a focus on (aspects of) service innovation. Edvarsson and collaborators introduced the service innovation model at an early stage (Edvarsson & Olson, 1996) and focused in particular on the aspect of user involvement in service innovation (Matthing et al., 2004). Sundbo. mixing a more sociological and strategic management approach quite early on, focused on managing service innovation (see Sundbo, 1996 and 1997; Sundbo & Gallouj, 2000; Sundbo, 2010) and recently aspects thereof such as "after-innovation" (Sundbo, 2008). Normann contributed considerably by pointing out the organisational aspects and forms of service innovation, especially through his notion of service management systems (Normann, 2002, p. 58). An increasing number of scholars can be said to contribute to this inter-disciplinary tradition that is also increasingly prescriptive.[46] However, they are neither very comprehensive about what specific organizational routines or dynamic capabilities are needed to bring about service innovations repeatedly, nor do they present a specific performance or output measurement for the service innovation business process. We will fill these two gaps by introducing our integrated framework for the strategic management of service innovation and in doing so add to this tradition.[47]

In summary: most existing frameworks and insights derived from current service (innovation) management literature are in our view partial, lack granulation (Howells, 2010) or are still too product-based. They neither appreciate well enough the multi-dimensional, inter-disciplinary, multi-party and multi-site character of service innovation, nor do they provide sufficient insight into the organizational routines needed at firm level for bringing about service innovations repeatedly. By developing our 6D-model of service innovation and set of six dynamic service innovation capabilities in this thesis we aim to do justice to the richness of service innovation and provide a managerial framework that may help in managing service innovation more consciously and systematically. In terms of the four traditions given here we have moved from the service innovation tradition towards the

45 Inter-disciplinarity refers here to the fact that various sub-traditions in service (innovation) management have started building on each other and are sometimes increasingly hard to differentiate. It does not refer to the inter-disciplinary character of the act of service innovation per sé.

46 See for example the process model for service innovation (Thomke, 2003), the collaborative client provider value creation process (Möller et al., 2008), contributions on service logic innovation (Michel et al., 2008), the service (design) model (Frei, 2008) and nine factors for market creating service innovations (Berry et al., 2006).

47 When we refer to our integrated strategic framework for the strategic management of service innovation, this is the combination of the 6D-model and the set of six dynamic service innovation capabilities.

interdisciplinary tradition combining mostly insight from the service management/service marketing tradition, the service innovation tradition and infused it with the RBV/DCV of the firm (see subsection 1.7.2 below).

### 1.7.2 How we add to the RBV/DCV of the firm literature

As explained above we infuse the existing service (innovation) management literature with the organizational, firm-level perspective derived from the RBV/DCV approach.[48] However, we address two problems in the current RBV/DCV literature itself as well and in doing so add to this literature.

The first problem addressed is that the RBV/DCV of the firm has hardly been applied and developed in a services context. Some contributions (e.g. Wang & Ahmed, 2007; Sirmon et al., 2007; Teece, 2007) provide generic frameworks that identify resources and dynamic capabilities for superior and sustainable firm performance in general. However, these frameworks are neither specific to a service context nor do they start from the specificities of service innovation. Other more focused contributions to the RBV/DCV literature look at particular resources or capabilities, but to our knowledge not at the business process of service innovation.[49] An exception is Kindström et al. (2009) who apply a dynamic capabilities approach to the 'service infusion' process in manufacturing. We address the challenge put forward by them when they observe that (2009, p. 331). "… so far, discussions in the literature around dynamic capabilities tend to be goods/product oriented. Innovation relates to lines, production resources, and installed bases, not services. … By applying dynamic capabilities in a service context the DCV framework can be developed further."[50] In this thesis we operationalise the RBV/DCV approach specifically to a services context and focus on a particular business process, namely the process of service innovation. We identify a set of six dynamic capabilities that service innovators can draw on for strategically

48 Sundbo was possibly the first to link service studies to a strategic resource based model of organizing innovation activities in services (see Sundbo, 1996), but focused primarily on an empowerment or corporate entrepreneurship model. More recently Möller et al. (2008) linking the RBV to service innovation, mentions that "service innovation... is fundamentally based on their resources and capabilities" (2008, p. 45) but predominantly analyses processes of service co-creation and do not make service innovation resources or capabilities explicit. Kindström et al. (2009) link the RBV/DCV to service innovation, stay close to Teece's sensing, seizing and reconfiguring framework (2007) and develop it more specifically to manufacturing firms involved in service infusion processes.

49 As observed by Salomo et al. (2007), these studies focus on specific dynamic capabilities or resources such as managing alliances, acquisition, knowledge creation or indeed (aspects of) innovation or dynamic marketing capabilities (see Bruni & Verona, 2009). Other studies in this tradition pinpoint specific issues such as related diversification (Døving & Gooderham, 2008) or internationalization of born global firms (Weerawardena et al., 2007) or specific industries.

50 This was also confirmed in a personal communication with Professor David Teece (April, 2009) when we asked him directly whether it made sense to him to apply the DCV approach to service industries and more in particular the business process of service innovation. He indicated that he would welcome such a contribution and emphasised the need to articulate it in rather practical wording.

managing their service innovation process more routinely. We provide empirical evidence of these dynamic service innovation capabilities in practice using our sectoral and case studies (presented in chapters 2-5). These dynamic service innovation capabilities have to our knowledge not yet been described in the RBV and DCV literature.

Another key problem in relation to the RBV/DCV of the firm is the missing causal relationship between actions and competitive advantage. In their landmark article, this is what Priem & Butler (2001, p. 36) articulated as the challenge "to answer the how questions" and to start identifying the "causal hows and whys" (Ibid, p. 34).[51] Put differently: the RBV/DCV of the firm is lacking performance indicators that could help shed light on these causal hows and whys. We add to RBV/DCV of the firm literature – and by infusing it in the service (innovation) management literature also indirectly to the latter - by proposing a specific output or performance measurement directly linked to the service innovation business process.[52] Hereby, we link the six dynamic service innovation capabilities (derived mostly from the RBV/DCV of the firm tradition) to dimensions of service innovation as identified in the 6D model of service innovation (derived mostly from the service innovation tradition). We hereby build on the approach adopted by Ray et al. (2004) who used the effectiveness of a particular business process as performance indicator – in their case the customer service business process – instead of overall firm performance. The latter is affected by a great number of variables. Using a dedicated service innovation performance indicator, we illustrate how regular firm resources and capabilities are leveraged, created, and combined to achieve innovative service experiences and solutions.

### 1.7.3 How we add to the service innovation policy literature

In our view more attention should be focussed on two main issues in the service innovation policy debate, including the underlying service innovation policy studies. In the first place this debate is suffering at various policy levels from principally opposing (and partly implicit) views on the role of services R&D and innovation and the best way – if any – to facilitate these. In practice existing service innovation policies are still biased towards the dominant paradigm of technological innovation in a manufacturing setting.[53] A systemic review or rationale for service innovation is missing and discussions on feasible policy actions are

51 To what extent our approach addresses the other comments on the RBV (and implicitly DCV) as articulated by especially Priem & Butler (2001), will be discussed extensively in section 6.3.

52 However, we also acknowledge that: (1) the business process of service innovation needs to be interpreted fairly broadly as managing service innovation is a distributed activity; and (2) eventually service innovation should contribute to a better overall firm performance.

53 A recent report by the European Commission on support to innovation in services in this context concluded that "policies in support of service innovation have remained relatively underdeveloped in many Member States and regions" and that "current innovation support mechanisms are still predominantly based towards technological innovation" (European Commission, 2009, p. 6-7).

mostly of the assimilation type (see below). We address these issues in various ways. Firstly, by extending and applying the well known three approaches to service innovation[54] i.e. assimilation, demarcation and synthesis or systemic approach (see Boden & Miles, 2000; Coombs & Miles, 2000; and originally Gallouj, 1994)[55] to service innovation policy as well. Explicating these three positions helps considerably when discussing service innovation policies. We also use these three approaches for formulating service innovation policy options. Secondly, we review the possible rationale for service innovation policies, differentiating between macroeconomic or contextual arguments, market failures and systemic failures. We argue that not only the more pragmatic macroeconomic/contextual arguments are too easily put aside, but also that it is too often taken for granted that market failure argumentation does not apply to service innovation. Further, we look into the usability of systemic failure argumentation and find this highly relevant when discussing the rationale for service innovation policies.

Another related issue is that until recently there was no systemic or innovation systems approach to the role of services in innovation systems and service innovation policies to facilitate these. Such an approach is in our view much needed to better understand how services and service innovators are embedded in and benefit from innovation systems on the one hand and contribute to their overall innovativeness and competitiveness on the other. We address this issue by reviewing systemic failures that might give rise to (systemic) service innovation policies as part of developing a rationale for service innovation policy. Additionally, we more specifically conceptualize and illustrate the various roles Knowledge Intensive Business Services (KIBS) play in supporting innovation at their clients and more widely in the functioning of innovation systems. The latter may also include functioning as an alternative (private) knowledge infrastructure next to the formal (public) one. In doing so, we are helping to develop a more systemic perspective on the role of services in innovation.

In this thesis it will be argued that besides the basic approaches to service innovation outlined above, we need a temporary demarcation approach (if only to compensate for years of neglect) in order to be able to develop a more comprehensive and better systemic approach to (service) innovation. At the same time it is realistic to appreciate

54 The *assimilation approach* starts from the idea that services and service innovation can be analysed and supported using or slightly adapting the concepts and tools developed for manufacturing and innovation in manufacturing (Tether, 2005). The *demarcation approach* points at the peculiarities of services, the predominance of other types of innovation next to pure technological innovation, and the different innovation processes or innovation styles prevalent in services. The *synthesis or systemic approach* starts with the idea of improving the overall functioning of complex innovation systems where technological and non-technological innovation, and manufacturing and services activities are typically intertwined and in need of each other.

55 Extensions of these approaches have been done by Drejer (2002), Nahlinder (2002), den Hertog et al. (2006), Rubalcaba (2007) and den Hertog et al. (2008).

useful elements in assimilation approaches towards service innovation management and service innovation policy as these are stepping stones towards a more integrated understanding of service innovation. In that sense the development towards a more systemic understanding of service innovation and service innovation policies is evolutionary rather than revolutionary.