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EXPLORING NEW SERVICE PORTFOLIO MANAGEMENT

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Most research on the management of innovation portfolios has focused on new product portfolios, whereas the management of new service portfolios has not been researched correspondingly. This paper addresses this literature gap by exploring portfolio management of New Service Development (NSD) activities empirically. The paper applies a qualitative research design, where data was collected in 52 in-depth interviews with managers and employees involved with NSD. The study finds that the portfolio management activities and processes were carried out in parallel with the NSD process, and that the most important stakeholders in the NSD portfolio management organization were top managers not involved in the daily NSD operations. Findings reveal that the firms used a great variety of criteria when making portfolio decisions. However, contrary to prescriptions based on new product development research, the decision process exposed for NSD was to a limited degree assisted by explicit portfolio management tools. We explicate our findings in five propositions.

Keywords: New service development; service innovation; portfolio management; scale-intensive service firms; supplier-dominated service firms.

Introduction

Portfolio management refers to the performance measurement and decision process where a firm updates and revises the list of active innovation projects (Edgett, 2013). In this process, "*new ideas are evaluated, selected and prioritised, existing projects are accelerated or deprioritised, and resources are allocated and reallocated to the active projects*" (Cooper *et al.*, 1999, p. 335). Since continuous innovation is necessary to sustain firm success (e.g., Hauser *et al.*, 2006) and funds and other resources are limited in all firms (e.g., Kester *et al.*, 2011), long-term firm success depends upon having implemented effective portfolio management processes (e.g., Chao and Kavadias, 2008; Vähäniitty *et al.*, 2010). Empirical research suggests that portfolio management practices (Lerch and Spieth, 2013; McNally *et al.*, 2013), affect innovation results (e.g., Cooper *et al.*, 2002; Szakonyi, 1994), as well as firm performance (e.g., Hall and Nauda, 1990; Urhahn and Spieth, 2013). Portfolio management research has resulted in numerous recommendations to managers (e.g., Edgett, 2013; Van Oorschot, 2010; Jugend and da Silva, 2014). However, most research in this area is based on the normative recommendations on empirical studies of manufacturing firms developing new physical products, and few studies have focused on the portfolio management practices used by service firms. In fact, when reviewing the New Service Development (NSD) literature, Biemans *et al.* (2015) only identified one high impact NSD article published in the period 1995–2012, discussing portfolio management.

Moreover, research indicates that the characteristics of NSD are different from those of New Product Development (NPD) (e.g., Droege *et al.*, 2009). Empirical investigations have, for example, indicated that NSD processes are generally more informal, faster and more incremental than NPD processes (Johne and Storey, 1998; Kelly and Storey, 2000; Mendonca *et al.*, 2004; Nijssen *et al.*, 2006). It is also often argued that the conceptual complexity of NSD is higher than that of NPD since NSD often requires parallel changes in many different dimensions such as technology, organization and business processes (e.g., Den Hertog, 2000; Den Hertog *et al.*, 2010; Johne and Storey, 1998). This conceptual complexity of NSD implies that the resources needed to carry out NSD processes also differ from those needed to carry out NPD processes (Froehle and Roth, 2007). Empirical findings suggest that while NPD typically requires the involvement of a selected set of specialised employees, NSD requires the involvement of a broader workforce, including front-line employees (Tether, 2005). Also, the firm-level effects of NSD are found to be different from those of NPD; while NPD typically has quantitative tangible effects, the effects of NSD are typically more qualitative and intangible (e.g., Aas and Pedersen, 2010).

These characteristics of NSD may potentially affect how service firms carry out, and should carry out, portfolio management. However, due to the lack of empirical

NSD studies investigating portfolio management, it remains an open question whether the normative recommendations in the extant portfolio management literature are valid for NSD. This knowledge gap is disconcerting both due to the size of the service sector (Spohrer and Maglio, 2008), and due to the importance of innovation to firm-level success in service firms (Aas and Pedersen, 2010). Therefore, more knowledge is needed on how service firms manage their NSD portfolios (Aas, 2011).

The present study contributes in filling the literature gap related to NSD portfolio management, by exploring qualitatively how service firms carry out NSD portfolio management. The paper addresses the following two research questions: (1) what are the characteristics of service firms' NSD portfolio management practices, and (2) how are service firms' portfolio management practices different from the portfolio management practices prescribed to manufacturing firms?

In the next section on theory, we summarise the theoretical insights provided by portfolio management research, and theoretically discuss the characteristics of NSD and how these characteristics may affect portfolio management. In the section on Method, the empirical methods chosen to answer the research questions are presented. The empirical findings are reported in section on Findings, and we discuss the implications, limitations and future research in section on Discussion, explicating our contributions in five propositions.

Theory

With few exceptions (e.g., Aas, 2010; Lee *et al.*, 2012), the existing innovation portfolio management research has mainly focused on the management of new product portfolios, whereas the management of new service portfolios has received less attention. This portfolio management research stream suggests that portfolio management may be perceived as a phenomenon having three dimensions: (1) the portfolio management objectives, (2) the portfolio management processes, and (3) the portfolio management tools that a firm uses during the processes (e.g., Coulon *et al.*, 2009). In extant research, the first and third dimensions have received most attention (Coulon *et al.*, 2009). In the following, we discuss the insights provided by NPD portfolio management research for each dimension, and we theoretically discuss, if and how the characteristics of NSD may affect new service portfolio management in each dimension.

The portfolio management objectives

Extant research within the first dimension suggests that firms typically follow four different objectives when they manage the NPD portfolios. Firms: (i) maximise the value of their portfolio; (ii) establish a balance between different types of

innovation projects in the portfolio; (iii) align the portfolio of NPD projects with the strategy of the firm, and; (iv) conduct an appropriate number of projects relative to their available resources (Coulon *et al.*, 2009; Zeynalzadeh and Ghajari, 2011). When studying the relationship between pursuing these portfolio objectives and firm performance, McNally *et al.* (2012) found that pursuing the two first dimensions of value maximization and balance were particularly important for NPD portfolio management. They also found that pursuing the objective of strategic fit could be harmful since this dimension could constrain innovative choices. However, other studies have come to different conclusions. For example, the conceptual study of Meskendahl (2010) suggests that the strategic orientation of the firm should influence portfolio decisions. Nicholas *et al.* (2011) empirical findings support this since the existence of a strategy encompassing NPD project selection was viewed as the most important best practice for NPD among 144 companies in the UK and Ireland.

However, the kind of objectives firms pursue when they take NSD portfolio management decisions have not been discussed explicitly in the research literature. Research suggests that characteristics of NSD and NPD processes differ (Droege *et al.*, 2009), and that the characteristics of NSD processes differ between different service sub-sectors (e.g., Kuester *et al.*, 2013). NSD processes tend to be more incremental (e.g., Hipp and Grupp, 2005) and ad-hoc (e.g., Nijssen *et al.*, 2006) than NPD processes, especially in service sub-sectors that offer services that are characterised by high degrees of intangibility, inseparability (simultaneous production and consumption) and customisation, such as personal services (Zomerdijk and Voss, 2011). Some authors also expose that a typical NSD process in these service sub-sectors takes less time and is less complex than a typical NPD process (e.g., Griffin, 1997).

It may be expected that the ad-hoc and incremental nature of NSD processes in these service sub-sectors imply that NSD portfolio decisions are decentralised to ordinary employees that do not have the overview of the entire NSD portfolio when they take portfolio decisions. As a consequence, we may expect that firms in these service sub-sectors seldom pursue the objectives of establishing a balance between different types of innovation projects and conducting an appropriate number of projects when they take NSD portfolio decisions.

However, NSD processes in other service sub-sectors offering services that are characterised by lower degrees of intangibility, inseparability and customisation, such as scale-intensive services (Pedersen *et al.*, 2015), tend to be more formal and explicit and more similar to those of NPD (e.g., De Brentani, 2001; Aas *et al.*, 2015). Therefore, we may expect that the objectives followed by firms in these service sub-sectors when managing their NSD portfolios are more similar to the objectives typically followed by NPD portfolio managers.

The portfolio management processes

Findings from NPD portfolio management practices studies (e.g., Barzecak *et al.*, 2009; Cooper *et al.*, 1999, 2002, 2004a,b,c; Cooper and Edgett, 2008; Lerch and Spieth, 2013; Van Oorschot *et al.*, 2010) offer managerial advice, or so-called "best" practices for portfolio management, including descriptions of how firms should organise the portfolio management activities and processes. In the latest edition of the PDMA Handbook of NPD, edited by Kahn (2013), Edgett (2013) recommends that firms aiming to become top performers should implement stage-gate development processes as well as integrating portfolio management into the gates by assessing, at each gate, if current projects has greater potential than new ideas or other projects underway, and by terminating weak projects.

Kester *et al.* (2011) deepen the findings of prior research by using in-depth data from four case studies. Their findings suggest that "*effective portfolio decision-making processes produce a portfolio mindset, focus effort on the right projects, and allow agile decision making across the portfolio's set of projects*" (p. 641). They also find that three types of decision-making processes, i.e., evidence, power, and opinion-based processes, are used when managers make portfolio decisions. The results of a recent study by Magnusson *et al.* (2014) even suggest that intuitive assessment among experts may be more efficient than criteria-based assessment during portfolio decision-making processes due to the fact that intuitive based assessment need less resources. Bentzen *et al.* (2011) also studied the decision-making processes by focusing on the factors managers pay attention to during the process. They found that neither the quality of information, nor the project status could explain the variations in managerial attention. However, the newness of the project to the portfolio was found to be the most important factor explaining variations in attention from portfolio managers.

Recent research has shifted the focus from the role of internal employees in portfolio management processes by suggesting that the involvement of external actors may also be valuable in these processes (Behrens and Ernst, 2014; Voss, 2012). Behrens and Ernst (2014) suggest that external consultants are valuable in the portfolio management process, and Voss (2012) goes one step further and suggests customer integration as an instrument to further develop portfolio management.

With few exceptions, research on portfolio management processes has focused on NPD portfolios. How the specific characteristics of NSD *may* affect NSD portfolio management processes has to a limited extent been discussed in the research literature. We now discuss, how NSD characteristics are expected to affect NSD portfolio management processes:

As suggested in the section on the portfolio management objectives, the incremental and ad-hoc nature of NSD in service sub-sectors offering services that

are characterised by intangibility, inseparability and customisation (e.g., Zomerdijk and Voss, 2011) may imply that NSD portfolio decisions in these service subsectors are decentralised to ordinary employees. Another potential implication of these characteristics may be that NSD portfolio decisions in these service subsectors are based on relatively quick assessments early in the innovation process and not integrated into gates in stage-gate processes as recommended to NPD portfolio management Edgett (2013). However, for service firms offering services that are characterised by lower degrees of intangibility, inseparability and customisation, such as firms offering scale-intensive services (e.g., Aas *et al.*, 2015), we expect the NSD portfolio management process to be more similar to that of NPD portfolio management.

Although the NSD process itself is often less complex than the NPD process, it is often suggested that NSD, in all service sub-sectors, is conceptually more complex than NPD (Johne and Storey, 1998). This is due to the fact that a higher number of functional departments are usually involved in NSD than in NPD since NSD often include parallel changes in organization, technology and processes (e.g., Hipp and Grupp, 2005; Nijssen *et al.*, 2006). We expect that this conceptual complexity of NSD implies that a higher number of employees are involved in NSD portfolio decision processes than the number of employees involved in NPD portfolio decision processes.

The portfolio management tools

The third dimension related to the portfolio management tools firms use, has developed during the last decades. Early practices, mainly deployed until the 1980s, were often limited to the implementation of financial-oriented tools based on early finance theory (e.g., Markowitz, 1952). Since then, multidimensional NPD portfolio management tools including additional performance dimensions such as strategic performance and intangible effects have been developed and implemented. According to Coulon *et al.* (2009), examples of such tools include: bubble diagrams (e.g., Cooper *et al.*, 2002), roadmaps (e.g., Probert *et al.*, 2003), scoring models (e.g., Cooper *et al.*, 2002; Bitman and Sharif, 2008), decision trees (e.g., Schneider *et al.*, 2008), strategic buckets (e.g., Chao and Kavadias, 2008), product innovation charters (e.g., Bart and Pujari, 2007), analytical hierarchy processes (e.g., Dyson, 2003), priority-risk-plot-diagrams (e.g., Ringuest and Graves, 1999), artificial neural network decision support systems (Thieme *et al.*, 2000) and sensitivity analysis (e.g., Dunham, 2002). In addition, it is suggested that the development of scenarios (Liesiö and Salo, 2012) and the use of portfolio matrices (Mikkola, 2001), technology assessment (Van Wyk, 2010) and visual

decision aids (Behrens and Ernst, 2014) may support portfolio management decisions.

The normative NPD portfolio management literature recommends that firms should use multiple portfolio tools with clear and well-defined rules with less emphasis on financial approaches and more on strategic and scoring approaches when ideas are valuated (Edgett, 2013). However, different tools have different impact on pursuing the objectives of portfolio management. The implementation of scoring models, for example, may assist firms in achieving portfolio management objectives in all four dimensions (value, balance, strategy and resources), whereas the implementation of product innovation charters predominantly assists firms in improving the strategic fit of their portfolio (Coulon *et al.*, 2009).

A few studies have suggested and tested different value assessment tools for new service ideas (e.g., Aas, 2010; Lee *et al.*, 2012). These tools may be of assistance in new service portfolio management processes. However, the broader issue of how the characteristics of NSD affects which of the portfolio management tools that are used during NSD portfolio management processes has only to a very limited extent been discussed in the extant research literature. The NPD portfolio management literature suggests that firms should place less emphasis on financial tools and more on strategic and scoring approaches when ideas are valuated (Edgett, 2013). Indeed, we expect this advise to be particularly relevant also for NSD portfolio management due to the fact that the effects of NSD on business performance have a more intangible, strategic, long term, and qualitative nature, in all service sub-sectors, than the effects of NPD on business performance (e.g., Aas and Pedersen, 2010), and due to the fact that the impact of NSD is more difficult to trace than the impact of NPD (De Jong *et al.*, 2003). We also expect that NSD portfolio managers need scoring schemes that are different from those of NPD due to the differences between NPD effects and NSD effects (e.g., Aas and Pedersen, 2010).

Summary

To summarize, prior empirical research has suggested that the characteristics of NSD and NPD differ, and that the characteristics of NSD differ between different service sub-sectors. Table 1 summarises how we expect that NSD characteristics may affect NSD portfolio management practices.

Previous empirical NSD research has limitedly explored NSD portfolio management practices. Therefore, in line with Biemans *et al.* (2015), we argue that a stream of exploratory, fine-grained qualitative research is needed to better understand how service firms make NSD portfolio decisions. The present study was undertaken with this aim.

Table 1. How NSD characteristics are expected to affect NSD portfolio management.

NSD characteristic	To what type of service providers is the NSD characteristic expected to be relevant	How is the characteristic expected to affect NSD portfolio management
NSD processes are more incremental, informal and ad-hoc than NPD processes	Expected to be most relevant for firms providing services that are characterised by high degrees of intangibility, inseparability and customisation (e.g., personal services)	It is expected that firms do not pursue the objectives of establishing a balance between different types of innovation projects and conducting an appropriate number of projects when they take NSD portfolio decisions NSD portfolio decisions are expected to be decentralised to ordinary employees NSD portfolio decisions are expected to be based on relatively quick assessments early in the innovation process
A higher number of functional departments are usually involved in NSD processes than in NPD processes The effects of NSD on business performance have a more intangible, strategic, long term, and qualitative nature than the effects of NPD on business performance	Expected to be equally relevant for both firms providing services that are characterised by high degrees of intangibility, inseparability and customisation (e.g., personal services) and firms providing services that are characterised by lower degrees of intangibility, inseparability and customisation (e.g., scale-intensive services)	A high number of employees from different functional departments are expected to be involved in NSD portfolio decisions Financial-oriented tools are expected to be used to a limited degree in NSD portfolio management processes Strategic approaches and scoring approaches are expected to be used intensively in NSD portfolio management processes The scoring schemes used in NSD portfolio management processes are expected to be customised to NSD

Method

To explore the NSD portfolio management practices, we deployed a qualitative case study approach (e.g., Yin, 2003). This approach was chosen since qualitative research arguably has advantages when the phenomenon to be studied is not well understood and where the variables are still unknown (e.g., Meredith, 1998; Johnson and Harris, 2003).

Since we expected the NSD portfolio management practices to differ between different service sub-sectors (see section on Theory), our research design was based on case analysis of two groups of firm sampled to represent two opposite ends of the tangible–intangible, separability–inseparability and standardization–customization continuum. First, we purposely selected (Eisenhardt, 1989) five providers of scale-intensive service firms. Scale-intensive service firms include telecommunications, financial, logistics and ICT services (De Jong *et al.*, 2003). According to De Jong *et al.* (2003), a main goal for firms in these sectors "is to keep an eye on the efficiency of their delivery processes" (p. 24). As a consequence, the services provided by firms in these sectors are typically delivered via ICT systems, or other networks, and arguably have a relatively high degree of tangibility, separability and standardization (De Jong *et al.*, 2003). Second, we selected a group of firms providing personal services. These firms were generally smaller than the scale-intensive firms, and to have approximately an equivalent number of employees in the two groups of firms, we sampled 13 personal services firms. Personal services firms are also referred to as supplier dominated services firms (Soete and Miozzo, 1989). They include hotel, personal transportation and experiential tourism services (De Jong *et al.*, 2003). Typically, these services are "*intangible because the ownership of a good is seldom transferred when customers buy tourism products, they are heterogeneous because it is difficult to deliver exactly the same total quality experience to all customers and they are often characterised by inseparability and perishability because production and consumption happen simultaneously*" (Pedersen *et al.*, 2015, p. 14). Thus, arguably these services have a relatively low degree of tangibility, separability and standardization (De Jong *et al.*, 2003).

By including cases from two opposite ends of the service, tangibility, separability and standardization continuum, we were able to reveal potential variations between the two groups representing extreme positions of service firms, and consequently be able to expose potential important differences in how service firms manage their NSD portfolios. Thus, the sample offered exceptional opportunities to learn about NSD portfolio management practices.

The five scale-intensive service firms provided different types of services both to other firms and to consumers: One firm provided telecom services, three firms provided financial, banking and insurance services and one firm provided logistics and transportation services. All firms were successful in the market and had expanded beyond the national border to several countries. All these organizations were large firms with their main location, i.e., headquarters, in a Scandinavian country. The firms were also members of a centre for research-based innovation focusing on the innovation challenges facing their sector, which indicate their focus on innovation. This fact, combined with the fact that the firms were large,

substantiate, that these firms have a focus on service innovation, and that they have comprehensive experience in managing large portfolios of NSD activities. The annual reports of the five firms also confirmed their focus on innovation. Based on this, we assumed that the sample of firms offered good opportunities to learn how scale-intensive service firms manage their portfolio of NSD projects.

The sampling of firms providing personal services followed the same procedure. We sampled 13 large firms that were successful in their market and had their main location, i.e., headquarters, in a Scandinavian country. These firms were also members of a business network focusing on the innovation challenges facing their sector. Their membership indicates their focus on innovation.

The main method of data collection was in-depth interviews with employees involved with NSD portfolio management in the case organizations. We followed a snowball procedure to select informants: First, each firm in the sample appointed an employee or manager who had a key NSD role. Then, we conducted in-depth interviews with the selected employees and managers. We asked during these interviews, if the informants could suggest other informants with in-depth knowledge of their firm's NSD portfolio management processes. Consequently, the sampling of informants within each firm followed a snowballing logic (Noy, 2008). This procedure was repeated in the following interviews, and continued until saturation. As a result, 52 informants were interviewed. In most firms, the resulting sample of informants consisted of a combination of top-level business managers, line managers as well as managers and experts with an explicit responsibility for NSD. Table 2 summarises key characteristics of the sample.

We followed a semi-structured interview guide during the interviews. We started the interviews by asking if the informant could mention examples of new services that had been developed and commercialised or implemented by his/her firm during the last three years. Thereafter, we asked open questions related to why these new service ideas had been selected and included in the NSD portfolio. We also asked how these NSD initiatives had been evaluated during the NSD process, and if the firm had evaluated whether the initiative should be accelerated, deprioritised or terminated during this process. During the interviews, the informants were allowed to talk relatively freely about the selected examples. However, whenever relevant, we asked more detailed follow-up questions about what portfolio management objectives they pursued, what criteria and tools they used during the portfolio decision process, as well as how the portfolio management process was organised. If the practices reflected the typical NSD portfolio management practices, we inquired to what degree the informant perceived the current practice as successful and we also opened up for more general reflections about the firm's portfolio management practices. Two researchers participated in each

Table 2. The sample.

	Firm no.	Type of services provided	Size (2010) (number of employees)	Informants
Scale-intensive services	A	Telecom	31000	SVP, two line/unit managers, two innovation experts, one IT expert, one business developer
	B	Financial, banking, insurance	4000	SVP, one line/unit manager, one innovation expert, one IT expert, business developer
	C	Financial, banking, insurance	4000	SVP, one line/unit manager, one innovation expert, one IT expert
	D	Logistics, transportation	20000	SVP, one line/unit manager, one innovation expert, one business developer
	E	Insurance	2200	SVP, one line/unit manager, two innovation experts, one business developer
Personal services	F	Accomodation and food (Hotel chain)	2700	CEO, one hotel manager
	G	Accomodation and food (Hotel chain)	12000	CEO, CMO
	H	Accomodation and food (Hotel chain)	2000	CEO, CMO, Sales Manager, one hotel manager
	I	Accomodation and food (Hotel chain)	13000	CEO, CMO, HR Manager, Revenue manager, one hotel manager
	J	Accomodation and food (Hotel chain)	1250	CEO, CMO, two hotel managers
	K	Experiential services (Amusement parks)	160	CEO
	L	Experiential services (Ski resorts)	950	CTO, Director of one ski resort, one innovation expert
	M	Personal transportation	5700	Director of Sales
	N	Personal transportation	13000	Director of revenue management

Table 2. (*Continued*)

Firm no.	Type of services provided	Size (2010) (number of employees)	Informants
O	Personal transportation	1800	CMO, one innovation expert
P	Personal transportation	2600	Director of communication
Q	Personal transportation	8700	COO
R	Personal transportation	3000	R&D Director

interview, which lasted between one and a half and two hours. The interviews were recorded and transcribed.

We coded and mapped our empirical data onto the three aggregated dimensions of portfolio management practices: (1) *the portfolio management decisions criteria*, (2) *the portfolio management processes*, and (3) *the portfolio management tools*. During this process, it became clear that the detailed portfolio management practices within each dimension differed considerably from the practices described in the NPD literature (e.g., Edgett, 2013). The findings of this analysis process are now reported.

Findings

Our empirical findings are organised according to the following three aggregated dimensions of portfolio management practices.

The portfolio management objectives

While NPD research suggest that firms follow four different objectives when they manage the NPD portfolios (see section on Theory), our findings revealed that both groups of studied firms mainly followed three different objectives when they took NSD portfolio decisions: (1) they only included NSD ideas that were aligned with the business strategies in the portfolio, (2) they ranked the NSD ideas in the portfolio based on their potential value, and (3) they only included an appropriate number of NSD projects relative to their available resources in the portfolio.

The first objective was related to strategic alignment. In both groups of firms (i.e., both the scale-intensive firms and the firms providing personal services), it was an absolute requirement that ideas had potential to assist in closing gaps between strategic goals and status quo. In most cases, it seemed as if the strategic goals were defined first and that these goals guided the search for new service ideas, for example, through campaigns where employees were allowed to come up with ideas on a specific strategic challenge. In turn, the new ideas were assessed against these goals. However, we also found examples of a reverse process, i.e., that the new service idea defined a new strategic direction or new strategic goals, as a manager in firm C explained:

> *"It started with a policy change, giving tax reduction to young people that start saving for real estate early... When we developed a youth savings service we discovered the strategic importance of this segment in general... "*

If the strategic alignment criterion was fulfilled for a particular idea, all firms then ranked the idea based on value. In Firm A, for example, each new service idea was ranked and the Top 20 ideas where given resources to commence. We noted, however, that the firms in our sample did not compare the value of new service ideas with the value of ongoing NSD activities in the portfolio. A manager in Firm A explained:

> *"We have a list with* 20 *— a maximum number of ongoing innovation projects... In our firm innovation is supposed to support the business strategy... Innovation is a strategic tool... What we do to select which projects to carry out is that we rank project ideas based on their value. Let's say that an idea is ranked as no.* 59 *, for example. What happens then is that the project competes with other projects for resources, and those projects that have higher priority will get resources first. So what often happens is that a good idea that has a positive financial potential will often not get the resources because we do not have enough resources."*

When the informants were asked about what constituted "value" most of them referred to financial value, and claimed that to get funding for an idea it was an advantage to demonstrate that the idea would have a positive financial impact, often in the short term. A project manager in firm B, for example, explained:

> *"The innovation projects that are selected have to be able to be financially beneficial after a short time... We have to be able to*

> *demonstrate in the business case that the investment will have a payback time of less than one year... We often also describe other nonfinancial effects in our business cases, but my impression is that the steering committee [portfolio decision makers] does not value these effects to any significant extent."*

A top-manager from Firm A explained an equivalent practice:

> *"To get funding, a business case is required. We have an Excel sheet that is to be used, and justified positive financial numbers are required in this sheet."*

However, when we were given examples of project ideas that had been given funding in the studied firms, we also observed that non-financial valuation criteria had often been considered in practice in both groups of firms. This applied for innovation ideas as diverse as a new music streaming service in Firm A, a new proof of financing service in Firm C and a new food concept in Firm I. Non-financial criteria in the sampled firms seemed particularly to be related to effects on customer satisfaction and loyalty. An innovation manager in Firm A (a scale-intensive service provider), for example, highlighted that effects on customer satisfaction could be included in their business cases:

> *"We need to submit a business case based on an Excel template, thus we need to quantify. Therefore long-term strategic initiatives... say related to customer experience... are more difficult to quantify... for example, how many more customers do we get by creating a good customer experience? How many do we lose by maintaining a bad experience?... so we need to supplement the business cases with descriptions of potential outcomes in text... "*

Our findings also suggested that criteria that are even more difficult to express in monetary terms could be emphasised in idea selection processes. The CEO of Firm I (a provider of personal services), for example, highlighted that the firm culture and values could guide the idea selection process. He stated:

> *"We are doing things today that are quite damaging for us from a financial point of view, but which we believe in. Organic breakfast is such a thing. We have 23 articles on our breakfast buffet, which is organically grown. We have fair-trade on some products. We could have found cheaper products. But we will not... We believe that someday we'll benefit from this decision... But it is difficult to measure... "*

Finally, regulatory change was identified as an external factor that might influence the ranking of innovation ideas in the firms in our sample. A product director in Firm A explained:

> *"We just had a pension reform. This policy change involved the opportunity to retire earlier than at* 67 *but with reduced annual payments. We implemented this flexibility, but with it came also increased service complexity due to the customer's freedom of choice. We have to show the consequences of the different choices to the customer. The customer can do this themselves... through a clever customer interface design... with pension calculator and simulations... then the customer can order directly on line... and based on what the customers choose and include of data we can automate service responses such as counselling."*

Our observations did indicate that the firms in our sample aimed at establishing strategically aligned and high value NSD portfolios both in terms of financial value as well as more intangible, non-financial value. Overall, these findings are in line with the findings of NPD portfolio management research (e.g., Edgett, 2013). The NPD research also suggests that firms aim to establish a balance between different types of NPD projects in their portfolios (e.g., Edgett, 2013). We found, however, not any explicit evidence that the studied service firms aimed to establish a balance between different types of innovation projects in their NSD portfolios. None of the informants included this dimension when they were asked open questions about how their firm decided which NSD ideas to be included in the portfolio. And when the informants were asked explicitly, if they aimed to establish a balance between different types of innovation projects in the portfolio, for example, between incremental and radical projects, or between high risk and low risk projects, they simply answered "no", whereas a few answered that this was at least not an expressed objective of portfolio management in their firms.

The portfolio management processes

All informants in both groups of firms reported that the total number of new service ideas in their firms were much higher than the available resources (both funds and personnel) for innovation activities. This was in part because the sampled firms were actively engaging numerous actors, including, especially their own 'ordinary' employees, in the search for new ideas, resulting in a high number of ideas. The following statement of the CEO of Firm I illustrates this:

> *"We must ensure that those closest to the issue must be allowed to come up with ideas. This is a prerequisite for innovation... For*

> *example, our entire environmental program is based on a campaign where we went out to our staff and asked what we should do differently environmentally. We received over* 5000 *proposals with* 1500 *unique ideas... Another example of an idea emerging from our employees is the new mobile check out service. When you work in the lobby of our largest hotel in Stockholm with almost* 400 *rooms, then you can come up with an idea that* 80 *of those standing in line could have checked out with their mobile phone... "*

However, the operational departments or business units responsible for the delivery of services were given a relatively limited mandate to allocate resources to NSD activities in both groups of firms in our sample. Although it may be correct to state that innovations in the firms in our sample typically emerged from initiatives of ordinary employees, the top-management played a crucial role in selecting what ideas to accelerate through allocation of human and financial resources. To be able to do this, the management in all sampled firms had implemented procedures to make ideas visible for the managerial level. The following statement from one Business Unit Manager in Firm J (provider of personal services) illustrates this practice:

> *"New service ideas often emerge from front-line staff here, and we often discuss new ideas here, but our hotel [business unit] does not have the opportunity to design and implement new service concepts on our own without backing from the headquarters. The ideas are forwarded to higher levels in the organization."*

Many top-managers interviewed, explained the reason why decisions to allocate resources to specific new service ideas were made at the top managerial level was that, they wanted to ensure a homogeneous service development in all business units. In particular, they wanted that a customer of a particular business unit (for example, a hotel) should experience the same service quality, if he became the customer of another business unit of the firm. The CMO of Firm H (provider of personal services), for example, explained the importance of homogeneous development like this:

> *"We are one hotel chain, not a chain of hotels... A customer must experience the same concept regardless of what hotel he/she visits... "*

After having made the ideas visible for the organization, top managers decided whether the idea should be accelerated through allocation of resources or not. At

this stage, the managers in both groups of firms usually decided whether to invest in a pilot project or not. One informant (CEO of Firm I, a provider of personal services) expressed this practice as follows:

> *"We are very fond of pilots. We have* 160 *hotels, now we'll soon be* 230*. So, it is clear that most our new services fly on one or two hotel first, often for a period up to a year. We test new services like this. It's slightly off the concept, but we allow it. After a while, we evaluate whether it [the new service] is good enough to fly at the other hotels. It is a management responsibility to make that decision."*

Quite often, especially if the new service was of incremental nature or was considered to have a low complexity, the pilot projects in the case organizations were run without any further involvement of portfolio decision makers in both groups of firms. An informant (innovation manager) from Firm C (scale-intensive services) explained:

> *"It is rare that things are stopped here [during the pilot project]... In this example, the development period was one month only... One month with interaction designers and customers with* 5 *different proposals before we ended up with this new manual [the new service]... "*

Although this was a quite common practice for incremental projects, the firms typically involved portfolio decision makers during the pilot project phase for the more radical or expensive projects. In some firms (in both groups of firms), this was executed through the implementation of formal stage-gate processes as an informant from Firm A (scale-intensive services) stated:

> *"Projects have to deliver the required documentation to be allowed to pass decision gate* 1, 2, 3 *, and so forth."*

However, in most firms a detailed pre-defined stage-gate process did not exist. Instead, evaluations done by portfolio decision makers during the development process were done on a case-by-case basis. In Firm D (scale-intensive services), one informant (innovation manager) expressed:

> *"I will say that our innovation process is a bit ambiguous. There are always some small and detailed decisions to be made. It is a bit ad hoc and chaotic... But, nevertheless, we do have some main stages and a balance between chaos and structure."*

A similar message was presented by an informant (CEO) from Firm I (provider of personal services):

> *"So when the "shit hits the fan" someone [the management] must take the decision... It is very natural that they [the management] should check a few steps along the way. If not, they [involved in the NSD project] can come up with something that does not work... But we are not very fond of detailed control... "*

After completion of the pilot projects, portfolio decision makers typically evaluated the results of the pilot project and based on this evaluation they decided if the new service should be implemented in all business units or not.

Thus, it may be stated that the process of NSD portfolio management in our sample was considered to be a top-managerial activity at the headquarters level. In all the case organizations (in both groups), NSD portfolio decisions were taken by a portfolio steering committee established by the headquarters. An Innovation Manager in Firm A (provider of scale-intensive services) explained the role of portfolio steering committees like this:

> *"In addition to a core project team group we have a steering committee. We also have something called action director and project owner... "*

In some firms, in both groups of firms, the portfolio steering committee had the same members as the top management group. In other firms, in both group of firms, the portfolio steering committee had members also from managers on lower levels. In both cases, however, the members of the portfolio steering committees were typically top-managers and line managers on headquarters level from different business functions. To exemplify, we provide the following statement from the head of the steering committee at Firm D:

> *"We [the steering committee] report to the top management team. I am placed there. [It is] the steering committee that takes the most of the daily business [portfolio] decisions independently."*

The tasks of the portfolio steering committees were to rank NSD ideas, decide whether project ideas should get financial and personnel resources, and to ensure that the firm always had a valuable portfolio of NSD projects. The portfolio steering committees typically met on a regular basis and discussed both ongoing NSD projects and new NSD ideas. Not all projects in the portfolio were discussed in each committee meeting. The motives for discussing projects in these committees could be that a project needed (more) funds or other resources to progress. Further, that a project was about to move to another stage (for example, from the

idea stage to the development stage or from the development stage to the launch stage), or it could simply be because it was a long time since the project was discussed in the committee. The committees typically had large degrees of freedom to determine their own agendas.

Thus, these committees had an independent role and operated in many ways in parallel to the actual NSD processes, and not as an integrated part of the NSD process and NSD project teams. It is important to note, however, that these committees were pure decision-making bodies that did not have any resources to carry out independent investigations. The committees in our sample based their decisions on presentations, reports and evaluations from project managers or new service idea originators. Third parties (for example, such as consultancy firms) were seldom used to carry out unbiased investigations.

The NSD project managers (or new service idea originators) perceived these committees in an ambiguous way: On the one hand, they perceived the committees as a valuable contributor to the NSD projects since these committees actually provided the necessary funds and resources to these projects. On the other hand, the committees were perceived as bothersome control bodies actually delaying the NSD projects. A NSD project manager in Firm C explained this ambiguity:

> *"To be able to carry out an NSD project in our firm we need support from RCN [the steering committee]. For this idea [a new digital service idea] I have had several presentations for RCN to convince them that we should invest in this project... And I have succeeded... [But] I had to report to the committee... because it was a few months since I had been there, and a lot had happened, so they almost wanted to make a new decision... But I and my line manager managed somehow to convince the committee leader [the CEO of the firm] that things were on track, and then we did not need to present again for the committee... and in my mind I thought that this was good, because I think it is quite illogical that all these directors from various areas should have an opinion about this new service that we are developing... "*

To summarise the findings concerning the dimension of portfolio management process, the NSD processes observed in our sample reveal that the firms experienced an abundance of innovation ideas compared to the limited resources available for them to realise all these potential innovation projects. Top management is closely involved in deciding and prioritizing among ideas and allocating resources to develop these through pilot projects. There is a limited use of structured stage-gate processes as NSD portfolio and decisions governed by

steering committees involving managers representing several different organizational units.

The portfolio management tools

In all firms, we found that "business cases" were formulated for all new service ideas. These were occasionally given as oral presentations to the portfolio decision makers. Although potential qualitative and intangible effects of the new service were often mentioned in the "business cases", as explained in the previous section, we learned that the business case descriptions focused predominantly on financial costs and effects in the studied firms (both groups of firms). An innovation project team member in Firm A explained how "business cases" were utilised to assess the innovation portfolio:

> *"The steering committee [portfolio decision makers] often starts their assessment with the business case; if a project receives a bad score [the innovation idea] will be discarded. Business cases are generally based on expected cost vs revenue. However, it is hard to measure and quantify customer experience, what is it worth in revenue — we know it has a positive effect, but it is difficult to consider as a business case. What is important in the early innovation phase is to identify some relations of how to weigh for example customer experience business case assessments. . . and use overall impressions to decide on which projects to pursue."*

To calculate the financial numbers to be reported in the business case descriptions the studied firms used formal tools like calculating the Net Present Value (NPV). However, a striking observation was that the firms to a very limited degree used other portfolio management tools described in the literature (see section on Theory) to assist them in making portfolio decisions. For instance, none of the firms used any type of scoring models or decision trees to estimate the value of non-financial and intangible effects. Neither did they use any type of roadmaps or strategic buckets to estimate the strategic long-term value of ideas or ongoing projects. Instead, it seemed as if the argumentation and presentation skills of idea originators, or other employees, were necessary to convince the portfolio decision makers, if an idea had low estimated financial value.

Discussion

The presented findings, based on explorative and in-depth qualitative data, provide a rich basis for the development of new theory in the form of theoretical

propositions. These propositions lay the foundation for future research on NSD portfolio management and may serve as tentative managerial recommendations. The propositions, organised according to the three dimensions of NSD portfolio management practices, are presented and discussed below:

The portfolio management objectives

According to the NPD portfolio management literature (e.g., Coulon *et al.*, 2009; Edgett, 2013), firms pursue four different objectives when they manage the performance of their NPD portfolios. They aim to: (1) maximise the value of their portfolio; (2) establish a balance between different types of innovation projects in the portfolio; (3) align the portfolio of NPD projects with the strategy of the firm, and; (4) conduct an appropriate number of projects relative to their available resources.

Our findings expose large similarities between the objectives service firms pursue when they manage their portfolios of NSD projects and the objectives manufacturing firms pursue when they manage their portfolios of NPD projects. Alignment with strategy and available resources are important, as well as value maximization.

Our findings confirm the suggestion of prior NSD research (e.g., Aas and Pedersen, 2010) that the value of NSD include both a financial (tangible) dimension consisting of short-term financial effects such as increased revenue and reduced cost, and a non-financial (intangible) dimension consisting of long-term strategic effects such as knowledge building, improvement of customer satisfaction and image. Our findings suggest that both dimensions are taken into account when NSD portfolio decisions are made.

However, our findings expose that service firms do not explicitly aim to establish a balance between different types of innovation projects in the portfolio to the same extent as manufacturing firms. As discussed in section on Theory, we expected that service firms delivering services characterised by intangibility, inseparability (simultaneous production and consumption) and customization, such as personal services, would seldom pursue the objectives of establishing a balance between different types of innovation projects, in part due to the incremental and ad-hoc nature of innovation in such firms. At the same time we expected that service firms delivering services characterised by tangibility, separability and standardization, such as scale-intensive services, would pursue the objective of establishing balanced portfolios, in part due to the more formal nature of innovation activities in such firms.

This expected difference between firms in different service sub-sectors was not observed in our data. What we did observe, however, was that although the

establishment of balance was not an explicit aim of the portfolio management activities in the studied firms, the studied firms in practice had new service portfolios with a considerable variation of high and low risk projects, small and large projects, complex and non-complex projects, etc. Thus, the establishment of a balance between different types of projects seems to happen implicitly in service firms. This may be explained with the fact that NSD has a number of different idea sources, such as customers, suppliers, competitors, employees and government (e.g., Mansury and Love, 2008; Menor and Roth, 2007; Den Hertog *et al.*, 2011), that unconsciously may lead to the suggestion of many different types of ideas.

Based on this, we propose Proposition 1 (P1):

> *P*1: *If service firms exploit different sources of ideas and base their NSD portfolio decisions on strategic alignment criteria and value criteria they will obtain balanced NSD portfolios.*

The portfolio management processes

The findings of NPD portfolio management research suggest that (successful) firms implement explicit and formal portfolio management procedures and integrate portfolio management and the development process of individual NPD projects (Edgett, 2013). In practice, such procedures are often implemented in the form of a formal stage-gate control system where the portfolio aspect is one factor that is evaluated at each gate for each project (Edgett, 2013).

Our findings indicate that NSD portfolio management is organised in a somewhat more flexible manner. Nevertheless, it is noteworthy that both the personal as well as the scale-intensive service firms in our sample had implemented a formal decision gate early in the innovation process to convert NSD ideas to formal NSD 'projects'.

Based on our discussion in section on Theory, this practice may be considered to be somewhat surprising. Previous NSD studies have suggested that the NSD process often tend to be ad-hoc and hidden (e.g., Nijssen *et al.*, 2006). The findings of Fuglsang and Sørensen (2011), for example, suggested that NSD often takes the form of so-called 'bricolage', i.e., small changes implemented by 'ordinary' employees during their daily work. Based on this, we had expected that NSD portfolio decisions were decentralised to ordinary employees and based on relatively quick assessments, especially in firms providing services that are characterised by high degrees of intangibility, inseparability and customization (e.g., personal services). Our empirical findings did not confirm these expectations.

Admittedly, we do not have any evidence in our material suggesting that 'bricolage' does not exist in our sampled firms, contradicting the findings of

Fuglsang and Sørensen (2011) directly. However, based on our findings we may state that the top-management in the sampled firms, in both service sub sectors, had implemented measures to make ideas resulting from 'bricolage', as well as other ideas, visible. Only ideas that were made visible passed the first gate of the NSD portfolio management process and were given resources. Neither functional departments nor individuals were given any other NSD resources; thus, formal NSD projects were accelerated while more hidden NSD initiatives were slowed down. This may be explained by the fact that the managers in the studied service firms perceived innovation to be an important tool to bridge the gap between the firms' strategic aims and their current situation, and therefore wanted to make sure that resources allocated to innovation contribute in this respect.

Based on this discussion P2 is offered:

> *P2: The acceleration of NSD requires that NSD ideas, including those emerging from bricolage, are transformed to formal NSD projects early in the NSD portfolio management process.*

After the first decision gate where formal NSD projects were established, the portfolio management process varied from project to project. Like prior NSD research (e.g., Hipp and Grupp, 2005), we found that the majority of projects were relatively small and had an incremental nature, and these projects were typically only evaluated in one additional decision gate before commercialization. The portfolio management process of these projects resembles what Cooper (2008) calls 'stage-gate lite'.

Other, more expensive and/or radical NSD projects went through several decision gates before launch. However, with a few exceptions, these decision gates had not been pre-defined. They were quite independent from the NSD process itself. The discussion of the status of a NSD project at a decision gate was not always associated with reaching a milestone in the NSD project. Instead, other factors also determined whether the status of a NSD project should be discussed. Thus, the NSD portfolio management processes in our sample were carried out in parallel with the NSD process, and the NSD portfolio management process was often relatively independent from the process of the individual NSD projects. This practice is different from that prescribed to NPD. The normative NPD literature suggests that all NPD projects follow a predefined stage-gate process, and that portfolio management is part of all gates (Cooper, 2008; Edgett, 2013).

The differences may be explained by the fact that NSD projects had a high degree of heterogeneity. New service ideas in the sampled firms came from a great number of sources such as customers, suppliers, competitors, employees and government, as found also by prior NSD research (e.g., Den Hertog *et al.*, 2011; Mansury and Love, 2008; Menor and Roth, 2007; Meyer, 2010), and this diversity

of sources may be one factor explaining the great heterogeneity of NSD projects. Another reason may be the conceptual complexity of NSD (De Jong *et al.*, 2003). As mentioned, NSD often involve parallel changes in the service concept, technology, organization and processes (Den Hertog, 2000). Such complexity also implies that the heterogeneity of NSD projects is larger than that of NPD projects. Therefore, it may be more difficult to design a stage-gate process that would fit for all NSD projects in a portfolio. Thus, each NSD project in the portfolio may have to be followed up in a more individual and flexible manner, than the projects in a NPD portfolio.

Consequently, proposition 3 (P3) suggests that:

> *P*3: *The NSD portfolio process need to be more flexible than NPD portfolio processes to accompany the high degree of heterogeneity in NSD projects.*

While NPD portfolio management research has discussed portfolio management processes, as well as portfolio management tools and decision criteria intensively, the portfolio management resources used during the processes have not received the same attention. In our sample of service firms, however, the portfolio management resources were found to be crucial to the success of portfolio management processes. This finding may be related to the fact that the resources used for NPD and NSD are different (Droege *et al.*, 2009). For example, firms in our sample did not have separate departments responsible for innovation, which may be more normal in manufacturing firms (Tidd and Bessant, 2013). Instead, employees at different levels and from many different functional areas were involved both in the idea generation stage, and also in the development stage as members of NSD project teams. These findings are in line with prior NSD research (e.g., Hipp and Grupp, 2005; Nijssen *et al.*, 2006), and may be explained with the conceptual complexity of NSD (De Jong *et al.*, 2003).

From a portfolio management perspective, we expected that an implication is that a high number of employees from different functional departments to be involved in NSD portfolio decisions (see section on Theory). In part, our findings confirmed this. Employees from different functional departments were indeed involved in NSD portfolio decisions in the sampled firms. However, we also expected that NSD portfolio decisions would be taken decentralised in the firms. Instead, our findings exposed that service firms typically establish a professional NSD portfolio management organization, for example, in the form of a steering committee, with representatives from the management of different functional areas. This NSD portfolio management organization is not involved in the daily NSD operations, but consulted whenever a portfolio management decision is needed. As discussed earlier in this section, this may be due to the fact that

innovation was perceived to be an important tool to bridge the gap between the firms' strategic aims and their current situation in the firms in our sample.

Based on this discussion we propose P4:

> *P*4: *NSD portfolio decisions need to be taken in collaboration by a group of managers representing different functional areas.*

The portfolio management tools

NPD portfolio management practices research suggests that firms aiming to become top performers should use multiple portfolio tools with clear and well-defined rules that are consistently applied to all ideas and projects (Edgett, 2013). Firms with the strongest NPD portfolios, typically use a combination of financial tools, strategic tools and scoring approaches (Cooper *et al.*, 1999).

We expected to find limited use of financial-oriented tools in NSD portfolio management processes, while strategic approaches and scoring approaches were expected to be used intensively in these processes (see section on Theory). Our findings did not support these expectations. On the contrary, our findings indicated that service firms do use explicit financial tools to assist them in making portfolio decisions, while explicit strategic tools and scoring approaches to help find the value of more intangible effects were used to a very little extent. Instead, the service firms in our sample relied on the ability of idea originators, or other intrapreneurs, to convince portfolio decision makers that the idea had valuable intangible effects. This practice confirms the findings of prior NSD research suggesting that intrapreneurs play an important role in NSD (Hydle *et al.*, 2014). It also confirms the findings of Kester *et al.* (2011) who found that portfolio decision-making processes in their sample were based on a combination of evidence, power and opinions. In our sample, evidence was used to assess the value of tangible short-term effects, whereas a combination of power and opinions were used to assess the value of long-term intangible strategic effects.

One reason for this practice may be that existing strategic and scoring tools are designed on the basis of the characteristics of NPD, and may not be equally relevant to NSD (Droege *et al.*, 2009). However, the current practice has at least two weaknesses: First, the firms risk missing valuable NSD ideas that are not backed by a convincing intrapreneur. Second, the fact that the selection tools and criteria are not fully transparent may be demotivating for potential idea originators. In turn, not using tools may affect the innovation culture in a negative way. Therefore, we believe that portfolio management decisions in service firms would benefit from the implementation of explicit tools that could assist NSD portfolio decision makers in assessing the value of strategic and intangible effects.

There have been a few attempts in the academic literature to develop scoring approaches that take the characteristics of NSD into account (e.g., Aas, 2010). This research focus in combination with research on the value of using tools versus not using tools in portfolio decision processes in NSD (Magnusson *et al.*, 2014), should be continued. At this stage, P5 is offered:

> *P*5: *Service firms will most likely benefit from using portfolio management tools that take the characteristic effects of NSD into account and future research should assist in developing relevant tools.*

Conclusions

This paper exposes how service firms manage their NSD portfolios and how these practices differ from the portfolio management practices prescribed to NPD in manufacturing firms. This study reveal the need for involvement of different resources in NSD and NPD, since NSD are more complex, more incremental, display a greater heterogeneity and requires parallel changes in several different dimensions. There are several important and unpredicted consequences for the portfolio management of NSD. With observations from a wide range of NSD processes, we deliberately sampled our cases from two opposite ends of the service tangibility, separability and standardization continuum. We expected to find large differences in NSD portfolio management practices between firms from the opposite ends of this continuum, but our findings did not confirm this expectation. In the first dimension of portfolio management, the portfolio management objectives, we found that there were many similarities with NPD portfolio management, but in all our sampled service firms, we revealed how NSD portfolio decisions always considered alignment with existing strategy first. In the second dimension, portfolio management processes, we found that NSD portfolio management differed significantly from NPD portfolio management as the portfolio decisions were governed by steering committees involving managers representing several different organizational units. The perceived financial value was important for the decision to include a new idea in the NSD portfolio. However, it appeared that other — non-financial — criteria complemented the NSD decision to a higher degree than what have been observed in NPD portfolio management studies. Finally, the third dimension, the portfolio management tools, also differed significantly from suggestions based primarily on data from manufacturing firms. In this study, none of the cases used specific tools to assess the value of non-financial effects. Instead, business cases with financial calculations were the most common tool when making NSD portfolio decisions.

The paper contributes with new knowledge on the management of NSD portfolios and we offer five propositions for further empirical validation. The study's limitation resides in having explored only large service firms. Future studies could qualitatively explore small and competitive service firms and quantitatively test the above propositions.

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