Managing service innovation: firm-level dynamic capabilities and policy options

den Hertog, P.

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The organisation of innovation in services: evidence from 20 European firms

This chapter is based on Chapter 3 of Hertog, P. den, Bouwman, H., Gallego, J., Green, L., Howells, J. Meiren, Th., Miles, I., Moerschel, I., Narbona, A., Ruibalcaba, L., Segers, J. & Tether, B. (2006), Research and development needs of business related service firms, final report RENESER project to European Commission, DG Internal Market and Services, Dialogic/Fraunhofer /PREST/Servilab, Utrecht/Stuttgart/Manchester/Madrid. The chapter was originally written by Pim den Hertog and Thomas Meiren based on 20 separate case study reports (for a detailed overview see den Hertog et al., 2006, pp. 194-239). Boxes 4.1-4, 4.6-4.8 and 4.10 and sections 4.11 and 4.12 are based on Segers, J., Hertog, P. den & Bouwman, H. (2007), The Organisation of Innovation in Service Firms: Evidence from Four Dutch Service Firms, in: Huizing, A. & de Vries, E.J. (Eds.), Information Management: Setting the Scene. Perspectives on Information Management, Volume 1, Elsevier, Amsterdam, pp. 237-249. I am indebted to co-authors Thomas Meiren, Jeroen Segers and Harry Bouwman and fellow researchers who contributed to the RENESER project.
Managing Service Innovation
4.1 Introduction and study design

In recent years, the realization that services will play a decisive role in future national economic growth has gained acceptance in Europe. Business-related services in particular are reckoned to have huge potential for growth and employment. In light of the widely acknowledged importance of services, it is striking to see that, although 50% of value added in the EU economies stems from services, service innovation accounts for only 13% of R&D expenditures (EU, 2005). Service innovation tends to be ill structured; it takes more often than not place under high time pressure, and customer orientation is hard to guarantee (Simons & Bouwman, 2005).

The question of how this potential of services and R&D and innovation in services can be fully realized is highly relevant. In order to develop appropriate and targeted policies, an obvious first step is to examine the current status of R&D – and more widely innovation – in business-related services. As part of the wider RENESER-project supported by the European Commission, 20 case studies in (mostly) business-related service enterprises were performed in Germany, the Netherlands, Spain and the United Kingdom (see table 4.1 below). These included four manufacturing firms or ‘hybrid companies’ (Atrium Oncology, Océ, Siemens Medical Solutions, Telefónica I+D) i.e. goods-producing manufacturing firms that are known to offer business-related services as well. These case studies had an explorative character i.e. were mainly aimed at capturing and analyzing how these firms’ service enterprises dealt with R&D and innovation and to yield insights into their needs for support in concrete terms.

The following questions were addressed through the case studies:

- What basic understanding do service companies have of R&D (and innovation)?
- What is the nature of the R&D activities carried out? What are typical examples?
- How is R&D (and innovation) organized and how is it integrated into corporate strategy?
- To what degree are they able to link into external public and private knowledge bases?
- How closely are companies integrated into public research promotion schemes?

95 Business related services are defined as intermediary business services such as business services and operational service (NACE 71-74), distributive trades (NACE 50-52), Network Services (NACE 40-41 and 60-64) and financial services (NACE 65-67). Specific subcategories included here are knowledge-intensive business services (or KIBS, NACE 71-74 excluding operational services) and within KIBS R&D services. Also included within the goods-producing manufacturing industries were manufacturing firms with services’ R&D aimed at providing services to other firms. In a number of the case selected it proved difficult to differentiate between activities aimed at other firms and activities aimed at final consumers (see den Hertog et al., 2006, pp. 17-18 for more detail).
### Table 4.1 Overview of 20 RENESER case studies of firms

<table>
<thead>
<tr>
<th>Name of the firm</th>
<th>Brief characterization</th>
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<tr>
<td>Ahold N.V.</td>
<td>Ahold encompasses an international group of local food retail and food service operators. The operating companies are supported by the Ahold Leadership Team and a business support office and are governed by a corporate executive board.</td>
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<tr>
<td>Atrium Oncology</td>
<td>Atrium Oncology is a subsidiary of AstraZeneca. Atrium Oncology Inc. is a cancer treatment and healthcare provider, attached mainly to key hospitals across the U.S.A.</td>
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<tr>
<td>DB Dialog</td>
<td>DB Dialog GmbH is a 100% subsidiary of Deutsche Bahn AG, the largest railway transportation company in Germany. The subsidiary was established in 1996 to provide services, such as a hotline, exclusively for Deutsche Bahn.</td>
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<tr>
<td>Deutsches Institut für Normung</td>
<td>DIN Deutsches Institut für Normung e.V. (DIN German Institute for Standardisation) is a registered non-profit organization. It provides standardization services mainly for enterprises. Although DIN is a non-profit organisation, 65 per cent of its overall income is from commercial activities. The rest comes from membership fees and promotional funds paid by German industry.</td>
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<td>El Corte Inglés</td>
<td>El Corte Inglés is the main company of a consolidated group and its core activity is ‘retail’. It has department stores, supermarkets, hypermarkets and convenience stores. However, it also conducts service activities, including services to companies: Fashion shops, travel agencies, ICT, insurance, and financial services.</td>
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<tr>
<td>Fujitsu Services</td>
<td>Fujitsu Services (FS) is the European services arm of the Fujitsu Group (FG). The company is a major supplier of ICT services and solutions to large clients in the public and private sectors. Its main activities include consultancy, IT solutions, and managed services.</td>
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<tr>
<td>Iberia</td>
<td>Iberia is an international airline group that, from its foundation in 1927, has remained in the market without interruption. The transport of passengers and freight is its main activity, although not the only one. In addition to the airline, Iberia operates in three other major areas: Maintenance, Airports, and Systems.</td>
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<tr>
<td>Independent Television Facilities Centre ifc</td>
<td>Itfc is a major provider of technical and content support services to the television broadcast sector in the UK and beyond. Headquartered in London, the company supplies post-production and video services including: subtitling; captioning; audio description; preparation, re-purposing and distribution of video-based materials.</td>
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<tr>
<td>METRO</td>
<td>The METRO Group was created in 1996 by the merger of leading German trade and retail companies. In 2005, the METRO Group was present in 30 countries with 1,171 locations and employed over 250,000 staff. The Group’s operational business is handled by four sales divisions that operate independently with proprietary sales concepts.</td>
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<td>Metro de Madrid</td>
<td>Metro de Madrid is a private company whose legal form is a joint-stock company, managed by the Comunidad de Madrid (Madrid’s regional government). The main activity of the company is the railway transport service of passengers around the Comunidad de Madrid, however it has already started to provide other business services such as consulting and concessions services.</td>
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<td>Name</td>
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<tr>
<td><strong>Network Research</strong></td>
<td>Network Research (NR) is a medium-sized ‘full service’ market research agency based in London. Activities include telephone interviewing, multi-method customer satisfaction surveying, data interpretation, information packaging, and research consultancy.</td>
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<td><strong>Norisbank</strong></td>
<td>Norisbank has about 1,150 employees. Its headquarters are located in Nuremberg and there are 99 additional branch banks all over Germany. Since 2003, Norisbank AG has been a company of the DZ BANK Group, which is one of the major financial service providers in Germany.</td>
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<tr>
<td><strong>Océ</strong></td>
<td>Océ has developed into a major manufacturer and provider of digital document management technology and services. Although mostly known as a manufacturing firm, Océ has over the years added a large variety of services to its portfolio.</td>
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<td><strong>Product design and development consultancies</strong></td>
<td>This case study includes the following three micro companies: Alan Wall, Product Design Understood, Raffo Design. They are engaged in product design and development, usually in close collaboration with their clients.</td>
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<td><strong>Randstad</strong></td>
<td>Dutch-based Randstad Group is one of the largest staffing and human resources service organisations worldwide. Randstad, apart from offering mass customised (traditional) staffing services, is deliberately moving towards higher value-added services (or ‘specialities’) for which new service concepts and business models are developed.</td>
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<td><strong>Rabobank</strong></td>
<td>Rabobank Group, founded as a cooperative of Dutch agricultural banks, is owned by about 269 member banks, and, besides private banking, focuses on the food and agribusiness industry. The cooperative’s global investment banking arm, Rabobank International, has about 140 branches in more than 38 countries.</td>
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<tr>
<td><strong>Roke Manor Research</strong></td>
<td>Founded in 1956, the company is now owned by Siemens, but remains an autonomous operation. Roke Manor employed 404 people in 2004, of which 330 are professional engineers and scientists, at its base in Romsey in Hampshire in the UK. Of its current personnel, approximately 85% are employed in research and development. Its own R&amp;D expenditure was 3.1 million euros with a turnover of some 43.9 million euros.</td>
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<tr>
<td><strong>Santander Group</strong></td>
<td>Santander Group is an organisation of financial services, a leader not only in Spain but also in Latin American countries. Its turnover is about 57,102 million euros (31 December 2004) making it the ninth largest financial organisation by stock-exchange capitalisation, the fourth largest in Europe, and the largest in the euro zone.</td>
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<tr>
<td><strong>Siemens Medical Solutions</strong></td>
<td>Siemens Medical Solutions has about 31,500 employees worldwide. In the field of services 5,200 persons are employed. Its portfolio enhances product bundles with complex products, integrated technologies and supporting services in the health care sector. Siemens Medical Solutions was one of the first German manufacturing companies that introduced a new service development process in the early 1980s. Since then, it has developed a whole range of new, innovative services and the service department has become a highly profitable part of the company.</td>
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<tr>
<td><strong>Telefónica I+D</strong></td>
<td>Telefónica I+D is a private Spanish company, created in March 1988, dedicated exclusively to research and development in the telecommunication sector. Its activities relate to improving the competitiveness of the Telefónica Group through technological innovation. R&amp;D activities have been closely linked to the evolution of telecommunications and the social demands in this field.</td>
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Apart from desk research, semi-structured interviews were used to collect information and answer the questions just mentioned. Besides general company information, questions concerning R&D strategy, R&D function, R&D cooperation and policy issues related to services’ R&D were selected as crucial topic areas. The interview guide was pre-tested in a dry run on selected companies and is included as annex 2. The interviews proved to be expedient because they made it possible to gain a broad insight into company activities on the basis of the predefined topics but also provided sufficient scope for more in-depth exploration of especially interesting issues. In particular they gave the opportunity to examine companies’ innovative special approaches and solutions in detail.

The case studies were carried out over the period from November 2005 to May 2006. As a rule, several representatives of each firm were interviewed during detailed discussions and workshops. Typically, members of management responsible for R&D and innovation were addressed as the target group. This made it possible to obtain well-founded statements regarding strategic and operational questions in relation to the development of new service offerings. All case studies were separately documented using a fixed format and also summarized in a two page summary. All case studies were authorized by the companies. When selecting the companies, we made sure that these were well spread over the various business-related services discerned and included both large and smaller firms. However, a pragmatic consideration was also that the research team was able or already had access to the firms selected. In view of the number of case studies (20) the reader is reminded that these results make no claim to be representative – only a wide-ranging empirical survey can make such a claim. It nevertheless offers a range of interesting insights intended to stimulate wider discussion on innovation in service firms, its organization and policy options to support these.

In the remainder of this chapter we present the synthesized results and illustrate these with examples from the four Dutch case studies.96 We will first provide an – admittedly rather crude – overall picture (section 4.2) before dealing with major issues ranging from conceptualization of R&D, to organizational and strategic issues related to service R&D, formalization of R&D, links to the science base, use of R&D programmes and suggestion for R&D and innovation policies (sections 4.3-4.10). Finally we briefly assess the robustness of the results (section 4.11) and summarize the case study results, including some practical implications (section 4.12).

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96 Pim den Hertog was responsible for and directly involved in performing the four Dutch case studies. The other 16 case studies were performed by the research partners. For that reason it was decided for this thesis to use the overall synthesis and illustrate this primarily with examples drawn from the Dutch cases.
4.2 Overall overview case study results

The RENESER case studies show that business-related service firms are responding by beginning to tackle R&D and innovation in services more energetically. Nevertheless, the main focal points of R&D and the way these activities are organized, budgeted and managed are mostly designed differently when compared to manufacturing firms. They do also reveal considerably variety among the set of service firms included in our sample as is evident from figure 4.1 below. It is almost impossible to characterize rather detailed case studies in a set of very crude symbols. It does however show that the case study firms are quite similar in some dimensions (the importance of hidden R&D, the prevalence of more decentralised approaches to R&D, the importance of innovation in co-operation with third parties), whereas in other dimensions the variety is huge (the conceptualisation of R&D, the use of central R&D units, the participation in public R&D programmes). This figure must therefore be treated as indicative and not be seen as a summary table. In the remainder of this chapter we discuss the key dimensions of the case studies performed in somewhat more detail and illustrate some of these central findings using examples from the four case studies on Dutch firms.

4.3 Conceptualisation of R&D

Given the increasing economic importance of services, the traditional growth model based on increased use of labour, capital and land is becoming less important and the “idea-driven growth” paradigm is increasingly establishing itself as a new explanatory model. It is based on the realisation that innovation – especially in the area of intangible services – is becoming an increasingly important factor for the success of entire national economies. This paradigm shift is manifesting itself particularly clearly if one analyzes typical service markets. It is apparent that market situations and competitive structures

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Box 4.1 Services R&D and innovation at Randstad

Innovation and new services are important to Randstad. How they emerge and are managed cannot be compared to common practices in manufacturing. Innovation in an organization like Randstad means enriching, blending, and customizing the company’s basic ingredients into well defined, profitable, and specific service concepts. Innovation is embedded in various activities and is therefore best viewed as a scattered activity. Innovation is embedded in the business culture (entrepreneurial, open-minded), in the fine-tuning of massive administrative and ICT systems (scope for predominantly incremental innovations) and the combined central/decentralised marketing resource management. Innovation is most visible in business concept development (codifying and diffusing best practices), co-innovation with strategic international accounts, and the practice of portfolio management at top management level.
### Figure 4.1 Main characteristics of R&D and innovation in 20 RENESER case firms analyzed (den Hertog et al., 2006).

- Yes
- Partly
- No
- No information available

<table>
<thead>
<tr>
<th>Activities in services’ R&amp;D&amp;I</th>
<th>Ahold</th>
<th>Aptium Oncology</th>
<th>DB Dialog</th>
<th>DIN</th>
<th>EL CORTE INGLÉS</th>
<th>GRUPO SANTANDER</th>
<th>Fujitsu Services</th>
<th>IBERIA</th>
<th>HTC</th>
<th>METRO Group</th>
<th>METRO DE MADRID</th>
<th>Network Research</th>
<th>NPD/consultancy firms</th>
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<th>Océ</th>
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<th>Randstad</th>
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<td>Decentral units for services’ R&amp;D</td>
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<td>High extent of hidden R&amp;D for services</td>
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<td>Dedicated budgets for services’ R&amp;D</td>
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<td>Participation in European R&amp;D programmes</td>
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are subject to constant change and that the pace of dynamic innovation has accelerated unmistakably. Against the background of increasing competition, successful companies no longer try to achieve decisive advantages through cost leadership or advances in quality or technology alone. They tend to differentiate themselves through innovative services that give them a decisive unique selling proposition compared to their competitors. The crucial challenges are, above all, to continuously offer enhanced or new services to the market, to be quicker than the competition, and at the same time meet customers’ needs and expectations.

However, many companies are confronted with the problem that current corporate structures and processes are not designed for efficient development and market positioning of services that are to be provided professionally and, in particular, there are no appropriate tools for strategic and operational planning of R&D and innovation processes in services. Problems very often start with the fact that the services offered by companies are not clearly defined, i.e. there are no unambiguous descriptions of service contents, relevant processes and required resources. The consequences are, besides lack of transparency and interfacing problems, inadequate ability to systematically develop and innovate the service portfolio offered.

We found that at least for the selection of 20 firms analyzed, firms have begun to grapple with issues relating to services’ R&D more seriously. In all the companies surveyed there are more or less distinct R&D activities even though the abstract concepts used for them are often not without ambiguity. Although all the companies surveyed are familiar with the term “R&D”, only roughly half of them use it routinely. In the majority of cases R&D is mostly associated with technological R&D, i.e. the development of new technologies or applying new technologies (mostly ICT) in a new context or for servicing the ‘service machinery,’ i.e. creating the technological facilities and platforms on which the services are provided. R&D is less associated with creating new services or new service development. Various phrases such as product or new service development, customer focused innovation, business development, service improvement or (more specifically) advanced retailing are used for these activities. This implies that, in practice, important services’ R&D and innovation activities are hidden behind labels such as business development, service improvement, etc., without being recognised as services’ R&D. A lot of services’ R&D is also concealed in client-specific solutions (that may later on serve as a basis for developing more standardized service products).

Like the understanding of the term “R&D”, the breadth of the R&D activities carried out also varies in the surveyed companies. Relatively heavily technology-oriented R&D is carried out in more than half of the companies. In some cases it is not a matter of simply adapting new technologies to support service business but rather of companies playing an important role in fundamental development of new technologies (e.g. RFID
Managing Service Innovation

In trading companies. In contrast to technology-oriented R&D, the development of new services or new service concepts is perceived as important in slightly less than half of the companies surveyed. The term R&D continues to be understood to mean the design of new processes (in roughly a third of the companies surveyed), creating new distribution channels (roughly a quarter of the companies) and, in a few cases, concepts for social changes in the company (“social innovation”).

Finally, it should be pointed out that, although the service-only companies surveyed in the project have a predominantly technology-oriented understanding of R&D, interestingly, the boundary seems to be blurring more and more in the case of the hybrid companies (formerly pure manufacturing firms). Here, less and less of a distinction is being made between R&D for material goods, ICT and services.

Box 4.2 What makes that Océ is developing into a service firm

Although generally known, organized, and managed as a goods-oriented manufacturing company, Océ has added a large variety of services to its portfolio over the years. Océ is currently dependent on revenues generated through its various services (some 50% of which are product related) for more than 70% of its turnover. In fact this shift has the character of a complete (paradigm) shift, from a hardware or product-based business model towards a (much more) customized services business model.

Apart from the switch to digital printers, digital documents, and colour printing machines, Océ’s shift towards a customized services business model is motivated by two major related market trends. In the first place, a trend towards increasing service content and what used to be labelled as higher customer intimacy can be identified. Customers demand complete solutions, i.e. combinations of hardware, software, and services. They increasingly want integrated solutions to manage their office documents. Consequently, key accounts are increasingly offered additional services, such as output management and document management solutions, fleet management archiving and scanning services, in addition to printing services that help control their costs (e.g. by using more centralised printers, web-based ordering, print job management). Another development is the trend among clients towards reducing the cost of ownership, document process outsourcing and hence, for Océ, a more service-based business model. There is a gradual development from merely supplying the machine and the related maintenance services and supplying paper, toner and supplies, towards additionally offering financial services, taking over people from the reproduction and related service departments, and eventually exploiting an infrastructure in-house with a certain functionality. Increasingly, large accounts want to be able to purchase printing and related services without having to purchase or lease the actual systems. Eventually they are interested in buying a specific functionality, which is why they increasingly outsource document handling processes. In fact, this development requires a complete shift from a hardware or product-based business model towards a customised services business model in which it is not the machines or even the number of copies that matter, but the profit made on client-specific service contracts.
4.4 Motivation for services’ R&D

The companies included in our study only began dealing with R&D in services in recent years. The question as to what motivated the companies to become more active in this field is highly relevant. The reason most often cited is “to preserve or boost their own competitiveness”. Many of the companies surveyed report increasingly dynamic markets, the emergence of new competitors and widening ranges of choice for customers that necessitate profiling through enhanced or new services. An equally frequently-mentioned trigger for new services is customers’ wishes. This includes both actively expressed customers’ requirements as well as attempts to improve customer loyalty initiated by the companies themselves. The third and fourth most frequently-cited reasons for services’ R&D in the study are cost reductions and/or efficiency improvements (mentioned by a third of companies) and the use of new technical capabilities (mentioned by a quarter of companies). Other reasons that are often mentioned include market deregulation and the trend toward outsourcing and higher value specialized services. If one considers the reasons for growth in services’ R&D overall, it is apparent that both proactive as well as defensive considerations play a roughly equal role among the surveyed companies.

Important obstacles to systematically deal with R&D and innovation in services were insufficient support by top management (in a quarter of the cases) and inadequate resources (also a quarter of the companies). Other frequently mentioned reasons included an overriding preoccupation with day-to-day business, an unwillingness on the part of customers to pay for new services, an insufficiently innovation-oriented corporate culture, inadequate exchange of R&D knowledge within the company, and a lack of organizational infrastructure to carry out R&D tasks.

4.5 Organizational arrangements

The question of the extent to which the R&D function is organizationally anchored in the company was an essential part of the case studies. In terms of the arrangements for organizational responsibility, the four following basic alternatives were considered:

- R&D and innovation in organizational units (e.g. new service development, service engineering) specifically set up for this purpose;
- takeover of R&D activities by existing organisational units (e.g. marketing, sales);
- R&D and innovation in the form of cross-divisional project teams;
- outsourcing of services’ R&D to an external partner (e.g. contract research).

In almost all the companies surveyed, R&D and more widely innovation in services take place in the form of project teams. In the overwhelming majority, these teams are cross-
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divisional, i.e. include employees from various business units. Central responsibility is mostly entrusted to divisions that have relatively high levels of contact with customers such as Marketing, Product Management or Sales. It is also noticeable that IT Departments are relatively heavily represented in project teams in the surveyed companies.

The fact that R&D and innovation are carried out in a large number of cross-divisional projects running side-by-side must be one important reason why most companies are unable to provide precise information on the extent and scope of their R&D activities. Interviewees often report “hidden R&D”, i.e. nobody in the company knows who or how many people exactly deal with services’ R&D. In some of the major companies surveyed, it is even reported that several hundred employees are active in projects involving R&D and innovation, but they are not regarded as such within the company.

The main drawback of R&D and innovation teams that collaborate on a temporary basis and with shifting responsibilities is that the knowledge acquired at the end of a project is often lost because the employees involved move on to other tasks. This disappearance of the embodied knowledge is the reason why more than half of the companies surveyed in the study have already opted in favour of assigning service R&D to existing organizational units as an ongoing ancillary task. The aim of this is to ensure that new services are developed continuously and the required knowledge can be built up and expanded. When asked which organisational unit was entrusted with services’ R&D, the companies responded that they usually opt for business development, marketing, product management or the specialised departments that interact with customers most intensively. This is yet more evidence that the intensity of contact with customers seems to be an important criterion for companies when it comes to allocating service R&D and innovation activities.

Box 4.3 Role of co-innovation at Randstad

A key characteristic of innovations at Randstad is that most of them involve clients. It is hard to pilot a new service without clients. This is most visible at the group that is responsible for major international accounts. This group deals with major clients operating in Europe, the USA, and Asia. The international accounts group is organised along industries (telecom, food/pharmaceuticals, logistics, finance and so on). A differentiation is made between international top accounts with high volumes of (Randstad) services and a wide geographical scope, international clients with either lower volumes or a more limited international representation, and accounts with more limited international activities. The first group consists of a limited number of businesses that are open to new service concepts and in practice function as launching customers. Randstad and these top accounts co-innovate, effectively in a risk-sharing partnership. The clients benefit most by gaining competitive advantage vis-à-vis major competitors. New services are initiated in a sort of open or proactive dialogue with key accounts. The act of piloting new services is mostly a matter of smart organisation and low-key experimentation rather than massive investments in new service concepts.
In order to further professionalize the development of services, a few of the interviewed companies (5 in all) have opted to set up dedicated organizational units whose main task is service R&D. This allows them to separate these activities from routine business and build up a R&D and innovation knowledge base. However, given the size of most companies surveyed, organizational units are relatively small and low profile indicating that most R&D and innovation efforts in services are still “hidden” and “dispersed”.

The fourth organisational alternative mentioned, full outsourcing of R&D and innovation in services, was not encountered in the surveyed companies. It should nevertheless be noted that great importance is attached to integrating external partners into development of services. Admittedly, external partners only take over individual subtasks rather than entire development of a new service. More than three quarters of the companies surveyed stated

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**Box 4.4 Ahold’s R&D function: centralised versus decentralised**

Thus far, Ahold’s R&D function is not designated or fully formalised within the organization. No employees are assigned with specific R&D tasks in their job description. Nevertheless, the increasing (global) competition and consumer wishes have resulted in an increasing need for a more coherent view on R&D processes and innovation. Most of Ahold’s R&D is decentralised, which means that most of it is performed by several hundreds of employees in the subsidiary companies. Within Ahold there is no strict hierarchy, and it can be seen as a management holding structure with different arenas supported by central units.

The bottom-up approach used at Ahold has grown historically. Ninety percent of its new products, concepts, ICT and logistic improvements are developed in Ahold’s subsidiaries and arenas. Here R&D can be broadly divided into 10% product development, 50% new shop concepts and 40% ICT/logistics. Market leaders Albert Heijn (the Netherlands) and ICA (Sweden) serve as examples. Their successful innovations will diffuse into other parts of the Ahold organization. The remainder of Ahold’s R&D (10%) is centralised and carried out by (several) dozens of employees. At a corporate level there is no development of new shop concepts, with 20% being allocated to new product development and 80% to the development and implementation of new ICT systems and logistic solutions. Less developed parts within the arenas are picked up at corporate level. Criteria (to be formalised) for the development of innovations or projects at the centre are: (1) requirement of economies of scale, (2) requirement of a certain level of standardization, and (3) distribution requirements, such as exchanging ideas and managing knowledge flows between the arenas. At a corporate level the first moves in facilitating the synergy between the relative autonomous arenas are taken mainly by the Ahold leadership team (ALT) and the business support office (BSO). To conclude the organizational arrangements, we point out that Ahold’s historically developed decentralised approach on the one hand has certain advantages (regional specific, more creativity), but that there are also disadvantages in terms of efficiency and speed. The strength and efficiency of Ahold’s competitors, for instance WalMart, are to an extent the result of their central and hierarchical organization. However, WalMart’s market strength makes it possible to impose their preferences (and e.g. set the standards) at their suppliers and thus reinforce the efficiency gains.
**Box 4.5 Characteristics and orientation of R&D activities at Randstad**

Dutch-based Randstad Group (€6,638.5 million in revenues in 2005) is one of the largest staffing and human resources service organisations worldwide. At Randstad, services R&D and innovation are generally hidden. This by no means implies that services R&D are non-existent at Randstad. In fact there are various ways in which Randstad invests in services R&D and innovation, albeit under different labels. In a way, R&D and the innovative capacity are embedded in various activities such as:

- A corporate culture in which all Randstad key employees can contribute to (and to a certain extent are responsible for) the overall intelligence function and can put forward suggestions and pick up signals regarding how to improve work processes and what new services to offer. Typically, Randstad consultants are well educated and in contact with both business clients and potential, individual candidates. In fact these consultants run their own outlet and must possess a certain degree of entrepreneurship. The Randstad organization is relatively flat, and consultants on the shop floor can easily make suggestions to the location manager or regional district manager. Randstad management steers quite intensively on this type of open, corporate culture and approximately 80% of all managerial positions are filled with Randstad’s own people, thus ensuring that the greater part of management has a thorough understanding of the business.

- Process managers of the in-house services are generally concerned with optimizing processes and hence incremental process innovations at the site of the business client. They are tempted to organize dedicated client-specific solutions. This has to be kept within limits so that additional services can be sold at a later stage. Process managers interact to jointly propose changes and innovations.

- Within the Randstad holding company a small group of professionals is responsible for business concept development. While this small unit does not develop completely new innovative services, it scans Randstad practices worldwide, selects best practices, codifies them in great detail, standardizes these new services and – after approval from the highest level – diffuses these as the standard way of working to those countries where the services are offered (these have to be adapted to local circumstances such as local regulation). In fact this can be labelled as a form of innovation diffusion and knowledge management.

- Another small group of professionals operating close to the market is responsible for strategic international accounts. This group interacts intensively with major international accounts. If a new service is required this is detected and an international project team works on a dedicated solution. Randstad has a considerable number of business and process consultants who are able to contribute towards solving this type of problem and develop new service solutions that may form the basis for more regular service products at a later stage. Typically, counterparts in a few selected top clients are co-producing part of Randstad’s new services.

- Other sources of R&D and innovation are administrative and ICT systems that should help in creating efficient back (including knowledge management systems) and front offices for Randstad. These administrative and ICT systems can also help in realizing process innovations such as electronic billing systems, new front office systems or shared service centres. In fact these are the massive, almost manufacturing like business processes running in the background of a typical service enterprise.
that they integrate selected consulting firms, software houses, market researchers, legal experts or other specialists into their R&D activities. Moreover, it should be mentioned, that creating a services innovation culture (and an open management style) or at least a corporate culture where innovation is valued, was used in quite a number of the firms we investigated to support service innovation on a company-wide basis and trigger bottom-up innovation.

There appears to be no “one size fits all” solutions when it comes to the organizational arrangements for service innovation. In practice this means that there is a variety of arrangements, even within individual firms where various organisational solutions can co-exist. It is therefore quite possible to find a company, despite having a dedicated service R&D department, developing new services in other organizational units such as marketing or sales. Without a doubt, one of the major challenges in the future (and on top of creating a services innovation culture) will be to devise appropriate forms of organization and management – especially for working in networks and mastering interfaces both interfim and intrafirm – that are suitable for getting to grips with existing complexity. This would provide a foundation for fast, efficient and continuous development of innovative services.

4.6 Decision-making on R&D activities

Decision-making on R&D activities was another topic area covered in the interviews. The first question addressed whether or not there was a long-term R&D strategy for services at company-management level. It turned out that less than a third of the surveyed companies had such a strategy. Furthermore, a few other companies stated that although there is no clear (service) R&D and innovation strategy, R&D and innovation projects are under the control of top management. All the other companies did not have a (service) R&D and innovation strategy, although most of these firms appreciate the necessity for having one.

**Box 4.6 Cosmopolites play an important role in Rabobank services’ R&D and innovation process**

Service R&D can be found in a number of places within the Rabobank organization. Basically, innovations are pushed by actors who are conceptualized in social network analysis as cosmopolites. Cosmopolites are persons who have creative new ideas, act like a kind of free agents within an organization, are part of extensive networks outside – in this case – the Rabo organization with strong ties to (technology) providers and universities, as well as with market parties, local banks, and strategic key informants within the central Rabobank. Cosmopolites are consulted and asked to invest in new concepts and technologies. Based on these proposals, the cosmopolites develop new service concepts. To develop these concepts further, they bypass the regular decision-making processes, and use their network to find funding and marketing support, inside or outside the Rabo organization. They act as intrapreneurs within the organization. After successful completion, pilot projects can gain formal status within the Rabobank.
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With respect to the decision-making process regarding new service R&D and innovation projects, the following practices were mentioned, some of which run parallel:

- decision-making is part of the wider overall R&D strategy and budget cycle;
- decision-making is based on a form of dedicated portfolio management;
- decision-making is delegated to committees or the departmental heads who are most involved;
- decision-making takes place on a case-by-case basis (e.g. sound business cases);
- decision-making depends on priorities of clients;
- development of new ideas takes place under the radar of senior management.

In most cases there was some mechanism for joint decision-making on service R&D priorities, although not necessarily at the highest management levels. Also case-by-case decision making was quite prevalent, leaving professionals dealing with service innovation considerable room to manoeuvre. Sometimes the role of entrepreneurial employees or free agents was seen as crucially important. However, the scope for playing around and really experiment varied considerably (as customers need to be involved).

Companies were not always able to provide detailed information on another question concerning the exact budgets involved in R&D and innovation in services. In a few cases, budgets are clearly defined and, as a rule, they are allocated from one project to the next. Consequently, generally speaking there is insufficient overarching control of service R&D and innovation activities i.e. investments in services’ R&D are not systematically evaluated and conclusions for future R&D activities not necessarily drawn. Although service R&D and innovation strategies, budgets and organization are lacking in most cases thus far, there is definitely a trend or need to formalise these and plan, manage, and budget service R&D and innovation in a more structured way. This pattern is most visible in hybrid firms and KIBS.

Box 4.7 Decision making regarding the Rabobank’s R&D activities – shift from a business centric towards a customer-oriented view

Proposals for innovative hard or soft R&D projects are judged like any other project. There are some budgets available for out-of-pocket costs or innovative projects. The board of executives of Rabobank keeps a distance, which make it possible for employees to work on innovative projects that are not under the board’s direct control. There is no direct involvement or active interest in service innovation from the board of directors. Decisions concerning projects are made every six months when portfolios are defined. It is important that projects be supported by local banks or other business units. Basically, funding of projects is based on a 50–50 basis (marketing and IT). Half the funding is provided by the innovation team within the ICT department, the other half by marketing, local banks or interested business units. An important criterion is a proper fit with the core strategy of the Rabobank, i.e. a focus on customer value. The Rabobank will always look at customer value first. Technical conditions and the business case are important criteria.
4.7 Formalisation of R&D

To make the R&D and innovation processes transparent and reproducible, to avoid duplication of work and to recycle existing knowledge (including mistakes made), and to meet quality standards, efforts are made to describe R&D and innovation processes and to standardize individual R&D and innovation tasks. This “formalisation” of services’ R&D ranges from fixed preset processes on the one hand to flexible, situation-specific procedures on the other. Where the phrase “formalisation” is used below, under no circumstances should this be interpreted as R&D and innovation processes being squeezed into a rigid straitjacket. The term should rather be interpreted as meaning that development processes are no longer generally haphazard and that there are guidelines in accordance with which R&D and innovation in services are conducted. On the basis of the 20 case studies performed, three levels of “formalisation” can be identified.

First level companies use virtually no set guidelines for developing and innovating services. This is the case in slightly more than one third of the surveyed companies. In these companies, most new services come into being on an ad hoc basis or on the initiative of individual employees.

At the second level, which includes the majority of the companies surveyed, development and innovation of services follow a pre-defined workflow. However, this is often documented only in a rudimentary way. Experience and knowledge from previous R&D and innovation projects are only available in the form of tacit knowledge. In addition, initial R&D methods are used to develop and innovate services, i.e. portfolio management, trend analysis, scenario analysis, SWOT analysis, quality function deployment (QFD), failure measurement, and effects analysis (FMEA). The main focus is on systematic portfolio management, which is used by a third of the surveyed companies.

Third level companies – a small share, notably three companies out of 20⁹⁷ – had definitively defined and comprehensively documented their R&D and innovation processes. Detailed specifications and guidelines for the development of new services were worked out to this end. Above all, this has the advantage that knowledge of service R&D and innovation is available across all involved employees rather than being confined to individual experts. As far as the structure of R&D processes was concerned, it was interesting that the latter were inspired by product development processes (e.g. stage gate model) known from product development.

It was also striking that all surveyed companies had recently started to formalize their service R&D and innovation and, as a rule, were unable to claim many years of experience in this field. Also, some of the companies that had previously had no documented R&D processes stated that they were currently working on greater formalisation.

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⁹⁷ A typical example here is Siemens Medical Solutions.
Box 4.8 Ahold attempts to standardise the methods of working in a four-phase service engineering model

As part of its innovation strategy development, Ahold is standardising its operational methods, although a formalised organisational structure for service innovation is lacking. This standardisation process relates to different areas and levels throughout the organisation, such as corporate brand development, local brand development, Ahold sustainable brand development, category profitability improvement method, and functional food as part of the healthy living programme. In these areas Ahold has developed a four-phase service engineering model for strategic initiative development: Desk research is carried out mainly by the Business Support Office at corporate level, albeit under the radar of the executive board. If the desk research turns out to be promising, a more formal initiative is taken. Further exploration by SWOT analysis is centralised. Next, a thoroughly worked-out business plan must be approved by the Ahold Leadership Team. The final phase involves piloting and feedback rounds and a rollout throughout the organisation. In addition to streamlining the working processes, Ahold puts a great deal of effort into measuring the output of its innovative activities. The value provided to the customers needs to be substantial, specific, and measurable. A variety of methods are used, from business impact analysis to customer satisfaction measurements.

Box 4.9 Using the funnel concept and portfolio management at Randstad

Randstad Group uses the well-known funnel concept in combination with portfolio management to organize the ‘R&D and innovation’ process. Using a funnel concept to first collect business opportunities and good ideas, and gradually reduce them by using a set of criteria is quite common in manufacturing R&D, but less so in services. At Randstad the following steps are used:

- Identify HR-related opportunities by scanning the market and by collecting good ideas spread over the Randstad organization.
- Assess how profitable such an opportunity might be (also by judging whether it is a one-off opportunity or something that can be scaled up and repeated), how it can be organized, what the chances are for success or the risks involved, and whether the organization can handle it.
- Assess the basic specifications of a new service or process, i.e. make a business case in terms of organization, resources and number of staff needed.
- Test the new concept or process in a pilot project, preferably with clients and at several different locations.
- If these pilots prove successful, describe them in detail (toolkit approach).
- Roll-out of the concept or improved process over the relevant countries where such services are offered i.e. declare them as the standard for this type of service.
- If necessary, adapt to the local context and culture.

At the level of the executive board of directors, portfolio management is used to monitor and decide on a portfolio of innovative projects that typically contain 10-20 projects ranging from incremental process innovations to completely new service concepts. So a decision at board level can result in scaling up a new concept. For some mass-customised services, mass is important; for specialties it is usually higher revenues per employee that matters.
4.8 R&D co-operation

Working together with external partners is important to almost all the companies we surveyed. An open collaborative network model seems to be the standard when it comes to service R&D. The most important partners are customers who cooperate in R&D and innovation projects as lead users or development partners. Suppliers, ICT companies and consultants are also mentioned frequently. To these must be added market researchers, sales partners, external experts, trade associations and so on.

Box 4.10 Linkages and collaboration for R&D at Océ

Océ is best known as one of the major R&D-oriented manufacturing companies, and as such the company cooperates with other businesses, universities, and other research organizations. However, in the area of service R&D there is as yet much less co-operation with other companies, universities, and research organizations, although some co-operation exists. Océ indicated that it would like to learn more from and share experiences with similar industrial companies, and more specifically companies from capital goods industries, with medium-sized production runs and an important service component, e.g. manufacturers of medical equipment and service industries that provide secondary or facilitating/enabling service functions to other industries. Océ would like to intensify cooperation with firms that possess the necessary process and business knowledge, and the creation of a community of interest/practice was seen as helpful. Additionally, there is an interest in working more closely with universities and other research organisations. One of the problems mentioned with regard to cooperating – on services and services R&D – with the knowledge infrastructure is that there are only a few individuals at best that have relevant knowledge and the relevant knowledge that is available is hard to locate.

Box 4.11 Rabobank: investor, R&D partner, co-innovator and knowledge provider

The Rabobank sees its own role not solely as investor in knowledge intensive projects, but also as a knowledge provider with regard to financial services and industry sectors, but also with regard to organizational processes, customer orientation, and new technologies. Rabobank wants to share its knowledge with its customers and government. Rabobank uses instruments such as entrepreneurial focus groups, Foundations and Rabo Development program, to share knowledge. Only in a limited number of cases are clients involved in service innovations at Rabobank. Pilots usually involve employees. Co-innovation mainly takes place between individual Rabobank employees, i.e. the cosmopolites, together with suppliers and actors in their network. Rabobank is involved in research ranging from analphabetism issues in the Netherlands to worldwide water management. On a local level Rabobank initiates studies together with local municipalities on local economic developments. Individual employees who are part of the innovation network within the Rabobank, have close contact with universities. This type of collaboration has an ad hoc nature and is not part of official policies of the Rabobank group. There are some part-time positions created at universities and funded by the Rabobank. However there is not a clear focus on service innovation yet.
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However, surprisingly there is no distinctive cooperation with universities and scientific establishments among the companies surveyed. These are regarded as suitable places for talent scouting and personnel recruitment or as partners for creating an innovation culture more generally, but are seldom invited to participate in concrete R&D projects. The companies we surveyed indicated that they felt that there was insufficient practical relevance, an excessively abstract method of working, a strong focus on manufacturing and technologies, and a “lack of innovative drive”. At the same time, many of the companies nevertheless claimed they were interested in working together more closely. Some of the surveyed service companies indicated that KIBS assume the role that many research establishments play in the case of manufacturing companies. They are often used as knowledge brokers and innovation intermediaries.

4.9 Participation in publicly funded R&D programmes

Another area of great interest in the survey among 20 companies involved the participation of business-related service firms in publicly funded R&D programmes. Both national programmes as well as programmes financed by the EU were taken into consideration.

Although roughly half of the companies claimed they had already participated in publicly funded R&D projects, the number and scope of the projects varied enormously. Only approximately a quarter of the companies indicated that their companies were regularly involved in such R&D and innovation projects in terms of significant capacity. In many major companies, the interviewees – who were, after all, predominantly persons responsible for R&D and innovation – were unable or found it difficult to cite examples of such R&D and innovation projects, a fact that underscores the hitherto subordinate role of this type of R&D and innovation support.98

The companies we surveyed made the following statements in response to the question regarding their generally speaking inadequate participation in existing public R&D and innovation programs:

- The content of programmes is insufficiently geared towards the needs of service companies (in fact almost all programmes mentioned by the companies have a strong technological bias).

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98 This observation is supported by the fact that the majority of companies we surveyed did not even know the national funding opportunities and EU programmes that are relevant to them. It must nevertheless be added that most of these companies are not actively looking for such opportunities or funding. By way of example, in the case studies there was hardly a single company that had created responsibilities and infrastructure (such as dedicated lobbyists or internal subsidy advisors) to facilitate systematic acquisition of public funding. This is in sharp contrast to major manufacturing companies where this is often the case.
Promotion opportunities are not transparent to many of the companies ("promotion jungle") and obtaining information about programmes is regarded by some as an onerous process.

The application processes of the programmes themselves are described as too bureaucratic, too costly and too time-consuming. In some cases there are also reservations concerning the participation of service-only companies in research projects.

In general, it would appear on the one hand that the opportunities offered by providers of public R&D and innovation funding are still insufficiently tailored to match the needs of service providers. On the other hand, there is undoubtedly room for improving the ability and willingness of companies to participate in R&D and innovation programmes.

4.10 Policy issues

Quite a few of the companies involved in the study do not have explicit policy suggestions on how to facilitate service R&D and innovation. Some of them (even large service firms) do not seem to be – whether intentionally or unintentionally – well connected to the R&D and innovation policy scene.

The interviewees were asked to suggest their recommendations for a future R&D promotion policy. Most policy suggestions have a rather general flavour and, to a large extent, are about non-innovation policies that better suit the needs of service firms (which might affect innovation considerably) such as:

- importance of educating and training service professionals with the right set of skills and mindset;
- need to have a fundamental debate about (future) changes in the service sector;
- better use of public procurement policies to spur innovation in services;
- need to increase framework conditions for entrepreneurship and innovation in general;
- need to work on an innovation culture society-wide and in service firms as well;
- importance of legislation and regulation (both too much to trigger new regulations for the development of service markets) such as in relation to healthcare, safety and so on.

Other service R&D and innovation specific policy suggestions include:

- creation of open innovation culture in service firms requiring open management style;
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- scope for developing service competence centres within the public knowledge infrastructure;
- need to develop frameworks and methods (toolboxes) for developing innovative services;
- the need to create platform of practitioners in services innovation;
- support needed for intersectoral exchange of best practice in service R&D and innovation.

In those cases where comments were given on R&D and innovation programmes, the following needs were flagged:

- define service R&D better;
- make existing R&D and innovation programmes more accessible to service innovators and provide better information on R&D and innovation programmes and the way service innovators can participate;
- increase the scope in the EU to deliberately cooperate in service R&D and innovation and create national and European forums for service R&D and innovation.

**Box 4.12 Randstad’s participation in (government-funded) research programmes and its need for an ‘open’ innovation culture and learning organisations**

As Randstad typically starts from its own strengths and R&D and innovation are mostly hidden (at least not managed as a major R&D or innovation effort), the company is not a regular user of R&D and innovation programmes. Although there are incidental examples of R&D or innovation support through government, e.g. when developing innovative ICT applications, participation in these programmes is not centrally managed and it is not dealt with in the field. For example Randstad does not participate in the Telematics Institute, one of the leading technological institutes in which some major Dutch service enterprises do participate.

Two items are regarded as relatively important for creating innovative service enterprises. In the first place the creation of an open innovation culture in service enterprises. Randstad itself steers on an open entrepreneurial culture, where people at all levels can put forward suggestions. Interview partners at Randstad remarked that the heart of the organization is in the sort of soft values such as openness. Promising ideas for renewal are accommodated and not dependent on a fixed innovation agenda. When discussing options for innovation policies that are favourable to service industries, it is indicated that government could contribute by creating a more favourable open innovation culture in general. The second item government could contribute for innovation in service companies such as Randstad is in creating learning organisations. How to best create a culture in which service professionals are willing to cooperate and share new insights and knowledge? A firm such as Randstad – which increasingly sells knowledge-intensive business services e.g. HR solutions – is in need of more and more employees with consultancy skills. They should be trained and become accustomed to sharing knowledge, not only with clients, but also among themselves. This also has implications for education and training in general.
4.11 How valid are the results of these case studies?

The RENESER cases have delivered a number of informative results on services’ R&D. However, it has to be pointed out, that the study does not have a representative character. On the one hand the sample of 20 cases is too small to provide results that could be generalised. On the other hand the selection of the individual enterprises took place in particular regarding experiences with services’ R&D and less regarding criteria such as size, sector and nationality.

Above all the study objective was pursued of uncovering and of discussing interesting solutions within the area of services’ R&D. Thus it supplies important detailed results, which would have been hardly possible with quantitative empirical investigations. An example is the determination and the discussion on the extent of “hidden R&D” within the interviewed companies. Only by the methodology of personal interviews could an exact picture be drawn here, which would not have been possible with a simple questionnaire. A comparison with former empirical studies on services’ R&D shows however a high degree of similar results. In particular there is an overlap of the following basic results:

**Service companies do perform R&D:**

All the examined service enterprises perform services’ R&D, whereby the range and the intensity of the R&D activities vary strongly. Since the 80’s there has been an increasing number of publications in the scientific literature as well. Extensive literature reviews can be found in Bowers (1985) and in Johne and Storey (1998). Significant R&D activities are in particular reported from financial service providers (e.g. Jochims 2002; Schneider 1999) and ICT service companies (e.g. Fähnrich & van Husen 2004; Meiren & Nägele 2002).

**Trend towards a formalisation of R&D:**

Early publications are full of statements like “new services happen” rather than formally develop (Rathmell, 1974), “we have yet to hear of service designers” (Gummesson, 1989) or the belief that new services happen as a result of “intuition, flair and luck” (Langeard et al., 1986). Also most of the interviewed enterprises have no long tradition in the systematic execution of services’ R&D, but they have definitely intensified and structured their efforts within the last years. This concerns in particular the clarification of responsibilities, the supply of budgets for R&D projects, the creation of an appropriate organisational infrastructure, and the definition of R&D processes. Similar observations are described in studies by Meiren (2006), by Spath and Zahn (2003) as well as by Edgett (1996). Moreover, some former studies also point out a correlation between formalisation of R&D and success (e.g. Fähnrich, 1999; de Brentani, 1995; Martin & Horne, 1992).
Lack of dedicated R&D strategies:

Although many enterprises are starting to systematise their services’ R&D, deficits in the formulation of explicit R&D strategies could be observed again and again in the cases – frequently in connection with a lack of consciousness and unsettled competencies in the top management. This often results in parallel running activities and a large amount of “hidden R&D”. This situation is also described in some empirical studies (e.g. Luczak, 2003; Fähnrich, 1999; Griffin, 1997).

Altogether it remains to be noted that the RENESER cases cannot be regarded as representative, their essential results are in line with former empirical studies. Thus the case study accomplished in the project has been a suitable instrument to obtain more detailed insights into individual enterprises and thus to complement the results of former quantitative empirical studies.

4.12 Summary of the case study results and some practical implications

Our study is a first step in understanding the management issues, both at a strategic and at an operational level, involved in service innovation. As far as we know, no similar studies are as yet available. Our study shows that service firms have begun to respond to the need for a more formalised approach to service innovation by tackling it more energetically. Nevertheless, the main emphasis of service innovation and the way service innovation activities are organised, budgeted, and managed differ from what we see in manufacturing firms, and there is also considerable variety among the particular service firms in this study. Based on the cases we investigated, the following conclusions can be drawn:

1. Most service firms show some form of structured attention to services’ R&D, however services’ R&D is mostly less formalised, more distributed, less explicitly managed and funded.

2. Increasing competitiveness and customer needs are important drivers for services’ R&D.

3. A dedicated long-term services’ R&D and Innovation Strategy (and hence management) at board of management level is rare. Formalised approaches for deriving services’ R&D strategies are limited.

4. Some service firms show high levels of technological R&D as well as technology-enabled innovation besides service delivery and organisational innovation.

5. Formalised, service-only R&D is the exception rather than the rule. However, in practice important services’ R&D activities are hidden behind labels such as business
development, service improvement, etc., without being recognised as services’ R&D. A lot of services’ R&D is also hidden in client-specific solutions.

6. In only about half of the cases were more formal methods used for managing services’ R&D and innovation portfolios and at project level about half of the firms involved also used more formalised (mostly rudimentary) models for new service development.

7. Although open models of innovation feature quite prominently in most cases, there is considerable room to improve R&D collaboration between service firms and research organisations. Cooperation in services’ R&D is mostly poorly developed.

8. Most large service firms are not well connected to the R&D and innovation policy scene (apart from the few that perform extensive technological R&D themselves).

9. Existing R&D schemes are of limited value to the majority of service firms and most of them find it hard or unappealing to get access to or participate in them. At the same time, nearly all the analysed companies do not have an internal structure for supporting the systematic acquisition of funded R&D projects.

10. There is a whole array of innovation and non-innovation policies that could help service firms become more innovative and eventually more competitive.

11. There is huge potential for cross-firm and cross-industry (lateral) learning.

12. Creating an innovation culture suited to services’ R&D and innovation (in firms, in industries, society-wide) is seen as the key to successfully increasing competitiveness through services’ R&D and innovation.

Based on the study, some practical implications can be identified. Firstly, an awareness of the relevance of service innovation has to be stimulated among board members of companies, as well as being engrained in the company culture, creating an open culture aimed at service innovation. The design and development process of services, as well as the allocation and sharing of resources, financial as well as with regard to sharing tacit knowledge on service innovation, require full management attention. Managers need to organise the service innovation process and to institutionalise service innovation within their organisations.

Secondly, in practice, service innovation appears to be a bottom-up, market-driven process. However, a more rational approach, based on a combination of business intelligence and practical market know-how, as well as the availability of tools that have been tested, may be important drivers when it comes to service innovation. Close collaboration between marketing, information management, and ICT departments is important in the development of new services. Needless to say, government can create favourable conditions for service innovations, not only by stimulating centres of excellence where business, research, and government meet, discuss, and research the management, operational, and practical
issues at stake, but also by creating awareness of the societal and economic relevance of service innovation, as well as by opening up its more traditional hardcore technology programmes for service R&D. If there is one thing this study has clearly illustrated, it is that service innovation has to be made more visible.