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

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Measuring innovation in a ‘low tech’ service industry: the case of the Dutch hospitality industry

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Summary

This article presents the findings of a survey among 613 firms in the Dutch hospitality industry adopting a demarcation perspective. The paper illustrates that innovation in this service industry is much higher and more varied than regularly reported. It further indicates that innovation activities in ‘low-tech industries’ can be in place with less formalized forms of (service) innovation management. Finally, it is shown that higher innovation intensity is associated with better firm performance. Based on this, some implications for managing innovation in the hospitality industry are discussed. Finally, some fundamental issues in the measurement of service innovation are raised.

3.1 Introduction

Innovation in services and service functions – including in industries such as the hospitality industry that are perceived as ‘low tech’ – are ubiquitous in practice and at the same time underrated in innovation research, innovation management and innovation policies. In all these realms, we are still suffering from a long standing bias towards technological innovation in manufacturing and some reluctance to seriously address innovation in services and especially non-technological innovation. The resulting definitional and measurement problems and lack of adequate data are persistent, and do obscure the contribution of services to innovation, productivity growth and well-being.

From the expanding innovation in services literature (for a recent overview, see e.g. Gallouj, 2009; Gallouj & Savona, 2008; Miles, 2005), it is evident that service firms are not merely passive recipients of others’ innovations. Many services contribute to innovation and may dispose of innovation processes which are, however, mostly shaped differently. Innovation in services or innovations in service functions represent multidimensional characteristics. Innovation often coincides with new patterns of product distribution, client interaction, renewal of service delivery organization, tapping the potential of new technological options, mostly ICT, and completely new revenue and business models. The

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71 Since OECD introduced the distinction between low tech, medium tech and high tech industries, mostly defined on their R&D input, the knowledge-based economy is associated with high tech industries. As observed by Hirsch-Kreinsen et al. (2003, pp. 33-34; see also Hirsch-Kreinsen & Jacobson, 2008), this is a somewhat distorted view as also developed economies are and will be dependent on so named low and medium tech sectors, knowledge bases of these type of industries may be deep, complex and systemic and can be embedded in regional and local innovation systems. We therefore used the inverted commas to indicate that, although this industry is generally perceived as low tech, this is not necessarily the case. On the contrary, we find many examples of innovative entrepreneurship in this industry.

72 This situation has improved. In the last version of OECD (2005c) Oslo manual and in the most recent round of the Community Innovation Survey, for example, organizational and marketing innovation are taken into account. Further a composite service sector innovation index has been composed (for a review, see Arundel, 2006).
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importance of the interplay between non-technological and technological elements has increasingly been acknowledged for in both theoretical and institutional contributions (see e.g. Coombs & Miles, 2000; Gallouj, 2002; Hipp & Grupp, 2005; OECD, 1997 and 2005).

The nature of the output of the hospitality industry, which we define here rather traditionally and limited as the services offered by hotels, restaurants and cafés is fuzzy and complex too. This has important implications for how both innovation and performance in this industry can be conceptualized. The services offered by hotels, restaurants and cafés cannot be reduced to offering a bed to sleep and/or food and drinks. In reality, the hospitality industry offers a multiple set of tangible and less tangible service activities that in combination result in a certain service experience in the creation of which the customer may participate to varying degrees. A hotel experience may vary from a prefabricated overnight stay where interaction with service workers is minimal (e.g. the Formule 1 concept as developed by French Accor group) or a complete experience with an incredible number of additional services and service experiences involving many interpersonal service encounters. In some cases, one might even think of such an experience as participating in a live performance. Similarly, a visit to a restaurant or café can vary from prefabricated or standardized with low levels of service interaction to more complete experiences where more customized and human service competences come into play. A ‘useful effect’ (Gadrey, 2000) for which a customer is willing to pay is not only a drink, a meal or a bed, but also includes effects such as spending some quality time with friends, feeling relaxed, having the opportunity to meet a specific category of people an so on.73

Another complicating factor is that the hospitality industry typically is a combination of diverse service activities. A hospitality experience can either be decomposed into different service elements or can be part of the service offer offered by other service industries such as retailing, tourism, transport or the cultural or entertainment domain. Like a hospital, a theme park, air transport and large-scale retailing, hospitality can be said to be a ‘packaged’ or ‘assembled’ service (Djellal & Gallouj, 2008b).

In this paper, we present the findings of a survey among 613 firms in the Dutch hospitality industry. This article is organized as follows. The first section positions this contribution in the wider literature on innovation in services. In a second section, we flag how innovative the Dutch hospitality industry is compared with other Dutch service industries using some indicators derived from the Community Innovation Survey for the 2004-2006 period. In the third section, a framework is introduced for measuring innovation in the hospitality industry. A subsequent section briefly presents the research methodology. Here, a measure of innovation intensity is introduced as well. Then in the main body of the article, some of

73 This ‘useful effect’ (and the ‘technical and human capacity’ to create this effect) can thus also be interpreted as an attempt to introduce a wider or more complete notion of service output and performance.
the key results of the survey (as regards sources, organization processes and economic effects) are discussed. Finally, overall conclusions are presented and some options for innovation management aimed at this service industry and more broadly measuring innovation in services are discussed.

3.2 Literature review

Studies on innovation in the hospitality industry are mostly rooted in either innovation or entrepreneurship studies within hospitality and tourism or innovation in services studies. The first of the two streams refers to an extant industry-specific literature covering various aspects, levels of analysis and points of departures for analysing innovation in the hospitality and the related tourism industry. There certainly is a tradition of looking in detail into the service innovation process and its management at the firm level, following mostly the broader new services design (NSD) research tradition. A relative early example is a study by Jones (1996) outlining a 15-step approach to the innovation development process in the hospitality industry. Of more recent date are the various contributions by especially Ottenbacher and collaborators (Ottenbacher, 2007; Ottenbacher & Harrington, 2009a, 2009b). Ottenbacher, for example, identified 12 determinants of successful hospitality innovation by analysing a set of 185 hospitality innovations in Germany (Ottenbacher, 2007). He concluded among other things that different objectives for hospitality innovations require a different approach to achieving NSD success; that understanding and responding to the market is key as well as a well-planned, employee-driven development process. Furthermore, he observed that innovation success is strongly related to excellent HRM practices as well as tangible features and tangible qualities of hospitality innovations. He and his co-workers also looked at more specific sub-segments such as quick service restaurants (see Ottenbacher & Harrington, 2009a) or culinary innovation processes by Michelin-starred chefs (see Ottenbacher & Harrington, 2009b).

Although working in a somewhat different tradition, these types of studies come close to dedicated innovation studies measuring at the firm level innovation in designated regions or countries. Martínez-Ros and Orfila-Sintes (2009) have measured and analysed innovation in the hotel industry extensively for example the determinants of incremental and radical innovations and how the two affects each other. At the other end of the scale, detailed case studies on innovation in mostly individual hotels have been performed. Phan (2007) in a detailed case study of innovation in the Plaza Athenée Hotel in Paris identified five key

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74 For an overview, see the dedicated volumes on innovation in tourism (Hall & Williams, 2008) and on innovation in hospitality and tourism (Peters & Pikkemaat, 2005).

75 Comparative studies where innovation in the hospitality industry is compared with other service industries is to our knowledge mostly absent. An early exception is Chan et al. (1998).
factors for its success in launching new services, notably a strategy which supports change and innovation; a charismatic leadership style that supports collaboration; an organizational structure and support structures within the firm that support innovation; a devoted ‘family’ of employees and an open and direct communication among all employees. Vignali & Mattiacci (2006) compared entrepreneurship and innovation in a hotel in the UK and Italy and concluded innovativeness without entrepreneurship can be detrimental to firm success.

Additionally there is also a diverse literature within this first stream that analyses technology adoption in the various hospitality sub-sectors. These may range from, e.g. website adoption and how it affects firm success in a particular region (see Scaglione et al., 2009), to an analysis on drivers of internet technologies adoption by hoteliers (Lim, 2009) or E-innovation in small UK hospitality firms (Martin, 2004). In a similar vein, Huang (2008) for example analysed e-commerce strategies in the Bed and Breakfast industry in Taiwan. Khan & Khan (2009) analysed how technological innovations in hospitality firms affect the relationship with their customers.

Other hospitality scholars start deliberately from the customer perspective. Victorino et al. (2005) for example, using a dedicated survey of under 1000 business and leisure travellers in the USA, the researchers analysed service innovation in the hotel industry and concluded that service innovation (hotel type, technology and customization) do affect the trade-offs made by customers and eventually customer choice. In a similar vein, using a survey among boutique hotel users in the UK, Aggett (2007) analysed factors that do attract customers to these hotels such as location, quality, uniqueness, services provided and the personalized level of services.

In the second stream, i.e. the innovation in services stream generally, a distinction is made between assimilation (technologist), demarcation (service-oriented) and synthesis (integration) approaches (Coombs & Miles, 2000; and earlier Bryson & Monnoyer, 2004; Gallouj, 1994, 1998). The central idea of the assimilation approach is that if there is any innovation in service activities, these can be analysed and supported using or adapting the concepts and tools developed for technological R&D and innovation related to material goods and artefacts in manufacturing. Work in this tradition ranges from numerous service studies on the impact of ICT on service firms and industries (Guile & Quinn, 1988; Hackett, 1990; Quinn et al., 1990a & 1990b; Rada, 1987), reverse product cycle introduced by Barras (1986, 1990) and various sectoral taxonomies of the service firms’ and sectors’ technological behaviour (Evangelista & Savona, 2003; Soete & Miozzo, 1989) inspired by the original work of Pavitt (1984). Hospitality sectors in these taxonomies belong to

76 Extensions of these approaches to take into account innovation public policy for services are included in den Hertog et al. (2006) and den Hertog & Rubalcaba (2010).

77 Gallouj (2009) has explained the relative success of this approach extensively.
the supplier dominated category. A trend towards a more autonomous role of services in innovation even in the assimilation approach is reflected in among others the more systematic coverage of service industries in national innovation surveys and some changes in the wording and answer categories in these surveys. However, still the dominant idea is goods-related technological innovation and their measurement.

Demarcation or service-specific approaches start from the specific characteristics of services such as their intangibility, interactivity and the co-produced character. Boundaries between established analytical categories of innovation such as product, process and organization get blurred and are found to be less useful. Contributions have especially pointed at the numerous non-technological innovations in services as well as the less formalized character of management of innovation in services. As Gallouj (2009) has pointed out, most contributions following this approach are empirical studies mapping and measuring innovation in selected service industries using dedicated or ‘autonomous’ surveys and case studies. Apart from local theoretical innovation models developed for retailing (for an overview, see Gallouj, 2007) and financial services (see Niehans, 1983; Vermeulen, 2001), demarcation approaches have been applied to innovation in knowledge-intensive business services (see Gadrey & Gallouj, 1998; Miles et al., 1995) and more traditional or ‘low tech’ service industries such as transport, cleaning or elderly care (Djellal, 2000; Djellal & Gallouj, 2006; Sundbo, 1996) and indeed the hospitality industry and tourism (see e.g. Martínez-Ros & Orfila-Sintes, 2009; Sundbo et al., 2007).

The integration approach starts from the idea that goods and services converge and hence that manufacturing innovation and service innovation through parallel processes of servicization and industrialization are increasingly hard to disentangle. Every firm or organization is made up of a (different) mix of service and manufacturing like functions, and the approach can explain both technological and non-technological innovation. The integration approach can in fact be interpreted as a plea for a grand, unified innovation theory or interpretation framework capable of dealing with describing innovation in all type of economic activities. This approach is most formalized in the so-called characteristics-based approach (see Gallouj, 2002; Gallouj & Toivonen, 2008; Gallouj & Weinstein, 1997; de Vries, 2006; Windrum & García-Goni, 2008). Using the particular vocabulary of this approach, innovations can be described more precisely and various types of innovations

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78 In the management literature, the assimilation strategy has sometimes been established as a strategic rule. Levitt (1972) for example advocates the systematic industrialization of services. Similarly, Shostack (1984) sees this industrialization strategy as a solution to the ‘divergence’ (degree of freedom) and complexity of service provision.

79 However, covering NACE 55 (hotels and restaurants) was optional in the Community Innovation Survey 2006 (CIS 5) and CIS 2008. As only a few EU countries hand in data for the hospitality industry, cross-country comparisons are still hard to make.

80 The blurring of boundaries and the need for an integrated framework was signalled earlier (see e.g. Barcet, Bonamy, & Mayère, 1987; Normann, 2002).
or innovation models are discerned. Gallouj (2002, pp. 81-84) has applied an integration approach to a hotel product differentiating between 50 characteristics which can then be recombined into, in this case, an organizational format that can be put onto the market as a new hotel product targeted at a specific potential client category. Innovation may take place at the level of the individual constituent services as well as at the systemic level, i.e. the package or ‘assembled services’ as a whole (Djellal & Gallouj, 2008b, p. 286). Innovation in assembled services have also been described for hospitals, theme parks and the retailing industry (Djellal & Gallouj, 2005, 2008b; Gallouj, 2007). The study presented here adopts the demarcation perspective as it highlights the specificities of innovation in a single service industry using an ‘autonomous’ survey (Djellal & Gallouj, 1999).

### 3.3 Innovation in the Dutch hospitality industry – in comparison

Before we present the framework, methodology used and survey results, we contextualize this survey by presenting some key data on technological and non-technological innovation in selected Dutch service industries derived from the Dutch Community Innovation Survey covering the 2004-2006 period (table 3.1). Table 3.1 illustrates the following:

1. Among the various service industries included, the hospitality industry\(^{82}\) shows by far the lowest share of firms with technological innovation. The share for services as a whole is almost 2.5 times and manufacturing more than 4.5 times higher.

2. Process innovations (technological) seem to be relatively somewhat more important than (technological) product innovation in the hospitality industry, although this can be observed for more service industries.

3. Although there are some service firms that report to only have technological innovation, a number of service firms report to have only non-technological innovation or technological and non-technological innovation. Although again the hospitality industry scores low as compared with other service industries, especially the 7% of all hospitality firms that report only non-technological innovation can be interpreted as a sign of our ignorance to measure in a more detailed fashion non-technological innovation.\(^{83}\)

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81 Gallouj (2002) differentiated between radical innovation, improvement innovation, incremental innovation, ad hoc innovation, recombination innovation and formalization innovation.

82 Included here is NACE section H, i.e. Hotels, restaurants, bars, canteens and catering and short stay accommodation. This is a somewhat wider category than the category used in the rest of the paper where hospitality is rather narrowly defined as HORECA, i.e. the first three subcategories just listed. We left out deliberately catering and recreational firms as the number of observations were too low and we therefore opted to present the statistically most robust results.

83 Not included in the table is the finding (Statistics Netherlands, 2009) that in total 11% of all firms in the Dutch hospitality industry report non-technological innovation over the 2004-2006 period (compared with 24% of all services), 10% of all hospitality firms report organizational innovations (compared with 22% for all services) and 3% marketing innovations (compared with 9% for all services).
Table 3.1  Technological and non-technological innovation in firms (10 or more employees) in Dutch service industries, 2004-2006

<table>
<thead>
<tr>
<th>Service Type</th>
<th>% of all firms with technological innovation</th>
<th>% of technological innovative firms with realized (technological) product innovation</th>
<th>% of technological innovative firms with realized (technological) process innovation</th>
<th>% of all firms with only technological innovation</th>
<th>% of all firms with only non-technological innovation</th>
<th>% of all firms with technological and technological innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>22</td>
<td>64</td>
<td>63</td>
<td>10</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Wholesale</td>
<td>31</td>
<td>65</td>
<td>59</td>
<td>12</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Retail trade &amp; repair</td>
<td>12</td>
<td>52</td>
<td>75</td>
<td>8</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Hotels and restaurants</td>
<td>9</td>
<td>53</td>
<td>70</td>
<td>4</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Transport, post &amp; communications</td>
<td>21</td>
<td>55</td>
<td>70</td>
<td>10</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Financial intermediation</td>
<td>29</td>
<td>63</td>
<td>64</td>
<td>9</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Computer and related services</td>
<td>55</td>
<td>89</td>
<td>44</td>
<td>26</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Legal, accounting &amp; consultancy</td>
<td>23</td>
<td>59</td>
<td>51</td>
<td>9</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Architectural &amp; engineering services</td>
<td>40</td>
<td>67</td>
<td>73</td>
<td>15</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Renting &amp; other business services</td>
<td>19</td>
<td>58</td>
<td>73</td>
<td>7</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Environmental services</td>
<td>36</td>
<td>71</td>
<td>76</td>
<td>16</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Other services</td>
<td>11</td>
<td>63</td>
<td>74</td>
<td>3</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>42</td>
<td>75</td>
<td>67</td>
<td>20</td>
<td>9</td>
<td>22</td>
</tr>
</tbody>
</table>

These observations suggest that current innovation survey may miss out to a considerably degree the innovativeness of important service industries, including the hospitality industry. In our view, much of the innovativeness of the hospitality industry (and probably in other service industries as well) and the ways in which these come into being remain unobserved if especially non-technological innovation is not really integrated in the core innovation measurements. We find substantially higher innovation levels in the Dutch hospitality industry through our dedicated survey and hope to contribute to a more detailed understanding of the dimensions of service innovation as well as the supporting business processes in this service industry. We will briefly reflect on this more generally in the concluding section.

### 3.4 A dedicated framework for measuring innovation in the hospitality industry

Firms in the hospitality industry increasingly face more demanding and at the same time more whimsical clients. Consumers may demand new, customized service experiences at existing and new locations and more standardized predictable service encounters at the same time. They may be extremely price-sensitive at one time and can be true hedonists at other times. Both in business and consumer markets, the hospitality industry has to compete with other ways of spending time (such as sports or relaxing at home), with other industries (retailing, for example, fun shopping, or airlines with dense networks allowing travellers to reach home) and other locations (for example, a ‘slow dining’ session at home with friends). The hospitality industry therefore has to innovate in service concepts, in assortment, in its primary service process and supporting processes, both internally and externally i.e. in its linkages to its suppliers and guests. The industry offers numerous examples of innovative services ranging from new service formula’s, menu-engineering, using products from the food service industry and front cooking in restaurants, detailed service offering and personalized services in hotels and innovative thematic cafés on sometimes unexpected locations. Behind the scenes, this may refer to advanced supply management, yield management or innovative human resource management practices.

The study presented here is a deliberate attempt to measure technological and non-technological innovation, organizational aspects of the innovation process in the Dutch hospitality industry and their link to firm performance. As to do justice to the richness and variety of innovation in this service industry and the role of non-technological innovation in the hospitality industry, we have developed in consultation with the principal of the study (i.e. a public-private industry association) the following points of departure for measuring innovation in this industry:

1. An introduction of the notion of conceptual innovation which is recognizable for the entrepreneurs in the hospitality industry;
2. A differentiation between innovations which are readily visible and can be directly experienced by clients (‘front office’) and innovations not directly experienced by clients (‘back office’);

3. A differentiation between technological innovation and non-technological innovation in the primary business process in the hospitality industry (that is actions directly related to serving food and drinks and a place to stay) and secondary, supporting business processes;

4. The notion that innovation need to be assessed in relation to other parts of the value chain i.e. most notably suppliers and the interaction with the client;

5. The notion that fine entrepreneurship (and hence regular business changes) is definitely different from being an innovative firm or offering innovative services.\(^84\)

The resulting framework (table 3.2) was tested in the expert interviews and eventually six key targets in the primary business process and six supporting processes were discerned on which innovation may take place.

### 3.5 Methodology

The study reported here originally took place in the first half of 2005. It consisted of 12 expert interviews and a telephone survey. Interviews were held with entrepreneurs and other professionals (bankers, consultants and representatives of industry associations) active in the various segments of the hospitality industry. The semi-structured interviews were apart from discussing innovation and innovation processes in the hospitality industry used for developing and testing the conceptual framework and the questionnaire based on this.

The survey included 70 items on relevant types of innovation, organization of the innovation process, barriers in the innovation process and possible need for support, economic results of innovation and a few questions on entrepreneurship in general. A stratified sample based on sub-sector and firm size was drawn from the database of the principal (membership for all firms in this industry is compulsory). A total of 1,089 firms (actually individual locations) were approached and a total of 613 firms in the drinks, fast-food, restaurant and hotels subcategories were interviewed.\(^85\) This means a response rate of 56%. Answers are representative for the population of approximately 38,175 firms in the Dutch hospitality industry. A non-response rate analyses showed that there

\(^{84}\) We do however acknowledge that there is a gliding scale where business changes becomes innovation or where changes labelled as innovations are rather acts of regular business change rather than innovation.

\(^{85}\) That is, excluding HORECA at recreation firms – such as holiday parks – and sport clubs.
was no systematic bias in the firms (not) responding. Results shown are weighted and representative for the whole population of Dutch hospitality firms. The weights applied are limited as the sample is fairly large and the sample was already a stratified one.

A specific element of this study is the use of an innovation intensity measure. In most innovation surveys, such as the Community Innovation Survey, firms indicate whether they have introduced a new or considerably changed (i.e. new to the firm) product or service onto the market over a three-year period or introduced a new or considerably changed (i.e. new to the firm) process innovation over the same period. No differentiation is made between highly innovative firms and firms that innovate more marginally or averagely. This would mean in the case of the hospitality industry that a restaurant developing a new way of offering the wine menus is seen as innovative as a hotel chain introducing a

Table 3.2  Key innovation targets in the hospitality industry

<table>
<thead>
<tr>
<th>Primary business processes</th>
<th>Supporting business processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Service formula or concept (e.g. a new franchise formula or a new highly customized service approach)</td>
<td>(1) Procurement or supply management (e.g. electronic ordering)</td>
</tr>
<tr>
<td>(2) Serviscape or location/building and how it is decorated (e.g. outlets in unexpected locations or the look and feel of a particular café, restaurant or hotel such as a designer hotel)</td>
<td>(2) Marketing and sales management (e.g. channel management and loyalty programmes)</td>
</tr>
<tr>
<td>(3) Assortment of products and services directly related to food, drinks and sleeping (e.g. menu engineering or the choice of various types of pillows in a hotel)</td>
<td>(3) Human resources management (e.g. training of personnel for new type of functions)</td>
</tr>
<tr>
<td>(4) The service interaction level offered or service experience offered to the guest (e.g. highly personalized services or electronic reservation system)</td>
<td>(4) Accounting (e.g. the use of advanced cash registers or administrative software)</td>
</tr>
<tr>
<td>(5) The actual primary service production in the area of food, drinks and sleeping (e.g. innovative approaches to keeping a location tidy and clean or the way food and drinks are prepared)</td>
<td>(5) Day-to-day operational management (e.g. innovative ways of management)</td>
</tr>
<tr>
<td>(6) The equipment or technology used in the primary production process (e.g. remote ordering devices on terraces or the latest kitchen technology)</td>
<td>(6) Use of innovative equipment/technology in generic supporting activities</td>
</tr>
</tbody>
</table>

The weights $w_i$ are calculated by dividing the population proportion for each strata by the sample proportion for the same strata, thus $w_i = P_i / p_i$. The sum of the $w_i$ sample size of the strata concerned is equal to the total sample size, thus $\sum w_i n_i = n_+$, whereby small $n$ denotes sample, $n_+$ population proportion and $i = 1..12$. There are 12 strata in total: size (small, medium, large) and sector (café, fastfood, restaurant, hotel).

An exception is Elche & González (2008) who include an innovation intensity measure in their analysis of a sample of Spanish service firms.
complete new hotel concept (e.g. using new serviscapes, creating completely new service experiences involving various primary and secondary business processes) or multiple innovations. In order to differentiate between not, low, medium and highly innovative firms, respondents were asked to score six key aspects in the primary business process and six supporting processes discerned on a four-point scale (not innovated [0], slightly innovated [1], considerably innovated [2], completely innovated [3]). This not only helps in relevant information in itself, but also helped to develop an extra dimension (next to sub-sector and size) for analysing the results of the survey. This in practice means that the thresholds for qualifying as a low, medium or highly innovative firm are relatively low. On each of the in total 12 items, a firm may score between no innovation (0 points) and completely innovated (3 points). A firm may therefore score in total between 0 and 36 points on this innovation intensity dimension. Firms scoring 18 points or more were labelled as highly innovative, firms scoring 6-17 points were labelled as medium innovative and firms scoring 1-5 points low innovative.

Further, especially medium and highly innovative firms may score well on only a few of the 12 items or innovate (even modestly) over a broad spectrum of items. Finally, the more complicated innovations such as introducing a completely new service concept will affect more aspects and underlying business processes and hence result more likely in a label ‘highly innovative’.

3.6 Survey results

Innovation intensities and innovation focus

Using the indicator of innovation intensity just outlined, it was observed that a vast majority, i.e. 86% of firms in the Dutch hospitality industry, has innovated in at least one of the six key aspects in the primary business process or six supporting processes discerned (Segers & den Hertog, 2005, p. 36). However, innovation rates differ considerably. Only 9% of the Dutch hospitality firms can be labelled as highly innovative. The majority of firms in the fast-food, restaurant and hotel subcategories are medium innovative. However, one should acknowledge that the threshold for this category is rather low, given the broad definition of innovation and relatively low number of points needed to qualify for this label. Notwithstanding this low threshold to qualify as a medium or highly innovative firm, a majority (52%) of all firms is still not or hardly innovative. This suggests that there is only a limited share of firms in the Dutch hospitality industry where innovation is dealt with in a more integrated fashion. The latter can be assessed when we look more in detail into

88 Note that this dimension is not constructed proportionally and therefore is skewed, which was needed as to guarantee enough observations per cell. This may imply that the innovativeness of the Dutch hospitality industry is somewhat overestimated.
the six key aspects in the primary business process on which innovation may take place or the actual innovation focus.

From figure 3.1 it can be noticed that a majority of firms in the Dutch hospitality industry did not innovate at all on four out of the six aspects on which innovation may take place (for an explanation of the six aspects, see table 3.2). Sixty-six percent of firms did not innovate the service concept. Sixty-two percent of the firms did not innovate in the service interaction level or the organization of the primary service production. These figures point at the fact that an important share of the Dutch hospitality firms do not innovate on key aspects of their primary business process. Aspects on which hospitality firms innovated more often are assortment and technology used. In both cases, the more marginal innovations seem to dominate. This fuels the idea that this industry is relatively strongly focused on innovations in assortment and technology which are to an important degree initiated from outside the industry itself. Here firms can react to, rather than adopt, a more pro-active stance towards innovation.

However, the degree to which these six aspects are innovated plays a role as well. Twenty-six percent of the Dutch hospitality firms, for example, rated the serviscape, i.e. the feel and look of a location, building and its decoration as an aspect that was innovated considerably or completely. The figure for technological innovation is 25% (see figure 3.1). This confirms the particular importance in the hospitality industry of the environment in which a service is delivered (see Zeithaml & Bitner, 2003) and of technological artefacts. Typically, as was evident from the interviews, entrepreneurs in the hospitality industry have a tendency to prefer working on the tangible serviscape rather than on, for example, conceptual

![Figure 3.1](image)

**Figure 3.1** Innovation on six key aspects of the primary business process in the Dutch hospitality industry during 2002-2004, by level of innovativeness (Segers & den Hertog, 2005).
innovation and organizational type of innovations, which seem to be taken for granted more often. In terms of the six supporting business processes on which innovation can take place, technological options in secondary processes or technological innovation is the category that scores highest. Figure 3.2 reveals that 51% of Dutch hospitality firms have at least somewhat innovated this process. The figure for human resources management amounts to 46%. Remarkably so only 36% of the firms innovated on the marketing and sales function. As the hospitality industry is a marketing and sales driven industry where currently the use of ICT and for example online reservation systems feature prominently, one would have expected more innovation efforts here. Administration, purchasing/supply management and operational management are clearly the supporting business processes that are innovated less often. This seem to indicate that innovation in the Dutch hospitality industry is perceived rather limited and less so as an integrated challenge that also affects or requires supportive business processes. One could also argue that these supporting business processes are adapted, but not necessarily innovated. This touches upon a fundamental discussion on what essentially should be labelled as innovation and innovation processes in services still and what as regular fine entrepreneurship (see Drejer, 2004). A key issue is not only the degree to which one is willing to let go the technological criterion for innovation, but also the degree to which one is willing to accept the idea that innovation is a deliberate activity yes or not (see Toivonen et al., 2007).

Figure 3.2  Innovation in six supporting business processes in the Dutch hospitality industry over the 2002-2004 period, by level of innovativeness (Segers & den Hertog, 2005).
Shaping of the innovation process

Regarding the shaping of the actual innovation process, sources of innovation, organization of the innovation process, cooperation and innovation barriers were assessed. As to the main sources of innovation, one can differentiate between internal and external sources. Respondents were confronted with ten possible sources and could indicate per source whether these played a role to innovate over the preceding 3 years. Two internal sources stand out. Entrepreneurs themselves were mentioned by 87% of the innovating firms (Segers & den Hertog, 2005, p. 38). This might be biased as it was most often the entrepreneurs themselves that responded. However, the role of the entrepreneur is quite high in industries dominated by Small and Medium-sized Enterprises (SMEs). Collaborators were mentioned by 47% of the innovative hospitality firms. Three other sources frequently mentioned as an important source of innovation are government (57% innovating firms), mostly through its role as regulator, suppliers (48%) and guests (44%) (Segers & den Hertog, 2005, p. 38). The latter can be perceived as low for an industry that is all about creating user experiences. However, it can equally be perceived as quite high as it was mentioned in the interviews that final consumers in the hospitality industry are, to an important degree, conservative and weary of especially more radical changes to the experiences created by the hospitality industry. Other firms and industry associations were both mentioned by 26% of innovating firms. Remarkably so the tendency to perceive external advisors (19%) or firms in other industries (12%) as important sources of innovation is limited, signalling a limited external orientation (Segers & den Hertog, 2005, p. 38).

With regard to the organization of the innovation process in services in general, it has been established that these are less formalized, less explicitly managed and less often budgeted as compared with manufacturing firms (see den Hertog et al., 2006). The Dutch hospitality industry is no exception to this observation. In this type of industry, innovation is more likely to be organized in an 'artisanal' fashion (Sundbo & Gallouj, 2000) where R&D departments are lacking, firms are less externally focused and innovation mainly occurs through entrepreneurial spirits and improvement and learning, mostly in small steps. It appeared that 74% of the of innovative Dutch hospitality firms thought that innovation in their firm was mainly dependent on the creativity of the entrepreneur or managing director (Segers & den Hertog, 2005, p. 34). As can be observed from figure 3.3 below 93% of the innovative firms, the entrepreneur or managing director takes the initiative and is directly involved in implementing these innovative ideas. In 70% of the innovative firms, collaborators were involved in this process and in 50% of the innovative firms, collaborators were made responsible for realising innovations. In 52% of the (innovating) firms, innovation was planned and budgeted at least to some extent. This would imply that in 50% of the innovative hospitality firms, some formalization takes place regarding the innovation process.
One of the striking results and illustrating the inward looking and intra-sectoral orientation of most firms in the Dutch hospitality industry is the fact that only 16% of the innovative firms bought specialized knowledge on the market to realize innovations. Although acquiring specialist knowledge maybe too costly for especially SMEs in the hospitality industry, this score is remarkably low. Whether more formalized and planned approaches to service innovation in general are to be preferred and pay off for service industries is open for discussion. It might well be the case that by adopting – explicitly or more implicitly – R&D-based innovation models, we might lose track of innovation practices integrated in the service practice that emerge without deliberate or planned innovation efforts.\(^9\)

A logical next step in analysing the innovation process is to analyse to what extent innovative firms in the hospitality industry have actually co-operated over the 2002-2004 period to realize innovations. Fifty percent of the innovative Dutch hospitality firms indicated that they co-operated over the 2002-2004 period in some way to realize innovations.\(^{89}\)

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\(^9\) Toivonen et al. (2007) and Toivonen (2010) has reflected on the service innovation process and differentiates between the model of rapid application, the practice-driven model and the ad hoc innovation model. Sundbo (2008) even introduced the notion of after-innovation, i.e. innovation as a continuous process after the launching of the e-service (Sundbo, 2008), indicating that a formalized approach to service innovation may start even after the launch of a new service.
innovations. As is evident from figure 3.4, they tend to co-operate most strongly with suppliers (18%) and ‘banks, accountants and other advisors’ (17%). Most remarkable is the bias towards co-operation with colleagues from within the industry (12%) rather than co-operation with actors from other industries (7%) and the completely lacking co-operation with educational facilities (0%). The latter is remarkable and further underlines the inward looking character of the hospitality industry when innovation is concerned. Tether and Tajar (2008), for example, showed, using CIS 3 data for the UK, that service firms (with some exceptions) are significantly more likely to have links with consultants and significantly less likely to have links with either private or public research organizations. Apparently, the Dutch hospitality industry has almost none with both categories. A subdivision by innovation intensity clearly shows that innovation intensity and higher levels of co-operation correlate. Thirty-six percent of the low innovative firms co-operate, whereas these shares are 60% and 69% for medium and highly innovative firms. More innovative firms are more likely to have a better feeling with ‘what is going on’ outside the firm and to have more ties with (potential) cooperation partners. This is evidently the case for co-operation with suppliers, other firms in the same industries and probably most notably other firms in other industries. The latter seem to suggest that learning and benefiting from

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*Figure 3.4 Co-operation with third parties to realize innovation in the Dutch hospitality industry over the period of 2002-2004, by innovation intensity (Segers & den Hertog, 2005).*

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90 For a fundamental discussion on the determinants of R&D and innovation co-operation, see Poot (2004).
co-operation with other industries is associated mostly with highly innovative firms.

What then are the most important barriers that hinder hospitality firms to innovate? Fifty-eight percent of the entrepreneurs experience barriers when innovating or attempting to do so (Segers & den Hertog, 2005, p. 42). The expert interviews mainly pointed at the lack of time; as in most firms, entrepreneurs work hard to run their businesses, have a very practical attitude and especially the smaller firms may have difficulty to invest in innovations that may not immediately result in increased turnover and profits. Further an aversion against external advisors and government officials was signalled. The top-three barriers mentioned in the survey were lack of financing (27%), regulation/legal barriers (19%) and lack of time/too busy (6%) (Segers & den Hertog, 2005, p. 42). In the interviews, it was mentioned that regulation acted both as a barrier to innovation as well as an incentive to innovate.Remarkably so, another barrier often mentioned is customers that are unwilling or unable to pay for new services (see e.g. Howells & Tether, 2004) was not mentioned as an important barrier to innovation in the Dutch hospitality industry.

Service innovation and firm performance

Only a limited number of studies have empirically tested the link between innovation and economic performance at the firm-level using innovation survey data combined with data on firm performance (Cainelli et al., 2006). Most of these limit themselves to the manufacturing sector as datasets for service industries are partial at best. Our one sector one country study provides some evidence on the link between innovation and firm performance in a number of ways.

In the first place we found that a majority of innovative hospitality firms perceives a wider impact of innovation (figure 3.5). Two direct financial impacts of innovation i.e. higher turnover and lower costs are mentioned by respectively 52% and 50% of all hospitality firms. However, firms also report other impacts such as quality improvement of the products and services offered (69%), increased capability of meeting regulatory requirements (60%) and the chance of welcoming new categories of guests (53%). Of course, one can argue that these other impacts eventually will affect firm performance as well.

A second way in which we assessed how innovation contributes to firm performance was by asking the firms how innovation contributed to profitability. This also allowed us to test the relative importance of the various types of innovations. Overall the percentage of firms expecting a rise in net profit over 2004 (as compared to net profit over 2003) rose with level of innovativeness. In total 20% of all non-innovative firms reported an expected rise in net profit whereas 31%, 37% and 38% of, respectively, low, medium and highly innovative

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91 Cainelli et al. (2006) points at four studies where service industries were included: van der Wiel (2001), Loof & Heshmati (2001), van Leeuwen & van der Wiel (2003), and Evangelista & Savona (2003).
firms expected higher net profits. Overall 23% of all innovative hospitality firms mentioned innovation in assortment – a relatively low key and easy to accomplish type of innovation – as the type of innovation in the primary process contributing most to profit (Segers & den Hertog, 2005, p. 45). Innovation in the service concept, serviscape and technological innovation scored 16%, 15% and 15%, respectively (Segers & den Hertog, 2005, pp. 45-46). The more process-related innovation such as service interaction level and organization of the primary service production were mentioned less often.

A third litmus test for assessing whether innovation in a ‘low tech’ service industry like the hospitality industry pays off and seriously affects firm performance by linking development of turnover to innovation intensity. We established that a higher innovation intensity is associated with a more positive development of turnover. On average, 36% of all hospitality firms signalled an increase in turnover. For non, low, medium and highly innovative hospitality firms, this share amounts to 27%, 30%, 41%, and 53%, respectively (Segers & den Hertog, 2005, p. 49). We should be careful though as a rise in turnover does not necessarily mean rising profits. Investments in innovations may result in higher turnover and lower (temporarily or not) profit levels. Further we do not know the exact causality: do innovative firm generate more turnover or is a rising turnover a precondition for investing in innovation and becoming more innovative or is the ‘evolutionary hypothesis’ confirmed? The latter, as suggested by Cainelli et al. (2006), points at the presence of a cumulative and self-reinforcing mechanism linking firms’ productivity and innovation, i.e. there is a
two-way dynamic link between the two. Our set of data limited to one service industry in one country indicates that higher innovation intensities coincide with improved firm performance and vice versa.

Finally, we want to flag here as well, more generally, that measuring service output and service performance is still beset with problems. There are serious problems measuring productivity and growth and especially how increases in quality should be accounted for (see Djellal & Gallouj, 2008a). Additionally one could question the absolutism with which productivity and growth are used as the single most important performance indicator as it is a subjective and partial measure for performance and does not account for negative externalities such as social and environmental costs.  

3.7 Conclusions

Innovation in the Dutch hospitality industry was analysed using a less technology-biased definition of innovation through a composite indicator for both innovation in the key primary process as well as supporting business processes. Innovation in the Dutch hospitality industry is a widespread and multidimensional phenomenon where technological and non-technical innovation mix and support each other. The analysis of the innovation process in the Dutch hospitality industry confirms the more general finding that innovation in most service industries is less formalized, less explicitly managed and less often budgeted as compared with innovative manufacturing firms. More innovative hospitality firms are clearly shown to co-operate more often. In terms of firm performance, it is signalled that the impact of innovation should be perceived more widely and also includes non-financial impacts. Further, higher innovation intensities are associated with better firm performance (defined narrowly) suggesting that innovation in a generally perceived 'low tech' industry as hospitality matters.

In total, 58% of the entrepreneurs in the industry experience barriers when innovating. These barriers do seem to leave room for more professional service innovation management. In the first place, there is scope for further increasing the awareness regarding the need for innovation in this industry. Still a majority of firms in this industry are on their key processes not or only marginally innovative. This finding, combined with the use of a broader and a less stringent definition of innovation, point at the fact that still a majority of firms do not address innovation in a more integrated and systematic way. Secondly, firms in this industry should pay more attention to what may be labelled

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92 Djellal & Gallouj (2008b, 2010) have pointed at the existence of a performance gap in service economies next to the well-known innovation gap (i.e. the gap between real-world innovation and what is being measured using the established innovation indicators). They have proposed a multi-criteria framework for analysing service output and performance.
Managing Service Innovation

innovation ‘behind the scenes’ or in processes which are not directly visible from the outset. Innovation efforts in this industry are relatively more focused on innovations in assortment and technological innovations and less so on conceptual and process-type innovations. This asks for management practices that more explicitly address and facilitate these broader types of innovations. Finally, there clearly is a need to address the inward-looking character of entrepreneurship in this industry. Initiatives to more actively assess new developments and trends in other industries and in (potential) groups of customers as well as initiatives to co-operate more and more systematically with external knowledge partners need to be supported. Entrepreneurs are too much focused on their own industry when innovating and should develop a wider view on innovation, looking for queues and inspiration across industries.

As to future research on innovation in the hospitality industries, we see two promising ways forward. Firstly, a detailed understanding of innovation and innovation processes might be helpful in developing more prescriptive service innovation models for the hospitality industry at the micro-level. Studies like the one reported here for the Netherlands help in getting a detailed understanding on what business processes hospitality entrepreneurs steer and on what dimensions they can improve when innovating and the type of management capabilities needed for this. We believe that the conceptual model presented in this study discriminating between various types of primary and supporting business process on which innovation may take place are instrumental for this purpose. However, this would in our view require that the study is replicated in a number of other countries first.

Secondly, we see a need for more specific innovation measurements in the hospitality and other service industries to inform future versions of CIS and CIS-like measurements. Already on the basis of his one industry, one country analysis four more generic suggestions regarding measuring service innovation through innovation surveys can be made:

1. Innovation in this survey is more broadly interpreted than is usually the case in most innovation studies, especially those following the assimilation tradition. However, the exercise of trying to measure more precisely innovation in a service industry without an a priori bias towards technological innovation in our view is needed across all industries. This may increase our understanding of non-technological innovation and its interaction with technological innovation considerably.

2. The survey reported here illustrates that we should be more precise in discriminating between innovation in services, i.e. innovation in a service firm or industry and service innovation. This seems trivial, but the data in our study confirm that both typical goods like (technological) and typical service like (mostly non-technological, but not exclusively) innovations exist. Each industry is made of a (different) mixture of business processes with manufacturing and service-like characteristics and innovations. Put
differently, service innovation is not the prerogative of service industries labelled as such by existing statistical classifications.  

3. Our attempt to more precisely measure innovation in a service industry immediately fuels the fundamental debate as to how one should discriminate between service innovation, one time service solutions (that are not replicated in any form) and regular business change (see, e.g. Drejer, 2004; Flikkema, 2008; Toivonen, 2010). As Drejer (2004) rightfully observes, we should be aware of this distinction and be rather strict what can be labelled as service innovation. As some of the categories used in this analysis are industry-specific, the need for deriving at shared categories of innovation in services which are more refined than the current ones used in, for example, the Community Innovation Surveys is still paramount. There clearly is a need to further adapt the relevant frameworks as the 1997 and 2005 revisions (OECD, 1997 and 2005) are piecemeal and not sufficient enough to do justice to the richness and complexity of service innovations yet.

4. The need for measuring innovation intensity. In most innovation surveys, firms are labelled as either innovative or non-innovative and if innovative, their innovations are sometimes scaled by novelty (new to the world, country, industry or firm). However, no differentiation is made between marginal and highly innovative firms. Adding an innovation intensity measure (and preferably in a similar fashion a cooperation intensity measure) in future innovation surveys would help in analysing and understanding in more detail the effects of innovation and cooperation on firm performance.

If innovation in services and service innovations are to be taken seriously by innovation researchers, policy-makers and statisticians in the near future, there is a need to become more sensitive to the specific characteristics of service innovation. We need to map measure and analyse service innovation in greater detail and subsequently translate these into an ‘enlightened’ innovation policy and innovation management practice following the synthesis approach.

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93 Reflected in an expanding service innovation in manufacturing literature (Brax et al., 2008; Toivonen, 2010).
94 For an early critical review, see Djellal & Gallouj (1999) and Djellal et al. (2003).