

Co-creating a digital service for small business owners' finance management

Päivi Heikkilä and Maria Antikainen

VTT Technical Research Centre of Finland

{paivi.heikkila, maria.antikainen}@vtt.fi

Abstract. This paper presents a small-scale qualitative study exploring the everyday finance management of small business owners. The study was conducted by carrying out contextual interviews, combining the approach of business and social sciences. Insights from five study cases were utilised in co-creating a novel digital service targeted to facilitate finance management in the areas identified as challenging or lacking suitable services. The benefits and challenges of the co-creation process are also discussed. The findings increase the current understanding and bring practical implications to the understudied area of co-creation of financial services. For example, the needs for integration of services and graphical presentation of financial data are not met with current service offering and should be supported better. Gamification and social aspects, as well as, the need for mobile use, are seen as interesting elements for future research.

Keywords. Co-creation, Service Development, Novel Digital Services, Financial Services.

1 Introduction

Currently, the majority of digital financial services are developed for the needs of big companies. The needs of small companies, however, are in many ways different. The development of new financial services would benefit from being speeded up and from the incorporation of innovative ideas, as well as, from a better understanding of customer needs. Although the trustworthiness and safety of financial services play a central role, we believe we must find new ways of accelerating current development to satisfy the needs of a larger group of companies and to ensure overall satisfaction towards digital financial services.

To answer today's challenges related to new product and the service development process related to speed, quality and innovativeness, companies have to admit that in many cases the best people are probably not working for them. Instead, companies should seek for new external knowledge outside as Chesbrough (2003) suggests. Prior evidence shows that one valuable source for gaining fresh ideas and increasing creativity is the customers. Instead of treating customers or potential customers as passive recipients, they can become a key part of the innovation processes (e.g. Alam, 2006; von Hippel, 2005; Piller, 2004).

A rising interest in customer involvement has emerged in financial service development (Cooper and Edgett, 1996). Although financial institutions have been found to be intensive users of customer knowledge (see Hollenstein, 2003), the mechanisms of success in customer involvement and co-creation are still not thoroughly understood. The utilisation of co-creation in service development remains a rather unexplored area in general (Greer and Lei, 2012), as well as in the context of financial services (De Smet et al., 2014), on which this study aims at shedding light.

The research question for this study is twofold. Firstly, we want to increase the understanding of the daily needs and challenges of small business owners when managing their finances. To answer this part, we aim at understanding their daily life in a wider context, extending beyond the pure management of finances. This broadening is achieved by combining research practice from business approaches and social sciences. Secondly, we want to explore how the co-creation approach fits into the design of a financial service, the kinds of benefits that can be achieved, and the challenges that need to be overcome.

The following questions crystallise the aim of our research:

RQ1. What kinds of needs and challenges do small business owners experience in their everyday finance management?

RQ2. What kinds of benefits and challenges are identified when co-creating a novel digital financial service?

Since our focus was not only on gathering information on small business owners' needs concerning financial services, but on gaining a profound understanding of their everyday life and co-creating with them, we chose a qualitative approach, using interviews as a main data collecting method.

This paper is structured in the following way. In the second section we introduce relevant literature concerning new service development, co-creation of financial services and benefits and challenges related to co-creation. The third section introduces our research design. In the fourth section we discuss on our results, drawing conclusions in the fifth chapter which ends with considerations of future research.

2 Current understanding

2.1 Concept of co-creation in the new product and service development context

Understanding customer and market needs is one of the consistent themes in the earlier literature on innovation success and failure (Barclay, 1992; Hart et al., 1999; Tidd and Bessant, 2009). Utilising customers' or potential customers' creativity and innovation capability has a great deal of potential in new product development and service design. In recent years, the transformation in the customer's role has changed from being a passive object into an active participant, co-creator and innovator. An on-going shift of companies' mindsets from product-orientation towards service-orientation has also accelerated this transformation by positioning the customer experience at the centre of a business's purpose (Chesbrough, 2011).

In the business context, the co-creation approach-involving customers as an external resource for new product and service development-has been recognised in both theory and practice for at least four decades (e.g. Freeman, 1991; Leonard-Barton, 1995; Rothwell et al., 1974; von Hippel, 1988). In addition to open innovation literature that takes the user-centred view in new product and service development, there are many related concepts covering the same issue. Lead user literature by Eric von Hippel (1986, 2005) and other scholars has been among the pacesetters in suggesting that users can become a key part of the innovation process. Furthermore, the concept of (value) co-creation introduced by Prahalad and Ramaswamy (2000, 2004) stresses the empowerment of the customers, and sees them as active participants in companies' processes. The perspective is thus value creation for, by and with customers (Edvarsson et al., 2006). The same idea is embedded in the terms 'co-development' and 'co-design'. It can be argued that the concepts presented, namely open innovation, lead user literature and co-creation, approach the same phenomenon from

different perspectives (company, user and development).

The idea of co-creation is to involve customers in different phases and stages of the product or service development process (Edvardsson, 2006). In order to take a closer look at the co-creation process, Reichwald and Piller (2005) have defined different levels of customer involvement in new product development. On the first level, customers are considered as passive targets. On the second, companies ask customers more actively about new product features or product concepts, using surveys, web-based conjoint analysis and other means in order to obtain access to customer preferences and needs. Dialogue between customers and companies begins. On the third level, customers participate in the process by designing their own solutions on the user innovation platform and are considered to be equal partners of the organisation. In this study, we chose to use this model so as to illustrate our co-creation process, although in the service development context.

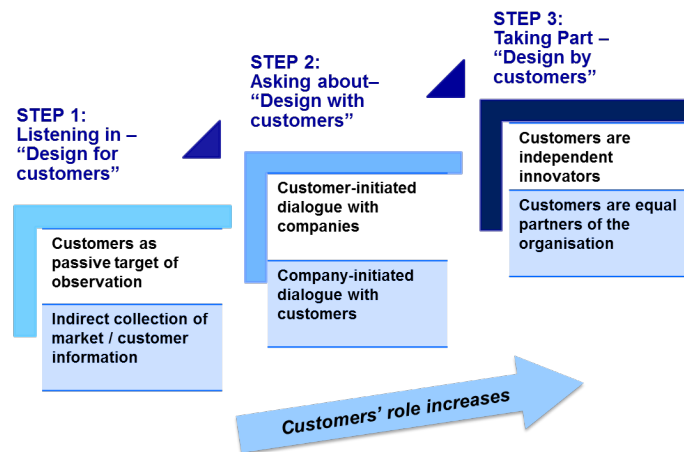


Fig. 1. Different levels of customer involvement in NPD process (modified from Reichwald and Piller, 2005).

2.2 Benefits and challenges related to co-creation

Co-creation with stakeholders is stated to provide companies with many benefits by enhancing the efficiency of the innovation process in terms of speed, costs and quality (Edvardsson et al., 2006; Hoyer et al., 2010). In a rapidly changing environment and with fiercer global competition, co-creation may benefit companies remarkably by reducing cycle time (Alam, 2006) and in this way accelerating the time from fuzzy-front-end to launch. Also, one major benefit of customer interaction is the access to sticky information on user needs, user context and user experience, which is usually tacit and difficult to find (von Hippel and von Krogh, 2006; von Hippel 2005).

Overall, earlier studies indicate that co-creation enhances an understanding of customers' value (Magnusson, 2003), enhances customer relationships (e.g. Gruen et al., 2005; McAlexander et al., 2002) and promotes long-term relationships (Alam, 2006). Customer involvement in NPD has also been shown to enhance product concept effectiveness (i.e. product-market fit), and may result in ideas for potential business opportunities (Alam, 2006; Brown and Eisenhardt, 1995; Bilgram et al., 2008; von Hippel, 1986). Heiskanen et al. (2007) argue that a more open-ended approach to concept testing is needed in order to encourage users to evaluate concepts more critically. Previous studies also suggest that involving users more in the

processes may also lower barriers to adopting new innovations (e.g. Alam, 2006; Rogers, 1983).

Despite the long list of the perceived benefits of co-creation, in many industries, customers have played-and continue to play-a limited and rather passive role in the development of new products and services. The most limiting factors have been poor connectivity with customers, possible lack of customer cooperation and an information gap existing between customers and producers (e.g. Alam, 2006; Franke and Piller, 2004). A natural reason for this is that companies face several challenges when trying to set up collaboration with customers. Furthermore, the risks of confidentiality and a lack of knowledge of how to interact with customers have influenced managers' willingness to involve customers in the process (Alam, 2006).

2.3 Co-creating financial services

Involving customers in service development process in the financial sector is indicated to include benefits, such as, improved quality of service and increasing speed of innovation (Carbonell et al., 2009; Chien and Chen, 2010). Oliveira and von Hippel (2011) emphasised the potential of customers as a source of innovation in the financial service development process. They found that as much as 55% of today's computerised commercial banking services in the US market are innovated, not by banks, but by individual users. In addition, 44% of corresponding computerised retail banking services were first developed and implemented by individual service users rather than by commercial financial service providers (Oliveira and von Hippel, 2011).

In the financing sector, the level of customer involvement varies considerably in the process, illustrated in Figure 1 (Chien and Chen, 2010). Opinion boxes and customer interviews are among the most common methods of customer interaction (Chien and Chen, 2010). Technological development and social media tools, however, open new methods for involving customers in co-creation (Antikainen 2011). Innovation tools may also be utilised when co-creating with potential future service users who are not yet customers of a company. For example, financial consumer services have been co-innovated, co-designed and evaluated with consumers using the VTT Open Web Lab (Owela), an online platform that enables consumers with various backgrounds to be reached for the purpose of co-creation in different phases of the design process (Heikkilä et al., 2011).

Although co-creation has been suggested to have several benefits, there are also controversial findings with regard to involving customers in new financial service development process. Some of the prior studies see customer involvement in a positive light (Drew, 1995; Menor and Roth, 2008), while others are more sceptical, especially of the degree of customers' interest and ability to contribute to novel financial service development process (Avlonitis et al., 2001; Vermeulen, 2004). Customers' *lack of confidence* (Howcroft et al., 2007) and *lack of knowledge* (Chien and Chen, 2010) concerning the providers of financial services have been seen as barriers for co-creation. However, these barriers could be alleviated by increased transparency towards customers, as well as, by customer education (Chien and Chen, 2010).

Apart from these challenges, it may be the case that the process with customers appears successful, but does not lead to explicit results. In one of the prior studies, customer involvement was found to have no direct effect on competitive superiority or sales performance (Carbonell et al., 2009).

To achieve the potential benefits of co-creation and overcome its probable barriers, one cannot underestimate the significance of careful planning of the co-creation process. Reaching the right participants, involving them in the suitable design phases

with appropriate methods and describing the design area or problem using their language, are all aims worth aspiring to.

3 Research design

3.1 Approach and methods

Our approach is qualitative and multidisciplinary, gathering holistic in-depth insights on small business owners' day-to-day finance management. Our field study combined the research perspectives of business and social sciences. First, by applying the social sciences approach we aimed at understanding the everyday financial tasks and practices of our study participants. While interviewing the participants, we also observed their key challenges in financial tasks and identified gaps between their needs and the current service offering. Second, we walked through the business models of our study cases, to ensure understanding of the ecosystem and the relevant issues for each case study. Based on this understanding, we identified the key challenges and needs that potentially could be tackled and met with a novel digital service. Case study research was selected as a study method, as its strengths lie in answering 'how' and 'why' questions and covering the context of the phenomenon under study (Yin, 2013; Baxter and Jack, 2008). These aspects are especially important in the realms of a research aiming at service development.

Our small-scale research consisted of five semi-structured contextual case-study interviews concentrating on everyday finance management and three feedback interviews focusing on the ideas and features of the service concept developed on the basis of the first interviews. The first interviews focused on the participants' current ways of managing finances, their needs and everyday challenges in creating opportunities for improved and novel design solutions. Feedback interviews introduced a new digital service concept for managing finances, let the participants interact with it and collected their impressions of the service.

The first interviews were conducted personally by two researchers at the participants' workplaces where the financial tasks are carried out. As the participants may have found it difficult to define their needs (see e.g. Avlonitis et al., 2001) and as concept development benefits from concrete material from the field, the contextual interviews were enriched with observation and demonstrations of the use of the participants' current financial services and tools. One of the researchers focused more on interviewing, the other one on writing down notes and photographing the current services, tools and parts of financial processes.

The second interviews were conducted by the same researchers either at the participant's workplace or by phone, according to the participant's preference. When carried out as a phone interview (selected by two participants), the service demonstration was shared with the participants both beforehand (sending them a link to the pilot service by e-mail) and during the session (using Skype). The service demonstration was not fully implemented, but covered the key aspects of the concept and illustrated its main features enabling user interaction.

3.2 Selecting the cases

The five cases were selected by purposeful sampling to represent different types of Finnish companies, to include both new and more experienced business owners and to show variation on the financial service needs. The cases include a gift shop, a baby equipment store, a used car dealership, an importer of a health product, and an IT service company. These show variation in terms of the type of sales (e.g. retail or online), their need for mobile tools and services (e.g. because of customer visits or

exhibitions) and their ambitions for growth. As the focus in the concept development was on small companies, only the business owner was interviewed (not all of them had employees). Three of the companies were located in the area of the Finnish capital Helsinki and two near Tampere, the largest inland city.

Table 1 lists background information of the cases.

Table 1. Background information of the cases.

	Case 1	Case 2	Case 3	Case 4	Case 5
Industry	Gifts and handicraft	Baby equipment	Used cars	Health products	IT services
Location	Near Tampere	Near Tampere	Near Helsinki	Helsinki	Helsinki
Founding year	2005	1993	2010	2012	2008
Number of employees	1	3	2	2014: 2 (2015:14)	2
Previous participation in co-creation projects	Yes	Yes	No	No	No

As financial matters are delicate and confidential by nature, the study cases were selected on the basis of previously built trust and confidence. Some of the business owners had already attended a co-creation project, while some were contacted by their bank adviser partnering in the project. This approach was mutually beneficial, leading to commitment from the participants while personally assuring them that the research would be worth attending. In contrast to some prior studies (see Howcroft et al., 2007 and Chien and Chen, 2010), the participants' lack of confidence or knowledge were not seen as barriers in this study, as the starting point for data gathering was our participants' expertise in their own financial tasks and everyday challenges.

3.3 Co-creation process

The co-creation process consisted of three phases. First, the study participants were interviewed and introduced to the idea of the development work. After the interviews, a pilot version of a new financial service was then designed, based on the findings of the field study. Third, the new service concept was introduced to the three business owners of the original five who were most dissatisfied with the current service offering. These three had an opportunity to give feedback on the concept and to re-design and co-create its structure and content further. Their feedback and ideas were brought to the designers for taking into account in the iterative design process. The first interviews were conducted in February and March 2014 and the feedback interviews in June 2014.

Co-creation with the business owners can be best mapped to Step 2 in the new product development process (see Figure 2): design and dialogue *with* the participants, not *for* them or *by* them. To be more specific, the research process also included the idea behind Step 1, listening to (potential) customers, as we did not only "ask about" desired services (as stated in the heading of step 2 in the figure), but also

observed the business owners using their current tools and services.

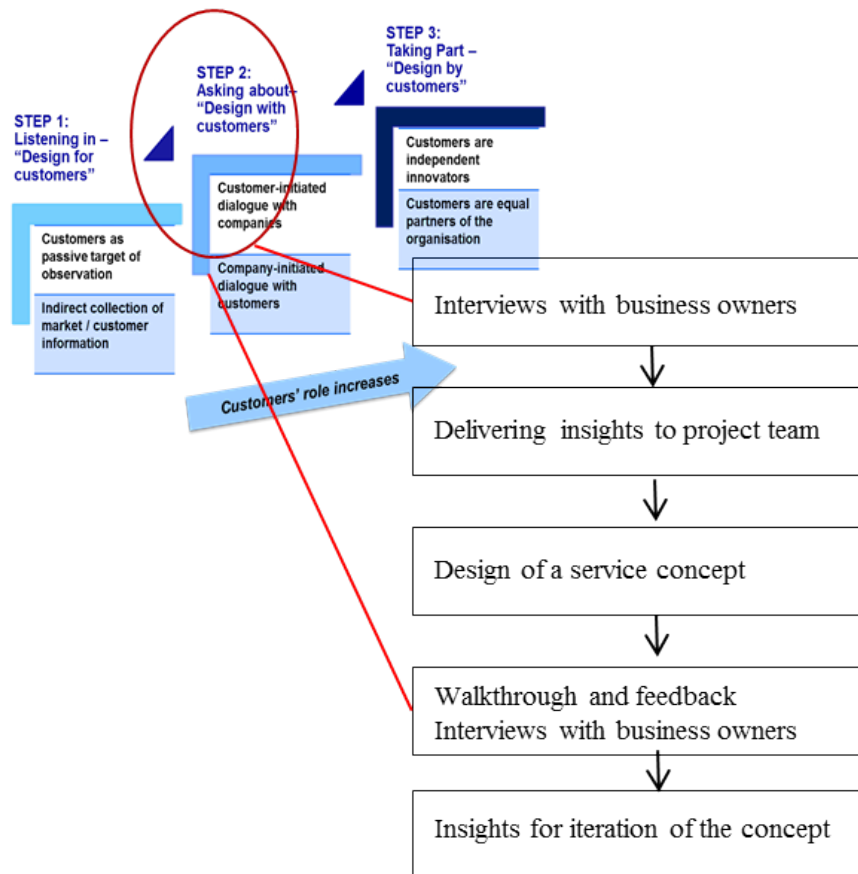


Fig. 2. Steps of co-creation process mapped to NPD process.

The co-creation approach was applied both when meeting the business owners and when bringing the findings to the project team, where parts of the concept were co-designed by domain experts, designers and researchers.

4 Results

4.1 RQ1: Everyday financial needs and challenges of small business owners

Our field study suggests that finance management is an area where novel digital services and the integration of existing services would be warmly welcomed. Our interviewees were lacking services that would feel as if they were targeted at small business owners and not at managing large businesses. Many of the current services were perceived to be *too complicated*, *too extensive* or *too expensive* for the needs of a small company. Small business owners would, thus, benefit from *an affordable modular system* that was simple enough to start with, yet allowed compatible parts to complement the service if needed later on.

Lacking suitably scaled, integrated services for their needs, the interviewees had created their own-often innovative-ways of combining services from different service providers: transferring information manually between them, using non-digital tools and even creating the missing parts of the services themselves. This gave us an exceptional opportunity to see the current gaps between services: the parts that required manual work and were thus likely to cause mistakes and the parts where the users decided to construct their own building blocks in order to gain the necessary data in the appropriate format. In spite of self-created solutions, however, lack of integration and compatibility between tools evoked frustration:

“This [finance management] is so primitive-without any decent digital system. I need to go through stacks of papers ... It would be so much easier to find everything if the data was in one digital place.” (Owner of a baby equipment store)

One of the key challenges identified with the current financial services was *the lack of visual presentation* of the information. Among interviewees, the current services were perceived too colourless and number-based. Graphical data would not only be important for making use easier and more pleasant, but also for allowing a snapshot of the relevant financial changes or trends, for planning the future or following the past, or making comparisons based on the data. This would be a core area for development in terms of rapid pick-up of information and finding the essentials. All our interviewees would have appreciated either more graphical user interfaces or more illustrative data views. Comparison of the existing services to their work books, colour codes in their own archiving, or their self-created worksheets, revealed a huge difference in the use of colours. For example, one of our interviewees had created four different graphical presentations of his financial data, separating different income and outcome categories by using different colours. He followed his company’s financial status mainly through these self-created graphs, as the ready-made tools did not offer sufficient visualisations.

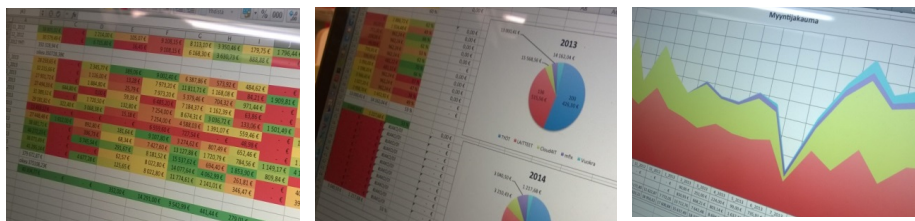


Fig. 3. Examples of financial data visualisations created by an entrepreneur.

Users of manual work books also made use of colour as a means of retracing, categorising and planning financial tasks. One of the interviewees summarised her thoughts in a concrete way:

“Why couldn’t this digital tool have some colours? They would be technically feasible and they wouldn’t cost anything.” (Owner of a gift shop)

Even though the interviewees were not very experienced in mobile financial services, they emphasised *the need for checking and writing down notes related to finances also on the go*. They stressed that it would be useful to get the notes directly to an appropriate system, for instance writing an invoice of a customer visit right after it. Without a mobile service, transferring or archiving data requires manual work. However, the most important thing is that the tool in hand is instantaneous.

“Each move is documented somewhere, however small it is. Sometimes I have needed to write on a napkin.” (Importer of a health product)

In addition to our main goal of exploring the needs and challenges of our target group, we also discussed whether our interviewees would see social aspects or gamification elements as a potential part of future financial services. As their current services contained no social or game-like elements, the participants found these themes surprising. After a certain amount of pondering, most of the interviewees thought these elements could make use of the service easier or more engaging by supporting playfulness, or by lowering the threshold for asking help or advice from others. They qualified this by saying that use of these elements should not affect the credibility of the services or make them more complicated.

“Everything shouldn’t be super serious. Adults need fun stuff, too.”

(Owner of a gift shop)

“A good solution could also include additional services. As long as they weren’t Angry Birds games, but something credible and reliable.”

(Owner of an IT service company)

Social and gamification elements were seen to be most valuable for new business owners with less experience of finance management.

4.2 RQ2: Benefits and challenges of co-creation

Observing the everyday challenges and needs of small business owners furnished us with concrete guidelines for designing a new service. We wanted to facilitate the design of an integrated and holistic system providing sufficient-or even delightful-support in terms of visibility and customisability, with an affordable starting kit of appropriate simplicity. We delivered our findings and examples from the field to the project members, and the subsequent co-creation within the design group led to a service that connects fragmented financial applications into one dashboard. Introducing this AppCollection service to our interviewees allowed us to validate and further develop our findings from the field. Integration of the services and the graphical tools for planning future finances also proved to be the AppCollection service’s most welcome features.

In general, the participants in the study were willing and interested in contributing to the service development-both in the first phase concentrating on their daily tasks and the second that introduced the new service concept. This may be due to several factors, such as perceived importance of the design mission, the clear focus of the participation phases and the possibility of participating with relatively low effort (no need for frequent meetings, the opportunity to meet at the workplace, the option of a phone interview for feedback). In our study, the lack of interest in financial offerings was not identified as a challenge (see Vermeulen, 2004), potentially due to the significance in business owners’ everyday life of managing finances. Gaining the commitment of the participants through the first stage of the study also increased their interest in seeing the pilot version of the new service and in engaging in its co-creation.

When interviewing the business owners, we faced challenges related to the confidentiality of financial data and to the lack of user experience of mobile financial services. The issue of confidentiality was tackled by aiming at creating an atmosphere of trust and by offering flexibility in letting participants choose, which data they would show. Instead of focusing solely on mobile financial services, we widened our scope to discussion on mobile services in general and on portable manual tools related to managing personal finances. This gave us an opportunity to concentrate on the issues that participants felt were relevant and suitable.

Meeting the participants first at their workplaces was a crucial factor in our study, allowing them to share and to show the most essential work practices related to finance management. This helped us both in gaining concrete understanding of their daily tasks and in building trust between participants and researchers. However, based on our experience, the feedback interviews carried out by phone were as fruitful as a face-to-face feedback meeting, as we already had sufficient understanding of the participant's business and work practices.

Although existing literature includes scepticism about the willingness and ability of participants to contribute to the new service development (Avlonitis et al., 2001; Vermeulen, 2004), we see that willingness and ability are aspects that can be taken into account through careful recruitment and motivation for the study and by planning the mission of the co-creation phases and enabling greater participation for the participants most interested. These principles are easier to apply in qualitative research design; quantitative studies require more effort and innovative research practices in order to convey personal touch and recruit suitable persons.

5 Conclusions

5.1 Contribution to theory

Our study aimed at contributing to the discussion on co-creation and open innovation, as well as, to the field of new service development in the area of financial services. We wanted to gain understanding of the everyday challenges and needs of small business owners, who remain outside the main target group for service providers. The insights gained were used in our service design process, which we hope will lead to a new and successful service containing business potential and making a good match for the needs of small business owners.

The study enabled us to identify multiple needs for financial services, especially related to the possibilities of integration, scalability to small business owners' needs, and visualisations. The testing of a service concept brought valuable insights and offered an opportunity to validate the preliminary ideas with the targeted users of the service. We believe that the collaboration with small business owners in both phases, coupled with a deeper insight into their lives as business owners, resulted in a wider understanding of their preferences. At the same time, we gained an opportunity to explore the benefits and challenges of the co-creation approach and of methods related to the design of a financial service.

5.2 Practical implications

Collaboration between small business owners or potential future customers brought valuable insights on different phases of our service design process. For example, it revealed that the participants would need more integrated and compatible services and enhanced visual presentation of their financial data. These needs were used as principles for guiding the design process. Beyond focus on their daily tasks and current needs, the participants were also challenged by asking their views on including social or gamification elements in financial services. Although these aspects were not yet a part of the current services they used, they were not met with disapproval. On the contrary, participants saw their potential additional value, provided the design was not compromised by reduced credibility or greater complexity of service.

Based on the study, the following table summarizes the key features, which would make the finance management of small business owners more fluent and convenient. Especially the need for integration and visualisation of the data were emphasised, but

also other features were brought out by almost all interviewees.

Table 2. Desired features for small business owners' finance management.

Feature	Description
Integrated, holistic system	All financial management through one service
	Mobile version to be carried along
Modularity	New parts can be added easily
	No need to pay for unnecessary applications
Accounting in a right format	On paper or digitally-to avoid scanning, printing or similar manual tasks
Visuality	Supports comparing and picking up information
	Makes managing finances more pleasant
Customisability	Shows essential features, enables annotation and self-defined categorisation
Affordability	To start with a rather simple solution with less expenses
Instructiveness	Guides in finding efficient practices in using the tool and managing finances

Compared to traditional user research, the co-creation approach gave small business owners a more equal role in discovering their ways of working, innovating improved practices and sharing their everyday life as a business owner. The design could be based both on the needs identified by the researchers and the participants' own ideas for improving their current financial practices. Furthermore, combining the expertise of researchers, designers, domain experts and the actual target group widened the perspectives of all participants in the process.

5.3 Limitations and future research

As the research was small-scaled and qualitative, the results cannot be generalised as such. Also, the data concerning mobile use practices is limited due to the lack of existing mobile financial services. As mobile services are constantly increasing in variety and number, it would be interesting to study how the emerging services support the early adopters in their everyday financial practices.

We believe that both gamification and social aspects of the services have a more significant role in the future and would like to see the focus of research and development work extended to these elements. Although financial services might at first appear too serious and task-oriented an area for the inclusion of game-like elements or social interaction, our interviews indicate their additional value in this context too. As less obvious features, these might be core elements for differentiating an engaging service from the basic offering.

In general, co-creation and customer involvement remain a relatively underexplored area in the context of financial services (Akamavi, 2005), as well as for services in general (Greer and Lei, 2012). One direction for future research is thus to increase understanding of the involvement of customers and potential end-users in the different phases of new product and service development processes.

Acknowledgements. This research has been conducted as a part of the DIGILE Digital Services Programme, an ecosystem effort pooling service enablers and platforms for the rapid launch, horizontalisation and ensured maintenance of new services (DIGILE 2014). This study belongs to the programme's Financial Services theme and supports concept design work in, which mobile financial services are co-

designed and iteratively developed with a large Finnish IT service company (Tieto), a major Nordic bank (Nordea) and research institutes (VTT and Aalto University). We would like to thank our project partners, as well as, the business owners who voluntarily participated in this study and shared with us their valuable thoughts and experiences.

5 References

- Alam, I. (2006). Process of customer interaction in new service development. In Edvardsson, B., Gustafsson, A., Kristensson, P., Magnusson, P., & Matthing, J. (Eds.), *Involving customers in new service development* (pp. 15-32). Series of Technology Management, 11. London: Imperial College Press.
- Antikainen, M. (2011). *Facilitating customer involvement in collaborative online innovation communities*. Academic dissertation. Espoo: VTT Publications 760.
- Avlonitis, G. J., Papastathopoulou, P. G., & Gounaris, S. P. (2001). An empirically-based typology of product innovativeness for new financial services: Success and failure scenarios. *Journal of Product Innovation Management*, 18(5), 324-342.
- Barclay, I. (1992). The new product process: past evidence and future practical application. Part 1. *R&D Management*, 22(3), 255-264.
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The qualitative report*, 13(4), 544-559.
- Carbonell, P., Rodríguez-Escudero, A. I., & Pujari, D. (2009). Customer involvement in new service development: An examination of antecedents and outcomes. *Journal of Product Innovation Management*, 26(5), 536-550.
- Chesbrough, H. (2003). *Open innovation: the new imperative for creating and profiting from technology*. Boston: Harvard Business School Press.
- Chesbrough, H. (2011). *Open services innovation. Rethinking your business to grow and compete in a new era*. USA: Jossey-Bass.
- Chien, S. H., & Chen, J. J. (2010). Supplier involvement and customer involvement effect on new product development success in the financial service industry. *Service Industries Journal*, 30(2), 185-201.
- Cooper, R. G., & Edgett, S. J. (1996). Critical success factors for new financial services. *Marketing Management*, 5(3), 26-37.
- De Smet, D., Mention, A., & Torkkeli, M. (2014). Involving High Net Worth Individuals (HNWI) for financial services innovation. In *Proceedings of The XXV ISPIM Conference-Innovation for Sustainable Economy & Society*. Dublin, Ireland, 8-11 June.
- DIGILE (2014). <http://www.digital-services.fi/>.
- Drew, S. W. (1995). Accelerating innovation in financial services. *Long Range Planning*, 28(4), 1-21.
- Edvardsson, B., Gustafsson, A., Kristensson, P., Magnusson, P., & Matthing, J. (eds.) (2006). *Involving customers in new service development*, Series of Technology Management, 11. London: Imperial College Press
- Franke, N., & Piller, F. (2004). Toolkits for user innovation and design: an exploration of user interaction and value creation. *Journal of Product Innovation Management*, 21(6), 401-415.
- Freeman, C. (1991). Networks of innovators: a synthesis of research issues. *Research Policy*, 20(5), 499-514.

- Greer, C. R., & Lei, D. (2012). Collaborative innovation with customers: A review of the literature and suggestions for future research. *International Journal of Management Reviews*, 14(1), 63-84.
- Hart, S., Tzokas, N., & Saren, M. (1999). The effectiveness of market information in enhancing new product success rates. *European Journal of Innovation Management*, 2(1), 20-35.
- Heikkilä, P., Järventie-Ahonen, H., & Riihiäho, S. (2013). User Originated Innovation of Mobile Financial Services. In A. Marcus (Ed.), *Lecture Notes in Computer Science: Design, User Experience, and Usability. Web, Mobile, and Product Design* (pp. 660-665). Berlin Heidelberg: Springer.
- Hollenstein, H. (2003). Innovation modes in the swiss service sector: A cluster analysis based on firm-level data. *Research Policy*, 32(5), 845-863.
- Howcroft, B., Hamilton, R., & Hewer, P. (2007). Customer involvement and interaction in retail banking: An examination of risk and confidence in the purchase of financial products. *Journal of Services Marketing*, 21(7), 481-491.
- Hoyer, W. D., Chandy, R., Dorotic, M., Krafft, M., & Singh, S. S. (2010). Consumer co-creation in new product development. *Journal of Service Research*, 13(3), 283-296.
- Leonard-Barton, D. (1995), *Wellsprings of knowledge*. Boston: Harvard Business School Press.
- Magnusson, P. R. (2003). Benefits of involving users in service innovation. *European Journal of Innovation Management*, 6(4), 228-238.
- Menor, L. J., & Roth, A. V. (2008). New service development competence and performance: an empirical investigation in retail banking. *Production and Operations Management*, 17(3), 267-284.
- Oliveira, P., & von Hippel, E. (2011). Users as service innovators: The case of banking services. *Research Policy*, 40(6), 806-818.
- Piller, F. (2004). Mass customization: reflections on the state of the concept. *International Journal of Flexible Manufacturing Systems*, 16(4), 313-334.
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: the next practice in value creation. *Journal of Interactive Marketing*, 18(3), 5-14.
- Prahalad, C. K., & Ramaswamy, V. (2000). Co-opting Customer Competence. *Harvard Business Review*, 78(1), 79-90.
- Reichwald, R., & Piller, F. (2005). *Open Innovation: Kunden als Partner im Innovationsprozess*, München. Available online at http://www.impulse.de/downloads/open_innovation.pdf. 17.11.2010 [Last accessed: August 11th, 2015].
- Rothwell, R., Freeman, C., & Townsend, J. (1974). SAPPHO updated: Project SAPPHO, Phase II. *Research Policy*, 3(3), 258-291.
- Tidd, J., & Bessant, J. (2009). *Managing Innovation: Integrating technological Market and Organizational Change*. 4th edition, UK: John Wiley & Sons,.
- von Hippel, E. (1986). Lead users: a source of novel product concepts. *Management Science*, 32(7), 791-805.
- von Hippel, E. (1988). *The Sources of Innovation*. New York: Oxford University Press.
- von Hippel, E. (2005). *Democratizing innovation*. Cambridge: The MIT Press.
- Vermeulen, P. (2004). Managing product innovation in financial services firms. *European Management Journal*, 22(1), 43-50.

Yin, R. K. (2013). *Case study research: Design and methods*. Beverly Hills: Sage Publications.