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RESPONSIBLE INNOVATION IN PLATFORM BASED FINTECH START-UPS

AN EXPLORATIVE CASE STUDY

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PREFACE

This thesis guides you through my graduation research for the Master of Science program Management of Technology (MoT) at the Delft University of Technology. The MoT program particularly focuses at the realm where technology, innovation, society and management meet. The specialisation I followed during this program, ICT Management and Design, has provided insight in the interplay between the focal topics of MoT with information and communication technology and systems. I have tried to incorporate a mixture of these topics in a research focusing at an industry which was previously fairly unknown to me. The combination of the core research concepts has proven to introduce interesting new insights and challenges.

As this thesis did not fall out of the sky, I like to thank some people for helping me show the way. First of all, I like to thank the graduation committee with in particular my first supervisor Dr. Victor Scholten for providing me with helpful suggestions on a regular basis throughout the past 6 months, and my second supervisor Dr. Mark de Reuver and chair Prof. Ibo van de Poel for providing feedback as the research progressed. Furthermore, I would like to thank the management and employees of the companies where I have, besides conducted this research, also gained valuable experience, for their pleasant collaboration. In particular I would like to thank Pepijn Meddens for this opportunity and his thinking along whenever possible.

I hope you will find some interesting insights in the next 60 pages.

Delft. August 25, 2016

Frank Waagmeester

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LIST OF ABBREVIATIONS

AC	Absorptive Capacity
AFM	Autoriteit Financiële Markten
ACM	Auroriteit Consument en Markt
CEO	Chief Executive Officer
COBIT	Control Objectives for Information and related Technology
CPMI	Committee on Payments and Market Infrastructures
CPSS	Committee on Payments and Market Infrastructures
CSR	Corporate Social Responsibility
CTA	Constructive Technology Assessment
CTO	Chief Technology Officer
DNB	De Nederlandsche Bank
FTE	Fulltime Equivalent
ISO	International Organization for Standardization
NIST	National Institute of Standards and Technology
PSD	Payment Service Directive
PTA	Participatory Technology Assessment
RI	Responsible Innovation
RRI	Responsible Research and Innovation
SaaS	Software-as-a-Service

EXECUTIVE SUMMARY

The payment services market is growing; more and more companies introduce new payment methods, transaction systems, payment administration platforms, subscription methods and so on. These innovative new payment services, part of the innovative financial services or 'FinTech' industry, often introduce new challenges compared to the conventional payment methods via incumbent banks. As a lot of these new payment methods are introduced by start-ups, the responsibility for guaranteeing security, privacy and accuracy of money transfers that previously lay with the incumbent banks now shifts towards these start-ups. Furthermore, these start-ups are increasingly often structured as a (software or cloud) platform, introducing extra challenges with respect to how to control the behavior of the users of such a platform in order to prevent e.g. fraud.

The purpose of this report is to explore the pro-active responsibility of such platform based start-ups in the FinTech sector by adopting the Responsible Innovation concept and relating this concept to specific challenges faced by start-ups and methods to control a platform. This report is intended to provide insight in how a start-up can include a responsible view to its innovation process when developing a new platform in the FinTech sector. An explorative case study into two start-ups with payment service platforms is conducted in order to explore to what extend the concept of Responsible Innovation is implemented, to explore the applied methods to maintain control over the platform, the specific challenges faced by start-ups and the FinTech industry, and the relations between these topics.

The study shows that the acquisition of external knowledge and an entrepreneur's existing knowledge and experience is particularly important in order to be able to anticipate potential issues and to include values from a wide range of stakeholders in the platform. This can be done by either engaging in collaboration with representations of the (future) stakeholder groups directly or by collaborating with market parties already involved with these stakeholder groups and with significant experience. The anticipated future challenges can be translated into control mechanisms that allow the entrepreneur to respond adequately whenever an issue on the platform occurs. Such control mechanisms can be the restriction of which customers are accepted on the platform, monitoring behavior on the platform and applying adequate measures in situations of misuse, and, specifically for FinTech companies, the control of money flows such that payments are only activated when the platform user does comply with the platform's terms. Furthermore, designing the platform's software modularly together with the organizational focus to adopt new knowledge increases the ability of a start-up to respond to new issues that arise. This also gives the platform owner the ability to change or add control mechanisms in order to increase his control over the platform and to decrease the misconduct by users of the platform. Lastly, making sure customers and other stakeholders accept the platform and agree with its business practice, preventing reputational damage, helps with becoming or remaining responsible when developing a new platform.

1   INTRODUCTION

Responsible Innovation is a well embedded concept in modern research to the active responsibility for technology driven companies. However, the practical application of this concept in actual innovative business practice shows some underexposed areas. A particular focus of this research will be how start-ups with a platform architecture in the innovative financial services (FinTech) industry deal with responsibility challenges.

1.1   INTRODUCTION TO THE PROBLEM

The increased focus on innovation of payment services has led to a still continuing shift of payment service delivery from the conventional banks in the direction of new payment service providing companies. A well-known example of such a payment-as-a-service provider is PayPal, which offers a worldwide solution for online payment. PayPal started in 1998 as a start-up trying to develop a universally applicable currency, free from governmental control, that's not only easy to use but also gives people the opportunity to receive payments via the internet (Grabianowski & Crawford, 2005), whereas that part of the payment traffic previously was only possible via the traditional banks. Start-ups are often more successful in developing overarching solutions where big incumbent banks may be struggling with their cumbersome structure and competitive character towards other banks, resulting in a lacking supporting organisation, unable to efficiently encourage innovative behaviour (Schilling, 2013). Companies in the financial sector trying to innovatively transform the conventional ways of handling money flows are often referred to as so called *FinTech* companies (Economist, 2015). Within this FinTech industry, numerous start-ups are developing new payment-as-a-service solutions and payment platforms. This shift in payment services towards new businesses and the development of new payment platforms is diminishing the power position of incumbent banks and results in several new possibilities for customers to enhance their payment experience (Mackenzie, 2015).

However, this shift of payment services from the incumbent banks with extensive experience in handling payments using conventional methods (card payments, cash, credit-card, cheques, internet banking) towards new start-ups with limited experience in this field, introducing new unconventional payment methods, is accompanied by the shift of responsibility over guaranteeing security, privacy and accuracy of money transfers towards these start-ups. This shift could lead to possible troublesome situations as new technologies often introduce unforeseen issues and highlight new challenges. The responsibility position of those new services is often vague and is most of the time only subject of discussion whenever a dispute occurs. Banks have certain restrictions and legal obligations when it comes to this kind of responsible behaviour. Generally, regulatory systems merely can seek control and conduct surveillance once the risks are upfront characterized (Lee & Petts, 2013). Moreover, regulatory systems often restrict the opportunities for innovation, which would also be the case if new payment services would have to comply with the existing SEPA regulation in the EU, which merely targets incumbent banks. However, in the payment services market, the EU and European banks have initiated the Payment Service Directive (PSD and PSD2) which is, besides introducing new regulation and supervision measures for the payment services sector, geared towards opening up the payment market and driving innovation in new payment services, as described in paragraph 3.1.

A complicating factor for effectively addressing responsibility with which start-ups have to deal is the lack of financial and human resources to develop a mature new product. Start-ups are often primarily focussing at a low time to market and accelerated growth in the early stages of the innovation trajectory rather than addressing all risks and potential challenges. Adequate precautions to cover potential issues are therefore presumably rewarded a low priority in the development process of a new FinTech innovation.

For FinTech start-ups with a platform architecture, some particular challenges arise regarding the start-up's responsibility position. The two-sided architecture of a platform introduces some specific challenges regarding ownership and control over the parties and products active on a platform (Tiwana, 2014). A platform owner is most often not the legal owner of the content or products on the platform, enabling flexibility in how the platform is ultimately used and by whom. This flexibility increases the potential for future unethical use that is difficult or impossible to anticipate in an early stage of the platform. Controlling the platform ecosystem as a whole is therefore paramount in order to ensure its responsibility position towards the two sides of the market it serves as well as society in general.

Examples of particular responsibility challenges, drawn from paragraph 3.3, are the FinTech company's responsibility in situations of suspected use of the platform for criminal or fraudulent activities, structuring money flow mechanisms in such a way that customers trust your operations, or taking care of the privacy sensitive data that come with payment transactions. Regarding challenges like these, e.g. fraud, rigid money flows and privacy, what should be the responsibility of the FinTech company and how can start-ups organise and integrate these responsibility challenges in their innovation process?

In the case of Sharepay, an online platform providing marketing and payment functionality for digital products and one of the units of analysis for this study, digital products from a large amount of product owners are sold via its platform. Although Sharepay has the ability to control the technical functionality and safety of the platform in order to safeguard direct misuse of the platform; quality of the products, fulfilment of orders, and alignment of the product owner's value proposition with its actual delivered value are a level of responsibility deeper and are not directly controlled by Sharepay. This leaves room for product owners to market low quality or even misleading products, which potentially generates mistrust of digital products buyers towards Sharepay's platform.

Those types of problems and concerns could also jeopardize the social acceptation of the FinTech company's services. Aldrich & Ruef (2006) propose that firms often strive for socio-political legitimacy, consisting of moral acceptance and regulatory acceptance by stakeholders, the general public, opinion leaders, and government officials. In developing a new service, companies have to act according to existing norms and laws, or try to influence the process of changing them.

When developing new innovations in the FinTech industry, actively pursuing a responsible approach to the design process would presumably lead to a more adequately designed platform with respect to potential responsibility challenges. This effort to innovate in an actively responsible way is known in science as *responsible innovation*, which aims at innovating towards "*socially desirable and socially acceptable ends, with connotations of trust and integrity.*" (Owen, Stilgoe, Macnaghten, Gorman, & Fisher, 2013, p. 27) A more detailed definition is proposed by René Von Schomberg: *"Responsible Research and Innovation is a transparent, interactive process by which societal actors and innovators become mutually*

responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society)." (Von Schomberg, 2013, p. 63) Such a definition sounds promising; however, organization wide commitment in such a comprehensive matter is often an extremely complicated activity. Especially in start-ups with a platform based architectures. The smallness of a start-up makes that resources are scarce and that focus primarily lies with generating revenue in a preferably short amount of time. The platform architecture adds complexities as a multi-sided market is served and the platform owner is not the owner of the wide variety of content, products, or services which is being traded via the platform, complicating the interactive process between societal actors and innovators mentioned by Von Schomberg.

1.2 RESEARCH OBJECTIVE

Following the argument in the introduction, responsible innovation addresses active responsible behaviour in the process of new service, product, or in this case, platform development, by incorporating ethical considerations in the design stages. Companies, and in particular start-ups, in the FinTech (or financial services) sector deal with a range of industry and product maturity related issues and concerns that could affect both the start-up itself as well as its customers. The platform architecture of the FinTech companies featured in this research adds to the complexity in integrating the responsible innovation paradigm in the innovation trajectory.

The objective of this research is to contribute to the understanding of how RI can be implemented in start-ups, specifically start-ups within the FinTech industry and with a platform architecture. This objective will be achieved by providing insight in how different aspects of RI are related to characteristics of FinTech start-ups and platform architectures based on both a literature study as well as a case study.

1.3 RESEARCH QUESTIONS

Following the research objective, the main question in this research is set to be:

> ***How can start-ups include a responsible view to their innovation processes when developing a new platform in the FinTech sector?***

In order to address multiple aspects of responsibility and the complexity added by the platform architecture and maturity related aspects of a start-up a set of sub questions is established. First, the challenges with which FinTech start-ups and platforms have to deal will be assessed in order to provide an insight in what the 'responsible view' of these companies should encompass. The first sub-question will address these challenges both for the FinTech industry specifically as well as for start-ups with a platform architecture.

1) *What are the primary responsibility challenges to be addressed in platform based FinTech start-ups?*
   a. *What are the specific challenges for FinTech companies?*
   b. *What are the specific challenges for platform based start-ups?*

As described in the introduction and addressed with sub-question 1, the platform architecture brings specific complexities for platform owners in controlling the behaviour of parties within the platform ecosystem as well as the direction of the ecosystem as a whole. Platform governance literature proposes different platform control mechanisms to control the platform ecosystems. Besides the technical development of platform functionalities, the implicit or explicit development and implementation of platform control mechanisms is expected to, at least partially, be the output of RI considerations. Therefore the second sub-question is drawn:

2) *What platform control mechanisms are available with respect to the challenges of FinTech platforms and how are these integrated?*

The concept or Responsible Innovation is believed to provide insight in how companies can include a responsible view in the innovation process. The operationalization of RI as provided in the literature review consists of four dimensions (e.g. anticipation, reflexivity, inclusion and responsiveness) which, if implemented properly, are believed to increase a company's active responsibility. Therefore the third sub-question aims at providing insight in how these dimensions are present in the cases of the conducted case study:

3) *How are the four Responsible Innovation dimensions integrated in the platform based FinTech start-ups?*

The last sub-question aims at providing insights to managers or entrepreneurs active in FinTech start-ups with a platform architecture. The specific aim of this sub-question is to extend the findings from the case studies on their current practice with respect to RI with the findings from the literature review and is therefore set to be:

4) *What recommendations can be made with respect to responsible innovation in platform based FinTech start-ups?*

1.4 RESEARCH DESIGN

The literature review as presented in Chapter 2 shows that little research has yet been devoted to the role of Responsible Innovation in FinTech and, although some research has addressed RI in start-ups, no empirical research has yet addressed RI in FinTech start-ups specifically. Furthermore, although some research has been conducted in the field of platform control, the combination of RI with FinTech start-ups and the implications of a platform architecture have never been brought together in one research.

Although the concepts are all discussed individually, combinations of two or more of the topics of interest are not yet made in existing literature. This lack of understanding, of e.g. the relation between RI and platform governance or RI in FinTech start-ups, leads to difficulties in building hypotheses or propositions. Therefore, an exploratory course has been set in order to obtain a qualitative understanding of the research topic.

According to Verschuren & Doorewaard (2010) a case study research strategy is appropriate in explorative research. A case is studied in depth rather than in breadth, as is often pursued with a survey research project, and the focus is on understanding and explaining the relations between the different concepts. Furthermore, the choice for a case study approach for this research is due to the researcher's easy access to two start-ups with a platform in the FinTech industry as well as their openness to collaborate in the execution of this

study. The researcher's 6 months internship with the companies provides opportunities to gather valuable information from planned interviews, informal conversations and observations of- as well as experience with everyday business practice. These sources of data are very valuable for an in depth study of the core concepts of this research within the cases.

The strategic sample of cases for this research therefore consists of two FinTech start-ups named Sharepay and Mempay. Both start-ups are part of a group of four FinTech companies of which the other two are more mature businesses without the typical platform architecture. Although the two cases share similarities in different aspects of the business, as will be discussed in Chapter 4, the tow companies are operating individually and serve different markets. Therefore the two cases will be studied and analysed in depth separately as in a two-case design Yin (2009).

The methods for data collection as adopted in this research are as follows. First a desk research addressing existing literature regarding RI and platform governance combined with the start-up aspect as well as an analysis of the FinTech industry. For the case study the formal data collection consists of semi-structured interviews with all currently involved employees and managers of the two companies. These interviews are structured in a sense that a list of topics to be discussed in the interviews is established; however, the interviews are conducted in the form of a conversation rather than with a question-answer approach. This is in line with the explorative character of this study and provides more opportunity to discover new insights compared to a more structured approach. The last form of data collection comes from the researcher's internship with the companies. This unstructured data could provide valuable insights in the day-to-day business of the companies and especially in verifying the results from the formal data collection.

1.5   THESIS OVERVIEW

Chapter two presents a review of the existing literature regarding Responsible Innovation and platform governance, as well as previous research to the role of Responsible Innovation in technical financial services. Chapter three provides an insight in the FinTech industry, the regulatory systems and supervision as well as the industry specific challenges. Chapter four provides the theoretical design of this research addressing the research strategy, approach, framework, and purpose as well as a description of the units of analysis followed by a more detailed overview of the cases, concluding with an overview of the methods for data collection and analysis. Chapter five presents the results of the case study per case. Chapter six provides the analysis of the case study results as well as a discussion of these results with the literature and answers to the research questions. Chapter seven concludes this thesis with the contribution of this study to theory, the limitations of this research, opportunities for future research as well as some practical implications for start-ups.

2 LITERATURE REVIEW

In order to address the concepts central to this study appropriately, the existing literature involving the concepts of Responsible Innovation and platform governance, as well as an assessment of previous research into the role of RI in financial services is presented in this chapter.

2.1 RESPONSIBLE INNOVATION

Responsible innovation is a concept with increasing impact in modern ethics and management science. However, the concept is yet underexposed in corporate management compared to the more popular Corporate Social Responsibility paradigm. Although the practical implementation of those two concepts often aligns on several subjects, there is a clear distinction to be made. In order to qualitatively assess the responsible innovation efforts in the financial services industry, this chapter will propose a working definition of the responsible innovation concept, based on existing literature, on which the conducted research will be based, as well as a review of the interplay between the responsible innovation and the corporate social responsibility paradigms.

2.1.1 WORKING DEFINITION RESPONSIBLE INNOVATION

Responsible Innovation is often used as part of- or short for the concept of Responsible Research and Innovation (RRI) (Asveld, Ganzevles, & Osseweijer, 2015; Owen, Macnaghten, & Stilgoe, 2012; René Von Schomberg, 2013). This thesis focuses on the innovation aspect of RRI in the sense that merely the applied innovation trajectories are examined, leaving the theoretical research aspect, which also should be subject to pro-active responsibility considerations, out of the scope. In order to examine the case studies qualitatively, a working definition of the concept of responsible innovation has to be provided in the form of key features or indicators that imply a certain degree of adoption of this concept, based on existing responsible innovation research and literature.

The foundation of the responsibility position in innovation processes can be broken down in two key responsibility dimensions; the ethical and value based reflection on purposes (Van den Hoven, Lokhorst, & Van de Poel, 2012) and the accommodation of uncertainty, allowing for responsiveness to the changing nature of the innovation. Those two dimensions are referred to in this thesis as *care* and *responsiveness* respectively (Owen et al., 2013). For the operationalization of the responsible innovation paradigm this thesis will build upon the framework proposed by Owen, Stilgoe, and Macnaghten (Owen et al., 2013; Stilgoe, Owen, & Macnaghten, 2013), in alignment with the broadly adopted definition of responsible innovation by Rene von Schomberg (2011a, 2011b):

> *"Responsible Research and Innovation is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society)."* (p. 9, p. 9)

The framework entails four commitments to be integrated in the innovation trajectory, extending the care and responsiveness dimensions:

1) **Anticipatory** considerations, including the intended and unintended impacts on society, economics and environment.
2) **Reflective** stance towards purposes, motivations, and potential impacts. Reflecting on what is known with regulatory guidelines, ethical and governance views, and what is unknown, assessing risks, assumptions, ignorance, questions and dilemmas.
3) **Deliberative** approach to engage into a broad **inclusion** of visions, purposes, questions, and dilemmas by arranging e.g. dialogue, debate, and consideration of perspectives of stakeholders.
4) **Responsive** innovation approach allows for iterative inclusion of the collective process in the subsequent trajectory of the innovation.

Those four commitments or dimensions will be shortly discussed on the basis of Stilgoe et al. (2013) in order to provide a guided view to those concepts for the remainder of this thesis.

2.1.1.1 ANTICIPATION

Harmful implications of new technologies are often unforeseen and risk-based forecasts of undesirable effects commonly fail to provide an accurate prediction. (Stilgoe et al., 2013) When the anticipation dimension is added to the innovation process, traditional design questions i.e. 'what/how/why?' are being accompanied with the 'what-if?' question (Ravetz, 1997). The innovators' expectations of the future therefore play a substantial role not only in predicting, but also in shaping desirable futures, as organizing resources to obtain those futures can be influenced by the innovator. Processes of anticipation are therefore facing interplay between prediction of and participation towards particular futures. (Stilgoe et al., 2013)

There are several approaches to anticipation in the innovation process thinkable. Upstream public engagement (Wilsdon & Willis, 2004) and Constructive Technology Assessment (CTA) (Rip, Misa, & Schot, 1995) are two approaches that involve the inclusion of particularly public stakeholders in early stages of the innovation process in order to engage into an anticipatory discussion of potential and more- or less desirable futures.

However, considering anticipation approaches in start-ups and small firms which only have limited time, financial and human resources, engaging in a deliberation process with a variety of (future) stakeholders is presumably not feasible. Moreover, technology-based start-ups are often more focused on surviving the first phases of market entry, rather than allocating resources to stakeholder engagement and development of a sustainable strategy. (Scholten & van der Duin, 2015) Therefore, a somewhat less conscious angle to anticipation lays within the concept of *absorptive capacity*: the organizational capacity to learn from external actors in combination with previously acquired knowledge and apply this knowledge in their business practices. (Cohen & Levinthal, 1990) By building on experience, existing knowledge and effectively acquire knowledge from for example a launching customer, start-ups engage in a less deliberate, however, resource efficient anticipation of the detrimental implications of the technology.

2.1.1.2 *REFLEXIVITY*

Responsible behaviour can't do without reflecting on purposes, motivations, and potential impacts (Owen et al., 2013). Stilgoe et al. (2013) argue that there is a demonstrated need not only for reflexivity on the part of actors, but also for institutional reflexivity in governance. This institutional reflexivity means that activities, commitments and assumptions have to be scrutinized. The different levels of reflexivity can be divided in first-order and second-order reflexivity (Grin & van de Graaf, 1996; Schot & Rip, 1997; Schuurbiers, 2011; van de Poel & Zwart, 2010). First-order reflection *"takes place within the boundaries of a value system and background theories"* (van de Poel & Zwart, 2010, p. 180) and *"deals with technological development paths that are considered necessary to attain an artifact with the desired meaning."* (Grin & van de Graaf, 1996, p. 302). This value system can contain existing scientific and technological theories, practical knowledge, appreciative systems (Grin & van de Graaf, 1996), as well as the more formal regulatory systems. Second-order reflection occurs without taking the value system for granted, moreover scrutinizes this value system, and is *"most likely to occur between actors from different kinds of communities, such as policy coalitions, managers, or engineers, because these actors are not antagonistic and are interested in different parts of reality"* (Grin & van de Graaf, 1996; van de Poel & Zwart, 2010, p. 180).

From a managerial perspective Grin & van de Graaf (1996) offer some insights on the implications of first- and second-order reflexivity for a manager's strategy to formulate a preferred identity within the market. With first-order reflexivity circumstances internal and external to the firm can be interpreted as a challenge which has to be mapped against the evaluation of alternative management measures. With second-order reflexivity besides the firm's identity also the value system with its existing theories, knowledge, and appreciative systems that concern the market, micro- and macro economy, organizational theory, management paradigms and so on.

Another perspective on reflexivity is provided through the concept of legitimacy: *"Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions."* (Suchman, 1995, p. 574). Aldrich & Ruef (2006) highlight two different parts of legitimacy: cognitive and socio-political. Especially socio-political legitimacy gives insight in a firm's potential drivers for reflexivity: *"Socio-political legitimacy refers to the acceptance by key stakeholders, the general public, key opinion leaders, and government officials of a new venture as appropriate and right. It has two components: moral acceptance, referring to conformity with cultural norms and values, and regulatory acceptance, referring to conformity with governmental rules and regulations."* (Aldrich & Ruef, 2006, p. 186)

2.1.1.3 *INCLUSION*

Continuing on the inclusion of stakeholders in the early stages of the innovation process as described in the anticipation part, *"opening up visions, purposes, questions, and dilemmas to broad, collective deliberation through processes of dialogue, engagement, and debate (…) allows for the introduction of a broad range of perspectives to reframe issues and the identification of areas of potential contestation."* (Owen et al., 2013, p. 38) Such dialogs can be qualitatively assessed by addressing three criteria as proposed by Callon, Lascoumes, & Barthe (2009): (1) intensity, addressing the upstream consultation of members of the pub-

lic and the amount of care that was invested in the composition of the group, (2) openness, addressing the diversity and way the public is represented in the group, and (3) quality, addressing the gravity and continuity of the discussion.

Processes of dialogue, engagement, and debate have to be accommodated with an analysis of the rationales and motivations of the commissioning, facilitating, and public participating agencies (Stilgoe et al., 2013) underlying appraisal, which could take the form of normative, instrumental, or substantive imperative. A normative imperative meaning a belief that it's the right thing to do is the motivation, a substantive imperative aims at achieving generally better ends, and an instrumental imperative aims at securing particular ends. (Stirling, 2007)

Although this process of inclusion by dialogue, engagement, and debate is important for a company from a RI point of view, it requires substantial resources in terms of time, financial and human resources to identify and manage relevant stakeholders, engage in negotiations and monitor their satisfaction (King, 2007; Orlitzky, Siegel, & Waldman, 2011), which are often not the abundantly available resources for particularly start-ups. Jenkins (2006) argues that, with respect to stakeholder engagement for small firms, stakeholder relationships may be informal of nature, can be based on trust or engaged from intuition or personal perspectives.

2.1.1.4 RESPONSIVENESS

Responsible Innovation is an iterative and on-going process during the entire innovation process. Therefore, challenges posed by adoption of the abovementioned three dimensions of RI have to be addressed in this process, hence this fourth dimension. Although public engagement is a necessary part of responsible innovation, the capacity to empower social considerations in the innovation process is still limited. Therefore, the innovation process requires being as responsive as possible. (Stilgoe et al., 2013) Responsiveness is about adjusting courses of action while recognizing the lack of knowledge and control (Pellizzoni, 2004). Engaging into a process of iterative, inclusive, and adaptive learning, through effective mechanisms of participatory and anticipatory governance should influence the trajectory and pace of innovation (Owen et al., 2013). *"Responsible innovation requires a capacity to change shape or direction in response to stakeholder and public values and changing circumstances."* (Stilgoe et al., 2013, p. 1572)

All these statements indicate that responsiveness is required as new information enters the scene in the innovation process. Here the importance of absorptive capacity, as described in chapter 2.1.1.1, for small firms becomes clear again. As start-ups often lack the resources to engage in structured participatory and anticipatory governance the absorptive capacity by the innovators increases the start-ups ability to gather new knowledge concerning the innovation and its market and structure the responsive approach appropriately.

2.1.2 ABSORPTIVE CAPACITY

The concept of absorptive capacity has been introduced in some of the previous paragraphs and potentially provides insight in the capacity of a firm to innovate responsibly based on previous experience and acquired knowledge. This form of learning is different from the general 'learning-by-doing', allowing firms to improve their current business practice while absorptive capacity *"allows firms to learn to do something quite different"* (Lane,

Koka, & Pathak, 2006, p. 836). Absorptive capacity refers to *"the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends"* (Cohen & Levinthal, 1990, p. 128). Cohen & Levinthal (1990) argue that this absorptive capacity is largely a function of a firm's level of prior related knowledge. The firm's level of absorptive capacity depends on the absorptive capacity of its individual members and especially those who *"stand at the interface of either the firm and the external environment or at the interface between subunits within the firm."* (Cohen & Levinthal, 1990, p. 132)*.*

Liao, Welsch, & Stoica (2003) have found that firms, specifically small and medium-sized growth-oriented firms, with a well-developed absorptive capacity can be expected to have an increased organizational responsiveness. Especially the external knowledge acquisition and intra-firm knowledge dissemination showed a positive relation to organizational responsiveness.

The study by Scholten & van der Duin (2015) relates the concepts of RI to absorptive capacity specifically for start-ups. This study is primarily focused on the effects of RI on absorptive capacity and the study shows that start-ups with higher levels of stakeholder engagement and social responsiveness have a higher potential absorptive capacity, which refers to the recognition and acquisition of external knowledge. However, the reverse effects of absorptive capacity on RI have not been proven. One can argue that firms with a high absorptive capacity are better capable of anticipation on future impacts and inclusion of stakeholder values in the innovation process, as they are capable of acquiring external knowledge and transform and exploit this knowledge effectively.

2.1.3 RESPONSIBLE INNOVATION RELATED TO CORPORATE SOCIAL RESPONSIBILITY

Although Responsible Innovation is rapidly gaining attention from researchers and practitioners, when it comes to social responsible behaviour in business, the Corporate Social Responsibility (CSR) (Dutch: Maatschappelijk Verantwoord Ondernemen (MVO)) paradigm is integrated to a significantly higher extent in modern business practice (Porter & Kramer, 2006). However, both concepts are often mentioned in responsible corporate behaviour research and tend to present some overlap herein. Therefore, an analysis of the relation between the two concepts is appropriate.

In the first chapter of the book *Responsible Innovation 2* (Koops, Oosterlaken, Romijn, van den Hoven, & Swierstra, 2015), Koops et al. argues that responsible innovation is a close relative of, and shares a strong family resemblance with corporate social responsibility. Where Koops et al. restrained claims that responsible innovation shares common ground with CSR, Malsch (2012) argues that responsible innovation predominantly extends the scope of CSR towards the development of new technologies and products. An adequate balance between those views into the relationship between RI and CSR is presented by Pellé & Reber (2015) arguing that responsible innovation "brings together the democratic stance of participatory technological assessment (PTA) and the idea of responsibility contained in CSR." (p. 107).

When exploring CSR as a concept further, existing literature is not entirely unambiguous about the meaning of social responsibility in business and society. However, the common dimension CSR researchers found is the extension of corporate governance beyond the mere focus on profit with the responsibility to integrate considerations of social impact (Pellé & Reber, 2015). Schwartz & Carroll (2003) propose a model of three central CSR do-

mains: economic (e.g. making a profit), legal (e.g. complying with national or international laws), and ethical (e.g. complying with existing ethical norms). Every (CSR) activity within a corporation should be classifiable by one of those domains. Pavie, Scholten, & Carthy (2014) present a slightly shifted focus of CSR, in line with the European Commission's statement that businesses should integrate economic, social, and environmental impacts into their operations.

Pellé & Reber (2015) also argue what the similarities and differences of CSR and RI are. On the overlap between the two concepts they argue that they both "align processes of production, innovation and research with societal needs, interests and values." and "rely on the individual virtue of top managers, employees, innovators, etc. as well as on the systemic capacity of production and innovation processes to allow their outputs to be shaped according to ethical and social desirability" (p. 110). However, on the shortfalls of CSR, Pellé & Reber argue that "CSR is sometimes based on too optimistic a vision of knowledge and rationality, where the outcomes of acts and decisions are seen to be identifiable and predictable." (p. 110), while innovation predominantly has to deal with high uncertainty and unpredictability. Another limitation often encountered with integration of CSR in businesses is that "firms tend to implement a restrictive conception of responsibility that is limited to compliance with existing norms." (p. 111) while RI aims at adaptation of the innovation to changing social environments and values beyond only the compliance with existing norms. (Pellé & Reber, 2015)

Combining all perspectives, the key differences between RI and CSR are with the focus and the sense of rationality. CSR focuses on a range of business related aspects within a more or less familiar value system, often solvable with accessible existing methods. The European Commission issued a handbook on CSR for SME's (European commission, 2013), indicating the possible practical approach to implement CSR. Although social responsibility is the key driver in this approach as well as in RI, innovation is only mentioned as an aspect of business. The focus of RI is explicitly on the innovation process, utilizing interaction with stakeholders and a responsive approach to new knowledge. RI furthermore departs from a viewpoint where the value system is not taken for granted whereas CSR continues from a more omniscient point of view, resulting in rationally addressable issues. Lastly, as CSR is concerned with the internal and external business perspectives, this approach can also be adopted by non-technology based firms whereas RI is particularly concerned with the technology and innovation aspect of businesses.

2.2 PLATFORMS AND GOVERNANCE

This thesis focuses on responsible innovation specifically in financial platforms with the use of platform governance principles. In order to get a sound understanding of what platform governance entails, existing knowledge on platforms and governance will separately be covered in this section.

2.2.1 PLATFORM DESCRIPTION

One of the key characteristics of a platform is the two-sided architecture, facilitating interaction between two separate groups (De Reuver, Sørensen, & Basole, 2016; Evans & Schalensee, 2007; Tiwana, 2014) of customers and 'independent' providers of complementary products and/or services in the ecosystem (De Reuver, Bouwman, Prieto, & Visser,

2011; Keijzer-Broers, de Reuver, & Guldemond, 2015; Rochet & Tirole, 2003; Tiwana, Konsynski, & Bush, 2010). Hagiu (2009) defines a two-sided platform as enabling "customers to purchase, access, and use a variety of products supplied by independent producers: software systems, internet portals, mobile networks, shopping centres etc." (p. 2). This last quote highlights the existing wide variety of different types of platforms, ranging from technical platforms (e.g. Windows and Wordpress), to sociotechnical platforms (e.g. Facebook and Skype) and organizational platforms (e.g. malls). Besides the two-sided architecture that these different types of platforms have in common, another characteristic is the way in which content ownership is arranged. In platform architectures, the platform owner is seldom the owner of the content which is featured on the platform (Tiwana, 2014). Amrit Tiwana distinguishes some structural differences in his book *Platform Ecosystems: Aligning Architecture, Governance and Strategy* (2014). He clarifies the structural differences in the sense that, although products and services use complex supply chains, platforms are generally networks with an even higher complexity, diversity and fluidness. Furthermore, the partial control and ownership of the platform by the platform owner indicate structural complexities in platform ecosystems. Those complexities require adjusted management styles in order to adjust the trajectory of the platform in the desired direction. This *"requires control without ownership, orchestration without authority, and direction without enough expertise by the platform owner."* (Tiwana, 2014, p. 52)

The success of most platforms depends, not only on the owner, but also heavily on the ecosystem partners with their complementary products or services. Platform owners often cannot foresee the new capabilities developed by the creative product or service developers (Tiwana et al., 2010).

2.2.2 PLATFORM GOVERNANCE

When it comes to platform governance, Tiwana argues that architectural decoupling of the platform and the content, in terms of a modular architecture, should be mirrored in the division of authority and responsibility across the platform ecosystem. By structuring the responsibility issue in such a way, responsibility of the content just lies with the content provider and 'only' the responsibility for the platform architecture and governance has to be taken by the platform owner. Mechanisms to control this decoupled architecture should cover two goals: ensuring alignment of the content provider's content with the direction and values of the platform and facilitating coordination between the platform owner and content providers. Tiwana explains four control mechanisms that can help to meet those two goals; gatekeeping, process control, metrics-based control, and relational control. The first three of those mechanisms correspond to the three control mechanism categories as proposed by Mukhopadhyay, de Reuver, and Bouwman (2015); input, behavioural and output control of the platform. Input control involves the acceptance criteria to determine what parties and what products are allowed on the platform. Behavioural control involves the degree to which the platform users comply with predefined processes, rules and methods. Output control determines the degree to which platform users meet the prescribed performance standards. Relational control is a more informal method of control and refers to the degree to which the platform owner and users strive for the same goal and share the same norms and values. Effectiveness of the control mechanisms depends on the platform owner's primary objectives. Although this study is specifically focused on mobile software plat-

forms, the overarching character of the four control groups can be applicable to all sorts of platform governance systems.

Other existing research into effective platform governance concerns the boundary resources model. *"Boundary resources play a critical role in managing the tension as a firm that owns the infrastructure can secure its control over the service system while independent firms can participate in the service system."* (Eaton, Elaluf-Calderwood, Sørensen, & Yoo, 2015, p. 217) According to Ghazawneh & Henfridsson (2013), boundary resources refer to *"the software tools and regulations that serve as the interface for the arm's- length relationship between the platform owner and the application developer"* (p. 174). Examples of boundary resources are Apple's Software Development Kit (SDK) which provides software developers with the tools, API's, and rules to develop applications in accordance with the platform's (in this case Mac OS or iOS) guidelines. With those boundary resources, the platform owner can control which resources are- and are not available for developers and can steer the behaviour of developers by forcing compliance with certain methods and conditions.

When focusing on the role of platform governance in the start-up phase of a new platform, (Owen et al., 2013) notes, based on Collingridge (1980), that at the early stages of innovation there may be *"most opportunity to shape and control innovation, with far fewer costs and vested interests; but it is precisely at these early stages that we have little or no evidence to make the case for control."* (p. 34). Therefore, considerations of early implementation of control mechanisms in the platform architecture will potentially lead to complicated trade-offs. This trade-off is effectively explained by Owen: *"If the dangers of lock in are the price of waiting for the accumulation of knowledge before action, then the risks of missed opportunity are the price of acting too early, of being too precautionary."* (p. 34)

2.3 RESPONSIBLE INNOVATION IN FINANCIAL SERVICES

The term "financial services" is often used with slightly inconsistent contexts in existing literature. Muniesa & Lenglet (2013) cover the topic of responsible innovation in finance in their article which is featured in the first edition of the book *Responsible Innovation* by Owen et al. The authors claim to address a structured approach to improve responsible innovation efforts in the financial services industry. However, "financial services" is here used to grasp financial products and solutions and the accompanying service from the product's parent company in one expression. The focus of the financial services industry in this thesis however is somewhat diverted from the above interpretation in the sense that "financial services" here often involve financial transaction services which often accompanies the transaction of a good or service which isn't necessarily financial.

For clarity reasons in this literature review, financial services are defined as the process by which a consumer or business acquires a financial good, in fact it is a task. The special focus in this research is on payment service providers, which enable the transfer of funds between a creditor and a debtor (Lassignardie & Brown, 2013). Financial products or goods on the other hand are not tasks, in the sense of the payment services above, but rather things, e.g. a mortgage, loan, security, insurance policy or bond. (Ross, 2015)

Muniesa & Lenglet (2013) base the relevance of their article on the notion the financial services industry has not yet developed a culture of public assessment and technical precaution where other sectors such as biomedicine, nanotechnology and telecommunica-

tions have. This claim could be read in the context of the argument of the financial crisis of the late 2000s being one of the indicators of irresponsibility in the financial sector, however, no empirical evidence is recalled to support this claim.

Although the argument for the lacking focus on Responsible Innovation in finance comes across somewhat weak, the presentation of the different perspectives on RI in finance, drawn from Armstrong et al. (2012), provides a structured insight in the different functional areas of the Responsible Innovation paradigm. Reflection on the role of New Product Committee's inside banks and investment firms resulted in seven perspectives of responsible innovation in finance: (1) perspective on function, (2) perspective on moral rules, (3) perspective on internalized values, (4) perspective on aggregate consequences, (5) perspective on accountability, (6) perspective on precaution, (7) perspective on democracy. Although the focus of New Product Committee's is particularly on financial products and goods, the provided seven perspectives are general enough to be potentially applicable in other domains including the financial services domain.

Adopting New Product Committees to incorporate RI in the organization is a fairly institutionalized approach. Other sociologists and researchers have advised to adopt the Responsible Innovation approach and mind-set on a broader organizational level. The, from industrial design studies deducted, Design Thinking approach could give guidance in finding the right balance in responsible development for the organisation as well as its innovations. Linking performance, innovation and responsibility across all levels of the organisational structure; complying with the existing law, anticipating future regulation, treating the value chain as an ecosystem in order to involve all actors, and innovating responsibly. A balanced consideration of those factors could increase the successful development of Responsible Innovation across the organization according to Pavie & Carthy (2013).

A more practical role of responsible innovation could be found in the management of risk and privacy implications for consumers due to payment innovations. Ross Anderson from the Cambridge University wrote an article touching upon the challenges that regulators face in protecting the consumer's interests and privacy with the current shift of payment systems from the traditional payment operators towards the wide variety of nonbank and niche players that start offering payment systems. Instances of fraud are likely to increase in number due to increased amounts of online transactions and the existing regulatory frameworks are unlikely to maintain control over payment systems due to innovative new payment services, potentially decreasing consumer protection. Anderson argues in favour of increased governmental control, not only card transactions but all transaction channels should be monitored by financial supervisors, in order to increase the effectiveness to address fraud. (Anderson, 2012) However, this regulatory approach aims at curing fraudulent issues after the fact, where efforts of active responsibility by the innovative companies can be aimed at preventing the cases of fraud beforehand. Furthermore, increased regulatory measures could decrease the innovators sense of urgency to address the issue, because there is already a sufficient level of consumer protection through regulation. Anderson also argues in line with this thought, enlightening that self-interest of payment service providers may be quicker than legislation.

2.4 OVERVIEW

The literature review shows that *Responsible Innovation* as a concept has received significant attention from researchers and scholars over the past years. Although the operational implications of the concept on innovation processes can become quite comprehensive, most researchers agree with the framework as proposed by Owen, Stilgoe, Macnaghten, Gorman, & Fisher (2013), saying that RI should be a continuous commitment to be *anticipatory, reflective, deliberative and responsive*. One key factor for all four dimensions is opening up the innovation process by engaging in interaction with external stakeholders in order to integrate RI throughout the innovation process. However, this often requires significant time, financial and human resources, which are often scarce resources for technology-based start-ups. The vast majority of previous research on RI has reasoned from the perspective of medium to large corporations or structured innovation processes. Very little research has been conducted towards the implications of RI in start-ups. Scholten & van der Duin (2015) refer to interrelation between *absorptive capacity* and RI and show that this organizational capacity to learn from external resources combined with previously acquired knowledge and apply this effectively in business practices is an important capability for start-ups in their search for active responsibility. However, this research is primarily focussed at investigating the effect of RI practices on absorptive capacity whereas for this research the reversed relationship is particularly interesting. As with research to RI, also the vast majority of research on absorptive capacity has addressed this concept in the setting of mature businesses where structured knowledge acquisition and transformation is presumably a more real challenge compared to start-ups, as a start-up inevitably requires knowledge acquisition and transformation when entering a market with a new business.

The particular focus on platform-based start-ups introduces some characteristics for this type of architecture. The two-sided market increases complexity with respect to ownership and control. *Platform control mechanisms* (input-, behavioural-, output-, and relational control and boundary resources) are therefore important for the platform owner to remain in control while maintaining the functionality offered by the platform. However, the Collingridge dilemma shows the difficulty of making a case for control in the early stages of innovation while most opportunity for introduction of effective control mechanisms is in these low maturity stages.

In order to structure the concepts prior research, I propose that platform control mechanisms are coupled to all four dimensions of Responsible Innovation, as shown in Figure 1. The design of a (FinTech) platform will inevitably require some form of platform governance design considerations within those four dimensions of RI. The innovator will try to *anticipate* future use (and misuse) of the platform and will start development of control mechanisms in order to maintain control over the platform. *Reflexivity* requires some sort of scrutiny of the value systems at play, determining what behaviour will be tolerated and what not. In the *inclusion* phase, stakeholders have a position to influence the platform governance. When including launching customers in the design stages of the platform, those parties can negotiate the implementation of certain control mechanisms and the design of boundary resources. Lastly, *responsiveness* of the platform, in particular the control mechanisms, with respect to new challenges that emerge either from the other three RI dimensions or from market developments.

The focus of this research on particularly start-ups increases the importance of several variables in the development of FinTech platforms. For example, the limited availability of resources and focus on accelerated growth potentially influences the integration of the four dimensions of RI to some extent and affects the priority to develop platform control mechanisms throughout the innovation trajectory.

As the existing insights in the setup, regulation, supervision and challenges of the FinTech sector are primarily covered by industry expert reports and governmental agencies, those topics will be discussed in the next chapter of this thesis.
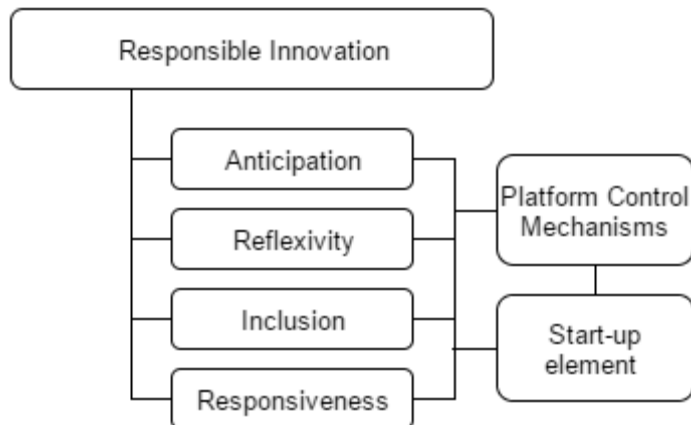

Figure 1: Research perspective with concepts from literature

3   THE FINTECH SECTOR

Continuous development in information and communication technology over the past decade have led to a rapid expansion and development of new and innovative financial services, gathered within the term FinTech (Jun & Yeo, 2016). Although innovation takes place in multiple different areas of finance, particularly the payment services niche, in which the units of analysis of this research are situated, has become extremely competitive. Globally the number of non-cash payments grows, and has grown, since 2009 with approx. 7.5% annually (Lees & King, 2015). Within this niche some trends have entered the scene, increasing the impact of the FinTech sector on modern payment methods.

Payment acquisition has emerged as a key area for competition within the FinTech sector. Payment acquisition refers to enabling commerce by bringing selling and buying party together, allowing a variety of payment methods based on customer preference and the facilitation of commerce in any location, channel or currency. Particularly the customer-to-business segment is moving towards facilitation of payment anywhere, any time and in any form. Furthermore, the transactional component in the payment value chain for FinTech companies is becoming a commodity while customer engagement has become a differentiator for payment acquisitionists. (Lassignardie & Brown, 2013)

Another trend within the payment-as-a-service sector is immediate payment. From a consumer perspective this entails the account-to-account payment transfer with immediate availability of the transferred funds and instant confirmation of the transfer within seconds. (Lees & King, 2015)

Jun & Yeo (2016, p. 160) note with respect to providing retail payment services by a payment platform that it "may not need to own all the necessary facilities and related licenses to provide payment services to consumers, provided it can access and use the facilities of other platforms.". This enables the exploitation of different parts of the payment value chain by a variety of banks and non-banks. Particularly for non-banks, this separation of different parts of the payment value chain introduces opportunities to add value as a front-end service provider. According to Busch & Moreno (2014) non-banks "are taking advantage by proceeding aggressively with digital innovations and capturing more and more of the banking value chain." This value chain consists of front-end-, back-end-, infrastructure-, and end-to-end payment service providers (CPMI, 2014) (Committee on Payments and Market Infrastructures of the Bank for International Settlements of which the Dutch central bank, De Nederlandsche Bank (DNB) is a member). Front-end providers offer pre-transaction, authorization, and post-transaction services while relying on the back-end and infrastructure providers for the delivering the remainder of the payment value chain. End-to-end providers include banks, credit card companies, and newer payment platforms like PayPal (Jun & Yeo, 2016). The interaction between the different players within the payment value chain introduces cross-platform externalities. CPSS (2012) (Committee on Payment and Settlement Systems of the Bank for International Settlements) explains these externalities as increased value of the service for all consumers with each additional merchant that accepts such a payment service, and vice versa.

3.1 REGULATION OF FINTECH

Now the core aspects of the FinTech, and particularly the payment services sector with the FinTech industry, are established, the regulatory drivers or barriers to this sector will be examined. CPSS (2012) proposes two prominent rationales for payment market regulation. The first rationale entails securing the market. In order to enter the payment services market, payment service providers need to be trustworthy. The second focuses on market efficiency. As conventional payment methods largely depend on incumbent banks, regulators may try to open the market up by lowering requirements for new payment service suppliers. Also, as the redistribution of costs and revenue between stakeholders in the payment value chain may be inefficient, regulators can intervene e.g. by imposing interchange fees.

The national central banks are a key authority with respect to payment service providers and may fulfil roles as catalyst, overseer and system operator. Other authorities that may play a role in the regulation of non-bank payment service providers are consumer protection authorities, competition authorities, telecom regulators (mainly for mobile payment services), law enforcement agencies and other specialized governmental agencies. (CPMI, 2014)

In the Netherlands, active regulation concerning payment services is dominated by the SEPA (Single Euro Payments Area) initiative, initiated by the EU and European banks (Lassignardie & Brown, 2013). SEPA mainly targets incumbent banks; however, the subsequent Payment Service Directive (PSD), issued in 2007, specifically addressed the broader range of non-bank payment services. This directive forms the basis on which the Dutch regulation for payment services is based (Timmenga, 2012). The aim of this framework is to *"increase competition, innovation and security in an integrated payment service market by allowing licensed non-banks to offer payment services alongside banks, under a lighter regulatory regime that takes due account of the risks inherent in their specific business models."* (CPMI, 2014, p. 32) This directive included a new group of payment service providers that can offer payment services without being a bank and thus do not have to cover the range of services provided by a bank, called "payment institutions" (CPSS, 2012). However, the PSD directive is only applicable when a service provider's core business consists of offering payment services, which is not always obvious when considering front-end service providers as discussed above. The PSD doesn't provide a measure for determining what the core business of a firm is, leaving a grey area open for diverse interpretation. (Timmenga, 2012)

As of October 2015, the European Parliament adopted the revised Directive on Payment Services, PSD2. This new directive has to be implemented by national governments which is expected to take at least until 2017 or 2018 (Spelier, 2015). Arguably the PSD2 feature with the highest impact is that banks have to provide access to account information, increasing the opportunities for new value adding services by FinTech companies (Tuk, 2016). Consumers are therefore not anymore tied to their bank to initiate payments from their bank account (DeNederlandscheBank, 2016), which is expected to dramatically increase the innovativeness of the FinTech sector in Europe (Hamerlinck, 2016).

Whether or not these regulatory frameworks are driving or hindering innovation in the FinTech sector is open for debate. The expectation that the new directive PSD2 will initiate innovativeness of FinTech companies could be explained as driving innovation. However, the lack of e.g. free access to account information, to be initiated by PSD2, in the current

directive could also be explained as lag in legislation and thus hindering innovation in a sense.

3.2 SUPERVISION OF THE FINTECH SECTOR

Although the regulatory frameworks are there to guide the activities within the FinTech industry, monitoring these activities and intervention capabilities are still necessary. Supervision and innovation are not the most obvious marriage in the financial domain, "On the one hand you want to stimulate innovation for lower prices, better products and more diversity, but on the other hand you can't let anyone take its own course. In the financial sector it's all about trust. You don't want it to become the wild west." Says Olaf Sleijpen, division director Supervision and Policy at the Dutch Central Bank (DNB). (Betlem & Keuning, 2016)

In the Netherlands, three authorities are concerned with the supervision of companies within the financial sector, namely the DNB (De Nederlandsche Bank), AFM (Autoriteit Financiële Markten) and the ACM (Auroriteit Consument en Markt). Of those three the AFM is mainly concerned with savings, investments, insurance and loans, while the other financial domains, including payment services are supervised by the DNB (Keuning, 2016). ACM is particularly involved with supervision of Dutch and European competition rules regarding detection of cartels and misuse of a party's dominant position. ACM has the power to enforce fines in those cases. (ACM, 2016)

The DNB acknowledges the increase of new, innovative payment services. In its vision on supervision for 2014 – 2018 the DNB claims: *"DNB supervises through thematic studies based largely on sharp data analysis and reprocessing of signals"* (DNB, 2014, p. 15). Howeverer, the CTO of Sharepay and Mempay claimed in an interview for this research regarding the supervision policy by the DNB: *"Supervisors are primarily focused on expansion. There are too many small initiatives they need to monitor. (…) The supervisors' fee goes up in order to initiate consolidation."* These proposed and perceived efforts for supervision don't completely align and one could argue that the DNB is potentially focusing more on scale and efficiency rather than the quality of the supervision efforts in this particular domain.

3.3 RESPONSIBILITY CHALLENGES FOR FINTECH COMPANIES

Although there is the implementation of the PSD frameworks in national regulatory systems, legislation will never fully address all potential issues in a certain domain. Some frequent occurring responsibility challenges for FinTech companies will be discussed.

3.3.1 FRAUD

One of the key challenges for FinTech companies is adequately anticipate and respond to fraud. Banks have invested heavily in data security measures over the past years. Information security departments have increased in size fast in order to keep criminal activities outside. New technologies across multiple domains have a downside: criminals also get access to new technologies and cause more and more misery. Due to the increased amount of reports of phishing, malware, crypto lockers, ransomware, hackers, DDos attacks and so on, supervisors demanded an increased focus from banks on cyber security in alignment with standard frameworks like COBIT, ISO and NIST (Verbrugge, 2016).

"The proliferation of origination channels and the risk of exposure (due to anywhere origination and acceptance) requires constant investment to ensure fraud can be detected and addressed." (Lassignardie & Brown, 2013, p. 46) However, the required investments to detect and address fraud adequately are probably not within the capabilities and resources of the majority of FinTech companies.

3.3.2 PRIVACY

Privacy concerns nowadays are gaining attention rapidly. The personal and privacy sensitive data gathering activities by all kinds of agencies is reaching overwhelming proportions and ways of leveraging big data for competitive gains are getting more and more easily accessible. Consumers are generally unaware what data is gathered and can't get a grasp of how the data is handled and for what purposes this data is used or even exchanged with other parties in order to increase the value of the information.

The current rise of the FinTech industry and the accompanying pressure on conventional services by banks pushes the latter to re-invent certain parts of their business in order to compete with the new innovative initiatives. In this process, large amounts of privacy sensitive data can be seen as both a potential benefit to be leveraged in new products and services to compete with new FinTech companies and as a potential worrisome factor to be protected from misuse. In this context, new FinTech companies are even argued to decrease privacy concerns when it comes to new financial products or services due to the fact that those new companies generally don't possess those amounts of data, leaving them to come up with a product that isn't dependent on this specific resource. FinTech companies often gain their customer's trust by positioning the service or product with simplicity and transparency as core values. (Prosser, 2016)

Although the privacy concerns with respect to FinTech companies will be relatively less urgent compared to privacy concerns with respect to data acquired by banks, privacy still remains a topic to be carefully integrated in the design of new FinTech products and services. However, generally speaking this is supposed to be not significantly different from privacy concerns with which the majority of other companies that deal with personal data on a daily basis, especially in e-business environments, have to deal with.

4 RESEARCH DESIGN

This chapter will outline the background to the conducted research and will provide insight in the chosen methods as well as the units of analysis and procedures for data collection and analysis.

4.1 RESEARCH METHODS

As stated in Chapter 1, this research is designed as a qualitative, explorative case study. The particular focus of this research in discovering and explaining how the different concepts are related requires an in depth understanding of these concepts in practice. A case study is in this case appropriate according to Verschuren & Doorewaard (2010, p. 178): *"the researcher tries to gain a profound and full insight into one or several objects or processes that are confined in time and space.".* The characteristics of a case study, provided by Verschuren & Doorewaard (2010) are as follows: (1) a small domain with a small number of research units, (2) intensive data generation, (3) depth focused rather than breadth, (4) a selective sample, (5) an assertion concerning the object as a whole, (6) open observation on site, (7) qualitative data and research methods. The research of this thesis is structured according to the case study design principles depicted by Carroll & Swatman (2000) and Yin (2009).

Carroll & Swatman (2000) present a methodological framework for Information Systems (IS) researchers to undertake theory building research with what they call a 'structured-case'. Structured in this case refers to three structural components: (1) conceptual framework, (2) pre-defined research cycle, and (3) a literature-based scrutiny of the research findings. Although Carroll & Swatman strive for theory building case studies, which is not the focus of this research, the basis for structuring such a research can be helpful in obtaining an effective research design.

Yin (2009) describes the case study research design to consist of five components: (1) research question, (2) propositions, (3) the unit(s) of analysis, (4) logic linking the data to the propositions, and (5) criteria for interpreting the findings. However, following Yin, an exploratory research, like this thesis, may have no propositions though should have some purpose. Therefore, in this research design the research questions, purpose, units of analysis, and the criteria for judging when the exploratory research will be successful are addressed.

4.2 RESEARCH FRAMEWORK

The explorative nature of this research requires a research framework that allows for a certain degree of openness to support iterative cycles. Therefore the research is structured as depicted in Figure 2. The theoretical foundation of the research comes from the literature review, supplemented with the desk research. The findings from these two parts will form the perspective of this research which will become visible in the interview structure in the case study. The findings from the case and the theoretical research will be combined in an analysis which will induce the discussion and conclusion phase of this research.
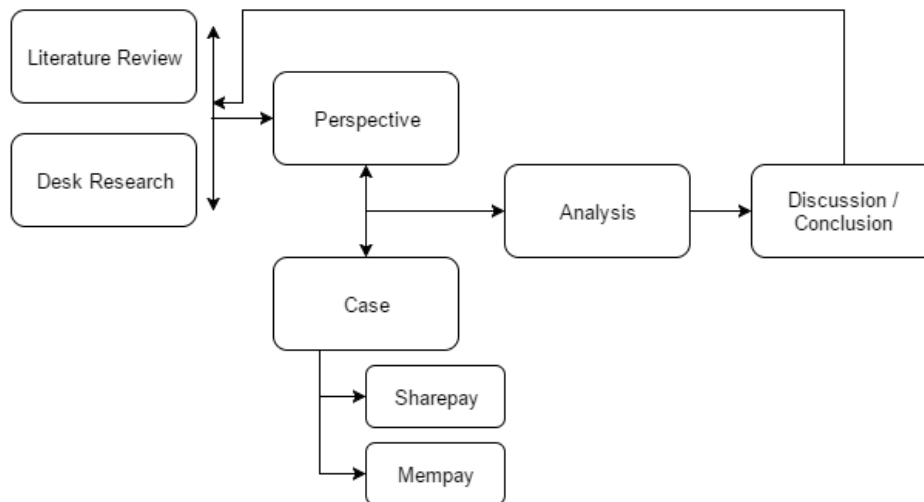
Figure 2 Research Framework

4.3 PURPOSE

As the exploratory nature of this study results in the absence of verifiable proposi-
tions, the purpose which can be verified after this study on whether or not it's obtained has
to be specified. Building upon the theoretical concepts and literature review of the previous
chapters, combined with the research objective and questions, the purpose of this research
is specified as follows.

The answer to the research question should provide insight in the degree to which the
four dimensions of RI are implemented in the innovation processes of the cases as well as
how and why related decisions in the innovation processes are brought about. In this re-
spect especially the role of the design of platform control mechanisms as well as the specific
challenges faced by start-ups should become clear. Regarding the role of platform control
mechanisms insight should be provided to which control mechanisms are present and why
and how these mechanisms are implemented. Furthermore, these control mechanisms as
well as the way in which they were realised should be related to the RI dimensions in order
to provide insight in their mutual relation. Regarding the specific challenges faced by and the
maturity related aspects of start-ups, insight should be provided in how and why these chal-
lenges and aspects affect the entrepreneur's view on responsibility and the platform's im-
plementation of the RI dimensions.

4.4 UNITS OF ANALYSIS

The two FinTech start-ups that form the cases for this research are Sharepay and
Mempay, which are owned by the same founders. The four owners of those two companies
also run two other companies, called CIB (Centraal Invorderings Bureau) and Billink. All com-
panies are in the FinTech sector. Of the four companies, CIB is the largest, employing about
40 FTE's, and has its core business in collecting overdue payments from all sorts of clients.
Billink provides a post-payment solution for web shops. Mempay provides a platform for
subscription sales of products. Sharepay provides a comparable platform to that of Mempay,
adding an affiliate networking platform and focussing on digital products. All four companies
are located in the same building however are positioned in the market as explicitly separat-
ed entities. From the four companies only Sharepay and Mempay will be investigated due to
their similarities in terms of platform architecture and maturity level as a start-up. Both

Sharepay and Mempay are positioned in the payment acquisition segment, a niche within the FinTech industry as described in Chapter 3, referring to the parties which enable commerce by bringing selling and buying party together, offering different payment methods and supporting commerce from any location, channel or currency. The platforms particularly fulfil the role of a front-end payment service provider as described in Chapter 3. Front-end payment service providers particularly focus on pre-transaction, authorization, and post-transaction services while the back-end payment handling and infrastructure is provided by other parties within the payment value chain.

Although the two companies are owned by the same owners and share very familiar platform architecture, they will still be treated separately due to some distinguishable characteristics. First, the markets they serve differ widely, resulting in different strategies which could affect the choices made in both innovation processes. Furthermore, the challenges faced by the two companies are also different and related to this different market positioning. Also, although the two companies have the same owners, the degree of involvement of the owners with either of the two start-ups differs as well as the employees involved with the companies on a daily basis. Whether or not these differences and similarities do impact the observations will be assessed in the analysis of the case study.

4.5   CASE DESCRIPTIONS

Sharepay

Sharepay is a young start-up, founded in 2013 as a separate entity building on the same technology as Mempay, which was at that time a module within Billink and not yet a separate entity. Sharepay was founded together with two entrepreneurs who were in the market for digital products and were looking for a new platform to suit their needs. These entrepreneurs helped shaping the platform and are currently still co-owner of Sharepay. They became also the first customer (in fact a client, product owner, or content provider, however as the term 'first customer' or 'launching customer' is often used for a first user of a new company's service this term will be used for this particular platform user) of the platform and thus will be referred to as such in this research

Sharepay offers a payment and credit management platform for clients (product owners) trying to market their digital products. Those digital products are for example trainings on how to lose weight, or how to make money on YouTube. Also e-books are on the platform however the majority of products are trainings and courses. One particular feature of this market of digital products is the affiliate marketing system. Affiliate marketers gain a fixed amount or percentage for each sell they generate for the product owner. In order to make sure that the revenue and costs division in such transactions was handled correctly a fairly well developed payment sharing functionality is built in the platform. Clients have the freedom to choose whether they prefer a fixed commission per sale or based on a percentage. Another key feature of the platform is the possibility to split payments over multiple periods and to sell subscriptions, which complicate the calculations on the platform side even further, especially in combination with the commissions for affiliate marketers.

Sharepay's platform offers the complete payment, invoicing, administration and affiliate integration for all transactions. Furthermore, a marketplace, which is only accessible for members of the platform, shows all products that can be sold via the affiliate marketing system.

Currently Sharepay has no employees who work exclusively for Sharepay. However, on average about 2 FTE are invested in the company from the employee pool working for the other three companies, consisting of the four owners, customer service staff and software developers.

Mempay

Mempay founded a bit later in 2013, as a spin-off from Billink, as a result of a customer that was a client of Billink and was looking for a solution for their structural invoicing and administration activities. The technological core of the platform is largely comparable with Sharepay, only without the affiliate marketing functionality. Mempay merely focuses on subscription selling of physical products in particular. Mempay is available as a module for multiple renowned ecommerce platforms.

Besides offering complete payment, invoicing and administration functionality Mempay also has the option to automatically couple the platform's credit management system to the overdue payment collection service of CIB. This gives client an extra service and a higher success rate when it comes to cashing overdue payments.

Mempay employs about 4 FTE from which 1 FTE is exclusively working for Mempay on acquisition and operations. The other 3 FTE are, like Sharepay, divided among the customer support staff, developers and the owners.

4.6 DATA COLLECTION

For the majority of companies that find themselves in the start-up phase, documenting data concerning major decisions, strategies, or procedures is given very low or no priority. This also applies to the units of analysis for this research, virtually no documented data is available that could add to the research data pool.

The primary source of data for this research comes from interviews with executives and employees. The interviewees are selected based on their involvement in the design and exploitation of the platforms and are either involved with one or with both companies. Furthermore, the interviewees are selected in order to cover insights and observations from different disciplines such management, technological, operational, finance, and customer support. Including those insights from different disciplines increases the variety of the gathered data from the interviews in order to increase the validity of the qualitative assessment. Table 1 shows the list of interviewees and their function or expertise within the companies.

Sharepay currently doesn't employ any dedicated staff as all daily tasks are divided among employees from the group of four companies. Therefore the selection of interviewees is done as follows: from the four owners, three were actively involved with the start of Sharepay and will therefore be interviewed. These are the CTO, CEO and commercial director. Furthermore the manager customer support was involved in an early stage as well as the manager finance. These five interviewees are currently the only employees with significant knowledge or experience with Sharepay. Therefore saturation among the existing staff is high. However, in the past also the first customer and an ex-employee were actively involved with the development of Sharepay. This first customer was included in the initial research approach; however, from the conducted interviews it shows that some of the specific challenges and issues were introduced due to the collaboration with this first customer. As these challenges became key in the analysis of the RI dimensions within Sharepay, these

topics were expected to be difficult to discuss with this first customer who is therefore removed from the pool of interviewees. Regarding an ex-employee of Sharepay's, several attempts to make an appointment for an interview were unsuccessful. The interviewees to be interviewed regarding the case of Sharepay therefore are:

1. CTO, co-founder of both Sharepay and Mempay. Regarding Sharepay he was in the early stages involved with both the design of the technical architecture as well as operation aspects. He was in close contact with the first customer and with the software developers.

2. CEO, co-founder of both Sharepay and Mempay. He is not involved with the day-to-day business of Sharepay but merely on a strategic level.

3. Commercial director, co-founder of both Sharepay and Mempay. He was involved with the first customer demand and conceptual design of Sharepay. He is only to a very limited degree involved with Sharepay's day-to-day business

4. Manager customer service was previously on a freelance basis involved with the customer service of Sharepay's first customer. When collaboration of this first customer with Sharepay started she was involved on a freelance basis to take care of Sharepay's customer service. In a later stage she started as full-time manager customer service for Sharepay, Mempay and Billink.

5. Manager finance has been involved with the financial structure of Sharepay and Mempay. He has helped setup the legal as well as financial structure in order to support Sharepay's functionality.

Mempay currently employs one full-time product manager who has been involved with Mempay for the past year. The remainder of the daily tasks are divided among the same multi-employable employees that work for Sharepay. From the four owners, also the CTO, CEO and currently particularly the commercial director are involved with Mempay. Furthermore also the manager customer support and manager finance are involved on a daily basis with Mempay. The manager finance was involved in the early stages of the founding of Mempay whereas the manager customer support picked up Mempay's customer support somewhat later in the process. These six interviewees are currently the only employees with significant knowledge or experience with Mempay and its development and therefore also with Mempay, saturation among the existing staff is high. The interviewees to be interviewed regarding the case of Sharepay therefore are:

1. CTO, co-founder of both Sharepay and Mempay. Regarding Mempay he was in the early stages involved with both the design of the technical architecture as well as operational aspects. Later on in the development process he was more focused on the technical aspects as the operational aspects were moved to the product owner and commercial director.

2. CEO, co-founder of both Sharepay and Mempay. He is not involved with the day-to-day business of Mempay but merely on a strategic level.

3. Commercial director, co-founder of both Sharepay and Mempay. He was involved with the first customer demand and conceptual design of Mempay. He is actively involved with the operational activities of Mempay.

4. Product owner, which a title used in agile software development and not to be mistaken with a product owner who features his product on the Mempay platform,

primarily involved with Mempay as the most operationally active employee and merely in the most recent phases of the company.

5. The Manager customer service was involved with Mempay only from a later stage and merely with the customer service and support activities.

6. The Manager finance has been involved with the financial structure of Sharepay and Mempay. He has helped setup the legal as well as financial structure in order to support Mempay's functionality.

Table 1 Interviewees

Company	Function	Active since
Sharepay	CTO	2013
	CEO	2013
	Commercial director	2013
	Manager finance	2013
	Customer support manager	2013
Mempay	CTO	2013
	CEO	2013
	Commercial director	2013
	Product manager	2015
	Manager finance	2013
	Customer support manager	2014

Due to the explorative and qualitative nature of this research, the interviews are conducted in a semi-structured way. As Yin (2009) explains: interviews are more like guided conversations rather than structured queries. A certain line of inquiry is pursued (see Appendix I Interview structure and example questions) however; the sequence of questions is not rigid. The topics to be covered during the interviews are extracted from the literature review and desk research and are set to be:

- The four dimensions of Responsible Innovation: anticipation, reflexivity, integration, and responsiveness. These dimensions follow from the working definition of Responsible Innovation as provided in chapter 2.1.1.

- Platform control mechanisms: input, output, behavioural, and relational control, as discussed in chapter 2.2.2. Also the boundary resources model as a means of control will be included in the conversations.

- Regulatory compliance and development of applicable regulation. This topic is included because of the expected relation to first- and second order reflexivity as discussed in chapter 2.1.1.2. Furthermore, Responsible Innovation is a form of active responsibility whereas the way regulatory compliance is treated could demonstrate a more passive stance towards responsibility.

- Corporate Social Responsibility (CSR). This concept has a close relation to Responsible Innovation, as explained in chapter 2.1.3. Because of the increased focus on CSR in the past years, this concept is often well known among managers and could add some insights that relate to Responsible Innovation.

- Balance between growth and further development. There is expected to be some tension among the start-ups between accelerated growth and maturing technological development. A decision related to the RI dimensions and platform control is inevitably related to the business perspective and is thus expected to be influenced by this balance which is particularly important for start-ups with limited resources.

Explicit mentioning of core concepts is avoided due to potential misalignment of interpretation of those concepts between the interviewer and interviewees. Although explicit mentioning is avoided, these topics are kept in mind by the researcher during the conversations in order to make sure that enough data concerning these concepts is gathered.

Furthermore, to structure the conversations, the interviewees are first asked to present their views on the development of both companies, what troublesome events have passed the scene from a sociotechnical perspective and how those issues were solved. Those events are then used in the remainder of the interviews to explore for example what role platform control mechanisms have played and how the dimensions of Responsible Innovation were integrated in the business prior to- and after the event. As the topics to be discussed are identical for both cases and the majority of the interviewees are to be interviewed regarding both cases, the collection of data from the interviews on both cases is done in one interview for each interviewee. In order to make sure all topics are covered for both cases the primary guide for the researcher through the conversations was the list of topics while trying to extract insights on these topics for each case individually. The basis for this approach was the expectation that when each case was to be discussed individually, addressing all topics for each case separately, this would come down to two conversations with very similar information form the interviewees, potentially leading to annoyance of the interviewee, which would harm the naturalness of the conversation.

Interaction of the researcher with the interviewees was primarily aimed at keeping the conversations going and steering the conversations alongside the topics of interest by means of follow-up questions. As Schutt & Chambliss (2013) argue: *"Spontaneous statements are more likely to indicate what would have been said had the researcher not been present."* (p. 330).

The interviews are recorded into audio files and short notes are made by the researcher to highlight elements from the conversations. These recordings are then saved redundantly and subjected to the analysis as described in paragraph 4.7.

Due to the researcher's half-year internship with the companies, some valuable experience and observations can contribute in the form of 'direct observation' (Yin, 2009) to the data collection as a second source of data. Especially the collection of tacit information during this time within the group of four companies adds some perspective on the collected data from the interviews and adds new insights that can be difficult to extract from conversations. For instance practical experience with the actual platform itself gives insight in how the platform control mechanisms are shaped and implemented and informal conversations give insight in how individuals perceive certain topics apart from their 'formal' statements in the interviews. Due to this internship, the researcher was familiar with the majority of interviewees and vice versa, causing a more open atmosphere which positively impacts the data collection.

4.7   DATA ANALYSIS

The analysis of the case-study data is covered in two chapters: the results of the gathered data as presented in Chapter 5, and the analysis of these result with respect to the core concepts of this research as presented in Chapter 6.

In order to construct a solid qualitative overview of the findings from the interviews the following approach is applied. After all interviews the researcher gains a broad insight in how the different concepts are identified within the cases, added with insights from the internship with the companies, and what the interviewees' perspectives on the concepts are. This broad overview is expanded with quotes from all interviewees in order to solidify the findings on each concept. As not everything the interviewees have said concerning certain topics can and will be included as a quote in this overview, a codified analysis of the degree of coverage of each topic in the interviews per interviewee is constructed. With this last analysis the researcher attempts to grab the degree in which an interviewee has conveyed insights on the research topics. This provides an extra dimension for analysis of the awareness and insight on the topics across the staff and their different backgrounds.

This coding analysis is executed by first creating a tree structure of the topics, keyword groups and individual keywords. First a tree structure of the topics, coupled to identifiable keywords is constructed and presented in Appendix II Coding table. For each topic the main aspects are extracted from the literature review and keywords for each aspect are derived from commonly linked keywords, synonyms or terminology derived from the interviews. The main aspects are derived as follows.

1. RI Anticipation. *Foreseeing* and *forecasting* of the *intended effects* of one's activities as well as the *unintended effects* which, added with a *probability*, form the *risk* of an activity. An innovator's *expectation* can be made explicit by asking the *'what-if?'* question in the innovation process.

2. RI Reflexivity. For both first- and second-order reflexivity, the *value system* is key to scrutinize one's purposes, *motivations* and impacts. The concept of socio-political legitimacy gives insight in how innovators can refer to *acceptation* and *reputation* for reflexivity.

3. RI Inclusion. Processes of *dialogue*, *engagement* and *debate* in order to open up visions, purposes, questions and dilemmas.

4. RI Responsiveness. *Iteratively addressing* new challenges, *changing course* and *direction* in *response* to new information.

5. CSR. As CSR is a more known concept and shows some overlap as discussed in the literature review, it is included in the interviews be it to a lesser extent. CSR can be split in the aspects *internal* and *external* to the company. The keywords here are derived from the interviews and the researcher's internship within the companies.

6. Start-up element. Due to limited resources a specific challenge for start-ups lies with the balance between *speed*, *profit* and *further development* towards more *product maturity*. Allocating *priority* to the right topics in order to achieve this balance is important.

7. Platform control. The way in which control over the platform is maintained can be structured in *input*, *output*, *behavioural* and *relational control* systems as well as the *boundary resources* model. As the practical implementation of

these mechanisms is not a part of the literature review, the actual present mechanisms are identified through the researcher's internship and interviews and the keywords are chosen accordingly.

8. Regulation. Although regulation is not a core concept of this paper, it is a key factor in the FinTech industry and potentially provides perspective to what kind of responsibility is enforced by means of regulation. Here the *changes* in *regulation* and *supervision* are the key aspects.

Coding is done manually because of limited amount of interviews and in order to cover potential ambiguity in the used terminology by the interviewees. Keywords are only counted when appearing in a new context, leaving the potential use of the same keyword multiple times in one sentence out of the coding results. Furthermore, whenever a statement by an interviewee is found to align with one of the abovementioned topics or aspects, however, without explicit mentioning of one of the coupled keywords this statement will still be included in the count.

After all of the interviews are conducted a three stage analysis of the interview contents, using the audio recordings, is conducted. The first stage consists of composing a short interview summary alongside a first coding of keywords. The second stage consists of a detailed count of coded keywords. The third and last stage consists, besides a third count of coded keywords, also of subtracting characteristic quotes on the research topics. All interviews are subjected successively to the same stage in order to maintain a clear mind, unattached to the characteristics of that specific interviewee and his or her background to prevent interpretative handling of the results. After one stage for all interviews is completed the next stage is started.

The results from the coding efforts are presented in Appendix II Coding table. The numbers in this table are converted to indicators indicating the interviewee's magnitude of provided insights regarding a topic relative to the other interviewees. These indicators are presented per case in the Table 2 and Table 3. A '--' shows that the topic was not covered in the interview, no useful answer was provided in response to the researcher's questions regarding the topic. A '-' shows that the topic was mentioned very briefly and superficial. A '+/-' shows that the topic was present in the conversation; however, no personal insight was conveyed, merely a general stance towards a topic was observed by the researcher. A '+' represents the presence of the topic and personal insights are conveyed. A '++' represents an interviewee's thorough understanding and the conveyance of valuable insights regarding a topic.

The analysis of all gathered data is done by ways of developing a broad case description for both cases (Yin, 2009). The analysis is presented along the four RI dimensions separately and the platform control mechanisms. The implications on these concepts due to the start-up phase of the two companies are integrated in the analysis of these concepts. Analysis will be conducted by interpreting the results along the knowledge from the literature review and FinTech industry analysis.

5 RESULTS

In this chapter the results of the two case studies will be displayed separately. For both cases a summary of the interview analysis results per interviewee are presented, followed by a description of the findings per concept. The description per concept is built up with general findings across all interviews, quotes from the interviewees and the researchers experience during the time with both companies. As most interviewees are involved with both companies and the development of both companies did take place in parallel and with a similar organisational setup the results will show some overlap. In order to keep the displayed results as comprehensive as possible some of the results including quotes from interviewees are shown in the results of both companies. A remark concerning the interview analysis results tables for both cases has to be made as the indications in these tables per respondent per topic are based on the coding results from Appendix II Coding table and are purely an indication to what extend the respondent has commented to a topic.

5.1 SHAREPAY

5.1.1 PROBLEMS AND ISSUES

The first unforeseen issue, addressed by both the CTO, CEO as well as the manager finance, came to light when Sharepay was reprimanded by the financial authorities for not complying with existing regulation concerning the collection of payments from one party, belonging to another party. To avoid penalties, the 'payment-service-provider' license was obtained and financial workflows were adjusted to comply with the regulation. The manager finance explained: *"Regulation has been a hurdle in the sense that at first we focussed at addressing the needs of the customer, while the focus on compliance with legislation and regulation was limited. Eventually we received a letter from the DNB and a request from our accountant to change some methods."*

Another issue, as addressed by all respondents, concerned the low-quality products that were brought on the platform in the early stages. Those products contained for example disputable training methods with almost too-good-to-be-true claims (e.g. get thin within a few days, how to get rich quickly). Although this sometimes was an issue, the allowance of those products onto the platform was for the largest part a very conscious decision. This will be discussed later in the next paragraph.

Sharepay also had problems with fraudulent activities, as was addressed by the CTO and the manager customer service. There have been clients that offered certain products but either didn't deliver exactly what was promised or even did not deliver at all. Furthermore, also the payment schemes were sometimes not unambiguous, resulting in customers having to pay higher monthly payments than advertised in advance. As the Sharepay platform offers split payments and subscriptions with a different amount for the first term, this gave some parties the opportunity to board new customers with low first time payments while weakly communicating the exact amount that would be invoiced the successive months.

5.1.2 RESPONSIBLE INNOVATION

None of the interviewees knew the concept of RI and no comparable approach with a similar aim was either loosely or structured present within the start-up.

Anticipation

All of the interviewees that were involved with Sharepay from the start, the CTO, CEO, commercial director and manager customer service, responded that there has been no conscious anticipation phase. Sharepay's CTO argued *"We have experienced a lot of things with CIB which can then directly be prevented."* One of the issues that was correctly anticipated was how client information was handled as he explains: *"Because we perceived a lack of control over information of new clients with Billink and CIB, we proactively tackled this concern with Mempay and Sharepay."*

Sharepay's manager customer service commented with respect to the fraud issues and the technical handling of money transfers: "The issues with Sharepay were harder than expected." The CTO argued, concerning collection of payments, that in hindsight *"handling financials correctly and particularly legally handling (…) we hadn't had that checked enough."* This had caused the interference of the supervisory agency, in this case the DNB.

When asking the interviewees whether or not this lack of a conscious anticipation phase, in light of the problems that have passed the scene, was a mistake some responded that a number of issues was certainly underestimated; however, all agreed that this still has been the right way to go as you have to act fast to grasp an opportunity in the market. The CTO commented: *"Thinking at the front of the development project could have been much better. However, then you first have to get to know the market, make a functional design, then the time-to-market would have been much longer. (…) As an entrepreneur you sometimes just have to go for something. You don't have to take every risk into account, that's entrepreneurship."* In response to a question if that's the right approach; to just go for something and see where it takes you he argues: *"That's indeed the mentality we have in the beginning because that means that everything could go wrong and is allowed to go wrong. And especially that it's allowed to go wrong is very important for me. We can destroy ourselves within the year."*

Reflexivity

The main subject to focus on in the discussion of reflexivity viewpoints with Sharepay was the stance of the interviewees with regard to the low-quality products on the platform. The manager customer service said: *"Sharepay was firstly just launched to get orders and results. The type of products that were on it was inferior. (…) Now I sense that they (management) try to clean things up and to create a nicer, better product."* The CTO commented: *"In the beginning you're accepting the excluded cases from other companies in order to grow your own business. That's an ethical joust, looking for the edge of what's acceptable in return for gaining a lot of transactions quickly (...) You tend to be mistaken by that because those low quality products also harm your reputation eventually (…) We started to kick those parties from the platform because our boundary slowly shifted due to the sufficient amount of good clients".* Sharepay's CEO argued: *"I don't know if those products were really bad because often those products were sold by people that used the products themselves. (…) You should not sell anything that doesn't exist and it's important to me that you're transparent in the way in which you offer something so people are consciously buying something."* He also added: *"We always looked at whether or not it fits within the boundaries of the law. That has been a guidance for us."*

Inclusion

All of the interviewees did emphasise the collaboration with a major first customer during the development of Sharepay. Commercial director: *"With Sharepay we had a few parties that wanted to do business with us. We saw good opportunities and have developed the platform in a murderous pace, without a good understanding of the business. That was a bit of a gamble."* The first version of Sharepay was therefore entirely built around the demands of that first customer as this was a party that was active in the market for digital products for some time and had experience with Sharepay's biggest competitor in the market. Sharepay's *CTO: "We have a customer need, we have our own vision, let's make the first product completely tailored to the customer's needs"* and the CEO said: *"That first customer really helped us in the beginning to make the first steps forward."*

Sharepay's manager customer service previously worked, on a freelance basis, as customer support staff for this first customer, which consisted of two internet marketing entrepreneurs. She told that these two entrepreneurs had organized a meeting with a lot of other advertisers and owners of digital products that at the time were using the platform of Sharepay's biggest competitor. She explained: *"The two people that were our first customer have activated their network of advertisers for digital products to actively engage in a discussion on what Sharepay would have to offer."* The CTO said that the insights from this collaboration were extremely valuable to release a platform that offered a lot of very welcome functionalities. Also after this first collaboration insights from employees and customers kept being utilized: "Involving everyone (within the company) but also customers in the development of the platform is for me very important (…) All ideas have to be accepted and written down, even if you're not acting on them you still have a big list of wishes for the platform."

Responsiveness

Sharepay is a cloud-based platform with a modular software architecture. This makes it quite easy to change parts of the system or add new features. Sharepay's CTO: *"Everybody within the company cooperates continuously to make new stories for the product. So in every moment feedback is asked and problems are solved or features added."* and *"We always build the software modularly so it can be expanded".* He also added that: *"We always work with three platforms consecutively. Platform one is savvy and is developed as fast as possible. Platform two is more directed towards what we actually want and is more scalable for the next two to ten clients. And when we see that it takes off we rebuilt the platform entirely to a third version which is just ok."* The commercial director commented: *"We have made the commitment to implement changes because we knew that not everything was ready and more work would come our way."* And the manager customer service: *"We had a new version of Sharepay almost every half year"*

The observations made by the researcher during his time within the two companies concerning the working and development methods showed that issues, new features, changes and bugs are indeed all registered, prioritized and added to the development roadmap.

5.1.3 PLATFORM CONTROL

In order to effectively address indications of fraudulent use of the platform, unjust use of the platform's functionalities or when an advertised product doesn't reach the required quality or marketing conditions the control over the platform has to be well organized.

Input control

One form of input control, which arguably could also be behavioural control, is the contracts. The CTO commented: *"In the contracts are a bunch of conditions which clients have to comply with. In the case they don't comply then they become liable and risk being shut of the platform."* Sharepay's CEO was a bit more reserved with respect to the control they maintain: *"It stays the internet, today everything can be all right and tomorrow clients can offer something completely different. You can't monitor everything 24/7. We do enforce contractual agreements with an option to exit a client when compliance agreements are not met. And when that's the case we say goodbye very quickly".*

The manager customer support has a specific role in accepting or rejecting new clients: *"We receive a sheet with all information about the customer, their contact person, customer service information, a phone number. New customers have to confirm their application, have to have addressed the specific requirements for the inclusion of a checkbox (specific requirement from the DNB making sure that customer know they are agreeing with a monthly payment), ensuring that customers know what they are buying, one of the contact persons should always be accessible, agreement with the general terms and a very clear statement towards customers that the product entails a subscription."*

Output control

Output control is primarily maintained via the payment structure. Sharepay's CEO explains: *"That's a piece of leverage we have. We are managing funds, when a transaction is done that turns out to be not to be right we can always refund to the debtor. When clients don't comply with the conditions they eventually don't get paid."* The CTO adds: *"Everyone can use the platform, however, when you want to get paid then additional information is required. We need a signed contract, copy of the passport and chamber of commerce information".* The manager finance explains some extra control over the financials of transactions that can be executed: *"When a payment is requested we conduct a global control on the amount of order of the past period, whether or not they are released and whether they are paid. So that's a check if the payment that's requested is correct. (…) This check is executed at least the first few payments for a new client, and after that it's a monthly periodic control."*

Behavioural control

Control over the behaviour of clients and customers on the platform is mainly based on the handling of incoming complaints, as the CEO comments: *"When certain complaints appear we check whether or not something has changed in the chain of that client."* Also the CTO adds: *"We conduct checks ourselves. We have some sort of moral compass that is established by the head of the support department who forwards cases that show a misalignment herein to the board of directors who then take the final decision."* Regarding the actual power they can exercise in cases of misbehaviour the manager customer support said: *"We have*

developed some functions to block specific products for example, because of too much complaints. Also we can refund everything and terminate subscriptions, so we very much maintain control."

A big task for the customer service department is also with filtering the debtors that just regret buying something or want to exit a subscription while they have no legitimate reason for that. The manager customer service explains: *"For me it's very important that we can proof to a debtor that they consciously bought something with an iDeal or MisterCash payment as proof. But also that the website of the advertiser and our website as well as the confirmation state exactly what it is they bought. This way they can never claim to not be aware of the implications of the transaction."*

Relational control

Signs of effective relational control were only observed between the platform owner and the launching customer, as this customer also had a share in the company they are both benefitting from the platform's success. However, this type of control is not structurally present as most clients are not personally known by the platform owners and merely utilize its functionality.

Boundary resources

Boundary resources as a conscious type of control were not present. However, the limited functionality and freedom that clients have on the platform reduces some potential misuse and can thus be seen as some sort of boundary resources control.

5.1.4 CSR

Currently, CSR is no primary focus. Collaboration with a CSR specialized organization is started to structurally roll out CSR changes in business practices. However, due to the small sizes of Sharepay and Mempay this is not yet to be deployed there but for now only with CIB.

5.1.5 CODING

The results from the coding analysis for the Sharepay case are provided in Table 2 the actual detailed output of this analysis can be found in Appendix II Coding table.

Table 2 Results Sharepay Case

	CTO	CEO	Commercial director	Manager Customer service	Manager Finance
RI Anticipation	+	+/-	+/-	+	-
RI Reflexivity	++	+	+/-	-	--
RI Inclusion	++	+/-	+/-	+	+
RI Responsiveness	++	+/-	+/-	+	-
Platform Control	++	+	--	+	+
Start-up factors	++	+	+	+	--
Regulation	+	+	+/-	-	+
CSR	--	+	--	--	--

Table 2 shows which conversations provided the most valuable information concerning a topic for each interviewee in the case of Sharepay. Although the CTO, CEO and commercial director are all co-owner and co-founder of Sharepay, it's clear that most insight on the innovation process has come from the CTO. During the interviews and also through the researcher's internship it became clear that Sharepay's technology is the real core of the company. Innovation is often initiated through technological potential, enabling new features or approaches within the platform. Furthermore, the focus on developing the platform according to the first customer's requirements and the iterative (agile) development strategy make that Sharepay is driven by technology potential. Therefore it's understandable that the CTO can provide most insight to the innovation processes. The CEO is merely on a conceptual level involved with the innovation process. An interesting point is that, although the CEO didn't convey many insights on the majority of RI dimensions, he did have a clear view on the reflexivity considerations of Sharepay's innovation process. The commercial director was merely involved with the initiation of Sharepay and after that primarily focussed at Mempay. The manager customer service conveyed some valuable insight on the RI dimensions and platform control. She was not directly involved with the development process however did observe all developments from close by and therefore could provide valuable information on these concepts. The manager finance, who was more on an operational level involved, conveyed only a limited insight regarding the RI dimensions. This is understandable as he was merely focussed at the financial structure of the platform and to a lesser extend involved with the technical development. Especially the reflexivity dimension is not covered by these two more operationally oriented interviewees, which can be explained by the very overarching character of this concept.

5.2   MEMPAY

5.2.1   PROBLEMS AND ISSUES

A major issue which Mempay stumbled upon, addressed by all interviewees, was a phishing case. One of their new clients, based in Curacao, was offering customers special subscriptions on behalf of supermarket chain Albert Heijn and the Dutch railways NS for only one euro. Within a few hours, about 20.000 euros were cashed. After a few hours this malicious activity was discovered due to customer complaints. Funds were frozen and returned to the duped customers. The activity was reported to the authorities.

Another issues, reported by the commercial director, concerned the reliability of the delivered service. Mempay was the financial backbone of one of the first customers. Whenever something goes wrong with the handling of payments or administration this could significantly harm the daily business of that client, which has happened multiple times. Most of this was due to human failure as a result of not acting redundantly when it came to business processes.

5.2.2   RESPONSIBLE INNOVATION

None of the interviewees knew the concept of RI and no comparable approach with a similar aim was either loosely or structured present within the start-up.

Anticipation

All of the interviewees that were involved with Mempay from the start, the CTO, CEO, commercial director and manager customer service, responded that there has been no conscious anticipation phase. Mempay's CTO argued "We have experienced a lot of things with CIB which can then directly be prevented."

Regarding the fraud issue, Mempay's product owner said: *"Honestly I think it's been good that we encountered this issue because otherwise the damage could have been much bigger. Additionally, this has caused that we are, within the organisation, much sharper when accepting new clients instead of only being focussed on revenue and total amount of transactions."*

When asking the interviewees whether or not this lack of a conscious anticipation phase, in light of the problems that have passed the scene, was a mistake some responded that a number of issues was certainly underestimated; however, all agreed that this still has been the right way to go as you have to act fast to grasp an opportunity in the market. The commercial director convincingly said: *"We have devoted too little time preventing some problems because we saw a windows of opportunity which we took immediately. On the other hand, if we would have waited too long we never would have had that specific first customer. In hindsight this has been the right choice because if we hadn't made it Mempay wouldn't have existed. (…) It was the perfect move."*

Reflexivity

Mempay's product owner argued: *"In the beginning we were satisfied with maybe a bit sketchy customers, purely because they run large numbers. Now that's not the case anymore. We take a look at the whole process, complaints on the internet and so on, before we take them on board."*

Mempay's CEO argued: *"For me it's primarily important how the agreement has been initiated. What is offered should match with what is delivered."* He also added: *"We always looked at whether or not it fits within the boundaries of the law. That has been a guidance for us."*

A special case with which Mempay's management really had to make a deliberate choice whether or not it fitted within their value system is explained by Mempay's commercial director: *"With Mempay we have a few parties that are in the erotic dating segment. I don't like that; I'm also not supporting their product. But they run subscriptions with large amounts generating a lot of revenue. Then it's the question you should ask yourself as an entrepreneur, am I going to accept a client with whom I have no affinity but who can keep the business running or am I only going for the nice clients without volume. You'll have to make concessions. That has been a deliberate decision we made together."* Mempay's product owner adds on this topic: *"It's a bit double because in principle they comply with our conditions, it's more about the name of such a company of which I wonder if we should attach our name to it, certainly if we also have some highly respected companies in our portfolio."* She also explained the solution they have found for now: *"We are transferring those parties to another payment provider in order to enable them to collect from their own name. They can then still use our platform so we don't lose them as a customer but our name isn't attached to it anymore.*

Inclusion

All of the interviewees did emphasise the collaboration with a major first customer during the development of Mempay. The first version of Mempay was therefore, as was also the case with Sharepay, entirely built around the demands of that first customer. Mempay's CTO: *"We have a customer need, we have our own vision, let's make the first product completely tailored to the customer's needs"* And the commercial director said: *"The customer was king; we have made a lot of adjustments because of customer demands."*

Mempay's product owner about the later phases of the platform: *"The basics of the platform were there. We then decided from our knowledge of the market to collaborate with a development company specialized in some important ecommerce platforms. This company really helped us shaping some modules. Next we decided to collaborate with a SaaS platform company. They also advised us on what functionalities, according to feedback from their customers, should be in the platform."* And she added later: *"We are now collaborating with a new party, from Rotterdam, that's helping us very much. They have had a subscription model already from the 90s until now, so they have a lot of experience in what works and what doesn't."*

Also after this first collaboration insights from employees and customers kept being utilized as Mempay's CTO said: "Involving everyone (within the company) but also customers in the development of the platform is for me very important (…) All ideas have to be accepted and written down, even if you're not acting on them you still have a big list of wishes for the platform."

Responsiveness

Mempay is a cloud-based platform with a modular software architecture. This makes it quite easy to change parts of the system or add new features. Sharepay's CTO: *"Everybody within the company cooperates continuously to make new stories for the product. So in every moment feedback is asked and problems are solved or features added."* and *"We always build the software modularly so it can be expanded".* And regarding the development of contracts he added: *"Like the platforms are contracts every time rewritten as a result of issues that appeared."*

The manager finance commented: *"When a request, complaint or application comes in for an issue or feature and we have to take action we certainly will."*

The observations made by the researcher during his time within the two companies concerning the working and development methods showed that issues, new features, changes and bugs are indeed all registered, prioritized and added to the development roadmap.

A striking example of effective responsiveness is the fraud issue introduced in paragraph 5.2.1. This issue was discovered quickly after complaints from customers. Within a few hours the conclusion of fraudulent activity was made, the products on the platform were disabled and payments were frozen. The fraudulent client could not be contacted anymore but all duped customers got refunded.

5.2.3   PLATFORM CONTROL

In order to effectively address indications of fraudulent use of the platform, unjust use of the platform's functionalities or when an advertised product doesn't reach the required quality or marketing conditions the control over the platform has to be well organized.

Input control

At Mempay clients can't register themselves at the platform. This is done by a request which is assessed by Mempay's product owner. One form of input control, which arguably could also be behavioural control, is the contracts. The CTO commented: *"In the contracts are a bunch of conditions which clients have to comply with. In the case they don't comply then they become liable and risk being shut of the platform."* Mempay's CEO was a bit more reserved with respect to the control they maintain: *"It stays the internet, today everything can be alright and tomorrow clients can offer something completely different. You can't monitor everything 24/7. We do enforce contractual agreements with an option to exit a client when compliance agreements are not met. And when that's the case we say goodbye very quickly".*

With regard to the contracts Mempay's product owner explains: *"The flow to be fulfilled by clients in their ordering process is made explicit in the contract. When it's an online initiated subscription it should be a first iDeal payment to verify the IBAN number and a checkbox in order to agree with the terms or by a mandate with a SMS verification code. When the subscription is initiated by telephone sales it should be confirmed via email by us, so the customer can still cancel the subscription and there Is a cooling off period."*

Mempay's commercial director points at another form of screening, executed by a third party: *"A lot of clients come in via a party like SEO shop. They have been screened there already so the chance of accepting a weird new client isn't very big. Although our own screening should be improved in the future"*

Output control

Output control is primarily maintained via the payment structure. Mempay's CEO explains: *"That's a piece of leverage we have. We are managing funds, when a transaction is done that turns out to be not to be right we can always refund to the debtor. When clients don't comply with the conditions they eventually don't get paid."* The CTO adds: *"Everyone can use the platform, however, when you want to get paid then additional information is required. We need a signed contract, copy of the passport and chamber of commerce information".* The manager finance explains some extra control over the financials of transactions that can be executed: *"When a payment is requested we conduct a global control on the amount of order of the past period, whether or not they are released and whether they are paid. So that's a check if the payment that's requested is correct. (…) This check is executed at least the first few payments for a new client, and after that it's a monthly periodic control."*

Behavioural control

Control over the behaviour of clients and customers on the platform is mainly based on the handling of incoming complaints, as the CEO comments: *"When certain complaints appear we check whether or not something has changed in the chain of that client."* The

manager finance explains: *"Customer service monitors the amount of complaints and questions that comes in. Based on that, when that's too high, which we have encountered, everything can be frozen and the account manager will be contacted to check whether fraud is the case."* Also the CTO adds: *"We conduct checks ourselves. We have some sort of moral compass that is established by the head of the support department who forwards cases that show a misalignment herein to the board of directors who then take the final decision."* Regarding the actual power they can exercise in cases of misbehaviour the manager customer support said: *"We have developed some functions to block specific products for example, because of too much complaints. Also we can refund everything and terminate subscriptions, so we very much maintain control."*

A big task for the customer service department is also with filtering the debtors that just regret buying something or want to exit a subscription while they have no legitimate reason for that. The manager customer service explains: *"For me it's very important that we can proof to a debtor that they consciously bought something with an iDeal or MisterCash payment as proof. But also that the website of the advertiser and our website as well as the confirmation state exactly what it is they bought. This way they can never claim to not be aware of the implications of the transaction."*

Relational control
Mempay maintains a much higher degree of personal contact with its clients compared to Sharepay. Although small clients will still not be addressed via relational control, the larger clients are often invited to the office or a representative of Mempay visits the client in order to discuss some business. Mempay's commercial director commented: *"Whenever something really harmful appears or in case of a scam or fraud we can detect this by looking a client straight in the eye and ask critical questions.*

Boundary resources
The boundary resources model as a conscious type of control was not present. However, the limited functionality and freedom that clients have on the platform reduces some potential misuse and can thus be seen as some sort of boundary resources control.

5.2.4   CSR
Currently, CSR is not integrated in a structured way. The commercial director made a point concerning the internal aspect of CSR: *"I want to create a place where people like to work, so they become ambassadors of the company".* Collaboration with an CSR specialized organization is started to structurally roll out CSR changes in business practices. However, due to the small sizes of Sharepay and Mempay this is not yet to be deployed there but for now only with CIB.

5.2.5 CODING

The results from the coding analysis for the Mempay case are provided in Table 3 the actual detailed output of this analysis can be found in Appendix II Coding table.

Table 3 Results Mempay Case

	CTO	CEO	Com-mercial director	Product Owner	Manager Customer service	Manager Finance
RI Anticipation	+	-	+	+/-	--	-
RI Reflexivity	++	+	+	+	+/-	--
RI Integration	+	+/-	+	+	--	+
RI Responsiveness	++	+/-	+	+	--	+
Platform Control	++	+	+	++	+/-	+
Start-up factors	++	+	+	+	-	--
Regulation	+	+	+/-	+/-	-	+
CSR	--	+	+	+/-	--	--

Table 3 shows which conversations provided the most valuable information concerning a topic for each interviewee in the case of Mempay. As with Sharepay, although the CTO, CEO and commercial director are all also co-owner and co-founder of Mempay, it's clear that most insight on the innovation process also here has come from the CTO, as Mempay has a comparable technical architecture and development approach. However, the commercial director, due to his higher degree of involvement with Mempay compared to Sharepay, has conveyed a clear insight in the majority of key concepts. The CEO is, also with Mempay, merely on a conceptual level involved with the innovation process. The product owner, who is the only employee dedicated solely to Mempay, was only involved in the later stages of Mempay; however, conveyed insights across all topics. Although these insights are thus not covering the really early phases of the development process, they are still valuable due to the continuous process to further develop the platform on which the product owner has transferred valuable insights. The manager customer service was not directly involved with the development process of Mempay and was only assigned to the setup the customer service in a later stage, hence the low degree of insights on the research concepts regarding Mempay. The manager finance, who was on an operational level involved, conveyed only a limited insight regarding the RI dimensions. This is understandable as he was merely focussed at the financial structure of the platform and to a lesser extend involved with the technical development.

6   ANALYSIS AND DISCUSSION

In this analysis the results, as presented in the previous chapter, are related to the theory as described in the literature review chapter 2. As the two cases show overlap to a certain extent, all focal concepts are analysed for both cases as well as a cross case analysis to highlight the differences and similarities between the two cases.

6.1   RESPONSIBLE INNOVATION

As expected beforehand, no conscious and structured approaches to integrate RI in both Sharepay's as Mempay's innovation and business practices were found. However, investigating the unstructured integration of efforts that align with the RI dimensions as described in chapter 2.1.1 has provided the following insights.

6.1.1   ANTICIPATION

Stilgoe, Owen, & Macnaghten (2013) describe the process of anticipation as the interplay between prediction of and participation towards particular futures. Ravetz (1997) very plainly describes it as a deliberate 'what-if?' question during the innovation process. Such an approach was observed in neither of the two cases. Although some remarks were made that, considering the problems both platforms have faced during development, some issues should and could have been foreseen; no-one convincingly argued that this was a fault in their strategy. This result is remarkable as responsibility literature regards the anticipation of potential futures due to someone's efforts of utmost importance.

The structured approaches of upstream public engagement (Wilsdon & Willis, 2004) and Constructive Technology Assessment (Rip et al., 1995) argue that a participatory approach with public stakeholders is appropriate in order to allocate and address potential futures. The collaborations with first customers in which both Sharepay and Mempay were involved can hardly be identified as such a participatory approach. Besides the important role of the first customer, no representation of a future customer base from either the supplying or customer side of the platform in order to anticipate future implications was included herein. The argument of the availability of limited resources for particularly start-ups has been made in the literature review. This argument seems to hold in both cases as the limited human resources that were available to the start-ups were exclusively focused at developing a first minimal viable product in order to start generating revenue followed by continuous further development. This focus on a low time-to-market was emphasized with the notion by the CTO that the strategy in the earliest phases was really focused at just start developing and to see where it would take them, while failures were allowed, indicating that anticipating potential negative effects was not a priority. Although this was only articulated explicitly by the CTO, the other conversations and observations implicitly confirmed this strategy.

As many start-ups struggle with the challenge to accelerate their time to market while dealing with limited resources, this 'just-go-for-it' strategy potentially will be present in a large portion of start-ups and thus requires some deliberation on whether such a structured anticipatory approach, as proposed by the existing RI literature, is actually necessary or even desirable.

The majority of RI literature refers to large firms and innovations with a fairly disruptive character, whereas this research focuses on start-ups with innovations that can better

be described as incremental innovations as the platforms build upon widely adopted software architectures and payment methods. Merely the combination of existing techniques and concepts form the ingredients to these particular innovation processes (Henderson & Clark, 1990). Furthermore, the FinTech industry's payment services niche already consists of a wide range of companies offering front-end, back-end or infrastructural payment solutions and receives a significant focus from governments and regulatory agencies as described in chapter 3. The importance of anticipating future effects of an innovation in a structured way is made clear in existing literature especially for innovations with a disruptive character. These innovations tend to open up completely new challenges as they disrupt the current status quo in a market segment, introducing difficult to predict futures. The more incremental character of the innovations in this research arguably weakens the case for such a structured approach as knowledge and experience concerning the different parts, on which the incremental innovation builds, is predominantly already present. Understanding the existing market dynamics, players, characteristics, preferences, challenges and problems other parties have dealt with can provide a fairly solid base upon which a new (incremental) innovation can be built. The experience and knowledge of an entrepreneur are in such a case very important as this will form the base for the entrepreneur's implicit anticipation on the innovation's effects. This capability of an entrepreneur to couple new external knowledge to existing knowledge and experience is covered in the concept of Absorptive Capacity (Cohen & Levinthal, 1990).

This was partially also the case with Sharepay and Mempay. The founders did all have significant experience and knowledge regarding the payment services market and especially the CTO had significant experience and knowledge on software development, which undoubtedly has influenced the decisions in the innovation processes either explicitly or implicitly. However, particularly the platform architecture brings challenges less familiar to the founders. One of these challenges can be identified as the dilemma of control as presented by Collingridge (1980), saying that at the early stages of innovation there may be *"most opportunity to shape and control innovation, with far fewer costs and vested interests; but it is precisely at these early stages that we have little or no evidence to make the case for control."* (p. 34). Although some methods for monitoring behaviour and client details were implemented from the start, more platform-specific control mechanisms were developed progressively during the platforms' developments in response to issues and challenges (responsiveness dimension of RI) that were not anticipated.

Also, the platform architecture of these companies makes it possible that platform users can be active in market niches unfamiliar to the platform owner. In the case of Sharepay, this market was described as the 'digital products' market, which was fairly unfamiliar to all of the founders. This lack of experience and knowledge regarding this specific market was confirmed by the majority of interviewees and resulted in some issues (e.g. bad quality products, fraud, defaults) that were unforeseen and preferably should have been anticipated.

Although most interviewees agreed that more effort could have been invested in this anticipation, looking back on the process they still believed this was the right approach, which seem like contradictory views. The reason why they believed in the adopted strategy can be found in on the one hand believe that more thorough anticipation efforts would have negatively impacted their time-to-market. And, on the other hand their internal confidence

in the responsiveness of the platform. This responsiveness is shown in the quick identification and resolving of issues, followed by appropriate design of control mechanisms to prevent comparable issues in the future.

6.1.2 REFLEXIVITY

Acting responsible in an innovation process can't do without determining what responsible behaviour entails in a specific situation. Reflecting on one's purposes, motivations and potential impacts is important in that sense (Owen et al., 2013), not only on a personal level but also in an institutional sense, scrutinizing activities, commitments and assumptions (Stilgoe et al., 2013).

From a first-order reflexivity perspective, van de Poel & Zwart (2010) argue that this is the type of reflection that takes place within a certain value system where the technological development takes place. This value system can contain existing theories, knowledge and appreciative systems (Grin & van de Graaf, 1996). For the two studied cases this first-order reflexivity particularly applies to the platform as a technology and the service it provides to its users. Transparency on the company level was mentioned a few times by the CEO. Although this might be a popular term to be used by business owners, the setup of the platform, presentation of information to customers on either side of the platform, and the adequate handling of complaints are observed during the researcher's internship and reflect this transparency throughout both start-ups. As the payment services niche's key feature is the transfer of funds, such transparency should be paramount in order to attract and keep new and existing customers. This also refers to socio-political legitimacy's moral acceptance, proposed by Aldrich & Ruef (2006), as both start-ups strive for the acceptance by both sides of the platform, the clients and customers, as well as other stakeholders such as the back-end- and infrastructure payment service providers, and for Sharepay specifically the affiliate marketers. Furthermore, regulatory acceptance, another aspect of socio-political legitimacy, is also strived for by complying with regulation, which is more or less enforced by the supervision agency, the DNB, as specific payment service provider licenses are required to be active in the market of payment services.

The platform architecture in both cases introduces an extra dimension to the reflexivity as a platform owner can reflect also on the responsibility of the members of the platform. The platform literature addressed the complications in platform architectures concerning the lack of ownership. Platform users might use the platform in ways which are not preferred by the platform owner. This requires reflexivity on the level of the platform ecosystem, scrutinizing the value-system and acknowledging the differences in perception of this value system by the different actors within this ecosystem, which can be referred to by second-order reflexivity (Grin & van de Graaf, 1996; van de Poel & Zwart, 2010).

Particularly the conscious strategies of both platforms to allow, what the platform owners perceive as, 'lower quality products' on the platform in the early phases is an example of such second-order reflexivity. These products potentially would not comply with the value system with which the platforms internally try to align; however, the clients offering those products are active within their own specific markets with other characteristics, stakeholders, customers, regulation and so on. The platform owner has the power to alter the boundary values of the value system with which the platform ecosystem has to comply. These boundaries can be set and changed by including conditions to control the input of cli-

ents and products on the platform and actively enforce compliance with these conditions by means of behavioural control. Finding a balance herein was found to be a challenge as setting the boundaries of the value system stricter negatively impacts the revenue of a platform, which particularly negatively impacts the growth of a start-up, while loosening these boundaries can impact the platform's reputation and socio-political legitimacy.

One specific example, which was referred to by multiple interviewees, is one of Mempay's clients offering erotic dating products. Such products are not supported or endorsed by the platform owners; however, these products generate substantial revenue, which is especially for a start-up hard to decline. Although this client does comply with all regulation and platform conditions, from a socio-political legitimacy point of view, being associated with such parties could harm the platform's reputation. This balance between socio-political legitimacy, the internally adopted (first-order reflexivity) value system, and revenue is a specific challenge for start-ups with a platform architecture where the cases in this research particularly show priority to socio-political legitimacy as avoiding damage to the platform's reputation was the top priority at all times.

6.1.3 INCLUSION

The broadly adopted definition of RI by Von Schomberg (2011) refers to the *"interactive process by which societal actors and innovators become mutually responsive to each other"* (p. 9). This interactive process and mutual responsiveness is in most literature especially reflected in the inclusion of stakeholders in the innovation process. Owen et al. (2013) argue that this is done by *"opening up visions, purposes, questions, and dilemmas to broad, collective deliberation through processes of dialogue, engagement, and debate (…) to reframe issues and the identification of areas of potential contestation"* (p. 38). This identification of areas of potential contestation refers to the anticipation dimension in paragraph 6.1.1, where the inclusion of stakeholders is argued to be particularly important when dealing with disruptive innovations. However, due to the incremental character of the innovations in this study, such a deliberate approach to include stakeholder in the innovation process is potentially less obvious and less intuitively preferred then with disruptive innovations where the case for societal impact is easier to defend.

Within the studied cases, the structured processes of dialogue, engagement and debate, of which many researchers argue its key to RI, are to a very limited degree present. Although both cases showed a very close collaboration with a first customer, these collaborations were primarily focused on results in the technological development. There is no real indication that these first customers can be identified as a representation of a larger group of stakeholders or that a broader range of visions, purposes, questions and dilemmas, besides their personal ones, are also part of the mutual discussions. Furthermore, such collaboration with a first customer is arguably common practice when starting a new business. Therefore, the collaborations with the first customers for both platforms cannot be seen as an effort to include external stakeholders in the innovation process in line with the structured inclusion approach as proposed by current RI literature.

In the case of Sharepay however, a meeting was held with a variety of potential clients in order to assess their requirements and thoughts regarding a new platform. Although this discussion primarily focused on technological functionality, these requested functionalities are primarily based on these potential clients' experiences and knowledge. Therefore, such a

deliberation on the technological functionality with future clients can produce implicit and explicit insights in the visions, purposes, questions and dilemmas of this stakeholder group. This meeting was organized by Sharepay's first customer who has activated his network for this purpose. Due to the unfamiliarity of Sharepay's owners with the market for digital products, such a discussion is particularly valuable. This might also be the reason why such a meeting was not organized for Mempay's platform as this market was arguably only a diversification from the markets already served by the other two companies from the same owners.

This approach has merely included the client side of Sharepay's platform whereas the customer side of the platform is apparently not included at all. Apart from the argument that processes of inclusion require substantial resources (King, 2007; Orlitzky et al., 2011), which generally are scarce among start-ups, the platform architecture also introduces extra complexity regarding the identification of the appropriate stakeholder groups. Conventional products or services generally focus on a specific market segment. In such a case, selecting a representation of the different societal groups within this market is arguably relatively feasible. However, as the platform users all address their own market, taking a sample of potential customers and related societal groups of platforms like the ones in this study seems almost impossible, especially as these customers are primarily consumers from all different parts of society.

The structured approach to inclusion of various stakeholders in the studied platform based start-ups is proven to be quite complicated and has only been implemented in a very limited sense, therefore further scrutiny of the reasoning as to why such a structured approach is preferred could increase the deeper understanding of this RI dimension and potential alternative interpretations. As argued in paragraph 6.1.1, a structured approach is particularly relevant for large corporations with disruptive innovations, which is the implicit focus of the majority of RI literature. However, the iterative character of innovation, smallness of the companies and the platform architecture make such a structured approach complicated. The inclusion of stakeholders in the innovation process is, as debated in the beginning of this paragraph, focused at opening up visions, purposes, questions and dilemma's, primarily to anticipate future issues and concerns from different stakeholders. Therefore, the same argument regarding anticipation on incremental innovations, i.e. adopting knowledge and experience from existing markets and parties is potentially very effective, holds. One can therefore argue that a structured approach to include stakeholders in the innovation process can for a large part be substituted by effective identification, acquisition and implementation of external and internal knowledge and experience as embedded in the concept of Absorptive Capacity. Mempay's current collaboration with specialized and experienced parties is primarily focused at such acquisition of knowledge in order to improve the platform according to market developments and customer needs. Effective implementation of such newly acquired knowledge with internal available knowledge refers to the responsiveness dimension of RI.

6.1.4 RESPONSIVENESS

The challenges that arise during the innovation process have to be adequately addressed in order to increase the responsibility of the innovation. Therefore, the innovation process needs to be as responsive as possible (Stilgoe et al., 2013). This responsiveness is a

process of iterative, inclusive, and adaptive learning (Owen et al., 2013). The internal focus to keep enhancing the technology and solve problems in a fast pace indicate a comprehensive inclusion of the responsiveness dimension in the innovation and operation processes of both platforms. The modular online platform architecture, which is always controlled and developed by the company itself, gives the innovators the ability to change parts of the platform ecosystem fast and implement it directly among the entire customer base. This is different from many manufacturing companies where changes to the technology are more difficult to enforce as the products are often not in the company's possession or within their span of control anymore. The responsiveness of both platforms furthermore also increases the Absorptive Capacity as the implementation of newly acquired knowledge is relatively easy.

This *"capacity to change shape or direction in response to stakeholder and public values and changing circumstances"* (Stilgoe et al., 2013, p. 1572) has been observed as an extremely important aspect of both platforms, both in a more and less positive way. On the one hand, this responsiveness has showed its value in adapting and responding to the platform users' behaviour, which has been especially recognizable in the phishing case with which Mempay has dealt. This issue was resolved very quickly due to adequate behavioural control mechanisms, resulting in a fast identification of the issue, and output control mechanism, through which the funds were immediately frozen and returned to the duped.

On the other hand, such fast responses also result in a reactive strategy. Anticipation to potential issues gets assigned a lower priority, which was in the early phases also reflected in the platforms' lacking input control mechanisms. New clients were not thoroughly screened resulting in the acceptance of unwanted clients and products with issues of fraud in the sense that products were not delivered according to the advertisements or not delivered at all.

6.2 PLATFORM CONTROL

Tiwana (2014) argues that the architectural decoupling of the platform from the content should be mirrored in the division of authority and responsibility between the platform owner and content provider. Mechanisms to control such architecture should ensure alignment of the content with the direction and values of the platform and facilitate coordination between the platform owner and content providers. The proposed control mechanisms are input, behavioural, output and relational control (Mukhopadhyay et al., 2015; Tiwana, 2014).

Within the cases, several examples of these control mechanisms can be distinguished. Input control was implemented in both cases by screening personal documents such as passport and an extract from the chamber of commerce as well as a contract with the terms and conditions to comply with has to be signed. Behavioural control is obtained primarily by handling complaints properly, which is generally done by the customer service. When complaints indicate a flaw in a product featured on the platform or misbehaviour of a platform user, action will be taken by the customer service or, with higher impact issues, by the managers. Output control is specifically maintained through the payment system. Payments from a customer to a client are only released when the client has handled in alignment with the contractual and regulatory agreements. As clients only benefit from the payments

through the platform, this last form of control gives both platforms a fairly significant leverage to enforce responsible use of the platform.

However, more interesting from a RI point of view is why and how these mechanisms came to be. The issues of fraud addressed in the cases demonstrate events where platform control mechanisms either did not function well enough or were not in place. The respondents all acknowledged that most of the input control mechanisms (e.g. legal documents checks and contracts) were absent in the early stages of the platforms. Collingridge's dilemma of control can be seen as one of the reasons for the absence of input control early in the platform development (Collingridge, 1980). From a RI perspective this can be interpreted as a lack of conscious *anticipation*; however, as indicated before, the general approach of proactively preventing potential issues was more or less deliberately absent. On the other hand, the *responsiveness* with respect to these types of issues was very much embedded in the platforms as was indicated by the iteratively updated contracts with every major issue that occurred.

Behavioural control is organized through the customer service and issues are handled personally by one of the employees, this type of control was present from the start, although fairly unstructured. The identification of issues and misconduct are important for the platform owner's ability to respond adequately and design proper countermeasures when necessary, i.e. responsiveness.

The control both platforms have over the money flows, as this is their core business, provides leverage to enforce compliance with the platform's conditions. The revenue streams are organized in such a way that money collected by the platforms after a transaction is not directly transferred to the client but first accumulated and only disbursed to the client periodically. As generating revenue is the main reason for the majority of clients on both platforms, withholding these revenues is the last thing a client wants.

Another type of control discussed in the literature is the boundary resources model, which proposes that controlling the tools available to platform users and the regulation a user has to comply with could form an effective way of controlling behaviour of platform users. Although this model is primarily explained as an effective method for control in software development and application platforms, the rationale behind it could potentially be applied to other cases. Both platforms offer very limited functionality, hence very low degrees of freedom for users of the platform and thus a low probability of misuse of the platform's functionality. This could be interpreted as limiting the resources available to platform users. The set of conditions with which users have to comply in order to be allowed on the platform can also be interpreted as a part of the boundary resources model. Although no problems were found concerning clients misusing certain functionalities that could have been prevented by restricting these functionalities, a conscious view on the conceptual method of the boundary resources model could provide insights in what platform users' degrees of freedom are on the platform and hence could increase the anticipation of potential misuse of these resources and functionality.

As software platforms are generally easily scalable, these challenges become even more apparent when experiencing the growth of a platform. In the early phases, controlling the content on the platform and the behaviour of the platform users remains quite feasible; however, accelerated growth increases the need for adequate control mechanisms for the platform owner to remain in control. This was verified by the majority of interviewees as

they argued that the current control mechanisms should be structured differently in order to be able to adequately address increased demand without having to linearly scale up the staff capacity. Background checks should be more automated and structured control of the money flows could automatically indicate potential misuse of the platform's functionality, as argued by the manager finance.

6.3 CSR

Structural implementation or articulation of CSR in both start-ups is absent. However, the founders have shown an interest to start implementing some insights from the CSR approach within the group of four companies. This merely comes forward from the growth of CIB, the largest of the four companies, and the potentially to be adopted CSR approaches will therefore particularly focus on this company. However, the observations show that CSR is approached in a fairly structured way by starting to explore cooperation with a CSR specialized organization. No comments were made regarding the timing of this exploration of CSR, implying that, as CIB already exists for 9 years, CSR is seen as a concept which can be adopted later on. Therefore, CSR seems to be approached more as a set of tools and methods that either transforms current business practice to align with CSR perspectives or adds new methods and business practice on top of the existing ones.

6.4 DISCUSSION

This research has focussed on the concepts of Responsible Innovation and Platform governance in relation to start-up and industry, in this case FinTech, specific features. The literature review has shown that Responsible Innovation is a broadly adopted concept with a quite comprehensive understanding of the implications on innovation processes. The four dimensions as proposed by Owen et al. (2013) provide a set of dimensions, i.e. anticipation, reflection, inclusion and responsiveness, to be operationally integrated in innovation processes. However, existing research covering RI predominantly tends to focus on the innovation processes in large firms with disruptive innovations and sufficient resources to effectively engage in RI. Scholten & van der Duin (2015) argue that start-ups often lack sufficient resources to effectively engage in structured and comprehensive RI activities.

Another concept involving active responsibility in business practice is CSR. The literature review has shown that consensus regarding the relation between CSR and RI is lacking. However, CSR as a concept does involve an attitude of active responsibility towards society and is more familiar among entrepreneurs and managers, be it more focussed at internal and external business practice where RI focuses more in depth on the innovation process.

The niche this research aims at is that of FinTech platforms with a focus on payment services. The platform architecture brings about some extra challenges, especially compared to the more traditional products or services architecture, as platform specifically facilitate interaction between two sides of a market. These challenges especially concern the ownership and control allocation within a platform ecosystem. As these are the main challenges for platform architectures specifically these are potentially also the challenges to address from a RI perspective. Tiwana (2014) provides insights in how these challenges can be addressed and proposes some control mechanisms.

To sum up the explorative examination of the role of responsibility in platform based FinTech start-ups the four sub research questions and the main question are answered.

Sub question 1:

Question: *"What are the responsibility challenges to be addressed in platform based FinTech start-ups?"* This question is divided in two sub questions which will be answered separately.

First: *"What are the specific challenges for FinTech companies?"* This question is primarily answered by combining findings from the desk research presented in Chapter 3 and findings from the case study. Both the desk research as well as results from the case study indicated that fraud issues are a major challenge especially for FinTech start-ups. The amount of front-end payment service providers increases and payment methods shift towards easier and more immediate payment, which increases the opportunities for parties with a malicious intent. For FinTech platforms a specific challenge is the control over product offering and product delivery. Discrepancies between those two could also indicate fraud. However, controlling these factors increases the demand for adequate platform control which potentially comes with a significant increase in terms of required resources.

The second sub question to be addressed is: *"What are the specific challenges for start-ups?"* From both the literature review and the case study results the main challenges for start-ups involve the limited availability of time, human and financial resources to allocate towards development of responsibility increasing features and mechanisms. The primary focus when starting a new business is a low as possible time-to-market in order to start making revenue as soon as possible. The limited resources a start-up does have in these early phases are then inevitably allocated to this goal, leaving active responsibility considerations underexposed.

With regard to platform based start-ups the challenge is to start early enough with implementing the right control measures. This proves fairly difficult as making a solid case for the necessity of control is weak in the early stages of a star-up, as also addressed by the Collingridge (1980) dilemma of control.

Sub question 2

Question: *"What platform control mechanisms are available with respect to the challenges of FinTech platforms and how are these integrated?"*

The platform control mechanisms available are addressed in the literature review and consist of input control, output control, behavioural control, relational control and the boundary resources model. With respect to FinTech start-ups the case study analysis shows that especially the input-, output- and behavioural control mechanisms are effectively implemented. Input control primarily consists of a check of legal documents and a set of terms and conditions with which clients have to comply in order to be able to utilize the full functionality of the platforms. Behavioural control is maintained by adequately handling complaints. These complaints are used to indicate potential misbehaviour on the platform. Output control is maintained by controlling the payments systems. Clients are only able to collect payments when the transactions comply with the agreed upon conditions.

Relational control is also occasionally adopted by engaging in a higher degree of personal contact with a (potential) client. However, as this was only observed in one of the two analysed cases and within that case not every client was consequently subjected to this type

of control, the question remains whether this type of control is effective for a FinTech platform, especially when experiencing growth of the platform.

Signs of restricting functionality available to platform users and enforcing compliance with platform regulations in the form of some conditions imply a certain degree of implementation of the boundary resources model, although this is not consciously implemented as a form of control.

Sub question 3

Question: *"How are the four Responsible Innovation dimensions integrated in the platform based FinTech start-ups?"*

The case study analysis has shown that there was no structural approach to RI in both start-ups. However, regarding the four dimensions the following has been found.

With regard to *anticipation,* both start-ups haven't put effort in a structured or conscious anticipatory approach. The focus on short time-to-market and primarily addressing direct customer demand are found to be factors that reduce the urgency among the entrepreneurs to address potential future societal effects. However, *absorptive capacity* of the entrepreneurs makes that anticipatory considerations are implicitly integrated in the design of the new platforms.

Furthermore, the *responsiveness* of the platform's design makes that problems can be addressed quickly, necessary adjustment of the platform control mechanisms can be done iteratively, reducing the necessity of conscious anticipation efforts. This responsiveness is found to be a key factor in both platforms. The modularity of the platforms and the aim to keep improving them as well as the effort to adequately address pressing issues make that the responsiveness is very high.

Reflexivity for a FinTech platform can be addressed from two perspectives and from two orders. First order reflection from the perspective of the company itself with respect to a value system is present. The focus on transparency of the platform is one of the key aspects herein, driven by socio-political legitimacy's moral and regulatory acceptance. Second order reflexion is particularly interesting in platform ecosystems as platform users might serve a market unfamiliar to the platform owner, setting the boundaries of a value system for the entire platform ecosystem is not a straightforward prolongation of the internally applied value system. Within the cases a shift in this value system has been observed, adopting a more permitting value system in the early phases and restricting this value system as the platform grows. A main driver here also is socio-political legitimacy as, although the products featured on the platforms are not owned by the platform owner, the platforms are still observed as part of the value chain by customers.

The last dimension, *inclusion,* was present to a limited degree in both start-ups. Most collaboration with potential future customers was predominantly technological oriented; however, technological requirements often reflect other more sociotechnical challenges and concerns. A structured approach to engage with a sample of the potential market or related parties to discuss visions, questions and dilemmas for a start-up is complicated and not very desirable as this requires a significant amount of resources. Collaboration with different parties with significant experience in different market segments were involved in the development processes in order to be able to adjust the platforms to market demands, which can be

seen as the acquisition and implementation of external knowledge from an Absorptive Capacity perspective.

Sub question 4

Question: *"What recommendations can be made with respect to responsible innovation in platform based FinTech start-ups?"*

As start-ups are primarily concerned with generating revenue and reducing the time-to market, a structured approach to RI is undesirable as this would require significant resources. Furthermore, the modularity of the software makes the development of a platform very agile and reduces the chances of lock-in when in a later stage it's found that a design choice has introduced responsibility issues, i.e. responsiveness. Therefore, a more unstructured and intuitive approach to RI could increase the platform based FinTech start-up's active responsibility. Inadequate anticipation during the development of the platforms has caused some problems during the course of both platforms' developments. Therefore, a deliberate 'what-if' question accompanying the different design choices could increase the ability to anticipate such problems. From a reflexivity perspective, looking for socio-political legitimacy should be sufficient for staying within the appropriate value system. The inclusion of stakeholders is particularly important in order to identify potential challenges. Therefore, collaborating with parties that have extensive experience with the type of customers, stakeholders and challenges with which the start-up is also involved is effective and can be seen as the acquisition of external knowledge as proposed in the Absorptive Capacity concept. Key for a software platform is responsiveness. Therefore, maintaining a modular architecture and an open mind to new issues and challenges is important in order to adequately address new issues that appear.

Main question

Now the four sub questions have been answered the research's main question can be answered: *"How can start-ups deal with responsibility when developing new platform based services in the FinTech sector?"*

Particular challenges for FinTech platforms are fraud issues and maintaining control over the platform ecosystem. In order to anticipate such potential futures, an entrepreneur should actively acquire knowledge from external parties about the different aspects of the target market and potential target markets of the future platform users. This can be done by engaging in deliberate collaboration processes with stakeholder groups; however, collaborating with specialized parties with expertise in different aspects of the target market and stakeholder groups can be an effective way of acquiring the required knowledge with limited use of scarce resources. This new knowledge combined with the entrepreneurs existing knowledge and experience form a base from which values of stakeholder groups can be extracted in order to include these in the innovation process. The visions, dilemmas, challenges, purposes and values that are extracted with this Absorptive Capacity can be translated into design strategies with the necessary control mechanisms to structure and maintain control over the platform ecosystem.

Modular software architecture combined with an organizational focus to translate new knowledge to the platform ecosystem provides the ability to obtain a high responsiveness to new challenges that arise. Challenges that concern the content and behaviour on the

platform can be addressed by adjusting the existing platform control mechanisms or by developing new ones. The base values of the value system that the platform owner wants to apply to the platform ecosystem, i.e. second order reflexivity, are reflected in the choice of platform control mechanisms. For example the acceptance of only companies registered with the chamber of commerce as clients on the platform and without previous misconduct through input control. Also the adoption of terms and conditions with which clients and customers have to comply, drawn in line with the adopted value system, and active supervision on the behaviour of platform users in alignment with these conditions through adequate handling of complaints as a form of behavioural control. The adoption of such a value system might be guided through the search for socio-political legitimacy. Compliance with acting regulation should always be pursued as well as alignment of the value system with the general public's values such that they accept the platform as a legitimate company, avoiding reputation damage at all times as this could eventually harm the company beyond repair.

Another form of control that particularly suits FinTech companies is the control of money streams. By making payments dependent on whether or not platform users behave responsibly, the platform owner has a substantial leverage in enforcing behaviour in accordance with the acting value system.

7 CONCLUSION

To conclude this thesis the contribution of this research to theory is provided as well as the limitations of this research. Furthermore recommendations for future research as well as practical recommendations to practitioners, in this case owners of platform-based start-ups, will be drawn from the discussion in Chapter 6.

7.1 CONTRIBUTION TO THEORY

This research gives insight in how start-ups, specifically FinTech start-ups with platform architectures, deal with responsibility. It shows how the concepts of Responsible Innovation and platform governance can be related to each other as well as how company specific challenges that come with the FinTech sector as well as the smallness of a start-up affect these concepts.

RI in existing literature was found to be especially focussed towards large corporations with disruptive innovations. Therefore the existing broadly adopted approach to RI as proposed by Owen et al. (2013), i.e. the four dimensions anticipation, reflexivity, inclusion and responsiveness, are not all straightforward applicable to start-ups with incremental innovations. The findings show that for these types of companies and innovations a structured approach to both anticipation and inclusion is not preferable due to the generally scarcely available resources of start-ups. Responsiveness, on the other hand, was found to be a key factor for such companies as their software platform allows quick responses to rising issues. Such high responsiveness lowers the impact of inadequate anticipation and therefore releases the pressure, from a RI perspective, of deliberate anticipation.

For start-ups with incremental innovations particularly, through the concept of Absorptive Capacity (Cohen & Levinthal, 1990), effective allocation and acquisition of knowledge, combined with existing knowledge and experience and followed by proper implementation of this knowledge forms an adequate base for explicit or implicit anticipation and inclusion of stakeholder values in the design of a platform.

The anticipated issues should be reflected in the platform's control mechanisms. Input control mechanisms are implemented in order to restrict access to the platform for unwanted users, behavioural control is implemented to restrict behaviour of platform users and output control is used to make sure no illegitimate transactions are carried out via the platform.

Reflexivity was found to be especially approached from a socio-political legitimacy (Aldrich & Ruef, 2006) point of view. Both first order, the start-up as a company, as well as second order reflexivity, reflecting on the platform ecosystem, are driven by regulatory- and moral acceptance. The adopted value system is reflected in the platform's behavioural control systems.

The responsiveness of platform based FinTech start-ups furthermore makes that unanticipated issues, such as particularly cases of fraud for FinTech platforms, are addressed quickly and that adequate redesign of control mechanisms can be implemented quickly.

7.2 LIMITATIONS

Some concepts were introduced to the research in a later stage and are therefore to a lower extend investigated. The concept of *Absorptive Capacity* for example has already

shown to be a concept giving valuable insight in the understanding of start-up specific circumstances. A broader investigation of this topic could potentially increase the understanding of how start-ups can anticipate implications of their design decisions and how inclusion of alternative perspectives can be incorporated in the design process.

Also the notion on stakeholder engagement by Jenkins (2006) concerning the more informal stakeholder engagement for small firms is a topic that needs broader investigation in order to determine the effects on the active responsibility for start-ups.

Furthermore, what value-systems exactly entail is up to now still more or less vague. A better understanding of value-systems and their dynamics could add to the understanding of particularly reflexivity from a RI perspective.

Another limitation of this research is the cross sectional focus on the really early stages of a platform development. The two investigated platforms in this research are both only a few years active. Although the specific focus of this research is on start-ups, a more longitudinal focus on the development of RI over the course of a few years for a start-up could provide more insight in the relation between start-up specific characteristics (e.g. limited resources and focus on time-to-market) and the development of more active responsibility considerations.

7.3   RECOMMENDATIONS FOR FUTURE RESEARCH

The concept or RI is operationalized in this research through the four dimensions anticipation, reflexivity, inclusion and responsiveness. As these dimensions are in existing literature primarily covered with large corporations and disruptive innovations in mind, an effective operationalization of the concept of RI specifically for smaller companies and for incremental innovations could greatly increase the adoptability of this concept within start-ups' innovation processes.

This research focused on FinTech start-ups which are driven by a very modular software architecture, which allowed for a high degree of responsiveness. This high degree of responsiveness removes the pressure from the remaining three dimensions of RI as the ability to respond quickly to an issue and to implement the solution directly to all users of the platform allows for a more reactive approach. As research towards RI in start-ups is very limited it would be interesting to have more insight on this topic. Therefore, research into start-ups with a business model that's to a lower degree depending on a software platform would add to the scientific understanding of RI in start-ups.

Other research could address the limitation of this research being cross sectional. A more longitudinal research towards the development of RI within a start-up and/or platform ecosystem would add to the understanding of the dynamics of responsibility in start-up and platform architecture.

7.4   RECOMMENDATIONS FOR PLATFORM BASED START-UPS

When starting a new business, addressing potential future responsibility challenges may receive very little attention. As resources are limited and the first customer is waiting for the start-up to deliver, allocating time and money to start addressing future responsibility challenges might be the last item on the entrepreneur's to-do list. For start-ups with a cloud based platform, the general stance might be to just launch the platform and wait what

problems arise. Moreover, when anticipating future responsibility challenges, one might risk foreseeing challenges that eventually don't even cause any problems.

An entrepreneur might argue that the societal impact of the start-up is very limited and that potential issues are surmountable. However, although cloud based platforms are found to be very responsive, some design choices might be difficult to reverse in a later stage where adoption of the platform has scaled up and lock-in effects cause difficulty in changing structural features of the platform. Furthermore, relatively small issues might soon cause reputational damage as online platforms for assessment of a company's delivered services and public criticism are well-known among the general public nowadays.

Therefore, assessment of the different aspects of active responsibility and the tools available to a platform owner to remain in control over the platform should be present. The following points might help start-ups, specifically those offering a platform architecture:

1. Anticipating potential futures and including values of stakeholders can effectively be done through the entrepreneur's experience and knowledge combined with acquired knowledge from external parties, as proposed with the concept of Absorptive Capacity. Therefore, the acquisition of external knowledge concerning the targeted market and related stakeholders, best practices and experience from external parties is important for start-ups.

2. In order to act responsibly, it's important to define what this responsibility means. Reflecting on the values for the organization itself is important; however, in the case of a platform also the platform ecosystem's values have to be defined. Avoiding reputational damage directly or by being linked to one of the platform user's misconduct should be paramount and helps articulating the boundaries of the value system to be applied on the platform ecosystem.

3. As responsiveness is a powerful feature of software based platforms, both the technological support for responsiveness as well as an organisational focus on responsiveness are important. Start-ups should stay responsive by structuring the platform's software design modularly and keeping an open mind to challenges that pass the scene.

4. The development of adequate control mechanisms in the early phases of a start-up will be based upon anticipation of future issues. As many issues are not anticipated, changing these control mechanisms or adopting new ones is important and is increasingly feasible with increased responsiveness. Structuring these mechanisms in input, output and behavioural control groups could increase the platform owner's insight in the available measures to encounter misuse and specifically fraud in the FinTech industry.

BIBLIOGRAPHY

ACM. (2016). FinTech en concurrentie. *Autoriteit Consument & Markt*, 5.

Aldrich, H. E., & Ruef, M. (2006). *Organizations Evolving*.

Anderson, R. (2012). Risk and Privacy Implications of Consumer Payment Innovation. *Payment Systems Conference*, 20.

Armstrong, M., Cornut, G., Delacôte, S., Lenglet, M., Millo, Y., Muniesa, F., … Tadjeddine, Y. (2012). Towards a practical approach to responsible innovation in finance: New Product Committees revisited. *Journal of Financial Regulation and Compliance*, *20*(2), 147–168. http://doi.org/10.1108/13581981211218289

Asveld, L., Ganzevles, J., & Osseweijer, P. (2015). Trustworthiness and Responsible Research and Innovation: The Case of the Bio-Economy. *Journal of Agricultural and Environmental Ethics*, *28*(3), 571–588. http://doi.org/10.1007/s10806-015-9542-2

Betlem, R., & Keuning, W. (2016). "Je wilt niet dat het hier het wilde westen wordt." Retrieved July 21, 2016, from http://fd.nl/ondernemen/1155352/je-wilt-niet-dat-het-hier-het-wilde-westen-wordt

Busch, W., & Moreno, J. P. (2014). Banks' New Competitors: Starbucks, Google, and Alibaba. Retrieved July 20, 2016, from https://hbr.org/2014/02/banks-new-competitors-starbucks-google-and-alibaba/

Callon, M., Lascoumes, P., & Barthe, Y. (2009). *Acting in an uncertain world: an essay on technical democracy*.

Carroll, J. M., & Swatman, P. A. (2000). Structured-case: a methodological framework for building theory in information systems research. *European Journal of Information Systems*, *9*(4), 235–242. http://doi.org/10.1057/palgrave.ejis.3000374

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Strategic Management Journal*, *35*(3), 128–152. http://doi.org/10.1177/0149206310369939

Collingridge, D. (1980). *The social control of technology*. Michigan: Frances Pinter.

CPMI. (2014). *Non-banks in retail payments*. Bank for International Settlements. Retrieved from http://www.bis.org/cpmi/publ/d118.pdf

CPSS. (2012). *Innovations in retail payments Report*. Bank for International Settlements. Retrieved from http://www.bis.org/cpmi/publ/d102.pdf

De Reuver, M., Bouwman, H., Prieto, G., & Visser, A. (2011). Governance of flexible mobile service platforms. *Futures*, *43*(9), 979–985. http://doi.org/10.1016/j.futures.2011.06.007

De Reuver, M., Sørensen, C., & Basole, R. C. (2016). The Digital Platform: A research agenda. Conditionally accepted for Journal of Information Technolgy.

DeNederlandscheBank. (2016). Technologische innovatie en de Nederlandse financiële sector. Retrieved from http://www.dnb.nl/binaries/DNB Onderzoeksrapport Technologische innovatie en de Nederlandse financiele sector_tcm46-336322.PDF?2016013016\nhttp://www.dnb.nl/binaries/DNB Onderzoeksrapport Technologische innovatie en de Nederlandse financiele sector_tcm46-

DNB. (2014). Visie DNB toezicht 2014 - 2018.

Eaton, B., Elaluf-Calderwood, S., Sørensen, C., & Yoo, Y. (2015). Distributed Tuning of Boundary Resources: the Case of Apple's iOS Service System. *MIS Quarterly*, *39*(1), 217–243.

Economist. (2015). The fintech revolution. *The Economist*. Retrieved from www.economist.com/news/leaders/21650546-wave-startups-changing-financefor-better-fintech-revolution

European commission, E. (2013). *Tips and Tricks for Advisors – Corporate Social Responsibility for Small and Medium-Sized Enterprises*. http://doi.org/10.2769 / 74688

Evans, D. S., & Schalensee, R. (2007). The Industrial Organization of Markets with Two-Sided

Platforms. *Competition Policy International*, *3*(1), 150–179. http://doi.org/10.3386/w11603

Ghazawneh, A., & Henfridsson, O. (2013). Balancing platform control and external contribution in third-party development: The boundary resources model. *Information Systems Journal*, *23*(2), 173–192. http://doi.org/10.1111/j.1365-2575.2012.00406.x

Grabianowski, E., & Crawford, S. (2005). How PayPal Works. Retrieved from http://money.howstuffworks.com/paypal.htm

Grin, J., & van de Graaf, H. (1996). Implementation as communicative action: An interpretive understanding of interactions between policy actors and target groups. *Policy Sciences*, *29*, 291–319.

Hagiu, A. (2009). Proprietary vs. Open Two-Sided Platforms and Social Efficiency. *Working Papers -- Harvard Business School Division of Research*, 1–42. http://doi.org/10.4135/9781412957403.n410

Hamerlinck, L. (2016). PSD2 gaat niet meer over PSD2 alleen. Retrieved July 20, 2016, from http://www.emerce.nl/achtergrond/psd2-gaat-meer-psd2-alleen

Henderson, R. M., & Clark, K. B. (1990). Architectural Innovation : The Reconfiguration of Existing Product Technologies and the Failure of Established Firms Author (s): Rebecca M . Henderson and Kim B . Clark Source : Administrative Science Quarterly , Vol . 35 , No . 1 , Special Issue : Tech. *Administrative Science Quarterly*, *35*(1), 9–30.

Jenkins, H. (2006). Small business champions for corporate social responsibility. *Journal of Business Ethics*, *67*(3), 241–256. http://doi.org/10.1007/s10551-006-9182-6

Jun, J., & Yeo, E. (2016). Entry of FinTech Firms and Competition in the Retail Payments Market. *Asia-Pacific Journal of Financial Studies*, *45*(2), 159–184. http://doi.org/10.1111/ajfs.12126

Keijzer-Broers, W. J. W., de Reuver, G. A., & Guldemond, N. A. (2015). Designing a multi-sided health and wellbeing platform: Results of a first design cycle. *Lecture Notes in Computer Science*, *8456*, 3–12. http://doi.org/10.1007/978-3-319-14424-5_1

Keuning, W. (2016). Ook ACM wil financiële innovatie helpen aanjagen. *Het Financieele Dagblad*, p. 8. Retrieved from http://fd.nl/ondernemen/1156501/ook-acm-wil-financiele-innovatie-helpen-aanjagen

King, A. (2007). Cooperation between corporations and environmental groups: a transaction cost perspective. *Academy of Management Review*, *32*(3), 889–900.

Koops, B., Oosterlaken, I., Romijn, H., van den Hoven, J., & Swierstra, T. (2015). *Responsible Innovation 2*. Springer International Publishing AG. http://doi.org/10.1007/978.3.319.17308.5

Lane, P. J., Koka, B. R., & Pathak, S. (2006). The reification of Absorptive Capacity: A critical review and rejuvenatino of the construct. *Academy of Management Review*, *31*(4), 833–863. http://doi.org/10.5465/AMR.2006.22527456

Lassignardie, J., & Brown, K. (2013). World Payments Report 2013, 56. http://doi.org/10.1017/CBO9781107415324.004

Lee, R. G., & Petts, J. (2013). Adaptive Governance for Responsible Innovation. In *Responsible Innovation: Managing the Responsible Emergence of Science and Innovation in Society* (pp. 143–164). John Wiley & Sons.

Lees, A., & King, M. (2015). World Payments Report 2015. Retrieved from https://www.fr.capgemini-consulting.com/resource-file-access/resource/pdf/world_payments_report_2015_vfinal.pdf

Liao, J., Welsch, H., & Stoica, M. (2003). Organizational Absorptive Capacity and Responsiveness: An Empirical Investigation of Growth-Oriented SMEs. *Entrepreneurship: Theory and Practice*, *28*(1), 63–85. http://doi.org/10.1111/1540-8520.00032

Mackenzie, A. (2015). The fintech revolution. *London Business School Review*, *26*(3), 50–53.

http://doi.org/10.1111/2057-1615.12059

Malsch, I. (2012). Responsible Innovation in Practice. *Sciforum Electronic Conferences Series*, *Vol. 2*(February), 1–15. Retrieved from http://www.sciforum.net/conference/wsf2/paper/836

Mukhopadhyay, S., de Reuver, M., & Bouwman, H. (2015). Effectiveness of control mechanisms in mobile platform ecosystems. *Telematics and Informatics*, *33*(3), 848–859. http://doi.org/10.1016/j.tele.2015.12.008

Muniesa, F., & Lenglet, M. (2013). Responsible Innovation in Finance: Directions and Implications. In *Responsible Innovation: Managing the Responsible Emergence of Science and Innovation in Society* (pp. 185–198). Wiley.

Orlitzky, M., Siegel, D. S., & Waldman, D. a. (2011). Strategic Corporate Social Responsibility and Environmental Sustainability. *Business & Society*, *50*(1), 6–27. http://doi.org/10.1177/0007650310394323

Owen, R., Macnaghten, P., & Stilgoe, J. (2012). Responsible research and innovation: From science in society to science for society, with society. *Science and Public Policy*, *39*(6), 751–760. http://doi.org/10.1093/scipol/scs093

Owen, R., Stilgoe, J., Macnaghten, P., Gorman, M., & Fisher, E. (2013). A Framework for Responsible Innovation. In *Responsible Innovation: Managing the Responsible Emergence of Science and Innovation in Society* (pp. 27–50). John Wiley & Sons.

Pavie, X., & Carthy, D. (2013). An Integration of Responsible Innovation in the Financial Sector Through Design Thinking. *SSRN Working Paper Series*. http://doi.org/10.2139/ssrn.2370396

Pavie, X., Scholten, V., & Carthy, D. (2014). *Responsible Innovation: From Concept to Practice*. World Scientific Publishing Co.

Pellé, S., & Reber, B. (2015). Responsible innovation in the light of moral responsibility. *Journal on Chain and Network Science*, *15*(2), 107–117. http://doi.org/10.3920/JCNS2014.x017

Pellizzoni, L. (2004). Responsibility and Environmental Governance. *Environmental Politics*, *13*(3), 541–565.

Porter, M. E., & Kramer, M. R. (2006). Strategy & Society: The Link Between Competitive Advantage and Corporate Social Responsibility. *Harvard Business Review*, *84*(12), 78–92.

Prosser, D. (2016). Data Privacy Fintech Opportunity Or Threat.

Ravetz, J. R. (1997). The science of "what-if?" *Futures*, *29*(6), 533–539. http://doi.org/10.1016/S0016-3287(97)00026-8

Rip, A., Misa, T. J., & Schot, J. (1995). *Managing technology in society: the approach of constructive technology assessment*.

Rochet, J.-C., & Tirole, J. (2003). Platform competition in two-sided markets. *Journal of the European Economic Association*, *1*(4), 990-1029. http://doi.org/10.1162/154247603322493212

Ross, S. (2015). What distinguishes the financial services sector from the banks? Retrieved March 10, 2016, from http://www.investopedia.com/ask/answers/030415/what-distinguishes-financial-services-sector-banks.asp

Schilling, M. A. (2013). *Strategic Management of Technological Innovation*.

Scholten, V. E., & van der Duin, P. A. (2015). Responsible innovation among academic spin-offs: how responsible practices help developing absorptive capacity. *Journal on Chain and Network Science*, *15*(2), 165–179. http://doi.org/10.3920/JCNS2015.x005

Schot, J., & Rip, A. (1997). The past and future of constructive technology assessment. *Technological Forecasting and Social Change*, *54*(1996), 251–268. http://doi.org/10.1016/S0040-1625(96)00180-1

Schutt, R. K., & Chambliss, D. F. (2013). Qualitative Data Analysis. *Making Sense of the Social*

World: Methods of Investigation, 320–357. http://doi.org/10.1136/ebnurs.2011.100352

Schuurbiers, D. (2011). What happens in the Lab: Applying Midstream Modulation to Enhance Critical Reflection in the Laboratory. *Science and Engineering Ethics*, *17*(4), 769–788. http://doi.org/10.1007/s11948-011-9317-8

Schwartz, M. S., & Carroll, A. B. (2003). Corporate Social Responsibility: a Three-Domain Approach. *Business Ethics Quarterly*, *13*(4), 503–530. http://doi.org/10.2307/3857969

Spelier, P. (2015). Payment Service Directive 2 for Dummies (deel 1). Retrieved July 20, 2016, from http://www.emerce.nl/achtergrond/payment-service-directive-2-for-dummies-deel-1

Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, *42*(9), 1568–1580. http://doi.org/http://dx.doi.org/10.1016/j.respol.2013.05.008

Stirling, A. (2007). "Opening Up" and "Closing Down": Power, Participation, and Pluralism in the Social Appraisal of Technology. *Science, Technology & Human Values*, *33*(2), 262–294. http://doi.org/10.1177/0162243907311265

Suchman, M. C. (1995). Managing Legitimacy : Strategic and Institutional Approaches. *The Academy of Management Review*, *20*(3), 571–610.

Timmenga, J. S. (2012). De hoofdactiviteit van betaaldienstverleners. *Update Banking & Finance*, 6–7.

Tiwana, A. (2014). *Platform Ecosystems: Aligning Architecture, Governance and Strategy*.

Tiwana, A., Konsynski, B., & Bush, A. A. (2010). Platform evolution: Coevolution of platform architecture, governance, and environmental dynamics. *Information Systems Research*, *21*(4), 675–687. http://doi.org/10.1287/isre.1100.0323

Tuk, Y. (2016). De eerste ervaringen met PSD2 en hoe snel de veranderingen gaan. Retrieved July 20, 2016, from http://www.emerce.nl/achtergrond/wat-psd2-van-financials-vraagt-en-hoe-snel-de-veranderingen-gaan

van de Poel, I., & Zwart, S. D. (2010). Reflective Equilibrium in R & D Networks. *Science, Technology & Human Values*, *35*(2), 174–199. http://doi.org/10.1177/0162243909340272

Van den Hoven, J., Lokhorst, G. J., & Van de Poel, I. (2012). Engineering and the Problem of Moral Overload. *Science and Engineering Ethics*, *18*(1), 143–155. http://doi.org/10.1007/s11948-011-9277-z

Verbrugge, R. (2016). FinTech wacht strijd met cybercrime. Retrieved July 21, 2016, from http://finno.nl/2016/03/22/fintech-wacht-strijd-met-cybercrime/

Verschuren, P., & Doorewaard, H. (2010). *Designing a Research Project* (2nd ed.). The Hague: Eleven International Publishing.

Von Schomberg, R. (2011a). Prospects for Technology Assessment in a framework of responsible research and innovation. *Technikfolgen Abschätzen Lehren: Bildungspotenziale Transdisziplinärer Methoden*, 39–61. http://doi.org/10.1007/978-3-531-93468-6_2

Von Schomberg, R. (2011b). *Research and Innovation in the Information and Communication Technologies and Security Technologies Fields*. Retrieved from http://ec.europa.eu/research/science-society/document_library/pdf_06/mep-rapport-2011_en.pdf

Von Schomberg, R. (2013). A Vision of Responsible Research and Innovation. In *Responsible Innovation: Managing the Responsible Emergence of Science and Innovation in Society* (pp. 51–74). John Wiley & Sons. http://doi.org/10.1002/9781118551424.ch3

Wilsdon, J., & Willis, R. (2004). See-Through Science: Why Public Engagement Needs to Move Upstream. *Demos*, 1–69. http://doi.org/10.1016/S0278-4254(04)00022-5

Yin, R. K. (2009). *Case Study Research* (4th ed.). SAGE Publications.

APPENDIXES

APPENDIX I INTERVIEW STRUCTURE AND EXAMPLE QUESTIONS

Onderwerpen

Issues en problemen (wel- en niet opgelost)

Spanningsveld groei / doorontwikkeling

4 dimensies van RI/MVI (anticipatie, reflexiviteit, integratie, responsiviteit)

De rol van CSR/MVO

Platform beheer (input, gedrag, output)

Regelgeving

Introductie

Nadruk op de interactie tijdens de ontwikkeling van het platform, de socio-technische kant (niet de puur technische problemen). Concepten niet letterlijk noemen voor zover mogelijk.

Voorbeeldvragen

Issues en problemen (wel- en niet opgelost)

- Welke problemen hebben de beiden platformen mee te maken gehad en hoe is hier mee omgegaan?
- Zijn er ook punten waar problemen verwacht waren maar die uiteindelijk geen echt issue waren?
- Waar strugglen de platformen momenteel nog mee?
- Hoe wordt het spanningsveld tussen groei en door-ontwikkeling aangepakt?
- Hoe worden problemen geidentificeerd? Wie is daar verantwoordelijk voor? (klant, intern?)
- Verzamel voorbeeld sub-cases die in de rest van het onderzoek als voorbeeld gebruikt kunnen worden.

4 dimensies van RI/MVI (anticipatie, reflexiviteit, integratie, responsiviteit)

- Was er sprake van een gestructureerde integratie van deze onderwerpen in het design traject?
- Anticipatie: In hoeverre zijn de eventuele impact en mogelijke issues (zie boven) van de platformen voor en tijdens de ontwikkeling in kaart gebracht?
- Reflexiviteit: In hoeverre zijn spelende issues in FinTech (privacy/security enz) gebruikt als kaders om de dienst binnen te ontwerpen. En is er ook rekening gehouden met eventuele toekomstige veranderingen in die kaders. (verandering van waarden).
- Integratie: Hoe zijn stakeholders betrokken bij het ontwerp en welke invloed hebben ze gehad op de ontwikkeling?
- Responsiviteit: Hoe flexibel is de opzet van de platformen om eventuele veranderingen in de industrie of opkomende problemen aan te kunnen. Is er ook een drive om continue te blijven innoveren om zo verwantwoord mogelijk te worden/blijven. Hoe worden prioriteiten en capaciteiten toegewezen in dit proces?

De rol van CSR/MVO

- Is MVO een aandachtspunt binnen de onderneming? En zo ja, hoe wordt dat ingevuld?

Platform beheer (input, gedrag, output)

- Hoe wordt controle over de platformen gehouden en hoe zijn ze tot deze vorm van controle gekomen?
- Welke rol hebben de stakeholders bij de ontwikkeling van controle mechanismes gehad?
- Worden de drie controle categorieën gebruikt? (input, gedrag, output) Welke vorm van controle lijkt het meest effectief en welke problemen worden hier mee voorkomen?
- Welke rol speelt relational control (het er vanuit gaan dat klanten zich gedragen op basis van gedeelde normen en waarden)
- Welke rol speelt eventuele boundary resources design?
- Is ook duidelijk dat die controle ook echt nodig is en dat inadequate controle mechanismen leiden tot overlast/problemen?

Regelgeving

- Is er regelgeving waar speciaal rekening mee moet worden gehouden?
- Ligt er regelgeving in het verschiet waar op termijn aan voldaan moet worden, en zo ja, hoe wordt daar op geanticipeerd?

Interiew checklist

	Sharepay	Mempay
Problemen (verleden, huidig, wel/niet opgelost, identificatie)		
Spanningsveld doorontwikkeling/groei/financieel		
RI Anticipatie		
RI Reflexiviteit		
RI Integratie		
RI Responsiviteit		
Rol van MVO		
Platform controle (hoe, adekwaat)		
Ontwikkelin van platform controle systemen (invloed stakeholders)		
Platform controle (input, gedrag, output, relational, boundary resources)		
Regelgeving (anticipatie)		

APPENDIX II CODING TABLE

Categorie	Trefwoorden	CTO Sharepay #	CTO Mempay #	Comm. Directeur Sharepay #	Comm. Directeur Mempay #	Product owner Mempay Sharepay #	Product owner Mempay Mempay #	CEO Sharepay #	CEO Mempay #	Manager klantenservice Sharepay #	Manager klantenservice Mempay #	Manager finance Sharepay #	Manager finance Mempay #
RI Anticipatie													
Voorzien/onvoorz	Voorspellen / verwachten / vantevoren / op voorhand / destijds / wat als?	5	5	1	2		1	2	2	3		1	1
Risico	Waarschijnlijk / consequenties / kritiek	1	1		1					1			
Gevolgen	Effecten / gevolgen / onwenselijk				1		1						
RI Reflexiviteit													
Normen /	Acceptabel / Gedrag / Ethisch / Verantwoord / Grenzen / Rand / Wettelijk	7	5	2	3		2	4	3	1	1	1	1
Motivatie	Inzichten / Afweging / randje opzoeken / Consessie	2	2	1	3		2	1	1			1	1
Reputatie	Voorkomen van reputatieschade / Identiteit	7	7	1	2		1	1	1	1		3	3
RI Integratie													
Samenwerken	Betrekken / Meewerken / Invloed	5	4	1	2		4	1	1	3		1	1
Dialoog	Match / Ideeen / Feedback / Overleg / Visie	4	2		1		2			3		1	1
Klantbehoefte	Klantvraag	3	2	2	2		2	1	2	2		3	3
RI Responsiviteit													
Aanpassen	Veranderen / wijzigen / evolueren / voortschrijdend / iteratief	3	4	1	3		2		1	2	2		
Modulair	Nieuwe opties / programmeren / toevoegen / automatiseren / versies	4	5	1	2		2	1	1	2	2	1	1
Reageren	Naar aanleiding van	4	4				3			1		1	1
Start-up – Spanningsveld doorontwikkeling													
Prioriteit	Afweging / belangrijk / balans / focus	5	5	2	3		1	2	2	2	2		
Snelheid	Time to market / snel reageren / instappen	1	1	2	2			1	1	1			
Doorontwikkeling	MVP / Functionaliteit / Volwassen product	2	2	2	2		1	1	1	3	1	1	1
Winst	Omzet / Groei / Financieel interessant	6	6	1	2		2	1	1	3	1		
Platform controle													
Input	Contract / acceptatie / screening / controle	7	7		4		7	3	3	2	2	1	1
Output	Voorwaardelijke uitbetaling	2	2					1	1			1	1
Gedrag	Klachten / reputatieschade / melding / moreel compas / incidenten / fraude	6	6	2	2		6	3	3	3	1	3	3
Relational control	Persoonlijk contact / hetzelfde doel				1								
Boundary	Beperkte mogelijkheden / weinig functies / vrijheid op het platform	1	1				1	1	1			1	
Regelgeving													
Verandering	Evolueren / updatesessies	2	2	1	1								
Toezicht	Toezichthouder / Autoriteiten	5	5	1	1		2	2	2			2	2
Regulering	Wetgeving	4	4	2	2			4	4	1	1	2	2
CSR													
Intern	Teambuilding / werksfeer / groen / paperless / personeel				2		1	1	1				
Extern	Sociaalmaatschappelijk / Activiteiten / Kennisoverdracht							1	1				