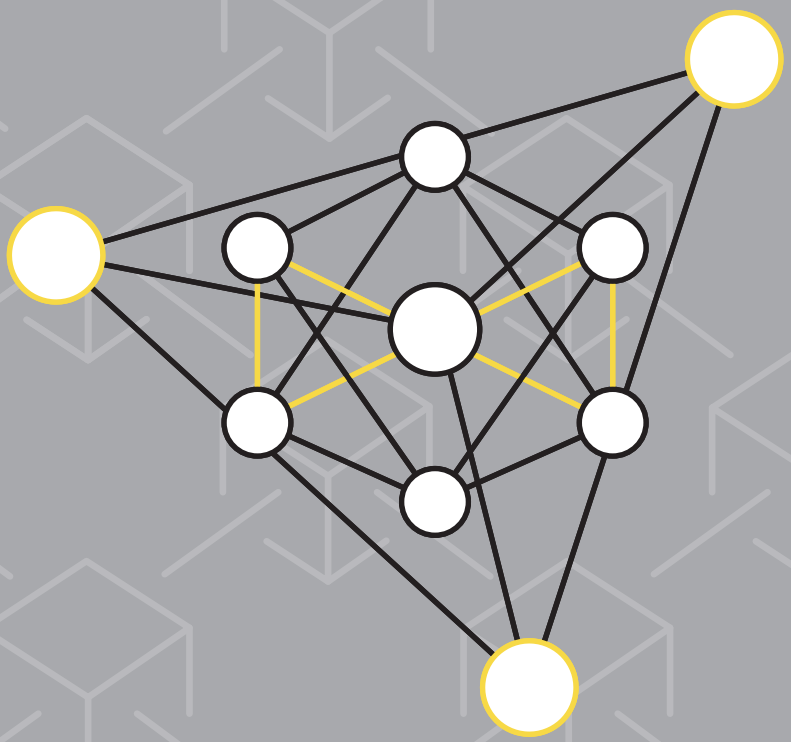
Expectation management for innovation processes within highly institutionalized environments

A framework for analyzing the organizational consequences of blockchain technology on the legitimacy of banks, and strategic approaches to manage these effects from a communication perspective



Marvin K. Vreman

TU Delft

EY Building a better working world

Expectation management for innovation processes within highly institutionalized environments

A framework for analyzing the organizational consequences of blockchain technology on the legitimacy of banks, and strategic approaches to manage these effects from a communication perspective

Master thesis submitted to *Delft University of Technology*
in partial fulfilment of the requirements for the degree of

Master of Science
in **Management of Technology**
Faculty of Technology, Policy and Management

and in partial fulfilment of the requirements for the degree of

Master of Science
in **Science Communication**
Faculty of Applied Sciences

by
Marvin K. Vreman
Student number: 4503368

To be defended in public on April 15th, 2019 at 10.00h

Graduation Committee MoT

Chairperson	: Prof.dr. M.J. van den Hoven,	Ethics/Philosophy of Technology
First Supervisor	: Dr.ir. Z. Roosenboom-Kwee,	Economics of Technology and Innovation
First External Supervisor	: Joëlla Albers,	EY Assurance Accountants LLP
Second External Supervisor	: Roderick van Vliet,	EY Advisory Accountants LLP

Graduation Committee SEC

Chairperson	: Prof.dr. M. de Vries,	Science Education and Communication
First Supervisor	: Dr. É. Kalmár,	Science Education and Communication
Second Supervisor	: Dr. M.C.A. van der Sanden,	Science Education and Communication
First External Supervisor	: Joëlla Albers,	EY Assurance Accountants LLP
Second External Supervisor	: Roderick van Vliet,	EY Advisory Accountants LLP

Preface

Over the past year, I have worked on my thesis project for the masters in MOT and SEC. The work that lies in front of you is a report that combines both masters as a double-degree project and is also the final exam to conclude my student life at Delft University of Technology.

It has been quite the experience. Looking back at this project, I am grateful for being able to design my own research. It was challenging, but also rewarding. I have gained much knowledge on different topics: the banking sector, blockchain technology, the practice of consulting, and what I found most captivating: how socially constructed systems put pressure on individuals, organizations, and larger institutions. Discovering why people expect certain outcomes or find certain activities 'normal' fascinates me. As I have learned, throughout this project:

> *"Institutions follow the individual, not the other way around." (MacDonald et al., 2016, p. 11)*

Interestingly however, in practice it seems that many people experience this the other way around. People say they must conform to what is expected of them and do not seem to realize that they themselves contribute to bringing change in the larger environment. Only conforming to what is expected, eliminates the unexpected.

I would like to thank my graduation committee at the university for supporting me throughout the whole research project. Especially, my first supervisors Zenlin Roosenboom-Kwee and Éva Kalmár, who were very supportive and critical at the same time. They enabled me to work in the right direction while being reflective about my own work. I would also like to thank Professor van den Hoven and second supervisor Maarten van der Sanden. Both were very positive and supportive throughout the research project.

Also, I would like to thank everyone at EY for their support and genuine interest. I would especially like to thank my supervisors Joëlla Albers and Roderick van Vliet, who always made sure I could access the necessary resources for my project. Both were very supportive and always had some tips and practical advice which made the research process so much smoother. I am very grateful for that.

Moreover, I would like to thank all the individuals who participated in this study. All of you provided valuable knowledge on the topic and insights in which manner theory can differ from practice. Without you, this project would not have been possible.

Finally, I would like to thank my friends and family for their patience and endless support. I am for always grateful to be surrounded with such good company.

Marvin Vreman
Delft, April 2019

Executive summary

Project context

In 2008, blockchain technology obtained its origin. It can verify transactions without the need for trusted central authorities and this has never happened before. Sooner or later, blockchain could revolutionize existing business models and bring new ways of coordinating economic activity. As a self-governing entity, blockchain will compete with firms, markets and economies. Its first application, bitcoin, has shown its potential to remove authorities and decentralize power. What will remain of the bank when its power and authority can be replaced with technology?

A bank's role as a financial intermediary is recognized by the public possibly without questioning. Their activities are socially deeply embedded as they have not experienced any major changes since their origin hundreds of years ago. Banks have become part of our culture. New technological trends show the importance to prepare for disruptive changes, but innovations oftentimes do not come from these traditional financial service firms. The importance and legitimacy of the banks is now questioned more than ever with the new feasibility of blockchain technology to solve trust-based coordination issues.

The thesis

This project has researched the consequences of blockchain technology on the expected future role of banks. And furthermore, how banks can respond to these effects to improve the innovation strategy and remain their future relevance. This has been done by inquiring the effects of blockchain on the organizational legitimacy.

> Organizational legitimacy is the perception of the bank's audiences that the actions of the bank are seen as appropriate along the social norms and values of its industry segment.

Two perspectives on organizational legitimacy are discussed in this project. First, an institutional perspective was adopted to gain a better understanding of the legitimation processes within the institutional environment and the effects of blockchain technology on the bank. Thereafter, a strategic perspective was used to manage the effects of blockchain technology on the legitimacy of the bank from a communication perspective. Narrative and systematic literature reviews, case analyses, semi-structured interviews, and a focus group approach were adopted as research methodologies and ultimately led to the construction of an innovation strategy framework.

Innovation strategy framework

The framework is applied to the Dutch banking system. The analysis of possible legitimation processes within this environment resulted in three legitimacy elements: (1) normative (moral based), (2) regulative (legal based), and (3) cognitive (culturally based). Banks primarily feel they ought to change their behavior due to blockchain technology as normative processes of legitimation.

The understanding and analysis of blockchain technology based on the design principles, allows for the identification of institutional elements that can affect social and economic systems. The institutional elements yield seven normative legitimacy challenges for banks and show how the institutional environment – that is changed by blockchain technology – pressurizes banks to change their organizational activities. The organizational consequences resulting from these legitimacy challenges have been identified by conducting expert interviews within the Dutch banking sector.

Now, banks mainly perceive blockchain technology as an enabler for improving their current business models. They will primarily imitate the changes that blockchain technology will bring to cope with the change in the legitimation process. Where needed, banks will shift from their current legal compliance to regulations including blockchain aspects. Also, it is clear that regulatory aspects play a major role in the outcome of the innovation process and limit the bank's innovative potential.

Depending on the legitimation process, banks should conform or strategically respond to the expected norm. The appropriate action has been determined by translating the ten most significant organizational consequences into communication challenges. During this process, each challenge was linked to different processes of legitimation: pragmatic, normative, regulative, and cognitive.

The regulatory and cognitive legitimation processes limit the bank's behavior – as constraints – and require conformity in a way that is economically viable, legal, and legitimate for the organization. The normative and pragmatic legitimation processes create opportunities for expanding the institutional playing field for the bank – as liberties – and enable strategic responses. Strategic actions involve responding to needs, producing proper outcomes, and offering symbolic displays.

Banks should select the most appropriate information that is communicated, aligning with the organization's mission, resources, and capabilities. Best practices to manage organizational legitimacy should further improve the strategic response through communicating about values, engaging in CSR activities, and including narratives in the communication strategies. Dialogue without the alignment of values of the wider institutional environment results in a negative legitimation process for the bank. The social norms and values should be assessed continuously, and if needed, the final legitimation strategies should be adjusted to ensure their effectiveness.

Conclusion

This framework shows organizations how to respond to external pressures induced by processes of innovation. Challenging highly institutionalized firms to conform to new social norms and values induced by innovations produce creative and legitimate solutions that fit the expectations of the larger environment. Innovation managers and communication professionals should focus on the novelties of innovation processes and the willingness to innovate should not only depend on legal compliance. Engaging in strategic processes of legitimation enables organizations to expand the institutional playing field and gain competitive advantage by differentiating in a legitimate way. The ultimate goal is to find solutions to improve the current processes, instead of violating the rules.

Contents

List of figures

List of tables

Part I

Introduction

1

Introduction

1.1 General introduction

"I just wish we could get there quicker; have the institutions involved in agreeing these structures, agree these things faster; get a movement that takes us past proof of stake and proof of concept to production of stake and production of concept. But it is all taking time. It's not the technology. It's the application of the technology that difficult things."
(Skinner, 2018, para. 7)

1.1.1 Blockchain technology

Blockchain technology obtained its origin from the invention of a peer-to-peer version of electronic cash which allowed online payments to be sent directly from one party to another without going through a financial institution (Nakamoto, 2008). This particular invention of electronic cash is also known as bitcoin, but in the general sense, these types of peer-to-peer payment system can also be referred to as cryptocurrencies. Although cryptocurrencies share some characteristics of traditional currencies, this growing asset class bases its verification on cryptography, hence, enabling peer-to-peer transactions (Acheson, 2018). The main novelty of bitcoin is the proof of concept that peer-to-peer systems can operate without intermediation of trusted central authorities, revolutionizing the way to do business – and society as a whole (Aste, Tasca, & Di Matteo, 2017). This underlying principle of bitcoin is known as blockchain technology, which can be described as a mathematically secured, chronological, and decentralized consensus ledger or database, whether maintained via internet interaction, peer-to-peer network, or otherwise (Vermont Statutes, 2017).

"The blockchain is best decoupled from its connection to bitcoin because the economic value and disruptive potential of blockchain does not depend upon the value and prospect of bitcoin" (MacDonald, Allen, & Potts, 2016, p. 4). In other words, the novelty lies in the specific design principles of blockchain and bitcoin is only the first of the many other potential applications for this technology. There is much power to be found considering blockchain as a major building block in its ability for the development of decentralized social and economic systems. It is for good reason that a widely discussed industry that blockchain may potentially transform is financial services.

1.1.2 The institutionalization of banks

The financial services industry – including banking, finance, and other payments services – accepted and made payments on behalf of their depositors since their origin in medieval Europe (McAndrews & Roberds, 1999). The institutionalization process of how modern banking is experienced has been going on for more than fifteen hundred years. Not to mention that the role of the bank as a financial intermediary is being practiced and recognized for almost as long. The general interpretation of the function of a bank is one that can be understood in a modern sense by describing it as an internalized market: "a platform to match those with excess supply of capital (savers) with those with excess demand for capital (borrowers)" (MacDonald et al., 2016, p. 2). Modern society is developed and built around financial institutions and the activities of these organizations are recognized by the public possibly without questioning. With that being the case comes along this new invention, blockchain technology, that can create a paradigm shift within this highly institutionalized environment.

1.1.3 Institutional theory and organizational legitimacy

"Institutions follow the individual, not the other way around." (MacDonald et al., 2016, p. 11)

Institutions can be understood as governance structures, which is an environment embodying rules describing the appropriate procedures and behavior that give collective meaning and value to particular entities and activities (Hybels, 1995). Environments where these embodying rules are deeply socially embedded are regarded as highly institutionalized. In modern societies, entities that arise in these highly institutionalized contexts are formal organizational structures, which activities are represented by an acceptable account of organizational activities, contributing to the organization's legitimacy, stability, and the necessary resources (Meyer & Rowan, 1977).

Legitimacy is one of the core elements of institutional theory, and it is granted when organizations conform to rules for social behavior (Scott, 2004). These rules are created formally and informally within the larger socially constructed system. When rules in an institutional environment are absent or unclear, organizations will lack understanding of the appropriate behavior within these structures which endanger the organization's existence. Knowing what these rules are, why they exist, and – if possible – how they can be manipulated, are key issues when organizations want to perform on both an economic and social level. Only by conforming to these rules, organizations will be perceived valuable and meaningful, contributing to its survival and legitimacy. Moreover, conforming to these rules means engaging in the appropriate behavior that is referred to the acknowledgement of that particular entity by its audiences. To give an example, a bank is only perceived as a bank when it acts like a bank. This may sound straightforward, but how does a bank know whether it is a bank or not? One way of addressing this question is by looking at the environment, at other organizations that are considered as banks, and act in an equal manner. If a bank suddenly decides to sell apples instead of being a financial intermediary, it quickly will not be considered as a bank anymore. Instead, it will be perceived as an illegitimate entity within the context of banks – and it will now probably be a legitimate fruit seller. In other words, without legitimacy, there is no bank at all. Being legitimate, being granted legitimacy or being perceived as a legitimate entity can be achieved by following the rules and procedures that are seen as appropriate for that particular entity. Looking at other organizations within the same institutional context and behaving similarly is one of the legitimation processes to achieve this goal.

The formal organization of banks operate in a highly institutionalized environment. For this reason, banks are more likely to engage in legitimating activities. The heavily regulated environment forces banks to engage in activities linking the organization with the environment because they are more dependent on acceptance by the environment for their economic well-being (Dowling & Pfeffer, 1975). Engaging in legitimating activities – and surviving – means a continuous understanding of the appropriate rules and procedures within the institutional environment, as well as signaling this understanding to its audiences.

The legitimation process may change significantly under certain circumstances of institutional change. Innovation processes can change the appropriate rules for behavior within the institutional environment. Changes in legitimation affect the institutionalization of organizational procedures and behavior and in consequence, can alter the organization's acceptance by its audiences. Although these major changes may be uncommon in highly institutionalized environments – since legitimation processes are more rigid in formal organizations – legitimacy is not an unquestioned state once established (Hybels, 1995). Accordingly, legitimacy is not something that just invariably exists. It needs to be maintained and managed. It becomes even more notable when considering institutional change due to innovation processes in an environment that has remained unchanged for decades. Legitimacy is at least the minimum requirement for an organization to prosper. Without legitimacy, and an absence of stakeholder support, it is nearly impossible for an organization to survive.

Organizations can manage legitimacy by effectively managing stakeholders' perceptions of the organization (Barnett, 2003) and by forging strong relationships with these stakeholders (Camilleri, 2018; Nason, Bacq, & Gras, 2018). Organizations should continuously restructure and reinvent their identities, images, reputation and brands, to gain and sustain legitimacy (Aronczyk, Edwards, & Kantola, 2017) by establishing a value congruence between the organization and the stakeholders' perception (Colleoni, 2013). All these legitimating activities rely heavily on communication between the organization and its stakeholders (Barnett, 2003; Colleoni, 2013; Khan, 2018; Massey, 2001; Pollach, 2015; Riel & Fombrun, 2007; Suddaby, Bitektine, & Haack, 2017; Suddaby & Greenwood, 2005).

1.2 Double degree master thesis project

"With the new feasibility of [blockchain] technology solving previous trust-based coordination issues, many previously taken-for-granted centralized institutions will lose their power, legitimacy, and importance" (Seidel, 2018, p. 41).

The significance of blockchain is better understood if it is regarded as an institutional technology. Blockchain offers a new way of coordinating economic activity and an institutional analysis views how blockchains compete with firms, markets and economies as institutional alternatives for coordinating the economic actions of groups of people (Davidson, De Filippi, & Potts, 2018). Accordingly, this research project aims to view blockchain technology from an institutional perspective. By first looking at the particular novelties of this innovation and not directly diving into the technical applicability of this technology within a specific domain, a clearer understanding can be developed of how blockchain distinguishes itself from other technologies. Identifying blockchain's institutional elements create insight in the social and economic structure of this phenomenon and contribute to the understanding of its effects on institutional environments and the legitimacy of organizations.

A widely discussed topic is how blockchain will disrupt financial services (Lachance, 2016). Its design will unarguably change the way how banks will perform their business. However, the institution of banks has not experienced any major changes since their origin hundreds of years ago, and their relevance and legitimacy have never been questioned as much as before this invention. "More and more large financial services firms are organizing for innovation, but it turns out that disruptive and radical innovations oftentimes do not come from established players, even though they have expressed the need for this to happen" (Das, Verburg, Verbraeck, & Bonebakker, 2018, p. 101). The question therefore is whether banks are ready for such an innovation.

Although the exact consequences of blockchain as an institutional technology will have yet to be determined, viewing blockchain from an institutional perspective provides insight in how blockchain can influence 'the rules of the game' and thus, how it affects organizations on both an economic and a social level. With blockchains functioning as autonomous organizations alongside traditional banking institutions, the nature of products and services may be redefined – which at the same time clarify social norms and values (Meyer & Rowan, 1977). Redefined social norms and values change the evaluative standards for which banks will be granted legitimacy. The appropriate procedures and rules can become ambiguous when blockchain technology enters the institutional environment of banks and clarity on these terms will become critical.

1.2.1 Thesis outline

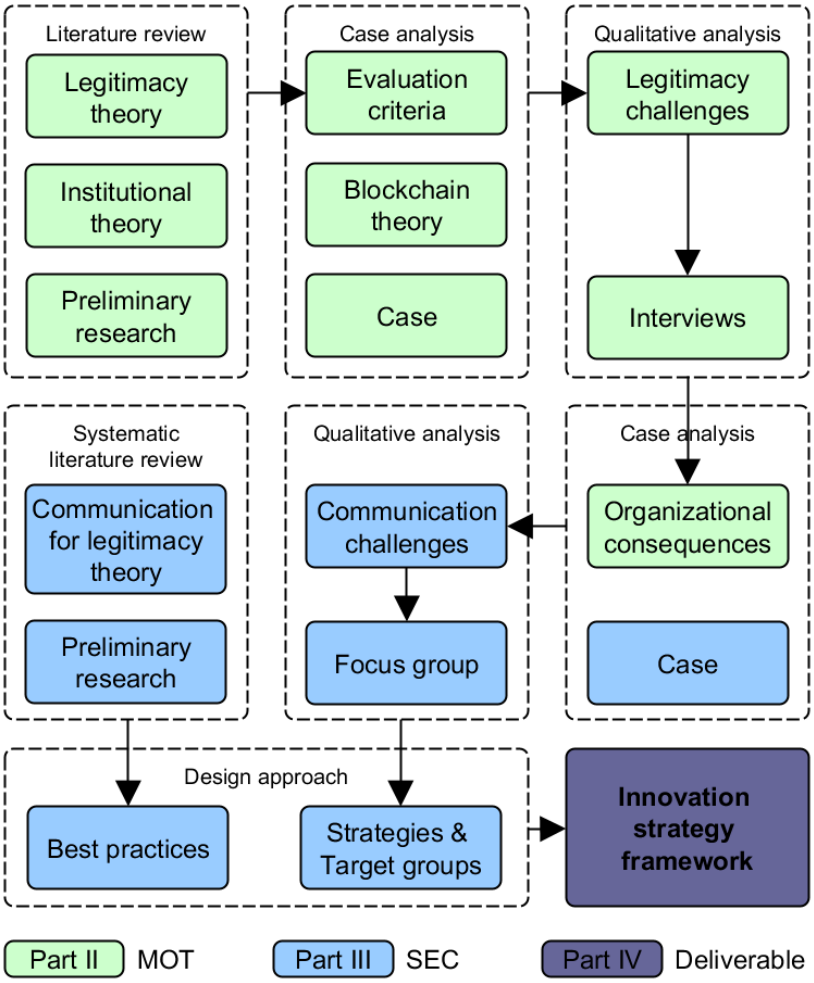


Figure 1: Research design of the double degree thesis project

The research project presented in this report entails a double degree master thesis project combining the master programs MOT (Management of Technology) and SEC (Science Education and Communication – Science Communication track) at Delft University of Technology. Both of the two master theses are designed to address the research problem mentioned in the introduction as schematically depicted in Figure 1. Based on a perspective on legitimacy, this project researches the consequences of blockchain technology on the expected future role of banks, and the ways in which communication contribute to effectively managing these effects to improve the bank's innovation strategy. Within legitimacy research, the majority can be divided in two categories – the strategic and the institutional perspective (Massey, 2001; Suchman, 1995). This research project touches on both perspectives and is further divided in three parts.

1.2.1.1 Part II – Management of Technology

The continuity and stability of banks are at risk and are faced the challenge to organize for change (Das et al., 2018).

Part II of this report involves the MOT project. The Management of Technology program focusses on exploring and understanding technology as a corporate resource – showing how firms can use technology to maximize customer satisfaction, while maximizing corporate productivity, profitability, and competitiveness (TU Delft, n.d.1). The impact

of blockchain technology on organizational legitimacy and the future of banks is therefore a relevant research topic within this educational domain.

The MOT project involves an institutional perspective on organizational legitimacy and blockchain technology, and how this technology in turn can affect the legitimacy of the institution of banks. Work in the institutional tradition emphasizes on the institutional environment and the pressure it exerts on organizations to act along the expected standards (Massey, 2001). It enables a more inward look into the socially constructed environment, and thus is suitable for analyzing the effects of blockchain technology on the legitimacy of the bank. To conclude, this part provides the organizational consequences for banks when blockchain technology affects the institutional environment. Moreover, it provides the possible managerial and research implications. This is done by means of a literature review, a case study, and a qualitative approach.

1.2.1.2 Part III – Science Communication

"Innovation happens in society, and involves the contextual re-ordering of relations in multiple social networks" (Leeuwis & Aarts, 2011, p. 4).

Part III of this report discusses the SEC project. Science Communication can play a major role in managing stakeholder's perception for organizational legitimacy. The domain of Science Communication contributes to the quality of new and emerging technologies by attuning to societal demands. It considers the design and optimization of strategic communication processes within and between organizations and society (TU Delft, n.d.2). A global trend within the Science Communication argues that the sources of knowledge are spreading more widely, indicating a shift towards a 'knowledge society' (Dijkstra, de Bakker, & van Dam, 2014). Scientists and experts and no longer the primary sources for knowledge about new technologies and decision-makers turn to the general audience as the attachment of societal values to innovation processes are becoming increasingly important. With blockchain technology having both social and economic implications, the interaction between innovators and society becomes more and more important for meaningful innovation. Great potential can be found in the process of constructing innovations by means of ongoing societal interaction (Leeuwis & Aarts, 2011). Under such circumstances, the practice of Science Communication contributes to a successful value alignment between the bank and their stakeholders under conditions of institutional change and contribute to the organization's legitimacy and its survival.

The SEC project involves a strategic perspective on organizational legitimacy. The strategic approach depicts legitimacy as an operational resource being purposive, calculated, and frequently oppositional. It emphasizes the ways in which organizations instrumentally manipulate and deploy – mainly through communication with its stakeholders – evocative symbols in order to achieve legitimacy (Suchman, 1995). The strategic perspective provides an outward look and has a more actionable approach on how the organization can manage legitimacy which makes it a suitable approach for identifying ways banks can manage or alter the effects of blockchain technology on the legitimacy of banks. This part discusses the legitimation strategies that banks can adopt to deal with the institutional consequences of blockchain which endanger the organization's existence. It aims to provide these insights by means of a case study, a systematic literature review, and a qualitative approach.

1.2.1.3 Part IV – Innovation Strategy Framework

Nowadays, banks, just like any other firm, are guided by a need for competitiveness. This implies not only vigilance over costs, but also a commitment to its customers to a procedure for creating value for both parties. (Lamarque, 2005, p. 30)

Part IV will provide a workable framework, integrating the results of both parts. It can be used to generate insights in which ways different elements of blockchain technology will affect the legitimacy of banks, the managerial implications, and the legitimation strategies that can be used to deal with these challenges. The outcome of this innovation strategy framework is based on the research findings and the interpretation of the researcher.

Part II

The effects of blockchain technology on the legitimacy of banks – an institutional perspective

2

Research Approach for MOT

This chapter describes the research approach for the MOT project. Section 2.1 describes the current trends concerning blockchain technology and the existing approaches describing this technology from an institutional perspective. Thereafter, section 2.2 provides the research context of this part, describing the overall context of the project, the knowledge gaps and research problem, research objective, and potential relevance of the research outcome. Section 2.3 describes the main research question and the set of sub-questions needed to answer the main research question. To conclude, section 2.4 provides the research methodology. It describes the sources, methods, and deliverable for each sub-question. Also, an elaboration of each research method is provided. Furthermore, a schematic research design is provided showing how the research approach is related to the chapter outline.

2.1 Current state

Regardless of its novelty, much existing research has focused on the potential impact of blockchain technology. Not only the impact in banking – where the first application of blockchain has been applied – but also in many other sectors the potential benefits of using blockchain technology are being explored. This includes sectors such as insurance, healthcare, government, automotive, retail and consumer goods, and many more. As shown in Figure 2, venture capital investments and deals in blockchain and crypto companies continue to rise, reaching almost four billion dollars in 2018 (Diar, 2018).

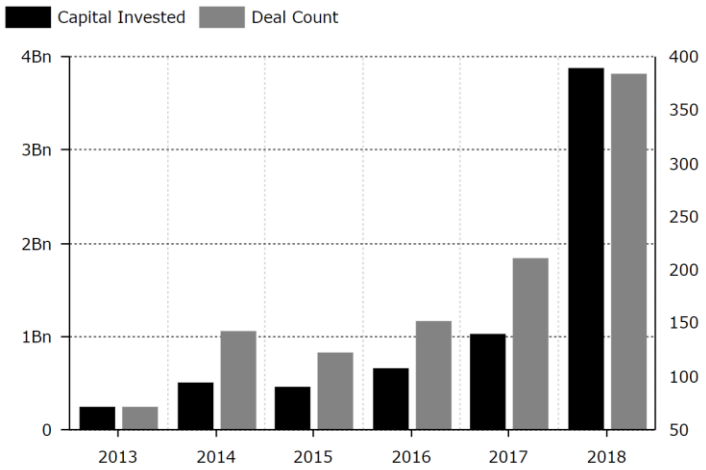


Figure 2: Yearly trend in venture capital firm blockchain investments and deals (Diar, 2018)

However, much of the existing blockchain-related projects focus on the efficiency gains and feasibility of this technology within these sectors. Yet it is argued that the true significance of blockchain does not entail a productivity revolution. Rather, it enables a new way of economic coordination, transforming governments, organizations, and markets (Davidson, De Filippi, & Potts, 2016). Solely considering blockchain technology from a technical point of view can result in the negligence of the true novel aspects of this invention and may lead to the conclusion that blockchain is not the suitable technology to be applied in this moment of time. In some cases, the efficiency gains of applying this technology are not superior to existing methods or the technology is simply not mature enough (Fenech, 2018).

This research project views blockchain from an institutional perspective and looks at the particular novelties of this innovation. By not directly diving into the technical applicability of this technology within a specific domain, a clearer understanding is developed of how blockchain distinguishes itself from other technologies. Some other scholars have applied a similar approach – i.e. by primarily looking at the particular novelties – and discussed the social and economic implications of blockchain (Allen, 2017; Aste et al., 2017; Davidson et al., 2018; Hayes, 2016; MacDonald et al., 2016; Seidel, 2018). What is lacking however, is the link between the potential effects on organizational theory and practical implications. In short, most research and development on blockchain technology seems to have focused on the technical performance and economic feasibility. Blockchain's transformative potential of institutional contexts and organizations is yet mainly unexplored.

2.2 Research context

Overall context

Blockchain technology appears to be an innovation with the potential of leaving both an economic and social impact. The first application using this technology is known as bitcoin, a cryptocurrency. However, after its invention it became clear that blockchain is not only suitable for cryptocurrencies but also for many other purposes. A widely discussed topic is how blockchain can disrupt financial services (Lachance, 2016). Its design will unarguably change the way how banks will perform their business. Banks, however, have not experienced any major changes since their origin hundreds of years ago. The question therefore is whether banks are ready for such an innovation. Now with the introduction of blockchain technology, banks should focus on its implications on both an economic and social level. Many customers may have confidence in the capabilities of the bank to perform their tasks. However, equally important is if the customers agree on whether the bank is doing the right thing. Banks must operate according to expectations of the environment in order to be perceived as a legitimate entity. The potential impact of blockchain technology on institutionalization processes may change these expectations.

Knowledge gaps and research problem

Despite the increasing interest in blockchain-related projects, there is no adequate organizational theory available to explain this large distributed trust segment of rapidly growing economic activity (Seidel, 2018). It is therefore unclear how blockchain technology can affect the legitimacy of an organization. There is no knowledge available on the effects of blockchain technology on the legitimacy of banks. Also, how these effects can be evaluated and can contribute to the development of an innovation strategy remains open.

Research objective

The aim of this research project is to identify the organizational consequences for banks that are affected by blockchain technology to improve the innovation strategy by looking into the theoretical effects of blockchain technology on the legitimacy of banks and by evaluating these effects with different experts involved the Dutch banking sector.

Relevance of research

The research outcomes may have a scientifically contribution in several ways. The confrontation of organizational theory with blockchain theory contribute to the understanding of blockchain as an institutional technology. Furthermore, the effects of blockchain technology on organizational legitimacy can contribute to the further development of legitimacy theory. The results can provide insight in the influences of blockchain technology on legitimacy within the financial domain or other large incumbent firms. The research design could contribute to the development of research projects which need to identify legitimacy challenges for organizations dealing with potential disruptive technologies.

Other than the scientific relevance, several insights can be gained from this research which may contribute to the societal gains. The resulting overview of organizational consequences on banks could provide insights that may arise in similar innovation projects in other domains. The research design could contribute to the development of innovation projects which need to identify legitimacy challenges for organizations dealing with potential disruptive technologies. The developed overview of organizational consequences may provide insights for banks how to make strategic decisions to deal with blockchain technology as a competing self-governing organization.

2.3 Research questions

The main research question for the MOT research project is as follows:

What issues can be discerned and conceptualized that capture the effects of blockchain technology on the organizational legitimacy of banks to improve the innovation strategy?

In order to answer this main research question, a set of sub-questions is answered first. The results from these sub-questions yield the formulation of an answer for the main research question. By splitting the main research question into sub-questions, the research objective can be achieved in a step-by-step manner. In consequence, four sub-questions are derived from the main research question:

The first sub-question focusses on the sources needed to establish the evaluation criteria:

SQ1 What criteria found in literature are relevant for identifying the effects of blockchain technology on the organizational legitimacy of banks?
   a. How can organizational legitimacy best be defined?
   b. What are the factors, and the relations between the factors, of organizational legitimacy?
   c. Which organizational legitimacies can be described within the banking sector?
   d. What factors affect the legitimation process?

The second sub-question involves an evaluation of the effects of blockchain technology on the organizational legitimacy of banks:

SQ2 Which legitimacy challenges arise, in view of the evaluation criteria, by analyzing the case of blockchain technology affecting the institutional environment of banks?
   a. What are the consequences of blockchain technology from an institutional perspective?
   b. How do the institutional elements of blockchain technology affect organizational legitimacy?
   c. How can the changes in legitimacy be best conceptualized?

The third sub-question uses the results from the second sub-question to identify the organizational consequences of banks in view of the legitimacy challenges due to blockchain technology. The organizational consequences reveal the focal points for the blockchain innovation strategy for the banks:

SQ3 Which organizational consequences arise when the institutional environment of banks is affected by blockchain technology by confronting stakeholders involved in the Dutch banking sector with the legitimacy challenges?
   a. How can the legitimacy issues be best confronted with the experts?
   b. Which experts can and need to be confronted?

The results of the third sub-question will be considered as input for the development of an innovation strategy. Therefore, the identified organizational consequences will contribute to answering the fourth and final sub-question:

SQ4 How can the identified organizational consequences contribute to the development of a framework supporting banks to improve the innovation strategy?
   a. How can the consequences be conceptualized and mapped out?
   b. What can be recommended to improve innovation strategy?
   c. What are the limitations of the research?

Each of the sub-questions is answered in the provided order as the output generated by the first sub-question is used as input for the second sub-question, as the output derived from the second sub-question is used as input for the third sub-question etc. In other words, by the time the fourth and final sub-question is answered, all necessary data has been collected to answer the main research question, and hence the achievement of the research objective.

2.4 Research methodology

Table 1: Research approach per sub-question

		Sub-question	Sources	Methods	Results
Chapter 3	**Problem-analysis**	SQ1	Articles, papers, and books on institutional theory, legitimacy theory, and blockchain technology, preliminary research on blockchain impact within financial services	Literature review	Evaluation criteria for identifying the effects of blockchain on the organizational legitimacy of banks
	Diagnosis	SQ2	Results SQ1, blockchain theory, case content	Case analysis	Legitimacy challenges
Chapter 4 Error! R		SQ3	Banking experts involved in innovation, regulation, strategy	Qualitative approach	Organizational consequences
Chapter 13	**Develop**	SQ4	Results of SQ1, SQ2, SQ3, Managerial implications	Design approach	Innovation strategy framework

The research methodology of the MOT project consists roughly of three parts: a problem-analysis, a diagnosis, and the development of a framework (Table 1).

The problem-analysis focuses on finding out what the exact problem is. Also, for who this is a problem, and why. This part identifies the importance of organizational legitimacy, establishes a workable definition of organizational legitimacy, identifies different legitimacy elements, and provides a model for evaluating the effects of blockchain technology on the organizational legitimacy of banks. The evaluation criteria are developed by doing a literature study. Accordingly, this forms the basis of the research.

In the phase of the diagnosis, the causes, backgrounds and interrelated aspects of the problem are researched. First, the established model in the problem-analysis is applied on the case when the institutional environment of bank is affected by blockchain technology, yielding several legitimacy challenges for banks. Secondly, these legitimacy challenges are confronted with experts involved in the Dutch banking sector to identify the organizational consequences induced by these challenges. This part also requires a critical reflection on how blockchain technology may or may not affect the organizational legitimacy of bank. Furthermore, it uses a qualitative approach to identify the organizational consequences.

Finally, an innovation framework is developed. It provides the combined results of the problem analysis and the diagnosis, and the managerial implications of the identified organizational consequences generated from the discussion. This framework provides managers insights to improve the blockchain innovation strategy for the bank.

Research design

The remainder of part II of the project is based on the research design as depicted in Figure 3. This research design is a schematic representation of the main research question and the sub-questions for the project. The following sections elaborate on each research method and how it is integrated in the research project.

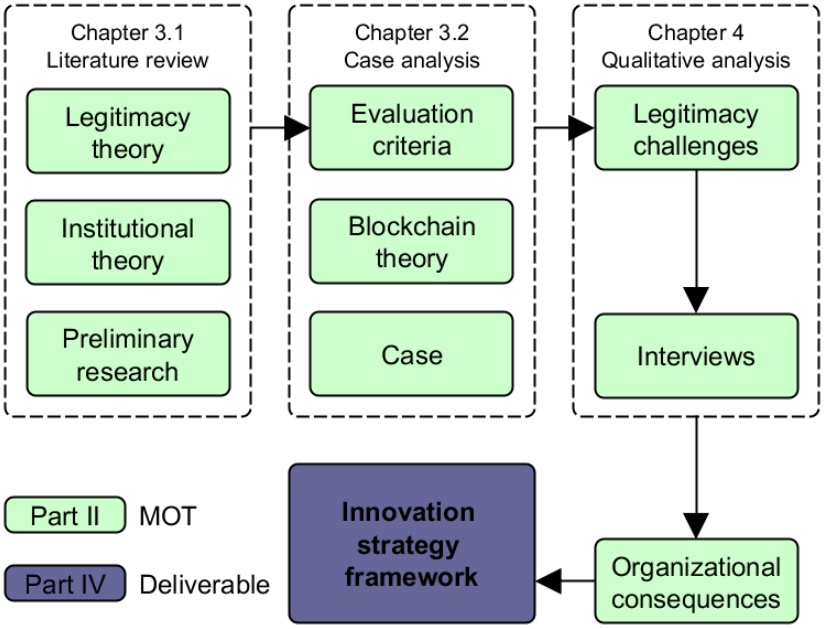


Figure 3: Research design for identifying the effects of blockchain technology on the organizational legitimacy of banks

2.4.1 Literature review

The purpose of the literature review is to answer SQ1: to develop the evaluation criteria which are needed to the following case study (Figure 3). A literature review enables the development of sharper and more insightful questions about the topic to be addressed (Yin, 1994). The questions enable the researcher to be critical about the dynamics of organizational legitimacy, contributing to the construction of evaluation criteria to assess the effects of blockchain technology on the legitimacy of banks.

The literature review process involves a narrative review. Its primarily focus is to gain an understanding without an initial impression of the topic area (Bryman, 2012). It considers a wide range in literature involving institutional theory, organizational legitimacy, and preliminary research regarding banking and blockchain technology. Within this process, a snowball sampling approach is used in search for relevant articles concerning the aforementioned theoretical domains. This approach concerns the identification of relevant sources based on preliminary recommendations and the continuous search for new sources based on the relevant references identified in the initial papers. The literature review has continued until the point at which incremental learning is minimal. This is described as theoretical saturation, which occurs when the researcher mainly observes earlier seen phenomena (Eisenhardt, 1989). To make sure that the time spend on this literature review is feasible within the duration of the project, the research questions, scope, and planning of the research are well determined beforehand. “The more a study contains specific propositions, the more it will stay within feasible limits" (Yin, 1994, p. 22). The propositions contribute to defining the purpose of the study and it limits the temptation of collecting all information that is encountered. Although a narrative review may be difficult to reproduce, it is a suitable approach for an explorative study like this.

The literature review process has been documented using OneNote. The search for relevant literature has resulted in a reading list containing over 60 papers. Within this list, the papers were categorized under:

- Institutional theory
- Organizational legitimacy
    - Legitimacy in banking
    - Communication for organizational legitimacy
- Institutional change
- Organizational trust
- Blockchain theory and governance
- Blockchain in banking and finance

These categories are also the criteria for which relevant papers have been selected. Over 30 sources within this reading list have been used for the establishment of the theoretical foundation. These sources do not include the sources of the additional books and web articles used for this study – these will fall under the preliminary research for the literature review. Relevant factors from the consulted literature have been documented under the corresponding topics that they were addressing. For instance, within the category of organizational legitimacy, different factors have been listed under topics such as: definitions, general understanding, dynamics, determinants, etc. Blockchain technology had factors related to topics such as: general understanding, consequences, economics, governance, banking, and many more. By continuously categorizing each relevant factor under a specific topic, a complete overview was created of the different papers discussing the relevant factors for this project.

After the search for relevant literature, the evaluation criteria have been developed as follows: First, there is the establishment of construct validity – i.e. clarity on what is going to be measured. It involved gaining a profound understanding of the related theories that describe organizational legitimacy and the characteristics of blockchain technology. To obtain construct validity, the correct operational measures for the concepts have to be established (Yin, 1994). This establishment is based on the following criteria to answer the first sub-question:

1. Creating a definition of organizational legitimacy relevant within this project's context
2. The selection of the specific types of changes that are associated with organizational legitimacy
3. Connecting these legitimacy types with the banking sector
4. Identifying which factors affect the legitimation process to show that the selected measures do indeed reflect the selected type of changes within the project context

These steps require clear definitions of each research object (e.g. blockchain and organizational legitimacy). Furthermore, the variables that influence the research object have to be determined. For instance, which elements of blockchain affect organizational legitimacy? And in what way? What is the significance of each variable? By answering such questions, the correct operational measures are selected and researched, establishing the evaluation criteria in a step-by-step manner. The resulting evaluation criteria are used to evaluate the effects of blockchain technology on the organizational legitimacy of banks.

2.4.2 Case analysis

The purpose of the case analysis is to answer SQ2: to identify the legitimacy challenges for banks by applying the evaluation criteria established in the literature review (Figure 3). The case analysis helps to understand the dynamics within single or multiple settings, allowing for in-depth examination of the project's specific case. It is highly suitable for exploring new topic areas such as blockchain technology (Eisenhardt, 1989). It emphasizes on comparing and interpreting the literature findings in order to gain profound understanding of the case (Verschuren & Doorewaard, 2010). The case analysis determines whether the theory's propositions are correct or whether some alternative set of explanations might be more relevant (Yin, 1994). In other words, a critical evaluation takes place of the identified legitimacy challenges and it decides which challenges will be confronted during the interview sessions.

The approach of the case analysis is based on the literature findings discussed in section 3.1. The execution of the case analysis is quite self-evident since all criteria are established during the literature review. The case description is based on the research context provided in the introduction (Part I). By having a description of the case early in the analysis process, the researcher can cope with the large amount of literature data (Eisenhardt, 1989). In essence, the case analysis inquires what the effects of blockchain technology are on the organizational legitimacy of banks. The results of this analysis yield the legitimacy challenges for the bank.

2.4.3 Qualitative approach – Semi-structured interviews

The purpose of the qualitative approach is to answer SQ3: to identify organizational consequences by confronting stakeholders involved in the Dutch banking sector with the legitimacy challenges. A qualitative approach is used to identify the organizational consequences for banks affected by blockchain technology. The results are derived from a comparison between theoretical data – i.e. the legitimacy challenges – and contextual settings – i.e. semi-structured interviews, increasing the understanding of the practical implications of the theoretical findings. Semi-structured interviews are suitable for delving deeply into certain topics and to gain a thoroughly understanding of the provided answers (Harrell & Bradley, 2009). Within the semi-structured interview, a list of questions of fairly specific topics are covered, which is referred to as the interview guide (Bryman, 2012). With this intention, the participant has a great deal of leeway how to reply. Also, it allows to delve deeper into certain topics that need further clarification or potentially interesting subjects.

Interview guide

The interview guide consists of numerous scenarios based on the developed legitimacy challenges during the case analysis. It is the main tool for the researcher during the interviews. The purpose for turning these challenges into scenarios is to provide the participants enough context for the challenges without unnecessary jargon. How these scenarios are developed is further addressed in chapter 4. Each scenario is provided with an open question to identify the corresponding organizational consequences. The open questions allow the participants to contribute as much detailed information as they desire. Also, it enables the possibility to ask probing questions to keep the conversation on track, addressing the appropriate topics. The open-ended questions are desirable "allowing the participants to fully express their viewpoints and experiences" (Turner III, 2010, p. 756); and limit the urge to only provide the answers that seem feasible within the current institutional context. Probes are used in case additional information is needed (Jacob & Furgerson, 2012), or in case there is any reason to think that the respondent has not given a complete report of their thinking or the participant simply does not seem to have understood the question (Harrell & Bradley, 2009).

Participant selection

The unit of analysis from which the data is collected is the Dutch banking sector, meaning that the interviews are conducted with experts involved in banking. A judgment sampling approach is used to select the participants for this project. This approach allows for a selection of candidates that reflect some knowledge on the topic which provides valuable perspectives on the research (Harrell & Bradley, 2009). In order for a meaningful conversation, the experts need to have knowledge on the fields of banking and blockchain. Moreover, the experts were approached based on the judgment that they have work experience in the banking sector, specifically in the areas of innovation and strategy. Furthermore, the experts were required to have some basic knowledge on blockchain technology and its potential impact in the financial services industry. This expert profile allows for critical viewpoints and a valuable conversation in which the participants are asked to think about the potential disruptive consequences for banks.

Six banking experts have been approached. Five of these experts were involved in four different Dutch banks and one expert is involved in one of the supervisory and regulatory bodies for the Dutch financial system, providing a diverse range of perspectives on the issues to be addressed.

3

Constructing Evaluation Criteria and Identifying Legitimacy Challenges

3.1 Constructing evaluation criteria

This section aims to construct the evaluation criteria in order to identify the effects of blockchain technology on the legitimacy of banks. These criteria are based on the literature findings describing legitimacy. By using this approach, the first sub-question of the research project is answered which stated:

SQ1 What criteria found in literature are relevant for identifying the effects of blockchain technology on the organizational legitimacy of banks?

By answering this question, the evaluation criteria are established to identify the effects of blockchain technology on the legitimacy of banking, and the corresponding challenges that arise. The theoretical foundation is set up by doing a literature review using a desk research strategy. Within this study, various literature concerning organizational theories are addressed. This includes institutional theory, with an emphasis on legitimacy theory. Additionally, to create a better understanding of the case, literature regarding the design features of blockchain technology and the role of banks are examined.

3.1.1 Organizational legitimacy

This section provides a working definition of organizational legitimacy that is relevant to this research project. Following, different legitimacy elements are identified, and these legitimation processes are linked to the institution of banking. It concerns how these legitimacy elements within the banking sector are affected due to institutional changes. The section concludes by addressing the most relevant legitimacy element related to the case.

Both legitimacy and institutionalization empower organizations by making them seem natural and meaningful (Suchman, 1995). As a result, the concepts of the institution and legitimacy are closely connected. Institutionalization of society's features derive from legitimation processes over time; and the legitimation process itself is mainly derived from institutions – other than that being legitimated (Hybels, 1995). As legitimacy being one of the core elements of institutional theory, numerous scholars have discussed the importance of legitimacy for organizations (Brummette & Zoch, 2016; Deephouse, 1996; Dowling & Pfeffer, 1975; Golant & Sillince, 2007; Hybels, 1995; B. G. King & Whetten, 2008; Massey, 2001; Meyer & Rowan, 1977; Palazzo & Scherer, 2006; Ruef & Scott, 1998; Suchman, 1995). Many institutionalists argue that organizational survival rates are enhanced by institutional isomorphism and legitimacy (Deephouse & Suchman, 2008; Meyer & Rowan, 1977) – isomorphism being the similarity of processes and structures between organizations. Also, that institutional isomorphism leads to incorporating formal elements which are legitimated by their external environment which, in turn, contribute to the commitment of internal participants and external audiences, increasing organizational performance (Meyer & Rowan, 1977). Moreover, exit rates for particular organizations are reduced by different elements of legitimacy, lowering its resource dependence (Ruef & Scott, 1998). Also, organizations who are heavily regulated tend to engage in activities linking the organization with the environment because they are more dependent on acceptance by the environment for their economic well-being (Dowling & Pfeffer, 1975).

3.1.1.1 Defining organizational legitimacy

Theory on legitimacy in an institutional context considers how organizations seek congruency between social values associated with the larger social structure that they are part of. Literature that describes the legitimacy granted to organizations – now referred to as organizational legitimacy – is founded on institutional theory. Within this domain, Dowling, Pfeffer, DiMaggio, Powell, Meyer, Rowan, Scott, Deephouse, and Suchman are, among others, well established scholars that elaborate on this theory. These scholars describe the dynamics of legitimacy, and how it can be managed and assessed. Aside from these scholars, many other researchers have tried to define legitimacy resulting in numerous, and sometimes confusing, definitions (Díez-de-Castro & Peris-Ortiz, 2018). With the aim of this project to analyze the specific factors that affect organizational legitimacy, a clear definition of this concept must be established. Therefore, this section provides a definition based on earlier work from these scholars and other researchers. To begin with, legitimacy within organizational literature is defined as:

"[the] appraisal of action in terms of shared or common values in the context of the involvement of the action in the social system" (Parsons, 1960, p. 175);

"*the process whereby an organization justifies to a peer or superordinate system its right to exist*" *(Maurer, 1971, p. 361);*

"[the] establish[ed] congruence between the social values associated with or implied by their activities and the norms of acceptable behavior in the larger social system" (Dowling & Pfeffer, 1975, p. 122);

"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).

While many of the definitions on legitimacy found in literature are built on earlier constructed definitions, Parsons (1960) and Maurer (1971) were one of the earliest scholars in constructing a commonly used definition of legitimacy. Both of their definitions suggest that an entity is legitimate when is has the 'right to act' in a certain social environment. An organization may act only after it is perceived as righteous within the social system. Dowling and Pfeffer (1975) built further on these definitions, arguing that organizations have legitimacy when there is congruence between the social values of the organization's actions and that of the larger social system. However, most literature builds on the definition provided by Suchman (1995), who argues that organizations are legitimate when the perceived actions of this entity correspond to the wider accepted social norms and values. Moreover, it acknowledges that legitimacy is possessed objectively, yet created subjectively; suggesting that legitimacy is earned, rather than created. Suchman's (1995) perception of legitimacy seems to be the most complete definition and is also most mentioned in literature (see also Table 21).

In this project's context, the aim is to address the legitimacy granted to organizations. Organizational legitimacy places emphasize on the appropriateness, acceptability and expectations of an organization determined by the organization's stakeholders. In this view, an organization can be seen as legitimate when it operates according to the established social norms and values of its market or industry segment (Brummette & Zoch, 2016). This means that banks are granted legitimacy when they act along the social norms and values which are perceived as acceptable within the financial services industry. This emphasis on congruency between the organization's value system and that of the larger socially constructed environment is common among legitimacy theory (Dowling & Pfeffer, 1975). These established social norms and values also include definitions and beliefs (Dowling & Pfeffer, 1975; Massey, 2001; Suchman, 1995), and is referred to as social normal and values defining the stakeholders' perceived appropriate actions of an organization.

By now, numerous interpretations have been addressed of legitimacy and while there is much overlap, there must be a working definition to translate the concept into a concrete research activity, containing specific measurable elements. This provides steering towards the research objective and it provides demarcation of the project. As based on the definitions and perceptions of earlier work, the following definition is used to describe organizational legitimacy of the bank:

> Organizational legitimacy is the perception of the bank's audiences that the actions of the bank are seen as appropriate along the social norms and values of its industry segment.

Organizational legitimacy is earned when there is a congruency between the values of the bank's perceived actions and the accepted social norms and values. It is provided through different legitimacy elements. These elements are part of the corresponding socially constructed system and the audiences associated with these elements differ as

their interests and influences may vary. In the next section, the different elements affecting organizational legitimacy are addressed together with the corresponding audiences.

3.1.1.2 Identifying legitimacy elements

Within both the strategic and institutional view of legitimacy, numerous established elements have been distinguished for evaluating legitimacy. It is argued that the trichotomies formulated by Suchman (1995) and Scott (1995) are the most commonly used institutional elements, distinguishing legitimacy into three basic components (Deephouse & Suchman, 2008). Each of these components provide a distinctive basis for evaluating legitimacy. Some of these elements have been reconsidered in the developing literature concerning legitimacy. However, many confusions have arisen in the interpretations of the different elements (Deephouse & Suchman, 2008), and therefore this research project will look further into these trichotomies provided by Suchman (1995) and Scott (1995). The focus on these elements will not be a limiting factor necessarily. Instead, viewing the most discussed interpretations of legitimacy provides a solid foundation to unpack these in line with the corresponding research project.

Suchman (1995) subdivided legitimacy into the grounded interpretations of pragmatic, moral, and cognitive legitimacy. Each interpretation rests on different behavioral dynamics. The pragmatic view lays its foundations in the calculated self-interests of the organization's audiences, both on practical and more substantial levels. Organizational support is provided when organizations share the values and interests of their audience, or when the audience considers the organization to be honest and trustworthy. The moral interpretation of legitimacy reflects the normative evaluation of the organization; it rests judgements about whether certain actions are morally acceptable. Finally, cognitive legitimacy bases its dynamics on cognition rather than normative evaluation; it involves affirmative backing of an organization and the mere acceptance of the organization being seen as necessary.

Scott (1995) distinguished a normative, regulative, and cognitive element for evaluating legitimacy. These elements are applied in the research by Ruef and Scott (1998) who looked into the legitimacy dynamics within a highly institutionalized environment. Since the banking sector also falls under this category, this trichotomy will be appropriate for evaluating the legitimacy dynamics within this research context. In other words, this research project will evaluate legitimacy in view of the institutional elements provided by Scott (1995). However, since much overlap can be identified between the institutional elements addressed by Suchman and Scott, both trichotomies will contribute to the analysis of the organizational legitimacy of banks and how it is affected. Hence, for the sake of simplicity and the similarities in research contexts, the trichotomy addressed by Ruef and Scott will be mentioned for evaluating the legitimacy dynamics of banks. In order to know which specific institutional element is of interest, each of the three elements will be further examined:

Normative legitimacy The first addressed element within the trichotomy is normative legitimacy. It views normative rules for social life that are prescriptive, evaluative, and obligatory (Ruef & Scott, 1998). Organizations have to conform to social norms and values while at the same time being constrained by the various occupational and professional standards to which their participants subscribe (DiMaggio & Powell, 1983). In other words, there exists a constant struggle between the organization – trying to define the conditions and methods of their actions – and the environment which include different stakeholders who conform to social norms and values such as (non)professional customers, bosses, and regulators. An example of this struggle is fair play. In this case, banks would not be judged whether they would benefit a certain individual – for instance if the offered service benefits the evaluator – but rather on the fact if bank should offer that service at all. This normative element has commonalities with the pragmatic and moral interpretation of Suchman (1995) which also reflects the normative evaluation of the organization (Díez-de-Castro & Peris-Ortiz, 2018). In a similar way, it is founded on the audience perception of a bank being honest and trustworthy, and whether certain activities are the right thing to do.

Regulative legitimacy The regulative element stresses the presence of explicit regulative processes. These include rule-setting, monitoring, and sanctioning activities (Scott, 1995). Activities like these are often lodged in formal oversight structures (Ruef & Scott, 1998). These structures consist of an important set of actors who confer legitimacy through regulatory endorsement (Deephouse, 1996) For instance, banks operating in the Netherlands are

monitored and controlled by the bodies of the European Central Bank (ECB), the Dutch Authority for the Financial Markets (AFM), and 'De Nederlandsche Bank' (DNB). These bodies try to ensure financial stability by supervising the operation in financial markets and resolve banks who in trouble in controlled manners. Banks are granted regulative legitimacy when they comply with the formal rules and regulations enforced by these bodies.

Cognitive legitimacy Whereas the normative and regulative elements consider whether certain actors are acting appropriate according to certain norms and values, the cognitive element specifies what types of actors are allowed to exist, what structural features they use, which procedures have to follow, and what meanings are associated with these actions (Ruef & Scott, 1998). This information is mainly conveyed through very diverse symbols such as close ties between organizations, appropriate corporate structures, and strong growth signals (Díez-de-Castro & Peris-Ortiz, 2018). Cognitive legitimacy can be so deeply ingrained in the socially constructed system that organizations can be given a taken-for-granted status, which means that removal of any of these cognitive aspects becomes literally unthinkable (Suchman, 1995). Cognitive legitimacy is provided when the organization's activities conform with larger belief systems and the experienced reality of the audience's daily life (Suchman, 1995). This experienced daily life can be addressed as the culture. Moreover, these belief systems being larger than the addressed normative and regulative element makes cognitive legitimacy the most foundational element, providing frameworks on the operation of social systems on which the normative and regulative systems are constructed.

In short, the basis of these three elements are conceptualized as moral, legal, and cultural (Figure 4). Organizational change is enforced because members feel they *have to* (regulative), *ought to* (normative), or *want to* (cognitive) change their behavior (Palthe, 2014).

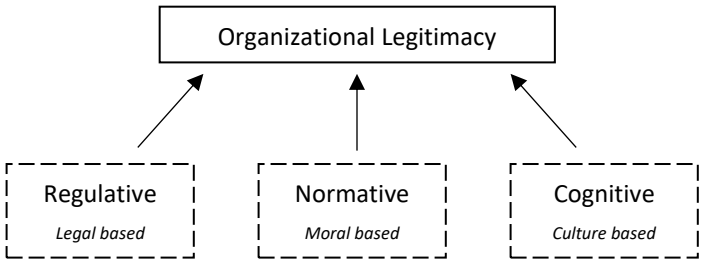


Figure 4: Legitimacy elements affecting organizational legitimacy

3.1.1.3 Which legitimacy element?

Before these elements are linked to the organizational legitimation process of banks, there need to be an understanding of which specific relevant element (or elements) of institutions need to be considered. In other words, which specific institutional elements – normative, regulative or cognitive – are being legitimated in this project's context? As shown in Figure 4, the three institutional elements affect organizational legitimacy in their own way.

Organizations considered to be legitimate in one of these elements may still be regarded as illegitimate in another. For instance, banks could be providing services to many clients while at the same time being in violation of certain laws and regulations. Granting that this project aims to investigate how the legitimacy of a bank is affected by blockchain technology, the weight of these elements within this context may vary and thus each require a closer examination.

The first element that is addressed is regulative legitimacy. Provided that a strong legislative and judicial order leads to a greater extent of institutional requirements (Meyer & Rowan, 1977), it needs to be considered whether the regulative element tends to be dynamic or is a rather fixed one. When examining the regulatory element of legitimacy within the banking sector, it is considered to be well established and will not subject to major changes in institutional environments or stakeholder's perceptions. To illustrate, banking has long been subject to professional norms (Das et al., 2018), mainly due to the power of large supervisory and regulatory associations. In the Netherlands, associations as the DNB, AFM, and the ECB fulfill these supervisory and regulatory roles. These

associations collectively develop legitimating devices to enhance public trust in the financial institution – for instance, by striving for financial stability. Additionally, these associations engage in regular and systematic efforts to evaluate and ensure the conformity of banks to industrywide professional standards and to provide assurance to the public so that such matters receive careful examination. The resulting evaluations are significant for the particular organization and from this perspective, to be legal is to be legitimate (Woodward, Edwards, & Birkin, 1996). Banks receiving evaluations that are favorable are likely to acknowledge them to relevant audiences. In contrast, critical evaluations are widely publicized in different local and national media outlets. Moreover, regulatory resistance for innovation is a common occurrence and "incumbents can lobby to defend their territory and draw blockchain technology within existing regulations" (Allen, 2017, p. 7). In short, regulative legitimacy is unlikely to endure significant changes due to the many regulatory bodies and common instances of regulative hostility towards new technologies.

When regarding the weight of cognitive legitimacy on the banking sector, this project follows the argument of Ruef and Scott (1998), acknowledging that banks are usually the taken-for-granted entities for providing financial services, and individual organizations seldom deviate from established formats. Products and services provided by the three largest Dutch banks are all offered in an equal format, showing that there is no need for authenticity in this aspect. Also, having a bank account is seen as something inevitable as our whole financial society is built around this notion. In other words, cognitive legitimacy is well established at the population level – which is also the level that is empirically evaluated. Additionally, the taken-for-granted quality of institutional rules make dramatic instabilities in the cognitive legitimation unlikely (Meyer & Rowan, 1977). Furthermore, the structural features and allowed procedures of the banks are closely aligned with the normative element. As a result, the cognitive element is not directly subjected to major changes. Any form of instability will be first noted in the normative element as cognitive legitimacy is more deeply ingrained in the audience culture. Cognitive legitimacy is therefore regarded as rigid in this project's context.

Normative legitimacy bases its evaluation in the social norms and values that are prescriptive, evaluative, and obligatory. This evaluation is done by the relevant audiences, who then in turn grant the bank its organizational legitimacy. As mentioned, the regulative element requires a formal evaluation – consisting of strict rules and regulations – which is done by the regulatory and supervisory bodies. In contrast, the normative element provides a moral evaluation which is provided by a larger audience. The bank's audience granting normative legitimacy include, among others, shareholders, regulators, employees, and customers. By far, the largest and most important group are the customers which in many cases can be addressed as the general public. This is based on the argument that cognitive legitimacy is well established, and that banks are considered the taken-for-granted entities for providing financial services.

The voice of the general public, and thus the voice of the customers, is generally speaking the media, who reflect the social norms and values of the larger social system. Furthermore, most significantly the attitude of the public is affected in banking environments that are structured by supply and demand (Langenohl, 2008). When supply and demand is affected, the public's perception of accepted behavior of banks also changes. These changing social norms and values are an important source of pressure for organizational legitimation (Dowling & Pfeffer, 1975). Innovative products and services which disrupt the existing supply of products directly affect the attitude of the customers which grant normative legitimacy to banks.

Successful management of organizational legitimacy requires a focus on the most dynamic element. As has been shown, regulative legitimacy is not exposed to major changes, and any cultural changes in cognitive legitimacy will be first experienced through a change in the moral aspect. The normative element on the other hand, is shown to be the most dynamic, and thus most significant, element that affects the organizational legitimacy of banks. Given these points, the evaluation of the organizational legitimacy of banks primarily focuses on the normative element rather than the cognitive or regulative. Meaning that there is an emphasis on the moral aspects of the legitimation process for banks and which social norms and values may conflict or vary when the financial services industry is subjected to disruptive change. With now the focus on normative legitimation of the bank, there need to be looked at how the environment exerts pressure on the bank through this element.

3.1.1.4 Normative legitimacy and trust

This section takes a closer look at the normative element from a perspective of trust, since it is argued that the concepts of trust and normative legitimacy are closely related (Díez-de-Castro & Peris-Ortiz, 2018). More specifically, both trust and normative legitimacy are linked to the expectations that banks fulfil their obligations (Mukherjee & Nath, 2003; Palthe, 2014). These obligations are based on the moral values that exist in the socially constructed system that the banks need to conform to. Trust is concerned with assumptions and beliefs about the benevolence and moral motivation of others (Vermaas, Tan, van den Hoven, Burgemeestre, & Hulstijn, 2010), and in a similar manner, this benevolence and morality is grounded in the social norms and values that is used for the normative evaluation of a bank when it is granted organizational legitimacy. Conformity of values is both a key determinant for customer's trust in banks and normative legitimacy (Mukherjee & Nath, 2003). Demonstrating trustworthy behavior is thus essential for the normative legitimation of an organization.

From an institutional perspective, this trust in the bank is defined as "the expectation of a customer that an institution (a specific bank) will keep explicitly or implicitly made promises and behave in a favorable or, at least, not unfavorable way for the customer" (van Esterik-Plasmeijer & van Raaij, 2017, p. 99). This moral behavior for trust is founded on the social norms and values and also affects the moral evaluation for normative legitimacy as depicted in Figure 5.

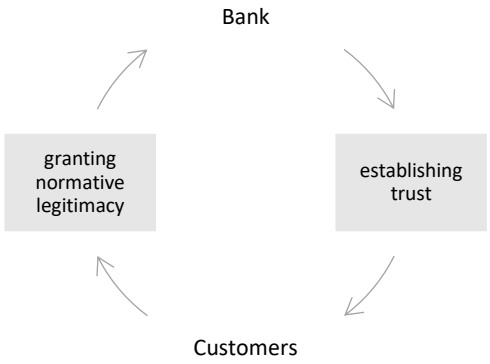


Figure 5: Relationship between normative legitimacy and trust: normative legitimacy is granted when the perceived actions of banks are conforming with the social norms and values; trust is established when the bank's actions align with the positive expectations of its customers.

For instance, when the customers have low expectations of the bank's behavior, because customers cannot identify any signals for moral actions, a lack of trust may follow as a result. This lack of trust in the moral actions of the bank results in a negative normative evaluation given by these customers. The negative normative evaluation is a result of the nonconformity between the norms and values of the perceived actions of the bank and the social norms and values in the larger socially constructed system. And since these customers are part of the socially constructed system who grant the bank its normative legitimacy, banks need to establish trust between the organization and their customers in order to be granted normative – and thus organizational – legitimacy. This relationship between trust and normative legitimation is an important aspect to discuss within the range of social aspects that can be affected, and blockchain technology seems to play a major role in affecting trust. More about this issue is considered in the following sections. But first, a final overview is provided of how the effects of blockchain technology on the organizational legitimacy of banks are evaluated.

3.1.2 Factors affecting organizational legitimacy

So far, Part II has defined organizational legitimacy for this project's context and identified the relevant legitimacy element. This section concludes by providing the necessary evaluation criteria for identifying the effects of blockchain technology on organizational legitimacy.

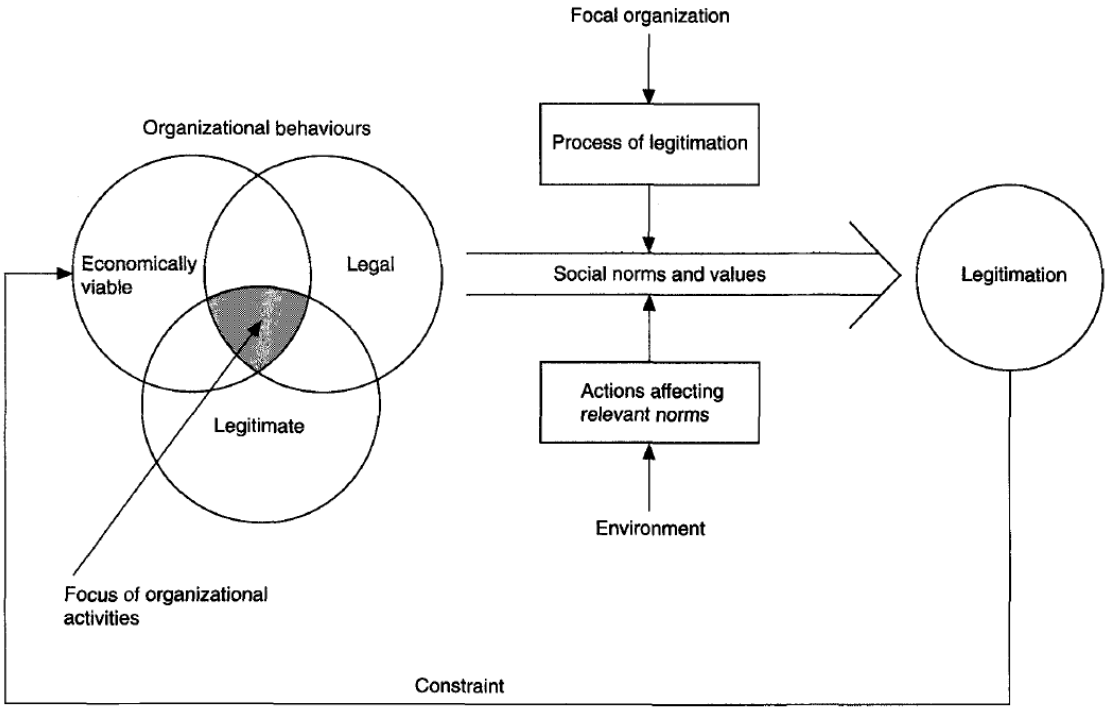


Figure 6: Dynamics of organizational legitimacy (Woodward et al., 1996, p. 331)

To recapitulate, organizational legitimacy is the perception of the bank's audiences that the actions of the bank are seen as appropriate along the social norms and values of its industry segment. Based on the institutional view of Dowling and Pfeffer (1975), the dynamics of the legitimation processes for the organization can be depicted as in Figure 6 (Woodward et al., 1996). As can be seen, legitimacy is granted when the focus of organizational activities alight with the social norms and values. These activities are based on the actions that are perceived as economically viable, legal, and legitimate. The organization's output may change when the social norms and values change, and consequently, are changed. These changes occur when the focal organization engages in processes of legitimation or when other entities in its industry segment – the environment – act in such a way that it affects relevant norms. In consequence, the outcome of the legitimation acts as a constraint, affecting organizational behavior.

3.1.2.1 Evaluation criteria for blockchain effects on bank's legitimacy

The model in Figure 6 provides all relevant and necessary components for answering SQ1 which is to identify the relevant criteria for analyzing the effects of blockchain technology on the organizational legitimacy of banks. By using the established definition of organizational legitimacy and integrating the relevant legitimacy element into the model, the evaluation criteria can be scoped to this research project.

The relevant component for this part of the research project refers to the environment affecting the relevant social norms and values evaluating the appropriate actions of the bank. In other words, the environment which induces actions affecting the social norms and values corresponds to blockchain technology and the actions affecting relevant norms are regarded as the institutional elements of blockchain. These institutional elements then affect the social norms and values. The affected social norms and values determine the legitimation process of the bank. However, in this project's context, the legitimation process is determined by the normative legitimacy element. The normative element includes the prescriptive, evaluative, and obligatory rules that banks need to conform to and acts as a constraint on the organizational behavior of the bank – constituting one motivation for organizational change. When highlighting the relevant dynamics of organizational legitimacy for this project it results in the model as depicted in Figure 7.

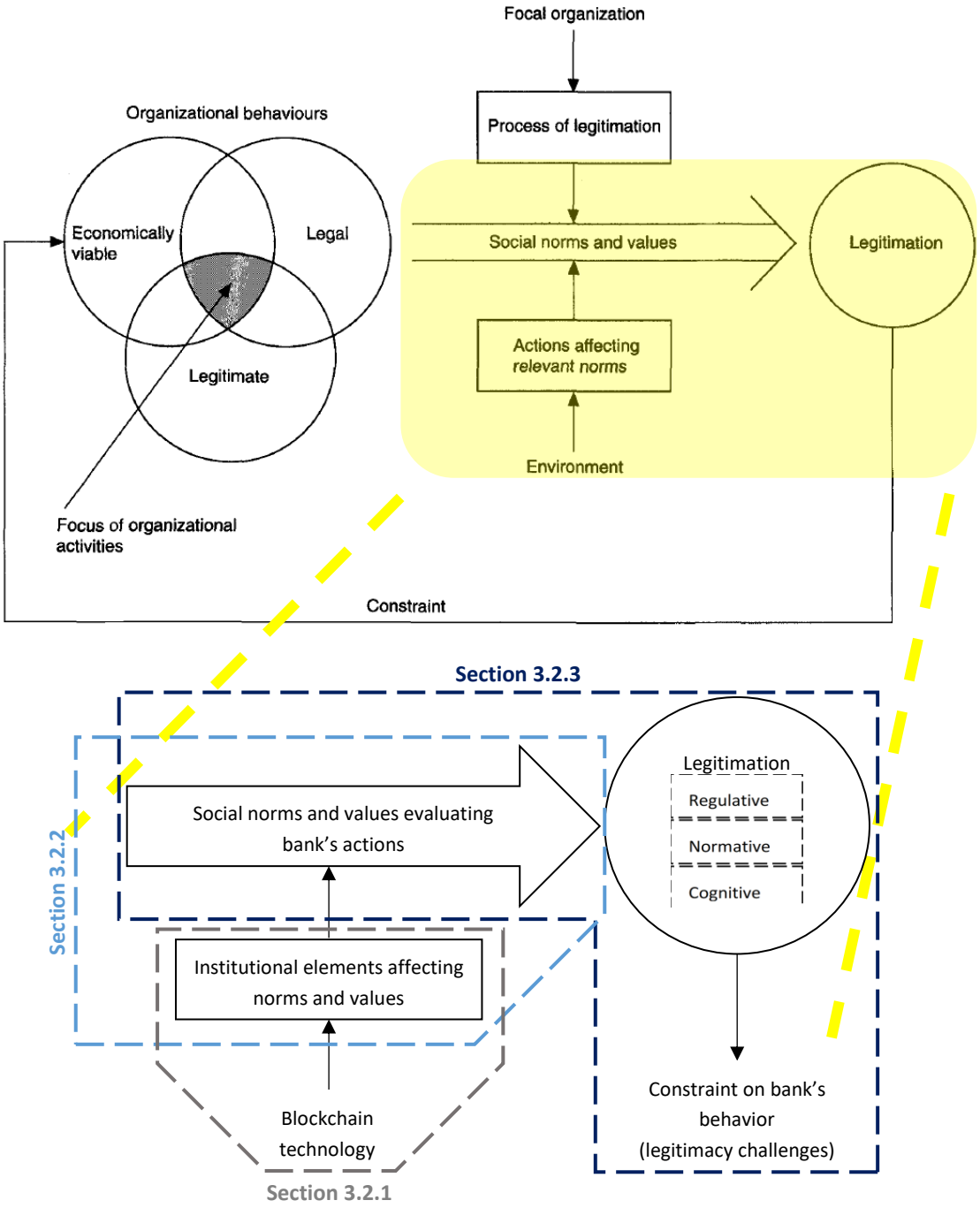


Figure 7: A model (initial framework) for identifying the legitimacy challenges for banks with blockchain technology affecting the institutional environment. Legitimation is done through the three elements of organizational legitimacy as depicted in Figure 4.

Following this model, the resulting constraints from the legitimation process are considered as the legitimacy challenges for banks induced by blockchain technology. To be more specific, the normative legitimacy challenges that arise when blockchain technology affects the social norms and values of the institutional environment of banks. In the following sections (as highlighted in Figure 7), this model is applied to identify these legitimacy challenges.

3.2 Case analysis: identifying legitimacy challenges

This section will use the evaluation criteria in order to identify the legitimacy challenges of banks competing with blockchain. These evaluation criteria have been constructed in the previous section and has resulted in a model. In other words, by applying this model on the case, the second sub-question is answered which states:

SQ2 Which legitimacy challenges arise, in view of the evaluation criteria, by analyzing the case of blockchain technology affecting the institutional environment of banks?

First, section 3.2.1 briefly describes blockchain technology, its design principles and features. Section 3.2.2 discusses institutional theory and provides an institutional view on blockchain technology to get a comprehension of the underlying social construct. Thereafter, section 3.2.3 aims to identify how these institutional elements of blockchain technology will affect the social norms and values of banks and the particular legitimating element. Section 3.2.4 then concludes this chapter by providing the legitimacy challenges that have been identified.

3.2.1 Blockchain technology – design principles and building blocks

"The main thing distinguishing a blockchain from a normal database is that there are specific rules about how to put data into the database. That is, it cannot conflict with some other data that's already in the database (consistent), it's append-only (immutable), and the data itself is locked to an owner (ownable), it's replicable and available. Finally, everyone agrees on what the state of the things in the database are (canonical) without a central party (decentralized)" (Song, 2018).

As stated above, Song (2018) simplifies the understanding of blockchain technology by describing it as a database with specific rules, using a particular set of features, or building blocks, to manage its data (consistency, immutability, ownability, decentralized etc.). The different features form the basis of its design principles. A closer look into the bitcoin protocol unveils these design principles of the blockchain system.

3.2.1.1 Design principles of blockchain

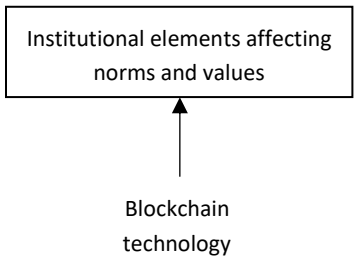


Figure 8: Understanding the design principles of blockchain technology

The design principles are derived from Tapscott & Tapscott (2016), who not only looked into the technical properties of blockchain but also emphasized the impact on the global economy, and especially on financial services – which lays within the scope of this research project. This information provides an appropriate starting point for understanding the general principles of blockchain technology (Figure 8):

Network integrity – disintermediation of trust

The first principle is based on the network integrity of the technology. One of the excitements about blockchain is founded on its ability to serve as a distributed peer-to-peer system while maintaining network integrity. The risk that the digital currency can be spend twice, also known as the double-spend problem, is traditionally mitigated by a trusted third party. In general, this trusted third party includes a financial institution. The blockchain system ensures trust between parties by using a consensus mechanism. This mechanism operates on an algorithm which is practically impossible to crack, solving the double-spend problem in case of digital cash or cryptocurrencies. In consequence,

“participants can exchange value directly with the expectation that the other party will act with integrity (Tapscott & Tapscott, 2016).” Thus, blockchain enables the removal of this trusted third party. Disintermediation of trust in turn mitigates opportunistic behavior (Davidson et al., 2016), and lowers transaction costs. With such a general application of this technology is has the potential to change whole industries (Drescher, 2017).

The most known consensus mechanism is the proof-of-work algorithm adopted by bitcoin. Other consensus mechanisms include proof of stake (S. King & Nadal, 2012), proof of activity (Bentov, Lee, Mizrahi, & Rosenfeld, 2014) and proof of storage (Benet & Greco, 2018). The consensus mechanisms enable blockchain to settle transactions within minutes, or even seconds. In contrast, the timeframe of money transfers administered by financial institutions are known to be widely varying depending on factors such as bank holidays, weekends, the involved currencies, whether it is a domestic or international transfer etc. (OFX Group Ltd, n.d.).

Distributed power

Removing the need for a trusted central third party not only disintermediates trust, it also distributes power across the network’s participants – shifting from a centralized to a decentralized system which drastically affect the previous assumptions about the power benefits of centralized organizations (Seidel, 2018). Without a single entity having full control, the system will sustain even if participants are forced to leave the network. The cryptographic consensus mechanism of the blockchain eliminates opportunism (MacDonald et al., 2016), removing the incentive of anyone trying to overpower the network.

Distributed power also enables that each user controls his or her own data. This control allows for doing transactions without asking for permission to any authority. In contrast, by having a financial institution as a third party, one basically asks for permission with every transaction. These third parties can undo transactions, freeze data, and seize information. “[Blockchain] could solve the crisis of confidence and even legitimacy in today’s institutions by shifting real power toward [individuals], equipping them with real opportunities for prosperity and participation in society..” (Tapscott & Tapscott, 2016, p. 53). This power shift may change the accepted social norms and values of the industry segment which blockchain decentralizes, forcing organizations to change their behavior accordingly.

Value as incentive

The blockchain system requires, in order to maintain its value, some sort of incentive alignment of all participants. This can be achieved by using tokenized ecosystems. Tokenization is a decentralized way of managing business processes by incentivizing its members through token reward functions (Scholte, 2018). In the case of the bitcoin network, each node (or participant) can earn bitcoin tokens by putting work in the blockchain system by solving 'puzzles', verifying transactions. These verifications cannot conflict with other verifications because of the consistency of the ledger. By acting in self-interest and self-rewarding, each participant is maintaining the ledger and the integrity of the network. Conversely, opportunistic behavior is discouraged because it can lower the integrity of the network. Hacking the system to obtain tokens from other users may result in an overall lowered trust in the system provided by its users, hence lowering the value of the tokens. Besides, with a lowered barrier to entry, users can easily switch to another blockchain system – as discussed in the following paragraph about inclusion. In other words, there is no point in stealing something that loses its value after acquiring it.

Security

Another characteristic of the blockchain network is the high security it brings. First of all, by removing the central party through decentralization, the single point of failure is also removed. Why waste any effort on decreasing the incidents of fraud among central authorities if this whole intermediary can be removed? Hackers no longer have a main attacking point – there is no big fish left to catch – as data is distributed in small chunks across the entire network. Secondly, blockchain ensures a secure platform through encryption and validation. For instance, the bitcoin network makes use of a public key infrastructure (PKI). Basically, PKI provides each participant with two asymmetric keys: one for encryption and one for decryption. This infrastructure shifts the responsibility of securing data to the individual users. Also, as each transaction is immutable, all transactions can be validated even years after. In short,

the decentralization, cryptography, and immutability features of blockchain can transform and improve how is data secured and managed.

Privacy & Rights preserved

Blockchain enables a degree of privacy that has not been possible on the internet before. All data that is owned on the bitcoin network is not linked to a user in any personal form. To participate on the network, the PKI does not require any provision of names, addresses or other personal information. The users can comfortably decide for themselves how much information they provide with each transaction. This means, that all personal information is managed by the users themselves. Third parties are no longer able to unknowingly use your personal information for marketing purposes.

Other than allowing users to manage their own personal data, a blockchain also enables full ownership rights to any piece of digital information that can be shared throughout the network. For instance, a proof-of-existence mechanism allows a user to verify that he holds a certain piece of information – say an ID or certain kind of certificate – without running the risk that someone will copy that information unauthorized.

Inclusion

Blockchain creates a platform of distributed capitalism, lowering the barriers to participation. A large portion of the world is still excluded of participating in the financial system. Worldwide, about 1.7 billion adults are unbanked, yet two-thirds of them owns a mobile phone (World Bank, 2018). And because using this network only requires an internet connection, many of these adults could easily participate. Furthermore, in developing countries, many people do not own a birth certificate or have a registered home address which means they cannot apply for a bank account. A blockchain removes these barriers since personal information does not have to be linked with the data on the network. In short, the global reach of this technology and permissionless feature allow for a higher number of participants entering the financial system.

From these design principles, the possible applications seem endless. Network integrity ensures trust; distributed power or decentralization removes a single point of failure; value as incentive mitigates opportunistic behavior; data security can be managed by the individual; privacy is enhanced through a disconnect between the data and the individual; rights are preserved through full ownership; and inclusion is enhanced by lowering the barriers to entry.

3.2.1.2 Building blocks of blockchain

As mentioned in the beginning of this section, a blockchain can be described as a database with specific rules, using a particular set of features (consistency, immutability, ownability, decentralized, canonical) to manage its data. Additionally, cryptography and transparency can be noted as separate features. The cryptographic features include the ability to execute smart contracts and the way consensus is built. Transparency is notable because in a public blockchain, all transactions are traceable up to the genesis block – which is the first transaction in the network. Everyone can access the transaction history in the ledger and timestamping of information reveals when transactions took place. Also, the value linked to those transactions are all open to the public. This transparent network allows for trusted records and assured transactions. And this not only holds for tracing money, but also the transparency regarding information on property rights, trusted certificates, production quality or origin, and much more (Tapscott & Tapscott, 2016). In short, the transparency of this ledger allows for easy access to valuable information.

This section described the design principles of blockchain technology and the building blocks that contribute to its design. While many use cases are being explored for blockchain technology, the focus of this project will be on the institutional elements of blockchain as the underlying technology of bitcoin. Not discussed are for instance the different blockchain types that exist – e.g. public/private or permissionless/permissioned – or the current developmental status of the technology since that is not the aim of this research. The aim is to look into the novel features of this technology and the invention's originally intended purpose. "In itself, a decentralized network holding

information on transactions is nothing new; the uniqueness here is in the fact that all functions traditionally executed by third parties, such as currency issuance, authorization of account holders, and so forth, are built in the network protocol" (Ishmaev, 2017, p. 670). In consequence, blockchain is addressed as a complete institution of information property functioning alongside traditional institutions. The following section dives further into this issue by providing an institutional perspective on blockchain technology.

3.2.2 Institutional theory

> *"Organizations compete not just for resources and customers, but for political power and institutional legitimacy, for social as well as economic fitness" (DiMaggio & Powell, 1983, p. 150).*

An institutional analysis provides knowledge on the processes by which structures, schemas, rules, and routines become established as authoritative guidelines for social behavior (Scott, 2004). Institutional theory is widely accepted among scholars and its organizational analysis emphasizes on rational myths, isomorphism, and legitimacy (Scott, 2008). Its various theoretical perspectives and approaches focus on the deeper and more resilient aspects of social structures. Hence, it can provide a better understanding of the interrelated social aspects of banks and blockchain technology. Understanding these aspects for social behavior is a key factor in managing the organization's political power and organizational legitimacy. In consequence, this understanding is also a key factor of this project. This attention for the organization's social fitness is important as organizations not only compete for resources and customers, but also for institutional legitimacy (DiMaggio & Powell, 1983). Social fitness can be achieved if there is knowledge on the institutional structure of the organization and its foundational building blocks. Organizations failing to understand and incorporate these building blocks are risking illegitimacy (Meyer & Rowan, 1977). In consequence, an institutional analysis becomes inevitable to understand the underlying characteristics and the dynamics of blockchain technology and how it affects organizational legitimacy.

Before diving into the institutional analysis, there need to be an understanding of what institutional theory tries to address. In general, institutional arguments can be exhibited under four common core assumptions (Scott, 2004): (1) institutions are governance structures, embodying rules for social behavior; (2) groups and organizations conforming to these rules are granted legitimacy, which contributes to their prolonged survival; (3) institutions are characterized by inertia or rigidity, tending to resist change; (4) past institutional structures constrain and channel new arrangements. Various institutional approaches exist based on these assumptions, each emphasizing on different governance structures. One common approach addressed by Scott is the normative approach, which focusses on informal systems of interpersonal ties and mutual obligations (Scott, 2004). The normative element of organizational legitimacy is also shown to be the most dynamic and thus relevant element for this research project. Meaning that the focus will be on the effects of blockchain technology on informal systems of interpersonal ties and mutual obligation within the institution of banks. In the following section, this institutional perspective of blockchain technology will be provided along the four common assumptions.

3.2.2.1 Institutional perspective of blockchain technology

> *"[B]lockchain is not a 'disruptive' technology, which can attack a traditional business model with a lower-cost solution and overtake incumbent firms quickly. Blockchain is a foundational technology: It has the potential to create new foundations for our economic and social systems" (Iansiti & Lakhani, 2017).*

Forasmuch as blockchain can be considered as a public database with a few extra features, the significance of this database is better understood if it is regarded as an institutional technology. Blockchain offers a new way of coordinating economic activity and hence, an institutional analysis focuses on how blockchains compete with firms, markets and economies as institutional alternatives for coordinating the economic actions of groups of people (Davidson et al., 2018). In other words, identifying blockchain's institutional elements create insight in the social and economic structure of this phenomenon, contributing to the understanding of how it affects legitimacy in the

institutional environments of banks. Under such circumstances, this section identifies the institutional elements of blockchain by comparing this technology with the four core assumptions of institutional theory (Scott, 2004). Arguing along these assumptions reveals how this technology is not only able to increase the productive output of a firm, but also how it affects the social norms and values of institutional environments (Figure 9).

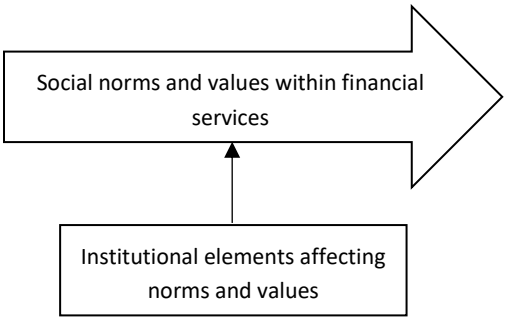


Figure 9: Identifying the institutional elements of blockchain technology

The legitimation process on organizations can be analyzed on different levels: the entire system, individual organizations or subunits within organizations (Ruef & Scott, 1998). This research project aims to identify the effects of an institutional technology on the organizational legitimacy of banks. Blockchain addressing as an institutional technology means that it competes with banks on an organizational level. These institutional consequences affect the entire system. For this reason, the focus is on the whole institutional environment. The rules and procedures of this environment are found in the financial services industry.

Blockchain as governance structure

The first major assumption of institutional theory describes institutions as governance structures, embodying rules for social behavior. The behavior of the actors participating in this structure can thus be derived from these rules. In a similar way, blockchains are governance structures. Blockchains can operate as Decentralized Organizations (DOs) or Decentralized Autonomous Organizations (DAOs) (Aste et al., 2017). The decision-making processes are independently handled by DOs and DAOs, under a predefined set of rules, without the need of human intervention.

> "The difference between the DO and the DAO relies on the fact that the information is managed and process into the DO by the humans which control the information flow. In other terms, the DO decision making process is bias toward the type of information through which decisions are made. Instead, the DAO holds full control of the information process and no majority can influence the decision process, i.e., collusion attacks are considered as a bug. Somehow Bitcoin can be conceived as a first experiment of a DAO with producers (miners), investors (buyers of Bitcoin) and customers (merchants and users of Bitcoins). In this case, the Bitcoin DAO's product would be the social welfare of the Bitcoin network participants. Blockchain application stacks based on DAOs represent a revolution because they replace most of our business logics with new models still to come, introducing new economic paradigms changing our society. Imagine for example, a DAO which is able to autonomously select and invest in different start-ups, to govern their business development and then to sell its stakes on them to other funds and redistribute the profits to its shareholders." (Aste et al., 2017, p. 3)

The participating actors in DAOs and DOs must follow strict rules that are hard coded in the system. In such a way, blockchains can operate as self-governing organizations as the organization's actions can be executed by smart contracts. It is therefore unsurprising that many scholars have argued that blockchain's novel combination of features enable the creation of new foundations for economic and social systems (Davidson et al., 2018; Iansiti & Lakhani, 2017; MacDonald et al., 2016). In a perfect world where opportunism is removed – i.e. with perfect information and costless transactions – there is no need for trust between agents. This institutional technology can radically reduce

the need for trust in a blockchain-based self-governing organization. If governance exist for no other reason than eliminating opportunism, blockchain is an institutional innovation (Davidson et al., 2018). Otherwise, blockchain may be just a source of productivity growth. So depending on the specific application and targeted industry, blockchains can be seen as direct competitors, as governance structures, to other organizations (Allen, 2017). As mentioned by Aste (Aste et al., 2017), cryptocurrencies such as bitcoin allow actors to exchange cash peer-to-peer, introducing new economic paradigms into society. In consequence, the bitcoin network directly competes with financial institutions like banks, as customers now can choose whether they will transfer money via a bank transfer or by using the bitcoin network.

How blockchain achieves institutional legitimacy

The second assumption predicates on the fact that participants conforming to these rules are granted legitimacy, contributing to prolonged survival. In other words, in an institutional environment, organizations are granted legitimacy when they conform to the rules of the larger socially constructed system (Dowling & Pfeffer, 1975). How would this be for a DAO? Again, in an institutional environment, legitimacy of the DAO is established by conforming to the rules of the larger system. For example, in a banking environment, legitimacy is achieved as DAOs can perform the same functions as the bank – as this was this technology's initial purpose.[1] However, this conformity to the rules is achieved by blockchain in its own distinct way – which is exactly why the legitimacy of banks is under pressure. The features of blockchain enable this legitimate participation in the financial institutional environment. For example, by looking at the value-as-incentive design principle: each user in the bitcoin network is maintaining the ledger and the integrity of the system by acting in self-interest and rewarding themselves, contributing to moral behavior and therefore normative legitimacy. Opportunistic behavior is discouraged as it can result in illegitimacy of the whole network which limits its survival chances. Compared to banks, DAOs mitigate opportunistic behavior in their own distinct way (Allen, 2017): correct usage is coded into the distributed system. Traditionally, opportunism is controlled by banks but a DAO can control opportunism in a decentralized manner, by a combination of public transparency and smart contracts (Davidson et al., 2018). In short, blockchain's features allow for conformity to rules of the larger institutional system.

Rigidity of blockchain

Thirdly, institutions are described as rigid, characterized by inertia. One general result of this institutional rigidity is that the organization's effort to conform to the institutional environment conflict with innovative activity (Meyer & Rowan, 1977). The rigidity of DAOs is based on some of its features: the cryptographic and immutability features of blockchain legitimize the governance structure of the system by storing every validated transaction irreversibly on the ledger, making every decision permanent. This rigidity is a result of the pre-written code of the blockchain system. After a blockchain has been launched and put in use, any changes that need to be made in the code may affect the perceived value of the system and hence, its legitimacy. Rigidity is also enhanced by making use of decentralized reputation systems (Davidson et al., 2018), which allow DAOs to self-monitor their activities and ensure that all tasks have been executed accordingly.

However, build-in democratic systems allow users to change the organization's structure in a legitimate way by voting for modifications in the pre-written code (Jentzsch, 2016). These modifications can be proposed by multiple users who get rewarded tokens if their design gets chosen by this democratic system. Also, the design principle blockchain which allows for a higher level of financial inclusion enables users to easily switch between different blockchain systems when other governance structures are preferred. In order words, the permissionless feature and global reach of blockchain significantly reduce institutional exit costs. Agents can escape the banking systems which are less than optimal at any given moment (MacDonald et al., 2016). Market mechanisms, regulations, and technological development will ultimately decide how the DAO will be structured and what the institutional exit costs

[1] Note that blockchain-based organizations inevitably involve normative obligations to achieve legitimacy but initially, institutions often enter social life as facts (Meyer & Rowan, 1977). In this case, these facts correspond to the function of the banks.

will be. Governments may decide to regulate DAOs in such a way that switching between these institutions is not preferable anymore. However, the more DAOs will enter the institutional environment, the harder it is to effect change by any entity.

How blockchains constrain and channel new arrangements

Finally, the fourth assumption of institutional theory predicates on the fact that past institutional structures constrain and channel new arrangements. Since blockchain is a new technology, there is no previous blockchain-based institutional structure which determines and shapes the design and functions of a blockchain. However, it does have the ability to constrain and channel new arrangements in existing institutional environments. As mentioned earlier, DAOs have the capability to compete with banks as institutions. In principle, the initial institutional structure of this organization and its output is determined by the developers of the blockchain system. Additionally, the decentralized and cryptographic feature enable DAOs to be self-governing by using the build-in democratic system (Jentzsch, 2016), which allows the organization's structure and output to be determined by its voters. Since organizations structurally reflect socially constructed reality (Meyer & Rowan, 1977), these developers and voters are likely to shape the structure of the blockchain-based organization in such a way that it mirrors existing institutional structures. Thus initially, customers may not experience any differences in banking as DAOs can offer the same products and services in its own distinct way (MacDonald et al., 2016).

However, DAOs fundamentally operate in a different way than traditional organizations and as time passes, the institutional environment may put peer pressure on the banks to offer products and services in a similar way as more and more of these DAOs may enter the market. For instance, in a DAO, immutability allows every decision or transaction to be irreversibly stored into the ledger. This ledger is publicly transparent, so that all actors can validate every transaction in the history of the database. The immutability and transparency features of blockchain can channel new arrangements since they can affect the norms of accepted products and services in the institutional environment. Furthermore, tasks such as controlling opportunism and monitoring activities are shifted from the institution to the market. In consequence, individuals may exit existing institutions moving towards decentralized blockchain-based institutions as consumer preferences change (Allen, 2017).

A final aspect in how blockchain channels new arrangement is by accelerating institutional evolution by introducing reduced institutional exit costs for individuals and also allowing for a permissionless source of variation (MacDonald et al., 2016). Institutions will have more variability in participants and blockchain entrepreneurs can develop DAOs without permission. All in all, the novel features of blockchain can influence existing institutional structures, and with it their legitimacy.

Although the exact consequences of blockchain as an institutional technology will have yet to be determined, viewing blockchain from an institutional perspective provides insight in how blockchain can influence 'the rules of the game' and thus, how it affects organizations on both an economic and a social level. With blockchains functioning as autonomous organizations alongside traditional banking institutions, the nature of products and services may be redefined – which at the same time clarify social norms and values (Meyer & Rowan, 1977). Redefined social norms and values change the evaluative standards for which banks will be granted legitimacy.

So far, this chapter has: provided a description of blockchain technology, described why blockchain can be addressed as an institutional technology. Furthermore, this section related the major assumptions of institutional theory to blockchain technology, providing the notion why and how blockchain can be regarded an institutional technology. For the sake of argument, blockchain is referred to as a DAO for the identification of the legitimacy challenges and the confrontation of the challenges. This will contribute to the understanding that blockchain can compete with banks as an organization and in consequence, can affect the institutionalization process of banks. The next section will identify the normative legitimacy challenges when DAOs affect the institutional environment of banks.

3.2.3 Identifying normative legitimacy challenges – how DAOs affect bank's legitimacy

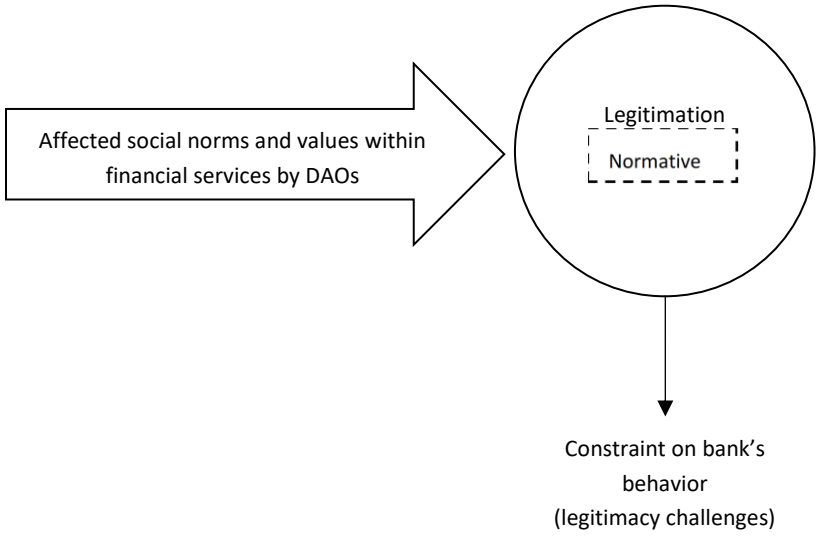


Figure 10: Identifying the normative legitimacy challenges

As mentioned before, normative legitimacy bases its evaluation in the social norms and values that are prescriptive, evaluative, and obligatory. As depicted in Figure 10, the effects on the normative legitimation process directly affect the organizational legitimacy of banks which act as a constraint on the bank's organizational behavior. These constraints are moral obligations who act as drivers for organizational change enforced by the larger socially constructed system (Palthe, 2014). The members of the bank feel they *ought to* change their behavior because it becomes the expected norm. In other words, the effects of DAOs on the normative legitimacy of banks are identified by first looking at the potential changes DAOs can impose on the accepted social norms and values of the larger industry segment. Which in turn pressurizes the bank towards the moral obligation to change their organizational output. Now with the understanding of blockchain as an institutional technology and how its design principles and features contribute to this aspect, a closer look at the novelty of each design principle reveals the normative legitimacy challenges when DAOs affect the institutional environment of banks.

3.2.3.1 Disintermediation of trust – mitigating opportunism

The first feature of blockchain that is discussed is the disintermediation of trust. DAOs remove the need for a trusted third party with the supply of products and services that mitigate opportunism by using a consensus mechanism. Never before has supply been affected by these kinds of features because the old financial model relies on trusted third parties. "Trust allows trusting parties to keep information and transaction costs low and to enter into mutually beneficial interaction" (Vermaas et al., 2010). Now that these trusted parties can be removed, transactions costs decrease even more which in turn increases the demand of these blockchain-based products and services as these can be offered for a lower price than the products and services of traditional banks. With this increase in demand, the social norms and values will include aspects of mitigating opportunism, or the lowered need for trust in the banks. In other words, the accepted perceived behavior of banks must include a higher level of eliminating opportunistic behavior. Banks that not actively engage in showing behavior that fit these social norms and values – which now include mitigating opportunism, but show behavior that is perceived as opportunistic can result in lowered trust between the organization and its customers (Mukherjee & Nath, 2003). Now as has been shown earlier, this lowered trust can directly negatively affect the normative legitimacy of the bank as customers perceive behavior that does not align with the accepted social norms and values. DAOs can compete with banks as they offer lower transaction costs on places where it can be more efficient to mitigate opportunism – and remove the need for trust – through consensus. In consequence, this leads to the following legitimacy challenges for the bank:

Challenge 1: DAOs, removing trusted third parties, offer products and services to customers that mitigate opportunistic behavior through consensus mechanisms which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a lowered need for trust in the processes which are being competed against.

Challenge 2: DAOs, removing trusted third parties, offer customers products and services with low transaction costs which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers are offered products and services with lower transaction fees.

3.2.3.2 Privacy & Rights Preserved

Privacy is a significant aspect in the value congruence needed for trust and thus also a key aspect in managing normative legitimacy (Mukherjee & Nath, 2003). Blockchain can affect the social norms and values by removing the needed trust from this aspect by providing a paradigm shift in how it manages privacy and preserved rights of its users. First of all, it lets users decide for themselves how much information they provide with each transaction as details do not need to be included. In other words, all personal information such as IDs and contact details, and data regarding the financial fitness of an individual such as details about mortgages, debts, etc. is owned and managed by the customers themselves. Secondly, third parties are no longer able to unknowingly use your personal information for marketing purposes. Customers can now decide for themselves to which organizations they are willing to share or sell their personal data. In short, DAOs can compete with banks offering a higher level of data ownership rights to its customers, and with it, a higher level of privacy. In consequence, this leads to the following legitimacy challenge for the bank:

Challenge 3: DAOs offer a high level of data ownership rights and privacy to customers which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a higher degree of privacy and data ownership rights.

3.2.3.3 Security

The security design principle of blockchain is also related to trust and thus normative legitimacy. Customers need to trust organizations in how it is securing its products and services. Some argue that trust perceptions are enhanced by showing the securing aspects of banking services (Mukherjee & Nath, 2003). Others have shown that too much transparency may have negative consequences of trust as it also communicates the negative aspects of certain security products (van Esterik-Plasmeijer & van Raaij, 2017). It is thus unclear what the perceived actions of banks need to be in securing their products. Either way, if the security of an organization is breached, then this can lead to customers' lowered trust in the organization. In other words, DAOs face a lower risk in trust issues with customers as blockchain enables higher levels in securing products and services than banks. Blockchain offers this security by: (1) decentralizing data and thereby removing the single point of failure, and (2) providing a cryptographic and immutable data infrastructure. In short, DAOs can compete with banks by offering products and services to customers that are secured by decentralization, cryptography, and immutability. In consequence, this leads to the following legitimacy challenge for the bank:

Challenge 4: DAOs offer products and services to customers that are secured by decentralization, cryptography, and immutability which lowers the risk of normative illegitimacy. Banks can better manage normative legitimacy by securing its products and services by decentralization, cryptography, and immutability.

3.2.3.4 Distributed power & Inclusion

Blockchain distributes power across the network's participants – shifting from a centralized to a decentralized system – in several ways: (1) DAOs can give customers more power in determining the organization's structure and output by using democratic systems, which for instance limits the power of the organization on how resources are spent; (2)

the cryptographic infrastructure shifts the control of securing data from the organization to the individual user; and (3) the removed authority makes transactions permissionless, which removes the organization's power to undo transactions, freeze data, and seize information.

DAOs enhance financial inclusion by: (1) offering lower barriers for participation by a combination of permissionless transactions and data ownership; (2) enabling multi-currency use at low costs as cryptocurrencies are easily digitally interchangeable giving users more choice in which governance structures they want to participate and allowing for more personalized products and services. In short, DAOs offer customers: more power in determining the organization's structure and output, more control in securing data, a higher level of financial inclusion, and multi-currency use. In consequence, this leads to the following legitimacy challenges for the bank:

Challenge 5: DAOs offer customers more power in determining the organization's structure and output which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a higher power in determining the bank's output and structure.

Challenge 6: DAOs offer customers control in securing data which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive that they are in control of their own data security.

Challenge 7: DAOs offer customers a higher level of financial inclusion which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers experience a higher level of financial inclusion (permissionless transactions & data ownership).

Challenge 8: DAOs offer customers a wider product range, enabling multi-currency use and more choice in governance structures, which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a wider range in products and services.

3.2.3.5 Value as incentive

The feature of blockchain to enable the use of tokenized ecosystems allow users to act in self-interest while sustaining the business processes of the organization. Trust is usually lowered in traditional organizations when actors act in self-interest. DAOs can reward users for adding value to the organization. For instance, by maintaining its business processes (e.g. verifying transactions or monitoring activities) or by improving the governance structure (e.g. updating software). In consequence, this leads to the following legitimacy challenges for the bank:

Challenge 9: DAOs offer customers value as incentive to sustain its business which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers can be rewarded for sustaining and improving the bank's business processes.

Now, by looking at the what DAOs can offer their customers and how this in turn can affect the social norms and values within the banking institution, the legitimacy challenges for the bank have been identified. Again, these legitimacy challenges are moral obligations who act as drivers for organizational change enforced by the larger socially constructed system which are all the stakeholders in the bank's industry segment (Palthe, 2014). The identified legitimacy challenges are viewed as moral obligations which act as a constraint on the bank's organizational behavior. Banks who fail to adopt these new norms are facing illegitimacy, endangering the organization's survival.

3.2.4 Interrelated aspects of the legitimacy challenges

Numerous interrelated aspects are identified between the legitimacy challenges (now referred to as C#) and the design principles of blockchain technology. In most cases, the complex effects on the social norms and values yielding the legitimacy challenges are induced by various combinations of the design principles of blockchain technology:

- C1 and C2 are both derived from the disintermediation of trust (D1) without any interrelated aspects to other design principles.
- C3, derived from privacy (D2) and rights preserved (D3), also relates to inclusion (D6), as it lowers the customer's barriers to entry to the financial system, and distributed power (D5), as data-ownership rights are moved back to the individual.
- C4 is derived from security (D4) without any interrelated aspects to other design principles.
- C5, derived from distributed power (D5), also relates to value as incentive (D7) as the customers who can contribute in determining the organization's structure and output must get some value out of it.
- C6, derived from distributed power (D5), also relates to security (D4) as customer can have the ability to have more control in securing their own data.
- C7 consists of two parts: permissionless transactions and data ownership – in section 3.2.3.4 described as lower barrier to entry. Both aspects increase the level of financial inclusion (D6) for customers. The permissionless transactions also relate to distributed power (D5) as banks have less control in authorizing payments. Data ownership relates to privacy (D2) as customers can disclose fewer personal data to organizations.
- C8 is derived from distributed power (D5) and inclusion (D6) as described in section 3.2.3.4.
- C9, derived from value as incentive (D7), also relates to distributed power (D5) as users can decide the organization's actions and output through democratic systems.

Table 2 shows the interrelated aspects of the design principles and the legitimacy challenges. Identifying these interrelated aspects show how the different design principles can affect the legitimacy of banks and provide insight in how to deal with these challenges. The identified interrelated aspects are used for the development of an innovation framework in part IV.

Table 2: Interrelated aspects of the legitimacy challenges

	Disintermediation of Trust	Privacy	Rights Preserved	Security	Distributed Power	Inclusion	Value as Incentive
C1	■						
C2	■						
C3		■	■		■	■	
C4				■			
C5					■		■
C6				■	■		
C7		■			■	■	
C8					■	■	
C9					■		■

3.3 Conclusion SQ1 and SQ2 – evaluation criteria & legitimacy challenges

3.3.1 Evaluation criteria for organizational legitimacy (model)

The first section constructed the evaluation criteria in order to identify the legitimacy challenges of banks competing with DAOs to answer the first sub-question of the research project:

SQ1 What criteria found in literature are relevant for identifying the effects of blockchain technology on the organizational legitimacy of banks?

An analysis of institutional theory and organizational legitimacy has led to: (1) an understanding of the legitimation processes of organizations and in particular the legitimation process of banks, and (2) an analysis of which element (regulative, normative, cognitive) is being legitimated in this project's context. The following evaluation criteria have developed to identify the effects on the organizational legitimacy of banks in an institutional environment affected by blockchain technology – resulting in legitimacy challenges (Figure 11):

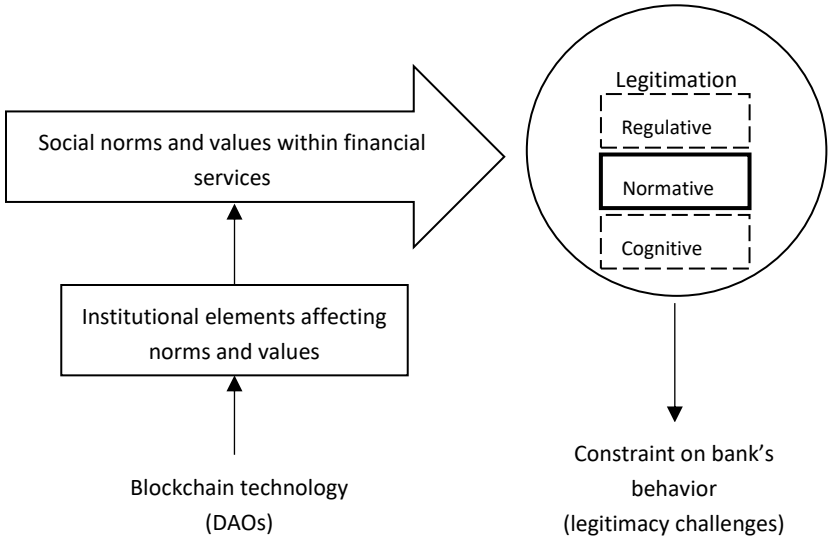


Figure 11: Initial framework – evaluation criteria for identifying the effects of blockchain technology on the organizational legitimacy of banks

This model is the first part of the framework that has been developed throughout this project. The following chapters will further build on this initial framework that will finally entail the innovation strategy framework for banks which generates insights in how the different elements of blockchain technology affect the legitimacy of banks and how the bank can manage their legitimacy.

3.3.2 Identified legitimacy challenges (case analysis results)

The second section used the evaluation criteria to identify the legitimacy barriers of banks competing with blockchain technology (also referred to as DAOs) to answer the second sub-question of the research project:

SQ2 Which legitimacy challenges arise, in view of the evaluation criteria, by analyzing the case of blockchain technology affecting the institutional environment of banks?

The application of the model – i.e. the evaluation criteria – has resulted in nine legitimacy challenges. By viewing the design principles and technological features from an institutional perspective, blockchain technology can compete

with banks on an organizational level as DAOs. Therefore, the analysis identified how DAOs could affect the legitimacy of banks. Under these circumstances, Table 3 shows the nine identified legitimacy challenges for banks:

Table 3: Legitimacy challenges for banks related to the design principles of blockchain in view of the established evaluation criteria

		Disintermediation of Trust	Privacy	Rights Preserved	Security	Distributed Power	Inclusion	Value as Incentive
		D1	D2	D3	D4	D5	D6	D7
Normative legitimacy is granted to the bank when customers perceive a lowered need for trust in the processes which are being competed against.	C1							
Normative legitimacy is granted to the bank when customers are offered products and services with lower transaction fees.	C2							
Normative legitimacy is granted to the bank when customers perceive a higher degree of privacy and data ownership rights.	C3							
Banks can better manage normative legitimacy by securing its products and services by decentralization, cryptography, and immutability.	C4							
Normative legitimacy is granted to the bank when customers perceive a higher power in determining the bank's output and structure.	C5							
Normative legitimacy is granted to the bank when customers perceive that they are in control of their own data security.	C6							
Normative legitimacy is granted to the bank when customers experience a higher level of financial inclusion (permissionless transactions & data ownership).	C7							
Normative legitimacy is granted to the bank when customers perceive a wider range in products and services.	C8							
Normative legitimacy is granted to the bank when customers can be rewarded for sustaining and improving the bank's business processes.	C9							

Now the first two sub-questions have been answered the next chapter will use these results to identify the organizational consequences of banks in view of the legitimacy challenges, yielding the answer to the third sub-question.

4

The Organizational Consequences for Banks in an Institutional Environment Affected by Blockchain Technology

This chapter to aims to identify the organizational consequences for banks in view of the legitimacy challenges that were developed in the previous chapter (Figure 12). By doing this, the third sub-question is answered, which states:

SQ3 Which organizational consequences arise when the institutional environment of banks is affected by blockchain technology by confronting stakeholders involved in the Dutch banking sector with the legitimacy challenges?

The results of this chapter contribute to the development of the final framework. The chapter set up is as follows: In section 4.1, the interview process is described. In section 4.2, an elaboration is given on the analyzing process of the qualitative results. Section 4.3 discusses the identified organizational consequences that were mentioned by the experts during the qualitative process and section 4.4 addresses the relation between these results. To conclude, section 4.5 gives the final remark.

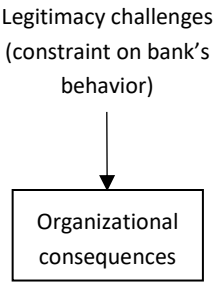


Figure 12: Conceptual model of qualitative approach

4.1 Interview process

Interview protocol

The interview guide can be found in Appendix 1.3. The protocol consists of four parts: the introduction, the start of the interview, the brainstorm session, and the closing. In the introduction, the researcher explained the purpose of the research project and how the session was executed. Also, a consent form was signed and if needed, any additional clarifications were provided. In case the participant agreed to be taped, the audio recorder was turned on at the end of this part. The following section formally starts the interview process. During this part, the participant was asked about his or her professional background and their interest in blockchain technology. Next, a transition was made to the brainstorm part which confronts the expert with different scenarios and corresponding questions relating to the legitimacy challenges. Each scenario addresses a particular legitimacy challenge for the bank. It aims to describe a situation in where the bank is facing one of the legitimacy challenges. After each scenario, a question is asked what will happen with the bank, yielding the organizational consequences for each challenge. The final part allows the willing participant to provide any additional information and formally closes the interview session.

Interview framing

The selected experts were asked to participate in brainstorm sessions. The reason for framing the semi-structured interviews as brainstorm sessions was to enable a more creative setting in which the participant does not feel obliged to provide answers that are only possible in this moment of time. The banking sector is known for its conservative environment where innovation has not been the norm for many years. By asking the participant to think about the possible consequences in a brainstorm setting, more out-of-the-box issues may be addressed which can result in a wider variety of possible organizational consequences. Also, to avoid jargon, the definition of DAOs and DOs are not mentioned during the interviews. Instead, the scenarios referred to an institutional environment where competitors were using blockchain technology.

Exclusion

Legitimacy challenge four (C4) and eight (C8) were not confronted during the interview sessions. Legitimacy challenge four (C4) addressed that banks can better manage normative legitimacy by securing its products and services by decentralization, cryptography, and immutability. In the case of legitimacy challenge eight (C8), normative legitimacy is granted to the bank when customers perceive a wider range in products and services.

First of all, due lack of time during the interview sessions, only the most significant legitimacy challenges were addressed. The effect of C4 on legitimacy found in literature was conflicting and not clear, and thus, not confronted during the interview session. Moreover, during the practice sessions for the interview within EY, it was concluded that customers already have the opportunity to easily switch between different currencies for global payments and is this challenge would therefore not affect the legitimacy (C8) of bank as much if DAOs already operate in a way that is currently seen as appropriate along the social norms and values.

4.2 Coding process

Atlas.ti

After a transcript has been made of each interview session, the further analysis of the results was done using the software Atlas.ti. Each question (or scenario) yields an answer of the expert that includes various organizational consequences for the bank relating to each particular scenario. Each identified consequence for the bank is given a certain code. These codes are related to the topic that the particular consequence addresses. Figure 13 shows the step-by-step process of the analysis. The legitimacy challenges are translated into scenarios and questions yielding the organizational consequences as codes. These codes are then analyzed to discuss the managerial implications. This, by looking at the number of occurrences of the codes.

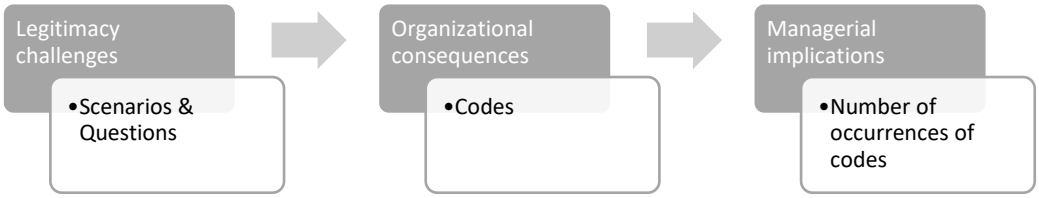


Figure 13: Analyzing process from legitimacy challenges to managerial implications for banks affected by blockchain technology

During the analysis of the interview sessions, 40 unique organizational consequences have been identified. This generated a list of 40 codes (Table 22). These codes were identified as follows:

In view of the first legitimacy challenge (C1) and corresponding scenario (S1), the following question (Q1) was asked:

> Legitimacy challenge:
> C1: DAOs, removing trusted third parties, offer products and services to customers that mitigate opportunistic behavior through consensus mechanisms which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a lowered need for trust in the processes which are being competed against.
>
> Scenario & Question:
> *S1: "Imagine that customers do not see any reason to make use of a bank, because there is no need for a trusted third party to verify transactions anymore."*
>
> **Q1: What are the organizational consequences for the bank?**

Part of the answer which corresponds to a unique organizational consequence is then selected and will be coded relating to the topic it addresses:

Answer (organizational consequence):
"We can see that the banks, not only our bank but everyone, shift towards viewing a future role of the bank as a platform or ecosystem."

Code:
Role shift: platform

The code corresponds to the fact that this expert assumes that, based on this scenario, the bank will have to shift its role towards the function of a platform. As can be seen in Table 22 (Appendix 1.5), four other codes exist that address the issue of a role shift for the bank. Some of these shifts have been mentioned explicitly, such as the shift of the bank towards a data owner or platform. However, some role shifts that were mentioned stated no specific function. These organizational consequences have been given the code 'Role shift: general'.

These codes that addressed the same issue but stated a different consequence have been merged into the same group.

4.3 Organizational consequences – Results interviews

Table 4: List of identified groups with the corresponding organizational consequences for banks. An asterisk indicates that multiple consequences have been identified within the group.

	Group	Number of occurrences	Abbreviation
1	Institutional isomorphism	56	II*
2	Regulation	55	R*
3	Distributed data ownership	43	DDO*
4	Role shift	33	RS*
5	Increased competition	32	IC*
6	Lower institutionalization power	27	
7	Distributed Organization	27	DO*
8	No consequence	21	NC*
9	Institutional differentiation	15	ID
10	Higher path dependency	14	
11	External stakeholders: more communication with customers	10	ES*
12	Lower customer relationship	6	
13	Lower transactions costs	6	
14	Lower transaction time	5	
15	Offer higher level of convenience	4	
16	Provide more transparency	4	
17	Illegitimacy	3	
18	Internal stakeholders: more communication with shareholders/management	3	IS*
19	Lower security costs	3	
20	Lower revenue	1	
21	Offer free services	1	

The unique groups can be found in Table 4. Within the column listing the abbreviations of each group, an asterisk indicates that these groups consist of multiple codes. For instance, DDO* consists of six different consequences related to the same topic. The following sections provide an overview of identified organizational consequences for banks in an institutional environment affected by blockchain technology, or DAOs. The corresponding scenario and interview question for each legitimacy challenge can also be found in the interview protocol in the Appendix 1.3.

Some consequences have only been mentioned once for a particular scenario. Since many of these experts were thinking out loud during the conversations, these single occurrences could have been thoughts which importance cannot be directly related to the provided scenario. Therefore, single codes will be excluded from the analysis. Only codes will be regarded as significant which reflect a relative importance mentioned by the experts. Therefore, codes that have at least been labeled five times during the interview session will be considered relevant. These codes, or consequences, with at least five occurrences are discussed in the following sections. The single codes can be found in the tables which provide the complete overview of identified organizational consequences per expert in the Appendix 1.6. Other findings worth mentioning are provided in the final paragraph.

4.3.1 Consequences from C1 and C2: Disintermediation of Trust

The first two scenarios both relate to the disintermediation of trust. Both of these scenarios were also the first ones to be confronted with the experts during the interview sessions. During the conversation, the transition was easily made from the first scenario to the second since they both address the disintermediation of trust. The resulting organizational consequences are found in Figure 45. Furthermore, since both of these scenarios relate to the same design principle, the codes are provided in the same figure. Below, a further elaboration is provided on the identified consequences for each scenario.

This first legitimacy challenge (C1) states that banks need to provide a lowered need for trust in the processes which are being competed against by DAOs. Based on the provided scenario and question, the most significant organizational consequences for the bank involve a role shift for the bank (14), institutional isomorphism (7), and consequences that are related to a more competitive environment (7):

Role shift (14) Within this group, the most mentioned consequence indicates a role shift in general without a specific function attached to it. If the need of the bank as a trusted third party would be removed, it was not difficult for the experts to imagine a role shift of the bank. All banks are constantly monitoring future developments and what these could mean for the organization in general. More specific roles that were mentioned were that of a shift towards the offering of only financial products and services such as providing advisory services or selling complex financial instruments, and the shift towards a platform where the bank would be the facilitator of the blockchain ecosystem.

> *Expert A: "When you are a platform, then you offer some products as an insurance. A bank does not always have to provide financial products."*

Increased competition (7) In general, the experts felt the removal of a trusted third party as a competitive pressure in which the banks have to respond. If there is no need for a bank to be a trusted third party, it would respond by looking at the activities within the competitive environment. For instance, by adopting a fast follower strategy, engaging in partnerships, or exit the current market of payment service providers.

Institutional isomorphism (7) Even in the case the need for the bank as a trusted third party was not seen as relevant anymore, the adoption of the technology leading to this disintermediation of trust is seen as inevitable by the experts. If the institutional environment pressurizes the bank by removing the need for a trusted third party to verify transactions, banks would adopt this technology and conform to the expectations of the environment. This, by imitating other organizational procedures or develop blockchain independently under similar constraints.

The second legitimacy challenge (C2) argues that banks need to offer their customers products and services with lower transaction fees to remain legitimate. Based on the provided scenario and question, the most significant organizational consequences for the bank involve lower transactions costs (6), institutional isomorphism (6). Additionally, the indication of no particular consequences (4) were mentioned as well.

Lower transaction costs (6) The lower transactions costs were mentioned by the experts as a direct consequence to the banks. If the banks partake in an environment with significant lower transaction costs to verify any transaction, the bank would see this as an opportunity for themselves as well. Mainly, to lower the price for the customers, but also to increase the profitability of the bank in some cases.

> *Expert C: "Maybe the bank's profitability will increase a little bit, but part of the cost savings created with blockchain will be beneficial for the customer."*

Institutional isomorphism (6) When DAOs offer lower transaction costs for products and services, the bank will engage in isomorphism, imitating the competitors. In a similar manner as the first scenario, banks would adopt blockchain technology and conform to the expectations of environment. This, by imitating other organizational procedures or develop blockchain independently under similar constraints.

No consequence (4) DAOs offering lower transaction costs for products and services would result no significant consequences for the bank. This has to do with the fact that some banks already abandoned payment services that heavily rely on transaction costs. Furthermore, transaction services are already so cost efficient that competitors using blockchain technology will not induce any significant competitive pressure.

4.3.2 Consequences from C3: Privacy / Rights Preserved / Inclusion / Distributed Power

The third legitimacy challenge (C3) argues that organizational legitimacy is granted to the bank when customers perceive a higher degree of privacy and ownership rights. The corresponding scenario indicates that the institutional environment of the bank allows customers to manage their own personal data and decide for themselves how much information they provide with each transaction as details do not need to be included. A frequently used example was a proof-of-existence system which verifies the existence of specific types of information without the need to disclose the content. Based on the provided scenario and question, the most significant organizational consequences for the bank involve distributed data ownership (DDO) (19), regulatory aspects (18), institutional isomorphism (7), and a lower institutionalization power (5):

Distributed data ownership (19) Consequences relating to distributed data ownership were mentioned most as this scenario directly addressed this issue. Experts mainly connected this scenario to self-sovereign identities in which many banks are currently exploring the future potential. Self-sovereign identity puts people in charge of their own identities without having to rely on another party to issue them an identifier for their use (Young, 2018). Banks see this as one potential solution to conform to the expectations the of customers. Also, the experts mentioned consequences related to the idea that a blockchain will enable a more automated infrastructure of processing personal and financial data.

> *Expert A: "I don't see blockchain as an enabler for customers to disclose fewer personal data, but it will enable a more automated process with the introduction of smart contracts."*

Moreover, the experts mentioned the consequence of increased risk for the banks. Without access to customer data, banks experience more difficulty in calculating the risks attached to certain financial products. There need to be a certain amount of data available to calculate these risks. This lower access to data may also lead to financial instability as monitoring trends will become more difficult. Banks will have to put more effort in how they can turn their available data into a valuable asset.

Regulation (18) In the case that the bank is exposed to an institutional environment that requires a higher degree of privacy and data ownership rights, experts mentioned that banks have to comply to Know Your Customer (KYC) procedures and other reporting obligations – including Anti-Money Laundering (AML) and Anti-Terrorist Financing (ATF). In other words, banks are required to collect a minimum amount of data in order to provide financial services. Stakeholders that require an even higher degree of privacy and data ownership rights would simply not be able to receive any financial services from banks. Moreover, these stakeholders would not be considered to operate in the legal domain anymore. Banks also have a certain duty of care towards customers in which they are legally obligated to protect customers against risky contracts. For this process a certain amount of financial data is required of the customer.

Even in the case that other organizations offered a higher level of privacy and data ownership rights, the experts mentioned that in order to be legally compliant, customers must disclose certain pieces of information before they can board onto a blockchain platform.

> *Expert A: "Blockchain can disintermediate trust and remove the third party, that's correct. However, a whole due diligence or KYC needs to be done before individuals can enter the blockchain platform."*

Institutional isomorphism (7) Experts mentioned that on places where it is possible, banks will imitate procedures and adopt the technologies that enable to conform to these external pressures. Also, banks can conform to these expectations when the regulatory and supervisory bodies adapt the regulations that include these expectations.

Lower institutionalization power (5) This consequence relates to the decreased power of banks to define norms and standards. When customers are able to experience higher levels of privacy and data ownership rights, banks are required to follow this trend in order to remain legitimate. Customers can engage in financial activities with the bank without the need to disclose more than the minimum required amount of data.

4.3.3 Consequences from C6: Distributed Power / Security

The sixth legitimacy challenge (C6) argues that organizational legitimacy is granted when customers perceive that they are in control of their own data security. The corresponding scenario indicates that the institutional environment of the bank allows customers to manage their own data security, so the responsibility for securing personal information lies solely with the customer. This is enabled through the decentralization of data in combination with PKI cryptography as discussed in section 3.2.1.1. Based on the provided scenario and question, the most significant organizational consequences for the bank involve regulatory aspects (12), distributed data ownership (11), institutional isomorphism (10), and a role shift (5):

Regulation (12) In the case that the bank is exposed to an institutional environment where customers have the ability to manage their own data security, experts mentioned the banks KYC and reporting obligations and the duty of care towards their customers. Due to the KYC and reporting obligations, the data of the customer needs to be verified, so the bank also needs some sort of copy of the customer's data. This means that the customer cannot have full control of their data security. A minimum amount of data needs to be disclosed with the banks. Furthermore, the duty of care towards the customers requires banks to be careful with the data. Banks have a certain moral responsibility towards their customers, and thus it is not clear what the benefits will be of shifting this responsibility of data security to the customers.

Distributed data ownership (11) Also here, consequences relating to distributed data ownership were mentioned most as this scenario directly addressed this issue. Experts mentioned the possibility of self-sovereign identities which could possible meet the requirements of the customers. But experts mentioned also that the banks will have to find a balance in meeting these requirements. For instance, if customers lose

their key to access their data, banks could help to resolve this issue by generating a new key. Another consequence addressed the fact that banks have more difficulty in preventing crises when they cannot support the customers in securing data. An increase of risk is also seen as a consequence since banks have less data to check and predict certain trends. Several experts were skeptical whether this scenario could really affect the social norms and values.

Expert F: "There are numerous examples of individuals who lost their private key and thus lost all their valuable assets since they lost access to their data or wallet."

Institutional isomorphism (10) Experts mentioned that on places where it is possible, banks will imitate procedures and adopt the technologies that enable to conform to these external pressures. Banks are looking into the possibilities of adopting blockchain to increase their levels of data security, and to give the customers more responsibility in how their data is used. It was quickly imagined that banks could conform to the social norms and values by imitating the rules and procedures of their competitors.

Expert A: "If this is the standard way to do business, banks will adopt the same procedures."

Expert C: "Banks will have to adopt the technology to provide the same, and possibly even a better, service."

Expert D: "The bank has to put fewer effort in data security resulting in a cost reduction. I can see this a possibility for the bank."

Role shift (5) Experts imagined a role shift for the bank resulting from this scenario, mainly towards that of a data owner. Banks have a lot of expertise, resources and capabilities on securing data. The bank could secure the data of those that do not want to be responsible for their data security. Essentially, providing data security as a service.

4.3.4 Consequences from C7: Distributed Power / Inclusion / Privacy

The seventh legitimacy challenge (C7) argues that organizational legitimacy is granted when customers experience a higher level of financial inclusion mainly resulting from permissionless transactions and higher data ownership. The corresponding scenario indicates that customers can easily open and use a bank account, because there is no direct connection between personal information and the account, and all transactions are permissionless. Based on the provided scenario and question, the most significant organizational consequences for the bank involve regulatory aspects (16), institutional isomorphism (14), increased competition (10), and a lower institutionalization power (7):

Regulation (16) The most mentioned category involved regulatory constraints. Banks have to be compliant on areas such as KYC, AML and ATF. They also have reporting obligations and a duty of care towards customers. A disconnect between personal information and the individual as well as permissionless transactions were seen as impossible due to regulatory constraints. Numerous banks have already been fined due to issues regarding KYC and AML. Moreover, experts mentioned that banks do not want to be associated with supporting criminal activity or terrorists as it negatively affects their reputation. All in all, banks will be very cautious in moving towards this trend and it is difficult to imagine that competitors are able to provide this level of inclusion.

Institutional isomorphism (14) Experts mainly mentioned that banks can conform to these social norms and values when the regulatory and supervisory bodies adapt the regulations that include these new expectations. It seemed unlikely that competitors would have an advantage since they would also have to be

legally compliant. Regulatory and supervisory bodies will immediately put a lot of pressure when competitors will find a way to adopt this scenario. After a while, rules and regulations will include these new expectations.

> *Expert E: "I think the solution lies more in designing the KYC process in such a way that more individuals, and also those without a home address, can be verified in different ways instead of removing the whole process at once."*

Also, on places where it is possible, banks will imitate procedures and adopt the technologies that enable to conform to these external pressures. It may be that other organizations – such as FinTechs – adopt this technology, and thus introduce this scenario. However, in that case, they operate in the same institutional environment and play under the same rules, meaning that banks can engage in similar activities. An expert mentioned that a lot of experimentation is being done within the bank to apply blockchain solutions on payment services, loan transactions, and many more use cases. When the expectations of the environment changes, the bank will conform to these expectations by adopting the technology.

> *Expert D: "The technology is out there, and the bank has enough capabilities to implement this. At the moment, the only barrier is regulation."*

Increased competition (10) Experts mentioned several consequences related to an increase in competitive pressures. In the case this scenario applies – that other organizations would offer this level of financial inclusion to customers and it is the new norm – the banks would adapt a fast follower strategy, copying the competitors' new way of doing business. Another solution would be to engage in a partnership with the organizations that conform to the social norms and values. Experts mentioned that blockchain is a network solution and a successful application of the technology requires a collaboration within in the ecosystem between the different parties. Finally, there was also mentioned that there would also be room for acquiring the business that provides this new way of doing business. In other words, banks would mainly respond in a similar way as if a competitor would provide a new product or service.

> *Expert D: "What applies for the competitors will probably also apply for us. So, I don't see any negative impact for the bank."*

> *Expert E: "If a competitor offers this to customers, then it will make us very curious. What their motivation is and how they are able to do that exactly."*

Lower institutionalization power (7) This consequence relates to the decreased power of banks to define norms and standards. When customers are able to experience higher levels of financial inclusion at other organizations, banks are required to follow this trend in order to remain legitimate. Experts mentioned that in this case, banks are forced to think differently about how to include more individuals in the financial system. One expert mentioned that the bank is already looking into ways to support more individuals as a means of charity.

> *Expert E: "If you're considering cryptocurrencies, it is very important to listen to the customers' expectations, but of course we have to stay within the legal domain."*

It is also argued that the bank will not conform to this new norm, as regulation will not allow for such a shift. In consequence, the bank loses customers, and there will be an increase in financial activities with these other organizations.

4.3.5 Consequences from C5 and C9: Distributed Power / Value as Incentive

The fifth (C5) and ninth (C9) legitimacy challenge both relate to the same design principles. Therefore, this scenario has been confronted as one question with different probing questions, to address both legitimacy challenges. With these legitimacy challenges, organizational legitimacy is granted when customers perceive a higher power in determining the bank's output and structure (C5), and when customers can be rewarded for sustaining and improving the bank's business processes (C9). Provided that, the corresponding scenario addresses these two issues. First, by imagining an institutional environment where customers can contribute in deciding the organization's actions. For instance, by deciding how capital is spend or how the organization should be structured in a democratized way. And secondly, customers can be rewarded for contributing to the organization. For instance, by earning tokens for verifying transactions, and monitoring or improving business processes. Based on the provided scenario and question, the most significant organizational consequences for the bank are related to distributed organizations (26) and involve institutional differentiation (9), institutional isomorphism (6), a lower institutionalization power (5), and no consequence (5):

Distributed organizations (26) Most consequences mentioned by the experts directly related to the scenario and addressed the effects on the bank moving towards a more distributed organization. Experts mentioned that in this scenario, customers lack the expertise and motivation to know what is best for the organization. Customers are ignorant, and the question remains if this involvement in improving or sustaining organizational processes will result in better outcomes. It could be that the decisions made will leave some customers is a position that is worse. In general, it is believed that the bank knows what is best for the customers. If this would ever be the new social norm, then it is of high importance to critically look which processes could be distributed or outsourced. Furthermore, customers need to be trained and know what is expected of them.

> *Expert A: "To run a bank on a democratic level, that everyone decides the output, then everybody needs to understand the situation."*
>
> *Expert B: "Honest and controlled business is of high importance, and this also needs to be guaranteed by the customers."*
>
> *Expert B: "The rules need to be very clear for everyone, we know from experience that there are always people who only like convenience or want to take advantage of certain situations."*
>
> *Expert D: "We don't know if the input of the customer will lead to a better decision."*

In this new norm regarding distribution organizations, banks will move towards a situation where customer also could be rewarded for their contribution. There is some kind of value as incentive to participate. Experts mentioned that the possibilities for the bank occur on different levels. First, the bank could give voting rights to participants. Every shareholder could have the right to vote for the strategic direction. For instance, a vote for a higher focus on sustainability or emerging economies. Or every customer can vote, and these votes can be included in the final decisions made by the executive board, turning the bank into a sort of government agency. Secondly, the bank could distribute certain business processes and ask customers for their computing power. But in order for this to be possible, the bank will have to think about which business processes can be distributed. Cloud and storage services are already extremely efficient for instance. New economic models should be developed which allows customers to be rewarded for their added value. One example mentioned is the possibility to give a discount for products and services to those customers who add value.

Institutional differentiation (9) Experts mentioned that the consequences of the bank will depend on the mission statement of the bank, their values, strategic direction, but also their capabilities and expertise. Each bank is different on these aspects. For instance, the business model of a bank will have to align with these new expectations. Moreover, it needs to decide on which level they want to conform to these new expectations, and the additional risks it may bring. Also, banks are not the same as non-profit organizations. They have to make to make profits. Banks who decide not to conform with these new expectations will lose customers.

Institutional isomorphism (6) This scenario was only easy to imagine when the experts could see some direct benefit for the bank. In that case, to conform to these external pressures, the banks adopt the technologies that bring this added benefit. Already, banks are looking into the possibilities of adopting blockchain to increase the efficiency of business processes and to increase the customer experience.

> *Expert C: "If you can propose this scenario to your customers then it's a win-win, because the customers helps to make the bank safer and more efficient."*

Lower institutionalization power (5) This consequence relates to the decreased power of banks to define norms and standards. When customers perceive that a higher power in determining the bank's output and structure and moreover, that rewards for sustaining and improving the organizations' business processes is seen as the new norm, banks are required to follow this trend in order to remain legitimate. Experts mentioned that in this case, banks are forced to think how their business would look like in the future. In the end, the customers decide which organizations are allowed to exist.

> *Expert A: "Customers can decide which banks are allowed to exist, and if customers want to move their money and services from one place to another, then they'll do that."*

4.3.6 Other findings

The following consequences have been mentioned numerous times, but none of these were explicitly mentioned at a particular scenario. However, these consequences are still interesting to mention as their occurrence overall contribute to their significance.

No consequence (21) In some occasions, experts mentioned that a scenario would not force the bank to any major changes. This code addresses all instances which are not related to regulatory constraints. The most mentioned topic is customer convenience. Experts stated that customers do not care who verifies the transactions. Nobody thinks about that. Also, small differences in what a bank offers and what not will not result in major shifts moving large customer segments from one bank to another. A major factor that keeps customers at one particular organization is convenience. Most customers do not like to experience switching costs.

> *Expert D: "The question is how many customers will eventually leave when competitors offer this service (i.e. manage their own data security). How many customers left Facebook when it came to light how they dealt with personal data? Not that many I assume. Customers probably do not care that much how banks use their data."*

Furthermore, no consequence was identified if the bank was not involved in the business that particular scenario was addressing. Also, if an expert identified a situation in which this scenario already could be addressed but also did not lead to major changes in the accepted social norms and values. An example that was provided addressed the possibility to be a shareholder of a bank and related to the distributed organization where customers could be rewarded for contribution. Moreover, it was mentioned that payment

transactions services are already extremely efficient and highly optimized. It would be very difficult for blockchain to disrupt this market.

Higher path dependency (14) History matters. In some scenarios, especially those addressing the potential of blockchain in the larger ecosystem, banks are dependent on other parties. Since blockchain technology is a network solution, there need to be an agreement on which system will be the new norm. Banks do not decide on their own which technology will be adopted. It is always a collaborative effort. Experts mentioned that banks have to move slowly and constantly have to evaluate the added value of each decision.

> *Expert C: "Blockchain is a network solution, the success of this technology is dependent on the acceptance of different parties within the network."*

4.4 Conclusion SQ3

This section identified the organizational consequences for banks in view of the legitimacy challenges that were developed in the chapter 3. This provided the answer to third sub-question which aimed to identify organizational consequences when the institutional environment of banks is affected by blockchain technology by confronting stakeholders involved in the Dutch banking sector with the legitimacy challenges.

The next chapter will discuss the key findings and the research implications. The results of the third sub-question and the discussion will be considered as input for the development of an innovation strategy in chapter 13, answering the fourth and final sub-question.

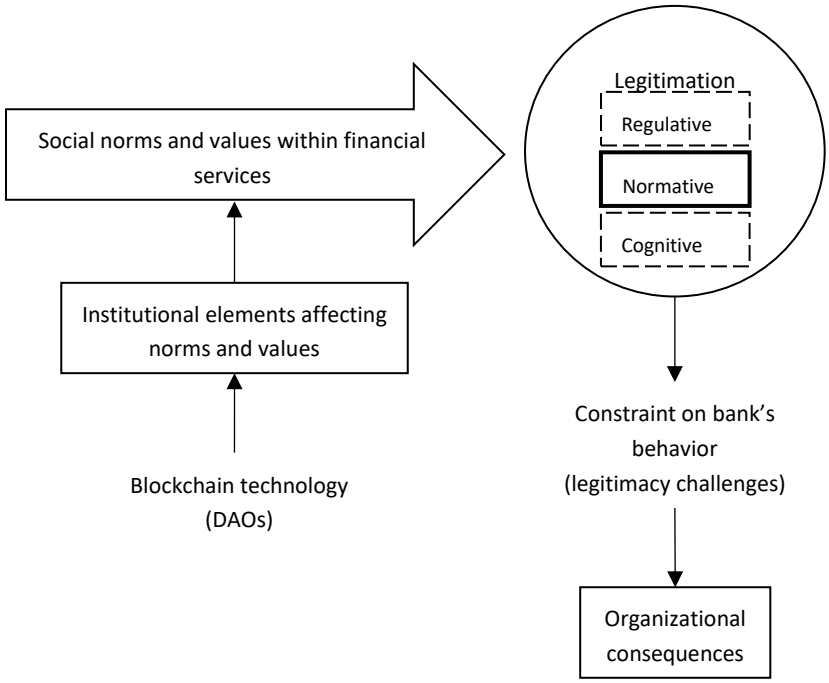


Figure 14: Initial framework – organizational consequences when blockchain affects the legitimacy of banks

5

Discussion & Conclusion

This chapter discusses the conclusions of the research project. First, in section 5.1, the answers are presented to each sub-question. Thereafter, the main research question is answered. Section 0 discusses the practical implications of the research project and the scientific contribution. Section 5.3 provides the limitations of the research and recommendation for future inquiries. Section 5.4 discusses some unexpected findings. And finally, section 5.5 provides a concluding remark.

5.1 Conclusion

The MOT project involved an institutional perspective on organizational legitimacy and blockchain technology, and how this technology in turn can affect the legitimacy of the institution of banks. This research project provided the organizational consequences for banks when blockchain technology affects the institutional environment, and the possible managerial implications. This was done by means of a literature review, a case study, and a qualitative approach. The aim of this research project was to identify the organizational consequences of blockchain technology on banks to improve the innovation strategy by looking into the theoretical effects of blockchain technology on the legitimacy of banks and by evaluating these effects with different experts involved the Dutch banking sector. In order for the main research question to be answered, a set of sub-questions has been answered first.

5.1.1 Answer to SQ1 – Evaluation criteria

What criteria found in literature are relevant for identifying the effects of blockchain technology on the organizational legitimacy of banks?

a. How can organizational legitimacy best be defined?
b. What are the factors, and the relations between the factors, of organizational legitimacy?
c. Which organizational legitimacies can be described within the banking sector?
d. What factors affect the legitimation process?

The relevant criteria found in literature for identifying the effects of blockchain technology on the organizational legitimacy of banks have been identified by means of a literature review. The relevant criteria that have been identified first involved the establishment of a definition for organizational legitimacy:

> Organizational legitimacy is the perception of the bank's audiences that the actions of the bank are seen as appropriate along the social norms and values of its industry segment.

Hereafter, different elements of legitimacy have been identified. Within this project's context, the regulative, normative, and cognitive element have been identified as important elements affecting the legitimation process of the bank. After exploring the dynamics of each element, the normative element of organizational legitimacy has been identified as relevant to evaluate for banks. Finally, to evaluate the effects of blockchain technology on the organizational legitimacy of banks, an initial framework has been provided that shows the dynamics of organizational legitimacy within this project's context.

5.1.2 Answer to SQ2 – Legitimacy challenges

Which legitimacy challenges arise, in view of the evaluation criteria, by analyzing the case of blockchain technology affecting the institutional environment of banks?

a. What are the consequences of blockchain technology from an institutional perspective?
b. How do the institutional elements of blockchain technology affect organizational legitimacy?
c. How can the changes in legitimacy be best conceptualized?

By analyzing the case of blockchain technology affecting the institutional environment of banks in view of the evaluation criteria, nine legitimacy challenges have been identified for the bank. These challenges describe how

blockchain technology as DAOs compete with banks, and the resulting institutional pressure on the bank and their legitimacy. The identified interrelated aspects of the legitimacy challenges contribute to the development of the final framework by providing insight in which design principles induce these challenges.

5.1.3 Answer to SQ3 – Organizational consequences

Which organizational consequences arise when the institutional environment of banks is affected by blockchain technology by confronting stakeholders involved in the Dutch banking sector with the legitimacy challenges?

a. How can the legitimacy issues be best confronted with the experts?
b. Which experts can and need to be confronted?

Confronting stakeholders involved in the Dutch banking sector with the legitimacy challenges has resulted in numerous organizational consequences for the bank. For each legitimacy challenge, the most significant consequences have been mentioned. The organizational consequences that have been identified when blockchain affect the institutional environment of banks involve:

- **Institutional isomorphism**: blockchain pressurizes banks to shift (1) from current practice to blockchain-based solutions and (2) from current regulation to regulations including blockchain aspects.
- **Regulation**: banks are constraint due to legal compliance.
- **Distributed data ownership**: blockchain pressurizes banks to (1) shift to blockchain-based information infrastructures, (2) shift to individual customer evaluation based on data, (3) put more effort in sustaining social stability, (4) and to shift to self-sovereign IDs for customers. Moreover, (5) banks will have to put more effort in how to benefit from data, and (6) will have fewer access to data to calculate risks.
- **Role shift**: the role of the bank will change towards (1) a platform function, (2) a keeper of data or (3) otherwise. Moreover, (4) banks will have to shift focus to the supply of complex products on platforms.
- **Increased competition**: banks will have to (1) exit unprofitable market segments as a result of a more competitive environment, (2) copy the first mover's strategy as a result of a more competitive environment, (3) acquire innovative startups as a result of a more competitive environment, (4) engage in partnership as a result of a more competitive environment, or (5) cope with a more competitive environment on this level.
- **Lower institutionalization power**: banks have less power to set norms and standards within the institutional environment.
- **Distributed organization**: blockchain pressurizes banks to (1) allow rewards for valuable contribution and (2) allow customers to decide organization's output. Moreover, as blockchain enables customers to participate/contribute/get rewarded, (3) customers need sufficient knowledge for their contribution and (4) there is a need for trust in the customers' added value.
- **No consequence**: no significant consequence will happen to the organization due to customer' laziness or otherwise.
- **Institutional differentiation**: banks have to take a different strategic focus.
- **Higher path dependency**: banks have limited possible choices for innovation
- **Lower transaction costs**: banks will lower the prices for the customers or increase the profitability of the organization.

5.1.4 Answer to SQ4

How can the identified organizational consequences contribute to the development of a framework supporting banks to improve the innovation strategy?

a. How can the consequences be conceptualized and mapped out?
b. What can be recommended to improve innovation strategy?
c. What are the limitations of the research?

The identified organizational consequences contribute to the development of a framework supporting banks to improve the innovation strategy by implementing the results into the framework for organizational legitimacy. This framework is provided in Part IV and shows the complete dynamics of how blockchain affects the institutional environment of banks and their legitimacy. The limitations are discussed in section 5.3.

5.1.5 Answer to main RQ & Key findings

The main research questions states:

What issues can be discerned and conceptualized that capture the effects of blockchain technology on the organizational legitimacy of banks to improve the innovation strategy?

This research question has been answered by means of a literature study and a qualitative approach. The issues that can be discerned and conceptualized are the legitimacy challenges that arise by viewing blockchain technology from an institutional perspective are the organizational consequences for the bank as a result of these challenges. Figure 15 shows how blockchain technology affect the organizational legitimacy of banks and the resulting organizational consequences.

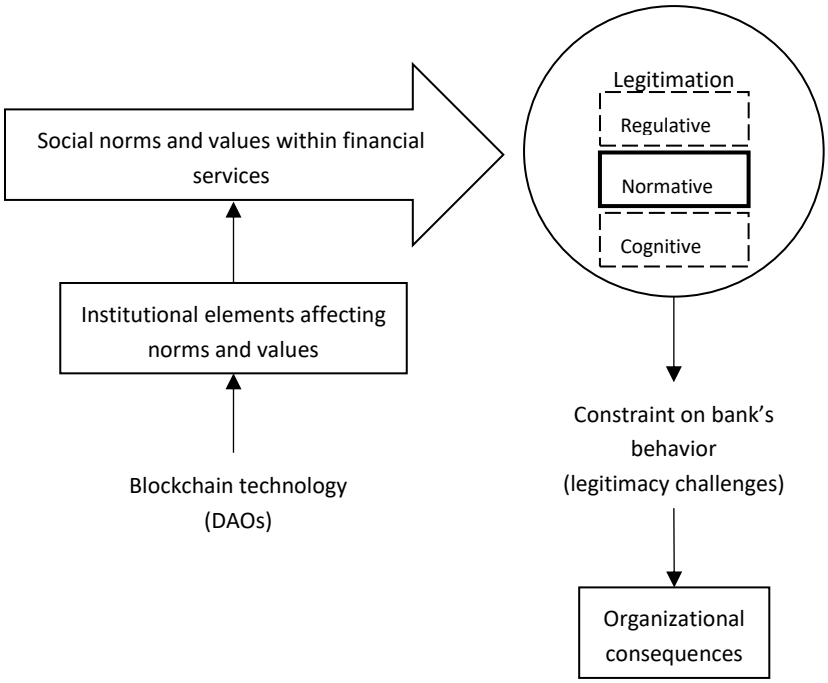


Figure 15: Initial framework – organizational consequences when blockchain affects the legitimacy of banks

The effects on the normative legitimation process – i.e. the legitimacy challenges – directly affect the organizational legitimacy of banks which act as a constraint on the bank's organizational behavior. These constraints are moral obligations who act as drivers for organizational change enforced by the larger socially constructed system. The identified organizational consequences for the bank resulting from these obligations provide insight for improving the innovation strategy since these consequences give a future perspective on the how the expected social norms and values are changed by blockchain technology. Table 5 shows each legitimacy challenge, how they relate to the design principles of blockchain, and the resulting organizational consequences. An elaboration on each of the consequences can be found in section 5.1.3.

*Table 5: Organizational consequences for banks resulting from the legitimacy challenges related to the design principles of blockchain (*The aspect of no consequence in this context is discussed in section 5.5)*

Legitimacy challenges		D1 Disintermediation of Trust	D2 Privacy	D3 Rights Preserved	D4 Security	D5 Distributed Power	D6 Inclusion	D7 Value as Incentive	**Organizational consequences**
Normative legitimacy is granted to the bank when customers perceive a lowered need for trust in the processes which are being competed against.	C1	■							Role shift Increased competition Institutional isomorphism
Normative legitimacy is granted to the bank when customers are offered products and services with lower transaction fees.	C2	■							Lower transaction costs Institutional isomorphism No consequence*
Normative legitimacy is granted to the bank when customers perceive a higher degree of privacy and data ownership rights.	C3		■	■		■	■		Distributed data ownership Regulation Institutional isomorphism Lower institutionalization power
Normative legitimacy is granted to the bank when customers perceive that they are in control of their own data security.	C6				■	■			Regulation Distributed data ownership Institutional isomorphism Role shift
Normative legitimacy is granted to the bank when customers experience a higher level of financial inclusion (permissionless transactions & data ownership).	C7		■			■	■		Regulation Institutional isomorphism Increased competition Lower institutionalization power
Normative legitimacy is granted to the bank when customers perceive a higher power in determining the bank's output and structure and can be rewarded for sustaining and improving the bank's business processes.	C5 C9					■		■	Distributed organizations Institutional differentiation Institutional isomorphism Lower institutionalization power

5.2 Research implications

This section discusses the practical and theoretical contributions of the research. From a practical point of view, the research design will be discussed, followed by the managerial implications and the implications for the regulators of the bank. From a theoretical point of view, the scientific contributions for legitimacy theory are discussed.

5.2.1 Practical implications

The research design of this research project has resulted in a process for the bank to identify the organizational consequences of blockchain technology. The framework that has been developed throughout the research project can provide insights in the steps that are needed to identify the effects of innovative technologies on institutional environments and how this in turn can affect the legitimation process of an organization within the corresponding environment. This especially holds for a technology with both social and economic implications. The social norms and values of the institutional environment are the evaluation criteria for which an organization will be granted legitimacy. These criteria are measured against different legitimacy elements. Within this research project, the regulative, normative, and cognitive elements have been identified as relevant within highly institutionalized contexts. Legitimacy is granted based on levels ranging from legal compliance to subconscious understandings. Innovations that have the potential to touch multiple levels within the legitimation process are thus more likely to affect the legitimacy of an organization.

The resulting identification of the organizational consequences due to the changing legitimation process can provide insights for the development of innovation strategies. Organizations can identify the possible implications of the new norms on their organizations and decide in what degree their vision and strategy can be aligned with their business.

5.2.1.1 Managerial implications

> *"Managers must guard against becoming so enamored with their own legitimating myths that they lose sight of external developments that might bring those myths into question", (Suchman, 1995, p. 595).*

Challenging the institution

The research project contributed to the development of an approach for developing innovation strategies in highly institutionalized environments. Managers can challenge the institution to conform to new social norms and values induced by the particular innovation and stimulate thinking outside the box which can be rather difficult for highly institutionalized firms. At the same time while enabling creative thinking, it provides legitimate solutions as it fits the expectations of the larger environment. Moreover, by having an overview of the organizational consequences, actionable steps can be developed to deal with these consequences.

Focus of the bank's activities

This research project has identified the organizational consequences on the legitimacy of banks affected by blockchain technology. What do these organizational consequences mean for the bank? The organizational consequences are a result from the normative legitimacy challenges that have been identified. Looking back at the dynamics of organizational legitimacy in Figure 6, the resulting consequences act as a constraint on the bank's behavior, and managers should change the behavior of the organization accordingly to retain its legitimacy. It is for good reason that it is mainly institutional isomorphism as a mentioned response for managing legitimacy. Institutional isomorphism contributes to the survival of an organization, which increases organizational performance, especially within heavily regulated environments (Dowling & Pfeffer, 1975; Meyer & Rowan, 1977). Following this argument, the response of the bank to these constraints should be economically viable, legal, and legitimate as depicted in Figure 16 (Woodward et al., 1996).

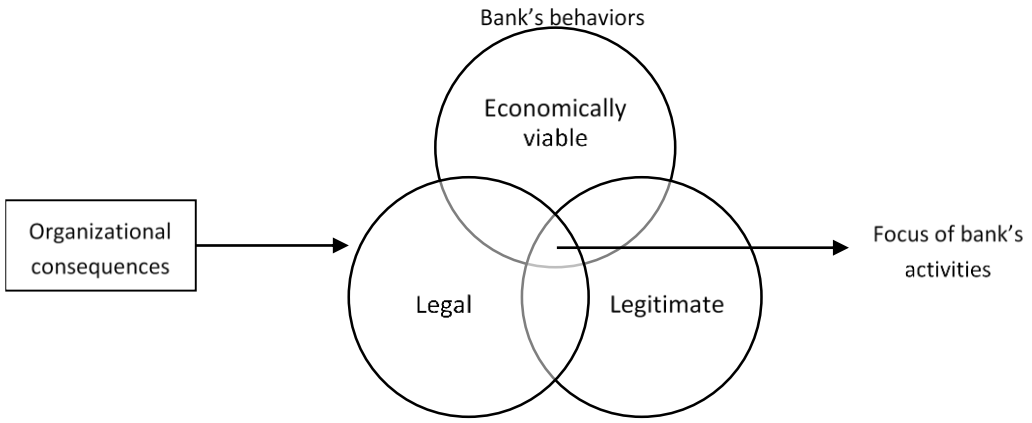


Figure 16: Focus of bank's activities resulting from the organizational consequences induced by blockchain technology

This means that the organization should focus its activities where: it has the resources and capabilities, the activities conform with regulatory compliance, and where the actions of the banks are perceived as appropriate for that particular entity. It can be argued that to be legal is to be legitimate from the perspective of the law, and to be economically viable is to be legitimate to the owners of the business. Legitimate activities correspond to social evaluations for the organization (Woodward et al., 1996). Besides focusing on these three elements when responding to the organizational consequences, the underlying causes of these constraints should be reviewed for an effective response.

When managers deal with the organizational consequences induced by an innovative technology as identified in this project, it is important that there is constantly looked at which elements of the technology are influencing the social norms and values and how this affects the legitimation process. Figure 17 shows how managers can deal with the organizational consequence concerning a role shift.

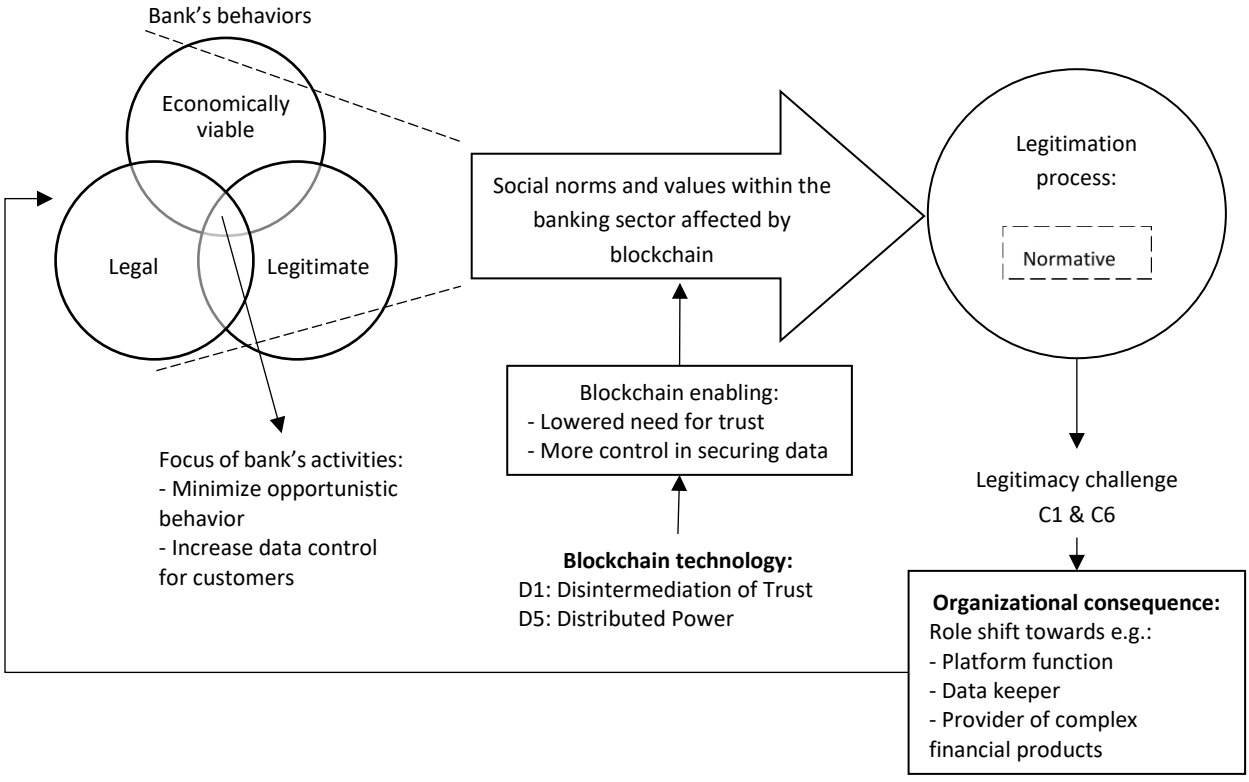


Figure 17: How banks can deal with the consequences of blockchain technology inducing a role shift for the organization

In this case, the role of the bank will change towards (1) a platform function, (2) a keeper of data or (3) otherwise. Moreover, (4) banks will have to shift focus to the supply of complex products on platforms. This consequence is a result of the first and sixth legitimacy challenge. In other words, normative legitimacy is granted to the bank when customers perceive a lowered need for trust in the processes which are being competed against by blockchain, and when customers perceive that they are in control of their own data security.

A lowered need for trust is induced by the first design principle of blockchain technology which is the disintermediation of trust. A disintermediation of trust means a mitigation of opportunistic behavior as there are less actors involved in verification processes. As the role of the bank will shift to different platforms, managers should emphasize on minimizing opportunistic behavior and be coherent in communicating this towards customers (Mukherjee & Nath, 2003).

The other challenge inducing this role shift is a result of the shift in control of data security. Customers want more control over their own data security, and this is a result of the design principles of blockchain enabling a higher security and distributed power – removing the central point of failure. As the role of the bank will shift to different platforms, managers should give customers the perception that they have more control in securing their own data (e.g. by including cryptographic features) and look for possibilities in decentralizing the data for increased security.

In short, innovative technologies could change the organization's appropriate actions within a particular market or industry segment. As a result, leading to different consequences for the organization. Managers could deal with these consequences by looking how the different features of the innovation change the expected norms within the larger segment and respond in a way that is economically viable, legal, and legitimate in the current market. When done correctly, managerial initiatives can make a substantial difference in the extent to which organizational activities are perceived as legitimate within any given cultural context (Suchman, 1995).

Regulatory constraint for bank's innovative potential

Legal compliance is seen as a significant factor for three legitimacy challenges. Normative legitimacy is granted to the bank when customers:

(C3) perceive a higher degree of privacy and data ownership rights

(C6) perceive that they are in control of their own data security

(C7) experience a higher level of financial inclusion (permissionless transactions & data ownership)

Banks mainly experience regulatory constraints and argue that they cannot conform with the new norms in these cases as they have different obligations to the regulators and supervisory boards. Banks innovative potential seems to be limited by these issues. In most cases, experts immediately blocked or saw no possible solution to deal with the legitimacy challenges and it seems that they regard their legal compliance of high importance. It is for good reason that the heavily regulated environment forces banks to engage in activities linking the organization with the environment because banks are more dependent on acceptance by the environment for their economic well-being. However, as has been shown, constantly relying on these legal compliance limits the potential of solving these challenges. In general, innovations are precursors and regulation often only change after a long time – when the innovation has shown its worth. Banks may be too late to conform to the new norms in these cases as competitors have much more experience with the new technology, which endangers their existence.

What these legitimacy challenges have in common is the design principle of distributed power. With this feature of blockchain, customers have more power in how data is used and do not rely on the bank for data management or verification. Banks now have the task to ask data from customers and need to authorize many

financial services. The procedures for these activities are heavily regulated and any errors can result in penalties for the organization. As one expert mentioned:

> *"I think the solution lies more in designing the KYC process in such a way that more individuals, and also those without a home address, can be verified in different ways instead of removing the whole process at once."*

Managers should focus on the novelties of the innovation and look how the design principles affect the legitimation process. The willingness to innovate should not only depend on legal compliance. The aim is to find solutions to improve the current processes, not to violate the rules. It cannot be denied that with bitcoin – the first application of blockchain – some of these features induced by distributed power are already possible. It is only a matter of time before the regulations will be changed accordingly.

5.2.1.2 Relevance for the MOT program

The aim of the MOT program is to focus on exploring and understanding technology as a corporate resource – showing how firms can use technology to maximize customer satisfaction, while maximizing corporate productivity, profitability, and competitiveness (TU Delft, n.d.1). The impact of blockchain technology on organizational legitimacy and the future of banks is therefore a relevant research topic within this educational domain. The subject and outcomes of this project can have relevance for several courses within the master program.

The course of Technology Dynamics (MOT1412) focusses on concepts such as socio-technological change and the factors that influence the innovation process. With the focus of course on the relation between society and technology, this research project also emphasizes on this relation. The effects of blockchain technology on the social norms and values and organizational legitimacy give rise to reflections on the possibility of technological forecasting and the necessity to address social values in the innovation process. The theories of the course such as technological determinism, social construction of technology, and quasi-evolutionary theory also touch these areas.

The focus of this research project to improve the innovation strategy of the bank has relevance with the Technology, Strategy and Entrepreneurship (MOT1435) course. The course focuses on formulating and implementing technology strategy for large firms by understanding the specifics of the external economic and societal environment. This research project uses a similar approach and aims to develop a framework that contributes to the formulation of an innovation strategy by understanding the institutional pressures of the external environment on the bank.

5.2.2 Scientific contribution

This section describes the gained insights which could have scientific relevance. It discusses the new insights that have been identified and contribute to the further development of legitimacy theory.

5.2.2.1 New insights to legitimacy theory

This research project held an institutional perspective on organizational legitimacy and researched how an innovative technology affects the legitimation process of an organization. Work in the institutional tradition emphasizes on the institutional environment and the pressure it exerts on the organization to act along the expected standards (Massey, 2001). This inward look into the socially constructed environment contributed to the understanding of the legitimation process of an organization and how this can be evaluated. During the research project, many scholars were addressed that discussed the issue of legitimacy. Some insights that have been gained during the project are discussed below.

1) The linking process of an innovation with an existing institution was a challenge. As legitimacy of an organization has many different elements in which it may be affected, it seems important to first have a clear perspective on the economic and social implications of the technology. **"**When organizational technologies are poorly understood, when goals are ambiguous, or when the environment creates symbolic uncertainty, organizations may model themselves on other organizations" (DiMaggio & Powell, 1983, p.

151). In other words, when the institutional elements of blockchain technology are not fully understood, banks may want to wait as long as possible before adopting this innovation. This was also visible in current banking projects where the success of the project depends on the agreements between different parties. Here it was even more important that every party fully understood the technology. After this understanding has been established, the consequences that arise for the organization can be linked to the element of the technology. This in turn gives the researcher a better perspective of the underlying cause of the change in the legitimating process.

2) The project focused on researching the most dynamic element – i.e. normative legitimacy – as this element is argued to be most influencing the legitimation process of the banks. However, another important legitimacy element for the banking sector is the regulative element. It is known that regulatory compliance is a major factor for the economic wellbeing of the bank (Deephouse, 1996; Dowling & Pfeffer, 1975). It was clear that in many cases, addressing new standards with the larger banks led to the issue of legal compliance. Organizations that are more visible and that relatively more heavily depend on social and organizational support are more likely to be affected by legitimacy than other organizations (Dowling & Pfeffer, 1975). This also seemed for the larger banks, who regarded the regulative element of legitimacy a major factor for their wellbeing. Legitimacy can be seen as the minimum requirement for an organization to thrive, and in the case of the banking, the regulative element seems to be the element that is first addressed by the bank as minimum criteria. In general, this can mean that the institutional pressures on an organization first bring up the most important element for that particular organization. In the case of banks this would be the regulative element.
3) The strict issue of legitimacy as a minimum requirement for an organization contributed to the identification of organizational consequences. When organizations are forced to conform to the new social norms and values in order to survive, more solutions are mentioned. The benefit of this approach is that the results of these findings align with the social norms and values. In other words, the acceptance of the new procedures by the environment is already included.
4) Normative behavior of the users in a DAO is somewhat binary – it is either there or not. Accidental illegitimate use of a blockchain is simply not possible because of the absence of relational contracts which leads to the system's inability to execute those actions – assuming there are no bugs. However, actors can induce illegitimate practices by hacking the system. The DAO, a blockchain-based self-governing organization, which raised over $150 million in crowdfunding, fell victim of a hack which led to the termination of the project (Siegel, 2016). This case illustrates that actors or groups can harm the blockchain by not conforming to the rules, causing the organization to become illegitimate, and eventually a termination of the whole system. In other words, for DAOs, illegitimate behavior on an individual level has major influences on legitimacy on an organizational level.
5) The relation between trust and normative legitimacy is an interesting finding as both trust and normative legitimacy have been linked to the expectations that banks fulfil their obligations (Mukherjee & Nath, 2003; Palthe, 2014). These obligations are based on the moral values that exist in the socially constructed system that the banks need to conform to. Trust is concerned with assumptions and beliefs about the benevolence and moral motivation of others (Vermaas et al., 2010), and in a similar manner, this benevolence and morality is grounded in the social norms and values that is used for the normative evaluation of a bank when it is granted organizational legitimacy. Demonstrating trustworthy behavior is thus essential for the normative legitimation of an organization. Establishing trust requires a certain level of moral openness, transparency, and articulateness of the bank (Vermaas et al., 2010). When individuals have confidence in the capabilities of a bank being a financial intermediary, but experience a lack of trust in the organization, it may still be considered as illegitimate. The relationship between trust and legitimacy is not mentioned explicitly and it may be a relevant issue to look into for the normative legitimation process of an organization.

5.3 Limitations of the research & Recommendations

This section addresses the limitations of the research project. Furthermore, for each limitation a recommendation is provided which could be considered for potential future research projects.

5.3.1 Limitation 1 – Research scope

Private closed blockchains

This project considered blockchain technology as a public open database and it is not considered that private blockchains can be integrated within the banks to create a hybrid organization – yet identifying as a traditional bank while using blockchain technology. In this case, blockchain may be used for efficiency gains of processes, reducing costs, while the institutional environment remains unaffected – viz. completely ignoring the original intention of blockchain to replace centralized power (Allen, 2017). However, this basically means that the bank is maintaining its congruence with its current environment and that it is not directly influencing the generalized perception of accepted behavior. In turn, organizational legitimacy may not be significantly affected.

> *Recommendations*
>
> More emphasize can be placed on the impact of private closed blockchains to increase the effectiveness of internal business processes and how this affects legitimacy. In this case, the effect of the internal stakeholders on the legitimacy of the organization should also be considered. An example of these blockchains for business processes are tokenized ecosystems. Tokenization is a decentralized way of managing business processes by incentivizing its members through token reward functions and can show interesting dynamics within existing institutions.

Legitimacy elements

The project focused merely on the normative element as this element has been identified as the most dynamic. However, the importance of a legitimacy element is difficult to assess. Legitimacy assessments are not of equal importance and there may be a difference between normative, regulative, and cognitive evaluations. Stakeholders may have varying influence on the legitimacy of an organization and these influences may vary over time and place (Ruef & Scott, 1998). It is unclear how the legitimation process will look like for the bank over a long period of time.

> *Recommendations*
>
> Future research can investigate how the legitimation process of a bank may change over time. For instance, by looking at the effects of previously introduced innovations – such as the internet – on the institutional environment of the bank and how this has changed the banking practice over time.

The institution of banking

This project has identified the possible effects of blockchain technology on the social norms and values of the banking sector and how this can affect the legitimation process. However, the current social norms and values within the banking sector have not been clearly defined beforehand. The focus was primarily on the novel aspects of blockchain technology and the shift towards the redefined social norms and values including these novel aspects. In other words, this project did not define a clear starting point of the current social norms and values. As a result, the potential effect of each legitimacy challenge on the bank was unclear beforehand and some outcomes of the confronted challenges were not expected beforehand.

To illustrate, legitimacy challenge eight addressed that DAOs offer customers a wider product range, enabling multicurrency use and more choice in governance structures, which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a wider range in products and services. During the practice sessions for the interview, participants argued that customers already have the opportunity to easily switch between different currencies for global payments and is this challenge would therefore not affect the legitimacy (C8) of bank as much if DAOs already operate in a way that is currently seen as appropriate

along the social norms and values. Multicurrency use is already offered by companies such as Transferwise and Revolut. In general, it was clear that most of the novel aspects of blockchain may affect the banking institution as it now is. However, this challenge would not have been formulated if the current social norms and values were clear beforehand. Still, the practice interviews sessions were helpful for identifying the significance of these challenges before confronting them with the experts.

Recommendations

In future research projects, a clear definition of the current social norms and values should be established before the potential effects of an innovation on these social norms and values are formulated. In this way, the significance of each legitimacy challenge can be determined beforehand. Also, more emphasis can be put on those challenges that have the biggest potential disruptive impact.

5.3.2 Limitation 2 – Institutional perspective of blockchain technology

Blockchain as a self-governing entity

An institutional analysis was done on blockchain technology to understand the underlying characteristics and the dynamics of blockchain technology and how it affects organizational legitimacy. This analysis was done by viewing blockchain along the four major assumptions of institutional theory. This analysis was done by means of a narrative literature review as there was little to no understanding of the topic area. This approach concerns the identification of relevant sources based on preliminary recommendations and the continuous search for new sources based on the relevant references identified in the initial papers. It was proven valuable as it resulted in a better understanding of blockchain as a self-governing entity and the implications of this institutional technology. However, it was also challenging to identify the specific aspects of blockchain that affect the social and economic structures as this approach did not allow for the identification of clear concepts that can be referred back to. In this case, the project referred back to the design principles of blockchain technology to determine the origin of the legitimacy challenges.

Recommendations

Future projects could adopt either a more systematic approach for identifying the institutional elements of blockchain or apply a grounded theory approach. The grounded approach enables the formulation of a conceptual model by gaining theoretical insights with minimum of prior knowledge on the topic involved (Verschuren & Doorewaard, 2010). The approach also enables to obtain an overall picture of a complex situation and is suitable when a theory (or in this case a conceptual model) must be developed in an area that has hardly been studied. In this way, concepts can be developed that explain blockchain technology from an institutional perspective which can be build further on in other research projects.

Complete contracts within blockchains

In a blockchain, all design principles constitute as rules for social behavior. However, one major difference between blockchain and institutions being governance structures is the idea that institutional rules for social behavior are not always clearly visible. For instance, contractual agreements between parties consist of formal and informal rules. The agreements written in the contract are based on formal rules, whereas the goodwill between the two sides are founded on informal rules, or relational contracts. The demonstration of the bank's appropriate actions towards the customers can either be communicated contractual or communal, or both (Woodward et al., 1996). The contractual method includes formal, legally-defined, structured, and written communication whereas communal communication relies on informal, morally-defined, unstructured, and unwritten interaction. In other words, not all rules are codified. In contrast, the activities of the blockchain-based enterprise are bounded by predefined rules. The argument here is that smart contracts are 'complete' contracts while firms are made of 'incomplete' contracts. In a world with zero transactions costs, all contracts would be complete (Allen, 2017). However, incomplete contracts arise from information problems, and costs of writing and enforcing the contracts. In consequence, blockchains may not compete head to head with organizations. It must turn out whether these informal rules can also be integrated in a self-governing database.

Recommendations

Future research can look into the effects on organizational legitimacy when an organization would switch from incomplete to merely complete contracts. Will the organization still be perceived as legitimate and will their constituents still provide the resources that are necessary? Or do there always need to exist some informal rules and agreements between parties for organization to thrive?

5.3.3 Limitation 3 – Research process

Literature review

For the establishment of more valid research criteria, a broader range of literature had to be considered. This may lead to deeper insight in the emerging results of organizational legitimacy. The method of a narrative review has some limitations as there are no clear boundaries when the gathered information can be regarded as sufficient. Now the researcher was limited due to time constraints and it led to a somewhat unreliable way in which the literature review was conducted.

Recommendations

Future research could focus more on a reliable way for researching literature such as a systematic review. Also there can be more emphasize on including conflicting literature, to increase the confidence of the research findings and it presents an opportunity to challenge researchers into a more creative, open-minded way of thinking (Eisenhardt, 1989).

Qualitative approach

One challenge with a qualitative approach is to accomplish external validity and reliability on the research outcomes – the results of the interviews are open to interpretation and the amount of interview participants is low. For these reasons, it will make a difficult case to generalize the findings and to make the study replicable.

Recommendations

Future studies can interview more experts for the identification of organizational consequences. As a result, a more reliable overview can be created of the potential impact of blockchain technology on current banking practices.

Interview process

During some interviews it was shown difficult to steer the participant into viewing blockchain as a competitive technology. The expert immediately assumed that blockchain would be an enabler for banks to increase the efficiency of their business processes. When an attempt was made to talk about an environment in which blockchain would be the competitor of a bank, for instance as a DAO, some participants moved towards the situation as it is now and explained that regulation would make that situation impossible. The conversations were already framed as brainstorm sessions which contributed to the open and flexible attitude of the participants.

Recommendations

Enough time should be spent to set the stage and the interview participant should be provided with enough context of the purpose of the study. For instance, as discussed before, a clear definition of the current social norms and values may support in an early identification of the potential bottlenecks that might occur during the conversations. “The more persuasive the supporting reasons justifying the introduction of a new practice, the more rational its adoption will be perceived, and ultimately accepted” (Hyndman & Liguori, 2018, p. 3).

5.3.4 Limitation 4 – Data interpretation

From legitimacy challenges to scenarios

The interview guide consisted of numerous scenarios based on the developed legitimacy challenges during the case analysis. It was the main tool for the researcher during the interviews. The purpose for turning these challenges into scenarios was to provide the participants enough context for the challenges without unnecessary jargon. The problem is that there little way of screening or testing for an investigator's ability to do good case interpretation (Yin, 1994). And therefore, some information may have been lost by turning these legitimacy challenges into the scenarios. To minimize this incidence, the protocol consisted of probes – addressing the particular design principle – that could steer the interview towards the topics that the particular scenario addressed. Yet it could still have led to the identification of possible organizational consequences not related to the original challenge.

Recommendations

Identify which underlying social norms and values are being challenged with each scenario. As discussed in section 5.3.2, this could be done by first developing concepts that explain blockchain technology from an institutional perspective. These concepts can be used as probes during the interview to address the implication on the social norms and values. It increases the validity and reliability of the interview process as the participants can be steered more precisely to the underlying institutional element causing the challenge.

Coding in Atlas.ti

The organizational consequences were identified by using Atlas.ti. As this research project has a very big exploratory nature, these consequences are very much based on the interpretation of the researcher and are therefore difficult to validate. For instance, in some occasions, an expert mentioned an organizational consequence more than once. These consequences have been coded also twice in these occasions. However, it could be the case that these consequences are referred to the same issue and therefore could have been identified only once. The various codes give therefore more a general sense of which consequences are possible. For this reason, the codes with low occurrences are not excluded as the importance cannot be solely derived from the number of occurrences.

Recommendations

The internal reliability and internal validity can be improved by having multiple people interpreting the data as a kind of triangulation. Having different perspective on the same data set could improve the identification of possible consequences and can increase the accuracy of labeling the codes with the quotes. Moreover, the scope of this research project requires a lot of assumptions. Hence, it is of high importance to be transparent on the assumptions and uncertainties throughout the research process.

5.3.5 Other limitations

This analysis has ignored the stakeholder characteristics. The degree of how well blockchain technology would impact the normative legitimation process of the organization could also depend on the willingness to accept the technology, cognitive capabilities, and expertise of the stakeholders within the institutional environment.

5.4 Unexpected results

Blockchain offering lower transaction costs (C2)

No consequence In some cases, DAOs offering lower transaction costs for products and services would produce no significant consequences for the bank. This has to do with the fact that some banks already abandoned payment services that heavily rely on transaction costs. Experts stated that customers do not care who verifies the transactions. Nobody thinks about that. Furthermore, transaction services are already so cost efficient that competitors using blockchain technology will not induce any significant competitive pressure. It would be very difficult for blockchain to disrupt this market.

In theory, banks can adopt blockchain technology and decrease transactions costs which can lower prices for customers or increase the profitability of the bank but in practice, it is shown to be difficult as the current infrastructure for payment services is highly optimized.

Other findings

Higher path dependency History matters. In some scenarios, especially those addressing the potential of blockchain in the larger ecosystem, banks are dependent on other parties. Since blockchain technology is a network solution, there need to be an agreement on which system will be the new norm. Banks do not decide on their own which technology will be adopted. It is always a collaborative effort. Banks have to move slowly and have to constantly evaluate the added value of each decision.

Lower customer relationship If transactions are not linked with a particular bank, then the bank will experience a lower customer relationship. This is an indirect consequence and the banks will have to put more effort to attract customers. Now, customers stay with one bank for most of their financial services. This will change if there is no continuous interaction with the customer for their daily financial services.

> *Expert D: "The payment infrastructure is the starting point for other financial services. When payments will move to a blockchain platform, the customer relationship will change. Customers will engage less with the bank. In consequence, the relationship with the bank will diminish. The bank will have to look for other channels to connect with the customer."*

5.5 Concluding remark

> *"Legitimation is frequently viewed as a prerequisite for the institutionalization of new ideas and practices" (Hyndman & Liguori, 2018, p. 5).*

Applying legitimacy theory to the introduction of innovative technologies within existing institutional environments provides insights in the future expectations of appropriate behavior for organizations partaking in these environments. Challenging highly institutionalized firms to conform to new social norms and values induced by the particular innovation stimulates creative thinking, while at the same time it produces legitimate solutions as it fits the expectations of the larger environment.

By looking at the case of blockchain technology entering the institutional environment of banks, the organizations may primarily feel they ought to change their behavior induced by normative processes of legitimation. This change will mainly be visible through institutional isomorphism: banks will shift from current practices to blockchain-based solutions and from their current legal compliance to regulations including blockchain aspects. Banks mainly perceive blockchain technology as an enabler for improving their current business models. At the moment it is clear that regulatory aspects play a major role in the outcome of the innovation process and limit the banks innovative potential.

However, processes of legitimation do not only occur through the regulative element and thus the willingness to innovate should not only depend on legal compliance. When regulations are changed accordingly, the significance of the normative and cognitive element will become more important for organizational legitimacy. Managers should look further than legal compliance and the innovation strategy should focus on the novelties of blockchain and how these can change the future expectations of the bank's appropriate behavior.

Part III

Expectation management for the consequences of blockchain on banks – a strategic perspective

6

Research Approach for SEC

6.1 Research context

Overall context

The previous part of the research project provided an institutional perspective on the aspects of blockchain technology that affect the social norms and values within the banking sector. The legitimation from this perspective acts as a constraint, affecting organizational behavior. The resulting organizational consequences that have been identified through expert interviews have increased the understanding of the relevance of each legitimacy challenge that can act as a constraint on the bank's behaviour.

Within Part III of the research project, organizational legitimacy is the outcome of the legitimation process enacted by the focal organization. By going back to the section which described the dynamics of organizational legitimacy (Figure 6), the focal organization, in this case the bank, also plays a significant role in affecting the social norms and values of the environment. Communication practices can be processes of legitimation for an organization to affect the social norms and values of the institutional environment. The affected social norms and values determine the legitimation process of the bank through one of the legitimacy elements. The results from the legitimation process are considered as opportunities for banks, expanding the space of appropriate organizational behavior. When highlighting the relevant dynamics of organizational legitimacy for this project it results in the model as depicted in Figure 18. By using the knowledge gained in Part II of the research project, a more accurate evaluation is made of which legitimacy challenges need to be targeted within the institutional environment affected by blockchain technology to successfully manage the organizational legitimacy of banks.

The institutional perspective in Part II looked at the effects of blockchain technology on the institutional environment of banks. Blockchain technology is providing pressure on the banks to act along the expected, normative standards which are identified as behavioral constraints for the organization (Massey, 2001). Part III of the research project views organizational legitimacy from a strategic perspective. The strategic approach depicts legitimacy as an operational resource being purposive, calculated, and frequently oppositional. It emphasizes the ways in which organizations instrumentally manipulate and deploy evocative symbols in order to achieve legitimacy (Suchman, 1995). A bank can gain legitimacy from its audiences through adoption of legitimate structures, practices and symbols (Suddaby et al., 2017). In consequence, the strategic perspective depicts legitimacy as an opportunity, providing an actionable approach on how the organization can manage legitimacy within the socially constructed system. These legitimating activities rely heavily on communication between the organization and its stakeholders (Barnett, 2003; Colleoni, 2013; Khan, 2018; Massey, 2001; Pollach, 2015; Riel & Fombrun, 2007; Suddaby et al., 2017; Suddaby & Greenwood, 2005). As the field of Science Communication aims to design and optimize strategic communication processes within and between organizations and society (TU Delft, n.d.), a strategic perspective on organizational legitimacy is most suitable. In this way, the institutional pressures of blockchain technology on banks are managed more effectively.

Knowledge gaps

The novelty of blockchain technology could potentially disrupt the financial services industry, including the banking sector. The question remains whether banks are ready for this disruptive change since this institutional environment has been stable for many decades. At the time of writing, there is no or little information available how banks should deal with the legitimacy challenges that blockchain may bring. In the same manner, how communication should be embedded and implemented within the bank to deal with the institutional consequences of blockchain remains unclear. What can banks do when customers do not regard a bank as a legitimate organization anymore? How can banks manage their organizational legitimacy when blockchain technology enters the competitive field?

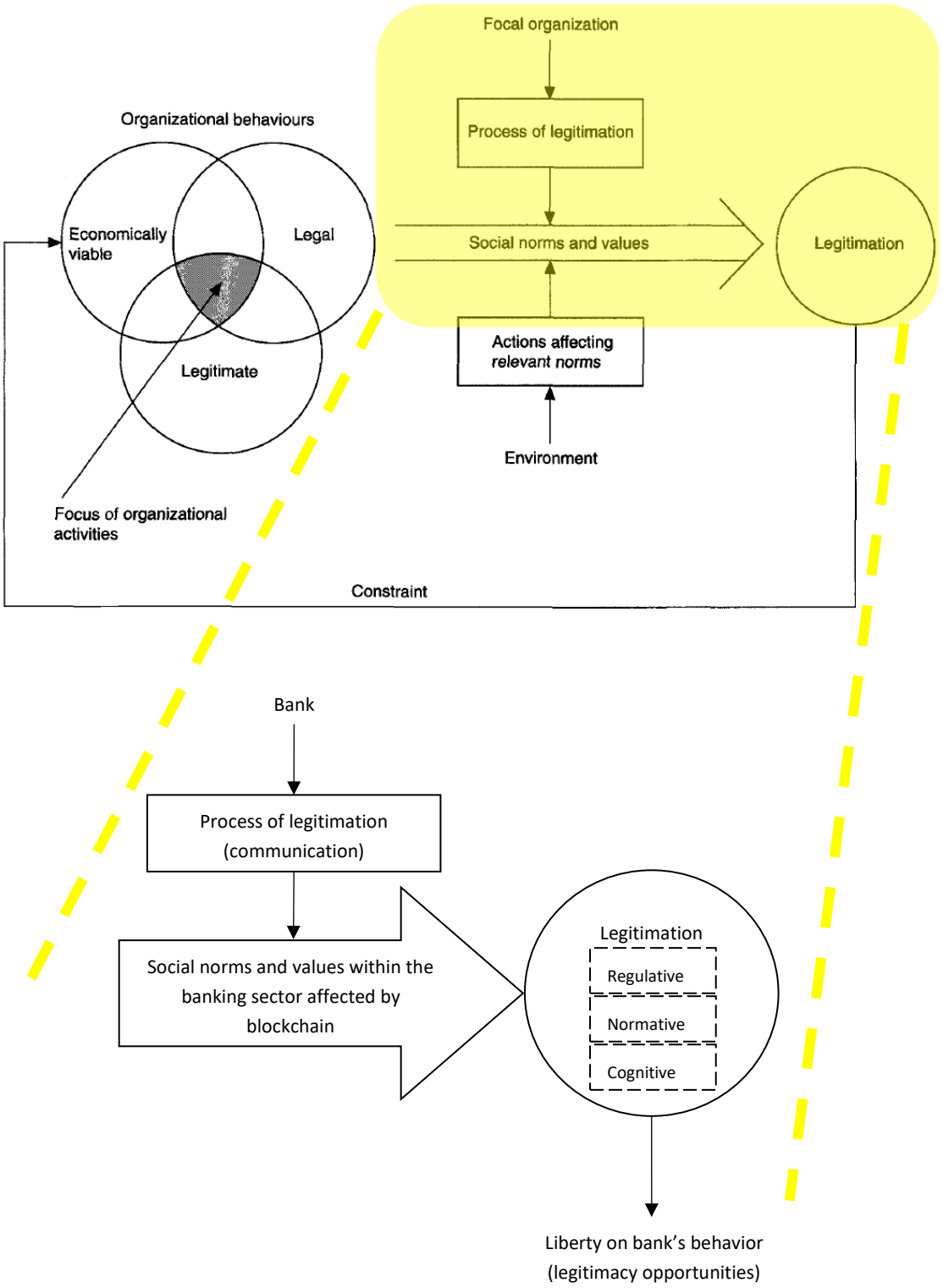


Figure 18: Initial framework for identifying the legitimacy opportunities for banks affected by blockchain. Legitimation is done through the three elements of organizational legitimacy as depicted in ***Figure 4***

Research problem

Organizational legitimacy is the perception of the bank's audiences that the actions of the bank are appropriate along the social norms and values of its industry segment. Banks are risking organizational illegitimacy in an institutional environment affected by blockchain as this technology can bring social and economic implications. Since legitimacy is provided by the organization's stakeholders, banks can gain legitimacy by managing the relationships with these stakeholders. How can banks sustain this relationship when the social norms and values are influenced by blockchain technology? One certain aspect would be to communicate with these stakeholders and signal that the behaviour of the bank is aligning these social norms and values. However, how banks should position themselves, what should be communicated, and to whom in this context remains unclear. In other words, how should this process of legitimation – as depicted in Figure 18 – look like?

Research objective

The aim of this research project is to improve the innovation strategy of banks by using communication for managing the organizational legitimacy affected by blockchain technology. This is done by identifying the role of communication for organizational legitimacy, identifying the best practices for managing this legitimacy, and identifying legitimation strategies and target groups from the organizational consequences which have been identified in Part II. Together, the best practices, legitimation strategies, and target groups are combined to develop a strategic approach for managing the organizational legitimacy of banks in an institutional environment affected by blockchain technology. In Part IV a legitimation strategy will be developed for the bank to deal with the consequences of blockchain technology.

6.2 Research questions

The main research question for the SEC research project is as follows:

How can the effects of communication on organizational legitimacy contribute to the improvement of the innovation strategy of banks in an institutional environment affected by blockchain technology?

In order to answer this main research question, a set of sub-questions are answered first. The results from these sub-questions yield the formulation of an answer for the main research question. The first sub-question focusses on the sources needed to identify the relevant best practices:

SQ1 Which best practices are relevant for managing organizational legitimacy for banks from a communication perspective?

a. What are the success factors, and the relations between the factors, for managing organizational legitimacy for banks?
b. Which communication tools can be identified for the purpose of managing organizational legitimacy?

The second sub-question involves the identification of communication challenges from the organizational consequences identified in chapter 4:

SQ2 Which relevant communication challenges for banks can be identified from the organizational consequences of banks affected by blockchain technology?

The identified communication challenges form the basis on answering the third sub-question yielding results for identifying the target groups and legitimation strategies of these challenges in a focus group setting:

SQ3 Which target groups and legitimation strategies can be identified by confronting the communication challenges within a focus group setting?

a. Which legitimation strategies can be applied?

b. What are the most relevant target groups and implications?

The results contribute to the development of a final framework:

SQ4 How can the identified best practices and results of the focus group session contribute to the development of a strategic approach for managing organizational legitimacy?
   a. Which legitimation strategies and corresponding target groups are most relevant?
   b. Which identified best practices are most relevant?
   c. How can the best practices be linked to the target groups and legitimation strategies?

6.3 Research methodology

Research design
Part III of the project is based on the research design as depicted in Figure 19. This research design is a schematic representation of the main research question and the sub-questions for the project. The following sections elaborate on each research method and how it is integrated in the research project.

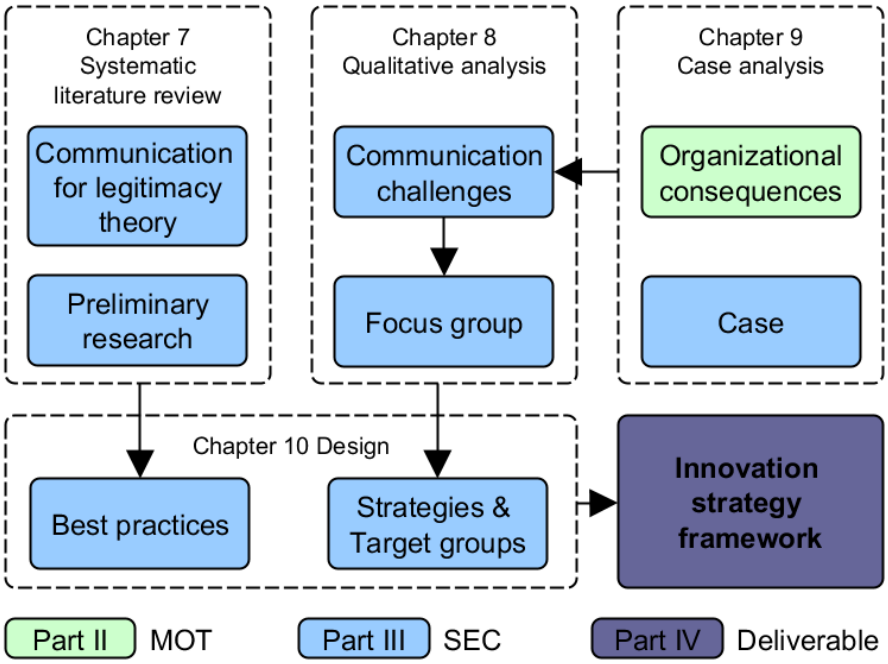


Figure 19: Research framework for Part III of the research project

6.3.1 Systematic literature review

The research strategy for gathering relevant literature, and thus answering sub-question one, is that of a systematic literature review, which "attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question. Researchers conducting systematic reviews use explicit methods aimed at minimizing bias, in order to produce more reliable findings that can be used to inform decision making" (Cochrane Library, 2018). The systematic review enables the researcher to make general statements about the earlier researched best practices for organizational legitimacy and their practical implications in new contexts (Siddaway, 2014). It is an effective research strategy to form an evidence-based starting point which is beneficial to the field of science communication (Van der Sanden & Meijman, 2004). In other words, the result of this systematic review provides a reliable source of communication factors that affect organizational legitimacy.

6.3.2 Case analysis

A case study approach is used to answer SQ2, which aims to develop different communication challenges based on the organizational consequences that have been identified in chapter 4. The aim of this research strategy is to understand the dynamics within single or multiple settings, allowing for in-depth examination of the specific case. The single-case study design is well suitable to confirm, challenge or extend theory and can "be used to determine whether a theory's propositions are correct or whether some alternative set of explanations might be more relevant" (Yin, 1994, p. 38). In this case it involves an analysis and reformulation of the organizational consequences into communication challenges, with the aim to create a valuable discussion during the focus group.

The case analysis process involves several steps:

- Determining the relevant organizational consequences
- Connecting the consequences with the appropriate legitimacy element to identify the appropriate legitimation strategies
- Developing communication challenges to be confronted in a focus group setting to allow for a better perspective on how the organizational consequences can be tackled using different legitimation strategies

Further elaboration on each step will be given in chapter 8.

6.3.3 Qualitative approach – Focus group

A qualitative approach is used to answer SQ3. The qualitative approach enables the collection of data in a more exploratory way (Eisenhardt, 1989). By confronting the communication challenges in contextual settings, factors can be identified that contribute to the development of a communication strategy for managing organizational legitimacy. These communication challenges are confronted using a focus group approach.

A focus group is an interview method to collect information and can be used to help explain results found through other data collection methods (Harrell & Bradley, 2009). Thus, an effective way to identify the practical implications that arise when banks use different legitimation strategies to tackle the communication challenges which are identified in chapter 9. The focus group allows for a direct opportunity to resolve conflicting information and it thus can raise both positive and negative effects of the results that have been identified in the literature review and interview sessions. Moreover, topics can be addressed that are not considered beforehand and thus can generate unexpected results. This is especially desirable when exploring potential disruptive technologies which increase the uncertainty for the stability of institutional contexts. The communication challenges are formulated as different cases and are confronted with financial advisory experts within the company of EY. The results contribute to the formulation of a communication strategy and the development of the final innovation strategy framework.

This section provided the research methodology for the SEC project. In Table 6, an overview is provided on the chapter outline of each report. Chapter 7 answers the first sub-question by exploring literature regarding communication for organizational legitimacy using a systematic literature review. The result is an overview of the best practices for managing organizational legitimacy. Chapter 8 addresses the second sub-question by using the interview results of Part II using a case analysis method. It generates the communication challenges which are necessary for the qualitative approach. Chapter 9 answers the third sub-question by confronting the results of the second sub-question within a focus group setting, yielding the target groups and strategies for processes of legitimation. Chapter 10 uses the results of the first and third sub-question to develop a strategic approach for the bank. Chapter 13 answers the fourth sub-question in which the results of the first three sub-questions are used to construct a final framework.

Table 6: Research approach per sub-question

Chapter	Sub-question	Sources	Methods	Results
7	SQ1	Communication for legitimacy theory; preliminary research	Systematic literature review	Communication tools (best practices)
8	SQ2	Organizational consequences (results Part II)	Case analysis	Communication challenges
9	SQ3	Results SQ2 – communication challenges	Qualitative approach	Target groups & legitimation strategies
10	SQ4	Results SQ1 and SQ3	Design approach	Strategic approach for managing organizational legitimacy
13	Main RQ	Results SQ1, SQ2, SQ3, SQ4	Design approach	Innovation strategy framework

7

Identifying Best Practices for Managing Organizational Legitimacy

7.1 Method for identifying best practices

This chapter consists of the theoretical foundation. The aim of establishing a theoretical foundation is to answer the first sub-question of the research project which states:

SQ1 Which best practices are relevant for managing organizational legitimacy for banks from a communication perspective?

It considers the success factors, and the relations between the factors, for managing organizational legitimacy for banks. Moreover, an identification is made of the communication tools for the purpose of managing organizational legitimacy. By answering this question, an evidence-based starting point is made to develop an appropriate communication strategy for managing the organizational legitimacy of banks affected by blockchain technology.

7.1.1 Process systematic literature review

The systematic approach is designed in order to answer the first sub-question of this research project which aims to identify the relevant communication factors that affect the organizational legitimacy of banks (Figure 20). This approach provides a reliable source of communication factors that affect organizational legitimacy. The systematic approach is comprised of several steps (Nunn & Hill, 2018): defining search criteria, a search for relevant literature, the exclusion of literature based on the criteria, an extraction and analysis of communication factors. A schematic overview of the systematic review can be found in Figure 21.

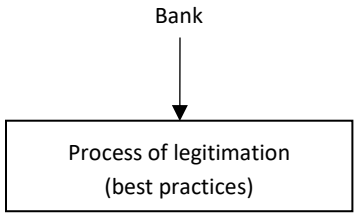


Figure 20: Conceptual framework for systematic literature review

First, search criteria have been defined in order to find the relevant articles for answering the first sub-question. The topics that are included in the search terms are based on this project's context and involved terms as legitimacy, blockchain, communication, organization, bank etc. The final search term that was used is as follows:

(legitima AND blockchain) OR (legitima* AND (position* OR communicati* OR dialogue*) AND organi* AND (manage OR improve OR sustain OR enhance OR preserve OR gain OR increase) AND (bank* OR financ* OR institution*))*

Exclusion 1 (SCOPUS)

The search for relevant literature was done using the SCOPUS and resulted in a number of 208 papers. The first exclusion of papers was done by reviewing the title, keywords and abstract and is based on the following criteria:

- Focus not on legitimacy or any other conformity to social norms and values
- Focus not highly institutionalized environments (as legitimacy not only plays a role in banking, but also other highly institutionalized environments, insights can be gained from other contexts as well).
- Focus not on the dynamics and effects of legitimacy (e.g. only describing what it is)

Based on these exclusion criteria, 168 papers were excluded. Out of the 40 identified papers, 38 papers could be fully accessed. No exclusion was done based on the date of the literature. Literature addressing communication for organizational legitimacy can be more applicable if the studies have been conducted recently. However, literature

addressing legitimacy is often based on the most fundamental papers described in literature. Hence, the literature search also includes papers addressing this issue in the earliest stages.

Exclusion 2 and follow-up search

An initial analysis of the 38 papers was done using NVivo. Here, the focus was to identify the papers addressing the effects of communication on legitimacy. First, a scan of the papers – reviewing the abstract, introduction, and conclusion – lead to a group of 21 eligible and 17 noneligible papers. The eligible papers addressed effects of communication on organizational legitimacy and the noneligible papers did not mention the role of communication on the dynamics of organizational legitimacy. Out of the 17 noneligible papers, four were identified as relevant for other parts in this research project. The remaining 13 papers were excluded from the research.

The 21 eligible papers were read in detail. Before the communication factors were extracted, a short follow-up search strategy was applied. It included a snowballing approach which identified referenced articles which directly mentioned effects of communication on organizational legitimacy. This resulted in seven additional relevant papers which were fully read and added to the eligible papers.

Categorization and analysis communication factors (NVivo)

An in-depth analysis of the 28 eligible papers resulted in a categorization relating to the institutional context in which the communication effects were mentioned. The segmentation is based on the difference on how these communication factors should be interpreted within this project's context (the number between the brackets indicate the amount of papers identified within that category):

General (17) Here, the relation of communication to legitimacy are mentioned in a general setting not related to any specific institutional context. In most cases, the effects were mentioned in the introduction or literature review of the paper.

Financial services (3) The effects mentioned in this category are identified in the context of financial services sector (e.g. banking, insurance, accounting etc.). These effects can be best translated to this project's context as it addresses the banking sector.

Healthcare (3) Many effects were mentioned in the context of healthcare, mostly addressing hospital environments.

Public sector (5) The effects mentioned in this category are identified in the context of state-controlled sectors.

Communication factors affecting organizational legitimacy in the contextual setting of financial services can have a higher impact than the factors mentioned in the public sector, as the social norms and values which are being legitimated in the financial services category better reflect the institutional context of this project. The significance of each factor may therefore differ.

The papers in each category were further explored using NVivo. Four codes were used for the analysis of the literature: goals (G), drivers (D), barriers (B), other (O):

- Goals describe what the purpose is of communication in the context of organizational legitimacy. This identification creates a general understanding of the importance of communication for organizational legitimacy within each context.
- Drivers are communication factors that positively affect organizational legitimacy. These drivers are the best practices that will contribute to the development of a communication strategy for managing organizational legitimacy.

- Barriers are communication factors that negatively affect organizational legitimacy. These factors need to be avoided for the communication strategy to remain effective.
- 'Other' is used to identify information that is not directly applicable but can be useful in a later stadium or another part of the research project (e.g. definitions, ideas, etc.).

7.1.2 Schematic overview of systematic review

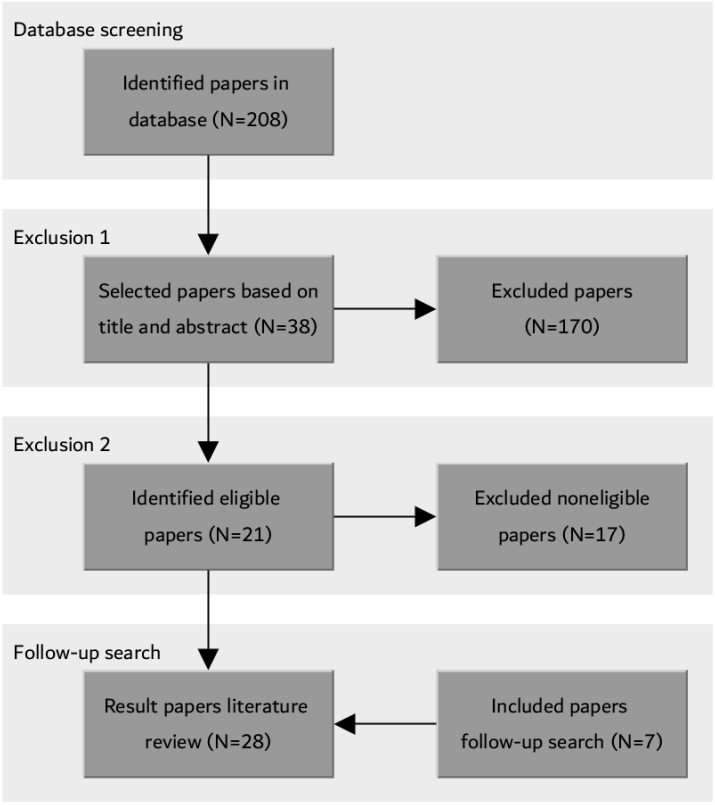


Figure 21: Flow diagram of systematic literature review

7.2 Results systematic literature review

In each category, various goals, drivers, barriers, and other factors have been identified. The literature study resulted in an identification of 25 goals, 75 drivers, 22 barriers, and 27 other factors. The number of identifications per category is depicted in Figure 22. Before diving into the communication factors affecting organizational legitimacy – the drivers and barriers – a closer look is taken at the importance of communication for organizational legitimacy – the goals.

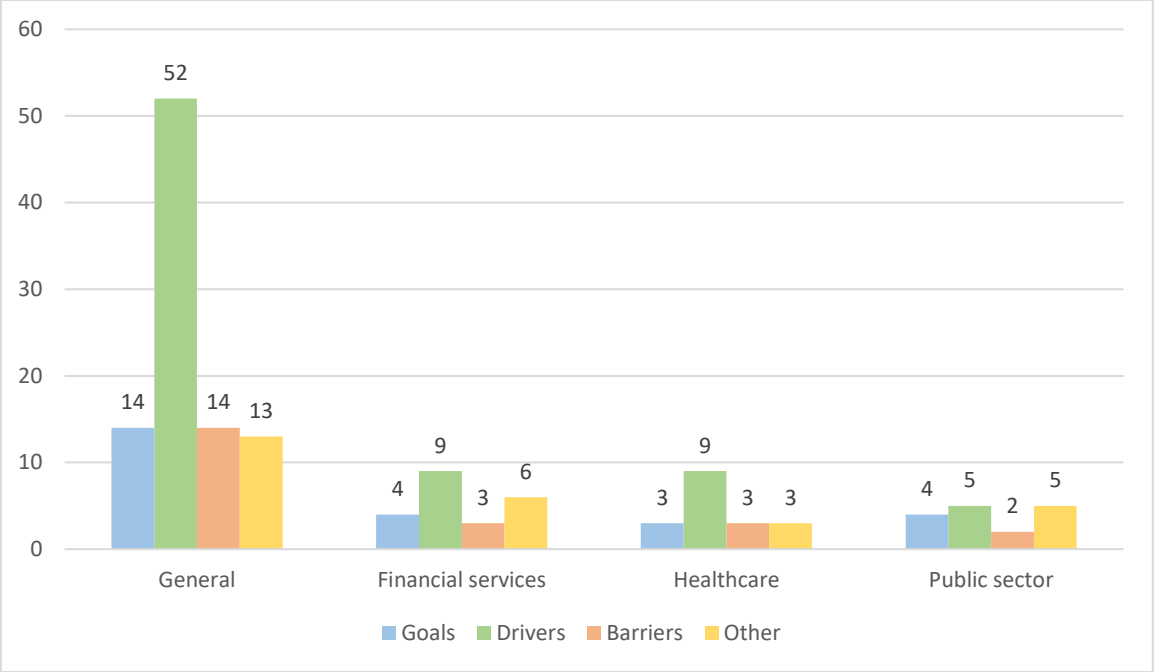


Figure 22: Distribution of communication goals, drivers, barriers, and other factors among the different institutional contexts

7.2.1 Goals – importance of communication for legitimacy

In this part of the analysis, the identification of goals gives broader perspective on why communication is important for managing organizational legitimacy within each context. An understanding of the purpose of communication for managing legitimacy in different contexts enables the researcher to apply the identified best practices in this project's context. The importance does not lie in the number of times the goals are mentioned. Thus, the goals with similar descriptions and references to the same source were not identified as a different goal.

A total number of 25 goals have been identified in the literature. That is, a description of the purpose of communication for organizational legitimacy. Also, in this part of the project, the earlier established definition of organizational legitimacy is used:

> Organizational legitimacy is the perception of the bank's audiences that the actions of the bank are seen as appropriate along the social norms and values of its industry segment.

Within each category, the numerous goals have been identified. The purpose of communication for organizational legitimacy within these different research contexts can vary as legitimacy can be established within different elements – i.e. regulative, normative, cognitive. Organizational change is enforced because members of the organization feel they *have to* (regulative), *ought to* (normative), or *want to* (cognitive) change their behavior (Palthe, 2014). By looking which motivation applies in each context, the appropriate legitimacy element is linked to the identified best practices:

General

Organizations can manage legitimacy by effectively managing stakeholders' perceptions of the organization (Barnett, 2003) and by forging strong relationships with these stakeholders (Camilleri, 2018; Nason et al., 2018). Organizations should continuously restructure and reinvent their identities, images, reputation and brands to gain and sustain legitimacy (Aronczyk et al., 2017). This, by establishing a value congruence between the organization and the stakeholders' perception (Colleoni, 2013). All these legitimating activities

rely heavily on communication between the organization and its stakeholders (Barnett, 2003; Colleoni, 2013; Khan, 2018; Massey, 2001; Pollach, 2015; Suddaby et al., 2017; Suddaby & Greenwood, 2005). As no specific context is provided for the application of these drivers and barriers, these best practices are used to support the overall legitimacy of an organization.

Financial services

The aim of communication has explicitly been mentioned by Hyndman and Liguori (2018) who researched the context of financial accounting. Legitimating strategies in accounting are important in processes of institutional change and communication plays and essential role to legitimate company's actions. Justifying change, both on an individual as well as on an organizational level, is primarily being done by using different communication techniques. Within the financial services sector, regulatory compliance has a greater effect on organizational legitimacy than in other industries (Nienaber, Hofeditz, & Searle, 2014). Banks primarily feel that they have to change their behavior in order to gain legitimacy. These drivers and barriers can therefore contribute to gain and maintain regulative legitimacy.

Healthcare

In the healthcare sector, especially in hospital environments, legitimacy is an important aspect for maintaining stakeholder support and access to viable resources. As these entities literally work with human lives, aligning with social norms and values is an enormous factor for its success (Sataøen & Wæraas, 2015). The main driver used by these entities for signaling this alignment and showing its appropriateness is communication (Blomgren, Hedmo, & Waks, 2016). Hospitals are mainly judged on a moral basis by their stakeholders. Organizational change is enforced because the hospital ought to. As a result, the drivers and barriers identified in this context are suitable for normative legitimation strategies in other contexts.

Public sector

In the public sector, legitimacy is seen as important since governments constantly try to find a balance between the values of state-controlled organizations and society. Successful legitimation is a result of transforming cultural values into observable actions – for instance, by engaging in CSR activities (Abdullah & Abdul Aziz, 2013). This can be achieved through organizational actions and communicating these behaviors to different stakeholders (Yao, Brummette, & Luo, 2015). Within the public sector, organizations mainly feel they ought to change their behavior, but they also want to. In consequence, these drivers and barriers are appropriate for managing cognitive and normative legitimacy in other contexts.

7.2.2 Drivers – best practices for organizational legitimacy

The systematic review has resulted in an identification of 75 drivers which are the factors that positively affect organizational legitimacy. These drivers have also been categorized under the four identified research contexts. A complete overview of the identified drivers is provided in Table 7. Drivers that have been mentioned in different papers which were similar have been merged into one unique communication driver. For instance, both the literature of Pollach (2015), and Schultz and Wehmeier (2010) mention that organizations can define the social norms and values of the institutional environment jointly through dialogue with the stakeholders partaking in the social system. For banks, this could mean that they can manage their organizational legitimacy by engaging in conversations with the regulators – if targeting the regulative legitimacy element. Within the general context, 26 unique drivers have been identified. In both the context of financial services and healthcare, six drivers have been identified. Finally, in the public sector context, five drivers have been identified.

*Table 7: Communication drivers for organizational legitimacy in a general context (*for directing internal stakeholders; ** for directing internal and external stakeholders)*

Communication drivers (general)	Source
Use written corporate discourses (CSR, IR)	(Brummette & Zoch, 2016; Camilleri, 2018; Suddaby et al., 2017)
Communicate economic rationales i.e. job/financial contribution to economy (Le & Bartlett, 2014)*; Communicate about contribution to society*	(Camilleri, 2018; Le & Bartlett, 2014; Nason et al., 2018; Suddaby et al., 2017)
Use standard-setting initiatives (industry-initiated codes, guidelines, labels, certificates)	(Camilleri, 2018; Pollach, 2015)
Engage in CSR initiatives (communicate about values)	(Heath & Waymer, 2015; Pollach, 2015; Schultz & Wehmeier, 2010; Suddaby & Greenwood, 2005)
CSR (combine business activities with philanthropy)	(Heath & Waymer, 2015)
Use metaphors and narratives to justify organizational change	(Khan, 2018; Suddaby & Greenwood, 2005)
Display emotions and engage in conversations that reflect the culture	(Khan, 2018)
Appoint high-level function to someone with innovation background	(Khan, 2018)
Protect banking practice by framing with commercial success and risk management	(Khan, 2018)
Use impression management activities (organizational accounts strategy)	(Le & Bartlett, 2014; Massey, 2001)
Refer to developed institutionalized structures and practices within organizational accounts	(Le & Bartlett, 2014; Suddaby & Greenwood, 2005)
Acknowledge the innovation (link to technical characteristics) within organizational accounts to minimize responsibility	(Le & Bartlett, 2014)
Utilize public platforms where stakeholders can air praise or grievances	(Nason et al., 2018)
Develop brand ambassadors, social media influencers, highly dedicated employees	(Nason et al., 2018)
Use symbolic actions (public relations and bargaining approaches)	(Nason et al., 2018)
Address the root cause of negative attention through technical actions (e.g. change KYC process to offer higher financial inclusion)	(Nason et al., 2018)
Negotiate social norms and values reference point with highly identified stakeholders	(Brummette & Zoch, 2016; Nason et al., 2018)
Communicate towards news media and market analysts	(Pollach, 2015; Schultz & Wehmeier, 2010)
Communicate the efforts to repair internal social weaknesses (e.g. installed monitoring systems or ombudspersons)	(Pollach, 2015)
Define social norms and values jointly through dialogue	(Pollach, 2015; Schultz & Wehmeier, 2010)
Launch new social performance initiatives: focus on brand-related communication, public speeches, online campaigns, events, sponsorships and awards (Pollach, 2015)*; use diversity statements, social media, online web content, value-based compliance programs for employee behavior* (Brummette & Zoch, 2016)	(Brummette & Zoch, 2016; Nason et al., 2018; Pollach, 2015)
Be consistent in content of response toward all stakeholders	(Massey, 2001)
Establish timely and reliable communication channels	(Schultz & Wehmeier, 2010; Suddaby & Greenwood, 2005)
**Obtain behavior of pro-blockchain executives using typified identities and frames originating from the broader societal logic*	(Khan, 2018)
**Utilize informal channels at the lower level of the organization to guide organizational change*	(Khan, 2018)
***Use real options orientation towards corporate strategy (internal/external)*	(Barnett, 2003)

Communication drivers (financial services)	Source
Use storytelling for current changes and future practice	(Hyndman & Liguori, 2018)
Impact people's existing frameworks carefully (fit blockchain in current banking practices)	(Hyndman & Liguori, 2018)
Engage in decoupling processes (abstract rhetorical arguments)	(Hyndman & Liguori, 2018)
Use open and active communication to enhance trust in innovations	(Nienaber et al., 2014)
Establish timely and reliable communication channels	(Nienaber et al., 2014)
Communicate with optimistic tone on C-level	(Patelli & Pedrini, 2014)
Communication drivers (healthcare)	**Source**
Use storytelling for current changes and future practice	(Blomgren et al., 2016)
Refer to positive aspects of established institutions (communicate that the bank is 'special in an ordinary way')	(Blomgren et al., 2016)
Engage in decoupling processes (construct ambiguous goals, undertake innovation activities outside managerial surveillance)	(Noir & Walsham, 2007)
Engage in corporate branding activities	(Sataøen & Wæraas, 2015)
Demonstrate that the bank is a 'normal' bank before becoming unique and differentiated	(Sataøen & Wæraas, 2015)
Use down-to-earth wording (information/trust instead of communication/branding)	(Sataøen & Wæraas, 2015)
Communication drivers (public sector)	**Source**
Use impression management activities	(Ogden & Clarke, 2005)
Use dissociation techniques (distance yourself from negative past)	(Ogden & Clarke, 2005)
Engage in CSR initiatives (communicate about values)	(Abdullah & Abdul Aziz, 2013; Yao et al., 2015)
Engage in decoupling processes	(Tumbas, Berente, & vom Brocke, 2017)
Demonstrate the technical superiority of the innovative practice, characteristic or form over existing alternatives	(Tumbas et al., 2017)

Communication tools and methods

Within each category, the drivers that have been identified consist of both tools and methods. Tools are communication devices intended to make a task easier, while methods are ways of communicating something. In consequence, as depicted in Figure 23, tools can enhance the ways in which methods can be made more effective or vice versa. Both tools and methods can contribute to the process of legitimation. For instance, obtaining certain industry-initiated certificates (tool) can enhance the signaling of efforts to repair internal social weaknesses (method) which can increase the legitimacy of an organization (Camilleri, 2018; Pollach, 2015).

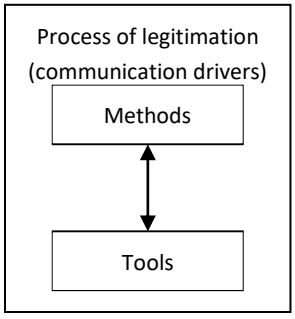


Figure 23: Communication drivers (tools and methods) as a process of legitimation

The distinction between communication tools and methods is not always clear as both are mentioned interchangeably in literature. For example, it can be unclear if using metaphors and narratives to justify organizational

change can be referred to as a method or a tool. Metaphors are devices that make the task of communication something easier, but it is also a way of communicating something. As in either case it can increase the legitimacy of an organization (Khan, 2018; Suddaby & Greenwood, 2005), the overlapping tools and methods are not explicitly addressed. Instead, the emphasis is on how these drivers can be used to manage the legitimacy of the bank. In chapter 9, these drivers are used to develop a strategic approach to manage the organizational legitimacy of banks affected by blockchain technology.

7.2.3 Barriers – factors for illegitimacy

The systematic review has resulted in an identification of 22 barriers which are the factors that negatively affect organizational legitimacy. These barriers have been categorized under the four identified research contexts. A complete overview of the identified barriers is provided in Table 8. Mainly, barriers consist of aspects that should be avoided or included when communicating with the organization's stakeholders to avoid illegitimacy.

*Table 8: Communication barriers for organizational legitimacy in different contexts (*for directing internal stakeholders; ** for directing internal and external stakeholders)*

Communication barriers (general)	**Source**
Dialogue without alignment of values	(Colleoni, 2013; Karlsson, Honig, Welter, Leora, & Sadaovski, 2005)
Communication language that is too complex	(Karlsson et al., 2005)
Defending one's positive self-views in one's own eyes or in the eyes of others	(Nason et al., 2018)
Ignoring stakeholder's negative feedback	(Nason et al., 2018)
Symbolic actions without changing actual social performance	(Nason et al., 2018; Schultz & Wehmeier, 2010)
Launching new social performance initiatives not addressing the root cause	(Nason et al., 2018)
Misconduct on high-profile corporate level	(Pollach, 2015)
Absence of global social performance initiatives (barrier in foreign countries)	(Pollach, 2015)
Providing only pull media	(Pollach, 2015)
Too many symbolic actions increasing public expectations	(Schultz & Wehmeier, 2010)
Solely focusing on individual actors	(Suddaby et al., 2017)
***Focusing on differentiation (branding, niches)*	(Barnett, 2003)
Communication barriers (financial services)	**Source**
Symbolic actions without changing actual social performance	(Nienaber et al., 2014; Patelli & Pedrini, 2014)
Communication barriers (healthcare)	**Source**
Focusing on differentiation (branding, niches)	(Sataøen & Wæraas, 2015)
Defending one's positive self-views in one's own eyes or in the eyes of others;	(Sataøen & Wæraas, 2015)
Dialogue without alignment of values	(Sataøen & Wæraas, 2015)
Communication barriers (public sector)	**Source**
Dialogue without alignment of values	(Yao et al., 2015)
Making excuses and justifications for acknowledged shortfalls	(Ogden & Clarke, 2005)

7.3 Conclusion SQ1

This chapter aimed to answer the first sub-question which states: which best practices are relevant for managing organizational legitimacy for banks from a communication perspective? This question has been answered by means of a systematic literature review.

Based on predetermined search criteria, the literature study resulted in an identification of 38 papers. Within group of 38 papers, 21 have been identified as eligible for this research project. Additionally, a follow-up search has

resulted in an added set of seven paper. Within the total amount of 28 eligible papers, four different research contexts have been identified: general, financial services, healthcare, and public sector. Within these contexts, 25 goals, 75 drivers, 22 barriers, and 27 other factors have been identified.

Goals describe what the purpose is of communication for organizational legitimacy within each context. In this way, the appropriate legitimating element can be targeted when using these best practices.

Drivers are communication tools that positively affect organizational legitimacy. Barriers are communication factors that negatively affect organizational legitimacy. Together, these drivers and barriers form the best practices for managing organizational legitimacy from a communication perspective.

Furthermore, 'other' is used as an indicator for information that is not directly applicable but was useful in a later stadium or another part of the research project (e.g. definitions, ideas, etc.).

Table 9: Number of identified best practices (drivers and barriers) for managing organizational legitimacy from a communication perspective

Context	Legitimacy element	Number of drivers	Number of barriers
General	*Regulative, normative, cognitive*	52	14
Financial services	*Regulative*	9	3
Healthcare	*Normative*	9	3
Public sector	*Normative, cognitive*	5	2

Table 9 shows the number of best practices for managing organizational legitimacy from a communication perspective within each context and the related legitimacy element. The relevance of these best practices is discussed in section 11.1.2, which discusses the results for developing an appropriate legitimation strategy in Part IV.

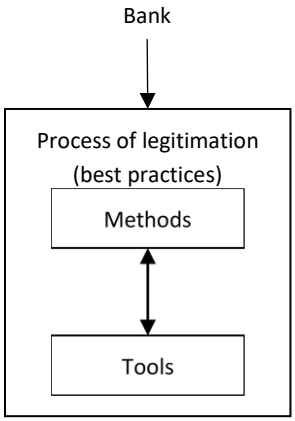


Figure 24: Best practices (drivers and barriers) as tools and methods for processes of legitimation for the bank

Figure 24 shows the schematic result of how the best practices contribute to the legitimation process. The identification of how these best practices can be used contributes to the development of a strategic approach for managing the organizational legitimacy of banks in an institutional environment affected by blockchain technology. This is discussed in chapter 10.

In the next chapter, communication challenges are developed based on the organizational consequences that have been identified in chapter 4. The challenges are then confronted in a focus group setting to identify the legitimation strategies and target groups. The qualitative results from chapter 9, and the theoretical results identified in this chapter, are combined to develop the final strategic approach for organizational legitimacy and the development of the final framework.

8

Identifying Communication Challenges for Organizational Legitimacy

The second sub-question involves the identification of communication challenges from the organizational consequences identified in chapter 4:

SQ2 Which relevant communication challenges for banks can be identified from the organizational consequences of banks affected by blockchain technology?

8.1 Case analysis method

This chapter discusses communication challenges based on the organizational consequences that have been identified in chapter 4 (Figure 25). To summarize, the organizational consequences emphasize where the bank should focus its blockchain innovation strategy to manage its organizational legitimacy. By translating these consequences into communication challenges, a better perspective is provided on how communication can be used as a strategic asset to manage organizational legitimacy.

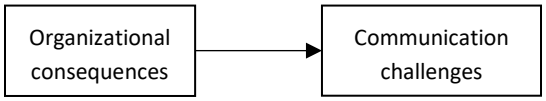


Figure 25: Conceptual framework of the case analysis

8.1.1 Determining the relevant organizational consequences

A selection is made of the organizational consequences to develop relevant communication challenges. The explorative nature of the expert interviews has to be considered during the case analysis. Therefore, to reassure a meaningful interpretation of the qualitative data, and in order to have sufficient time to discuss the communication challenges, a selection is made of the ten most occurring organizational consequences (Table 10). These ten consequences are mentioned most during the interview sessions. An elaboration of these consequences can be found in Part II of the research project (section 5.1.3).

Table 10: Ten most occurring organizational consequences overall

	Organizational consequence	Occurrences
1	Institutional isomorphism	56
2	Regulation	55
3	Distributed data ownership	43
4	Role shift	33
5	Increased competition	32
6	Lower institutionalization power	27
7	Distributed organization	27
8	No consequence	21
9	Institutional differentiation	15
10	Higher path dependency	14

8.1.2 Linking the consequences to legitimacy element

The next step is to link the consequences to the corresponding legitimacy element. Each legitimacy element requires a different communication strategy, since the underlying dynamics and stakeholders can differ for each element. In consequence, the communication challenges that are developed address the appropriate social norms and values within the larger industry segment of the bank.

Table 11: Legitimacy elements and corresponding strategies based on Kaganer et al. (2010)

Pragmatic legitimacy	Normative legitimacy
• Respond to needs – meet the substantive needs of various audiences (i.e., respond to client tastes). Demonstrate results. • Advertise product – persuade constituents to value the innovation offerings • Co-opt constituents – build alliances with potential constituents; highlight (exaggerate) the extent of constituent participation in the innovation • Build reputation – trade on the organization's strong reputation in related activities • Develop legitimacy by organizing collective marketing and lobbying efforts	• Produce proper outcomes – produce concrete meritorious outcomes • Embed in institutions – embed new practices in established institutions (e.g., through cooptation of respected entities) • Offer symbolic displays – portray outputs, procedures, and structures as conforming to moral norms • Proselytize
Cognitive legitimacy	**Regulative legitimacy**
• Mimic standards - mimic most prominent and secure entities in the field • Formalize operations – codify informal procedures • Professionalize operations – link activities to external definitions of authority and competence • Seek certification • Establish and promote new standards and models • Develop knowledge by promoting activity through third-party actors	• Signal that the new practice operates in accord with relevant laws and regulations

Legitimation strategies

The selected legitimacy elements include the pragmatic, normative, cognitive, and regulative element. Kaganer, Pawlowski, and Wiley-Patton (2010) developed a framework that included these four elements, together with the accompanying legitimation strategies (

Table 11). It involves a similar research context as this framework aimed at capturing legitimation dynamics specifically in the IT innovation domain, making it an appropriate framework for this case analysis. The strategies are general entrepreneurial approaches to the legitimation of new practices and are comprised of earlier studies (Kaganer et al., 2010).

The dynamics of these elements are described in Part II – section 3.1.1.2. In the previous part, the pragmatic element is included in the normative element since both of these elements shared commonalities on the normative evaluation of the organization (Díez-de-Castro & Peris-Ortiz, 2018). Both are founded on the audience perception of a bank being honest and trustworthy, and whether certain activities are the right thing to do. However, the pragmatic view lays its foundations in the calculated self-interests of the organization's audiences, both on practical and more substantial levels (Suchman, 1995). It involves the evaluation of the organization's utility, or practical usefulness, and is believed to play an important role in shaping the early stages of IT innovation diffusion (Kaganer et al., 2010). The normative and pragmatic element are thus considered separately when considering the legitimation processes enacted by the bank.

Linking process

The linking process is done in a similar manner as chapter 7, in which different research contexts have been linked to the corresponding legitimacy element. To recapitulate, organizational change is enforced because members of the organization feel they *have to* (regulative), *ought to* (normative), or *want to* (cognitive) change their behavior (Palthe, 2014). Here, the pragmatic element relies on the same legitimation mechanism as the normative element (Kaganer et al., 2010). Organizations *ought to* change their behavior to be seen as practically useful and gain pragmatic legitimacy. By looking into the context of these consequences – i.e. the quotations of the interview sessions in chapter 4, the underlying motivation for organizational change is linked to the appropriate legitimacy element. As a result, the most effective legitimation strategies are selected.

The process is as follows:

First, an organizational consequence is selected:

Organizational consequence:
Institutional isomorphism – technology adoption

Next, a scan of the quotations linked with these consequences is made (only three quotations are shown to exemplify):

Quotations:
Expert A: "If [using blockchain] is going to be the way to do business, then other banks will follow."

Expert C: "There won't be an organization who can implement a successful blockchain infrastructure on his own. Banks will develop this jointly."

Expert F: "To the extend which the customer will know that we're using blockchain as underlying mechanism remains open. Today, we use our smartphones for a lot of activities we couldn't imagine years before, such as internet browsing or sending e-mails. In a similar way, blockchain should be an enabler for providing solutions for the customer."

Based on the content of each quotation – whether it addresses pragmatic, moral, cultural or legal aspects – the corresponding legitimacy element is linked to this consequence: **pragmatic**.

As a result, each organizational consequence is turned into a communication challenge describing the appropriate dynamics. Hence, increasing the effectiveness of the legitimation strategies.

8.1.3 Developing communication challenges

The communication challenges are confronted in a focus group setting in chapter 9. The participants of the focus group have little to no prior knowledge on the topic. Therefore, it is important that each challenge is provided with sufficient context on the topic without the use of unnecessary jargon.

Four communication challenges will be formulated covering the four areas of legitimacy:

- Technology domain (pragmatic element – focus on innovation and practical aspects)
- Regulatory domain (regulative element – focus on legal aspects)
- Moral domain (normative element – focus on moral aspects)
- Cultural domain (cognitive element – focus on cultural aspects)

Each domain includes the organizational consequences that has been labeled accordingly in the previous section. The domains provide the organizational consequences as challenges in where the bank will be judged by its stakeholders on either a pragmatic, legal, moral, or cultural level. To illustrate, the following organizational consequence within the technology domain (pragmatic) is turned into a communication challenge:

Organizational consequence:
Institutional isomorphism – technology adoption DAOs pressurize banks to adopt the technology – from bank's current practice to blockchain-based solutions.

To provide more context and avoid jargon, this results in the following communication challenge:

Communication challenge:
Technological transformation Stakeholders require banks to change current business processes and move to blockchain-based solutions on places where blockchain is proved to be more efficient to keep up with changes in the technological environment.

Based on the adopted framework, the bank can adopt the following pragmatic legitimation strategies to align with the expectations of the stakeholders (Kaganer et al., 2010):

Pragmatic legitimation strategies:
(S1) Respond to needs – meet the substantive needs of various audiences (i.e., respond to client tastes). Demonstrate results.
(S2) Advertise product – persuade constituents to value the innovation offerings.
(S3) Co-opt constituents – build alliances with potential constituents; highlight (exaggerate) the extent of constituent participation in the innovation.
(S4) Build reputation – trade on the organization's strong reputation in related activities
(S5) Develop legitimacy by organizing collective marketing and lobbying efforts.

In this way, each organizational consequence is translated into a communication challenge, and a better perspective is provided on how communication can be used as a strategic asset to manage organizational legitimacy.

8.2 Case analysis results

This section provides the results of the case analysis. Section 8.2.1 provides an overview of the organizational consequences linked with the appropriate legitimacy element. Thereafter, section 8.2.2 provides the overview of the identified communication challenges within each legitimacy domain.

8.2.1 Linked organizational consequences with the legitimacy element

Table 10 shows the ten most important organizational consequences for banks induced by blockchain technology. The linking process as described in section 8.1.2 and has resulted in the overview as depicted in the following sections. Each organizational consequence is provided with extra context and is linked to the corresponding legitimacy element. The consequences labeled with an asterisk relate to multiple legitimacy elements as the context allowed for different processes of legitimation.

8.2.1.1 Organizational consequences related to pragmatic legitimacy

For the pragmatic element, the legitimation process evaluates the organization's utility, or practical usefulness. Thus, the focus within the context of the organizational consequences is on the benefits of blockchain technology and practical aspects of the innovation. The consequences that have been linked to pragmatic processes of legitimation are provided in Table 12.

Table 12: Organizational consequences linked to pragmatic legitimacy element

Organizational consequence (group)	Organizational consequence (specific)	Context
Institutional isomorphism	Technology adoption	Blockchain pressurizes banks to shift from current practice to blockchain-based solutions
Distributed data ownership	Automated information infrastructure	Blockchain pressurizes banks to shift to blockchain-based information infrastructure
	More data analytics*	Banks will have to put more effort in how to benefit from data
	Increased risk	Banks will have fewer access to data to calculate risks
Role shift	Product offering*	Shift focus to the supply of complex products on the platforms
	Platform*	Role shift towards a platform function
	Data owner*	Role shift towards the keeper of data
Increased competition	Exit current market	Exit unprofitable market segments as a result of a more competitive environment
	Adopt fast follower strategy	Copy the first mover's strategy as a result of a more competitive environment
	Acquire competitor*	Acquire innovative startups as a result of a more competitive environment
	Engage in partnership*	Engage in partnership as a result of a more competitive environment
	More payment service providers	Cope with a more competitive environment on this level
Distributed organization	Value as incentive*	Blockchain pressurizes banks to allow rewards for valuable contribution
	Voting customers*	Blockchain pressurizes banks to allow customers to decide organization's output
Higher path dependency		Blockchain causing banks to have limited possible choices for innovation

The banks *ought to* change their behavior as a result of these consequences to be perceived as practically useful and gain pragmatic legitimacy. From a pragmatic perspective, banks are seen as appropriate if they conform to the institutional environment and shift from current practice to blockchain-based solutions. Distributed data ownership changes the way in how the bank should manage data. A role shift for the bank is seen as the new norm. The increase in competition results in different strategies for the bank to adopt. With the rise of distributed organizations, banks ought to include customers into their business processes. And finally, a higher path dependency requires bank to show their limited possible choices for innovation.

8.2.1.2 Organizational consequences related to regulative legitimacy

For the regulative element, the legitimation process evaluates the organization's legal compliance. Thus, the focus within the context of the organizational consequences is on the legal aspects for the bank and the regulatory issues that blockchain technology might bring. The consequences that have been linked to regulative processes of legitimation are provided in Table 13.

Table 13: Organizational consequences linked to regulative legitimacy element

Organizational consequence (group)	Organizational consequence (specific)	Context
Institutional isomorphism	Regulatory shift*	Blockchain pressurizes banks to shift from current regulation to regulations including blockchain aspects
Regulation	KYC obligation*	Organizational constraint
	Reporting obligation*	Organizational constraint
	Duty of care*	Organizational constraint

The banks *have to* change their behavior as a result of these consequences to be perceived as a legal entity and gain regulative legitimacy. From a regulative perspective, banks are seen as appropriate if they conform to the institutional environment and shift from their current legal compliance to regulations including blockchain aspects. Moreover, banks are legally constraint due to certain regulatory obligations. In a way, signaling this to the environment also shows their legal compliance.

8.2.1.3 Organizational consequences related to normative legitimacy

For the normative element, the legitimation process evaluates the organization's moral values. Thus, the focus within the context of the organizational consequences is on the normative implications for the bank and the social issues that blockchain technology might bring. The consequences that have been linked to normative processes of legitimation are provided in Table 14.

Table 14: Organizational consequences linked to normative legitimacy element

Organizational consequence (group)	Organizational consequence (specific)	Context
Institutional isomorphism	Regulatory shift*	Blockchain pressurizes banks to shift from current regulation to regulations including blockchain aspects
Regulation	KYC obligation*	Organizational constraint
	Reporting obligation*	Organizational constraint
	Duty of care*	Organizational constraint
Distributed data ownership	Individual customer evaluation	Blockchain pressurizes banks to shift to individual customer evaluation based on data
	More data analytics*	Banks will have to put more effort in how to benefit from data
	Prevent crisis*	Blockchain pressurizes banks to put more effort in sustaining social stability
	Self-sovereign ID*	Blockchain pressurizes banks to shift to self-sovereign IDs for customers
Role shift	Product offering*	Shift focus to the supply of complex products on the platforms
	Platform*	Role shift towards a platform function
	Data owner*	Role shift towards the keeper of data

Increased competition	Acquire competitor*	Acquire innovative startups as a result of a more competitive environment
	Engage in partnership*	Engage in partnership as a result of a more competitive environment
Distributed organization	Ignorant customers	As blockchain enables customers to participate/contribute/get rewarded, customers need sufficient knowledge for contribution
	Value as incentive*	Blockchain pressurizes banks to allow rewards for valuable contribution
	Voting customers*	Blockchain pressurizes banks to allow customers to decide organization's output
Institutional differentiation*		Blockchain pressurizing banks to take a different strategic focus

The banks *ought to* change their behavior as a result of these consequences to be perceived as moral and gain normative legitimacy. From a normative perspective, banks are seen as appropriate if they conform to the institutional environment and shift from their current legal compliance to regulations including blockchain aspects Moreover, banks are legally constraint due to certain regulatory obligations. In both cases, showing legal compliance is also a way of being moral and trustworthy. Distributed data ownership changes the way in how the bank should manage data. For instance, customers may perceive it as fairer if they have more control in how their data is managed. A role shift for the bank is seen as the new norm as the current organization will not be seen as moral. The increase in competition results in different strategies for the bank to adopt. With the rise of distributed organizations, banks ought to include customers into their business processes. And finally, institutional differentiation is a way for banks to take a different strategic focus and follow their own mission and strategy.

8.2.1.4 Organizational consequences related to cognitive legitimacy

For the cognitive element, the legitimation process evaluates the organization's cultural values. Thus, the focus within the context of the organizational consequences is on the implications related to taken-for-grantedness and comprehensibility of social norms and values that are affected by blockchain technology. The consequences that have been linked to cognitive processes of legitimation are provided in Table 15.

Table 15: Organizational consequences linked to cognitive legitimacy element

Organizational consequence (group)	**Organizational consequence (specific)**	**Context**
Distributed data ownership	Prevent crisis*	Blockchain pressurizes banks to put more effort in sustaining social stability
	Self-sovereign ID*	Blockchain pressurizes banks to shift to self-sovereign IDs for customers
Role shift	General	As blockchain will change/remove certain business processes, the role of the bank will change
Lower institutionalization power		Banks have less power to set norms and standards within the institutional environment
Distributed organization	Trust in customers	As blockchain enables customers to participate/contribute/get rewarded there is a need for trust in the customers' added value
Institutional differentiation*		Blockchain pressurizing banks to take a different strategic focus

The banks *want to* change their behavior as a result of these consequences to be part of the culture and gain cognitive legitimacy. From a cognitive perspective, banks are seen as appropriate if they conform to the institutional environment. Distributed data ownership changes the way in how the bank should manage data. For instance, it can be perceived as taken for granted that customers are more in control of their own identity. A role shift for the bank will occur. Banks will have a lower institutionalization power – i.e. less power to set norms and standards within the institutional environment. With the rise of distributed organizations, banks want to trust their customers if they will be participating in sustaining business processes. And finally, institutional differentiation is a way for banks to take a different strategic focus and follow their own mission and strategy.

8.2.2 Communication challenges

This section provides the communication challenges covering the four areas of organizational legitimacy. The organizational consequences have been translated into communication challenges as described in section 8.1.3. Depending on the domain, the bank can adopt different legitimation strategies to be granted organizational legitimacy when tackling these challenges. The communication challenges are developed based on the context provided with each consequence in section 8.2.1.

8.2.2.1 Technology domain – pragmatic communication challenges

Table 16 provides and overview of the pragmatic communication challenges for banks dealing with blockchain in the technology domain. The bank will be judged on pragmatic terms by its stakeholders while dealing with these challenges. Different legitimation strategies can be adopted by the bank within this domain. The banks need to keep up with these challenges in order to stay legitimate in the future.

Table 16: Pragmatic communication challenges with the corresponding legitimation strategies

Pragmatic organizational consequences	**Pragmatic communication challenges**
Institutional isomorphism – technology adoption	**Technological transformation** – banks will have to change current business processes and move to blockchain-based solutions on places where blockchain is proved to be more efficient to keep up with changes in the technological environment.
Distributed data ownership	**Decentralized data ownership** – banks are put into a technological environment which forces them to: shift to blockchain-based information infrastructures, think more about how to use data as a corporate resource, be content with less data to calculate risks.
Role shift	**Role shift** – the role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management.
Increased competition	**Increased competition** – banks are put into a technological competitive environment which forces them to: exit unprofitable market segments, copy the first mover's strategy, acquire innovative startups, engage in partnerships.
Distributed organization	**Customer participation** – banks are put into a technological environment which forces them to: involve customers in deciding the organization's output, reward customer's for valuable contributions to the organization
Higher path dependency	**Shaped by the future** – banks are put into a technological environment in which the different actors must agree on the platform to be used, limiting the possible choices for innovation.
Pragmatic legitimation strategies	
• Respond to needs – meet the substantive needs of various audiences. Demonstrate results. • Advertise product – persuade constituents to value the innovation offerings • Co-opt constituents – build alliances with potential constituents; highlight (exaggerate) the extent of constituent participation in the innovation • Build reputation – trade on the organization's strong reputation in related activities • Develop legitimacy by organizing collective marketing and lobbying efforts	

8.2.2.2 Regulatory domain – regulative communication challenges

Table 17 provides and overview of the regulative communication challenges for banks dealing with blockchain in the regulatory domain. The bank will be judged on a legal basis by its stakeholders while dealing with these challenges. Different legitimation strategies can be adopted by the bank within this domain. The banks need to keep up with these challenges in order to stay legitimate in the future.

Table 17: Regulatory communication challenges with the corresponding legitimation strategies

Regulative organizational consequences	**Regulative communication challenges**
Institutional isomorphism – regulatory shift	**Regulatory transformation** – banks will have to comply with regulations that also include the legal aspects of blockchain technology to keep up with changes in the regulatory environment
Regulation	**Regulatory constraint** – banks innovative potential concerning blockchain is limited caused by regulatory aspects involving duty of care, KYC/AML, and reporting obligations
Regulative legitimation strategies	
• Signal that the new practice operates in accord with relevant laws and regulations	

8.2.2.3 Moral domain – normative communication challenges

Table 18 provides and overview of the normative communication challenges for banks dealing with blockchain in the moral domain. The bank will be judged on a normative basis by its stakeholders while dealing with these challenges. Different legitimation strategies can be adopted by the bank within this domain. The banks need to keep up with these challenges in order to stay legitimate in the future.

Table 18: Normative communication challenges with the corresponding legitimation strategies

Normative organizational consequences	**Normative communication challenges**
Regulation	**Regulatory constraint** – banks innovative potential concerning blockchain is limited caused by regulatory aspects involving duty of care, KYC/AML, and reporting obligations
Institutional isomorphism – regulatory shift	**Regulatory transformation** – banks will have to comply with regulations that also include the legal aspects of blockchain technology to keep up with changes in the regulatory environment
Distributed data ownership	**Decentralized data ownership** – banks are put into an environment which requires them to: shift to applying data analytics on individual customers, think more about how to use data as a corporate resource, put more effort in sustaining social stability, and shift to self-sovereign IDs for customers.
Role shift	**Role shift** – the role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management.
Increased competition	**Increased competition** – banks are put into a competitive environment which forces them to: acquire innovative startups and engage in partnerships.
Distributed organization	**Customer participation** – banks are put into an environment which forces them to: involve customers in deciding the organization's output, reward customer's for valuable contributions to the organization, make sure customers have sufficient knowledge for contributions.
Institutional differentiation	**Shaping the future** – the bank is put into an environment in which they have to adopt a different strategic focus than its competitors.
Normative legitimation strategies	
• Produce proper outcomes – produce concrete meritorious outcomes • Embed in institutions – embed new practices in established institutions (e.g., through cooptation) • Offer symbolic displays – portray outputs, procedures, and structures as conforming to moral norms • Proselytize – attempt to convert current beliefs	

8.2.2.4 Cultural domain – cognitive communication challenges

Table 19 provides and overview of the cognitive communication challenges for banks dealing with blockchain in the cultural domain. The bank will be judged on a cognitive basis by its stakeholders while dealing with these challenges. Different legitimation strategies can be adopted by the bank within this domain. The banks need to keep up with these challenges in order to stay legitimate in the future.

Table 19: Cognitive communication challenges with the corresponding legitimation strategies

Cognitive organizational consequences	**Cognitive communication challenges**
Distributed data ownership	**Decentralized data ownership** – banks are put into an environment which requires them to put more effort in sustaining social stability and shift to self-sovereign IDs for customers.
Role shift	**Role shift** – the role of the bank will shift to different models as blockchain will change or remove certain business processes.
Lower institutionalization power	**Power shift** – banks are put into an environment in which they have less power to define norms and standards
Distributed organization	**Customer participation** – banks need to gain trust in the customers' added value
Institutional differentiation	**Shaping the future** – the bank is put into an environment in which they have to adopt a different strategic focus than its competitors.
Cognitive legitimation strategies	
• Mimic standards - mimic most prominent and secure entities in the field • Formalize operations – codify informal procedures • Professionalize operations – link activities to external definitions of authority and competence • Seek certification • Establish and promote new standards and models • Develop knowledge by promoting activity through third-party actors	

8.3 Conclusion SQ2

This chapter aimed to answer the second sub-question which states: which relevant communication challenges for banks can be identified from the organizational consequences of banks affected by blockchain technology? This question has been answered by means of a case analysis. By adopting the framework provided by Kaganer et al. (2010), the organizational consequences have been categorized under the four domains of legitimacy – i.e. pragmatic, regulative, normative, and cognitive. Within each domain, the organizational consequences have been translated into communication challenges. Furthermore, the appropriate legitimation strategies have been provided with each of these domains. This has resulted in the initial framework as depicted in Figure 26, and will contribute to the development of a strategic approach for managing the organizational legitimacy of banks in an institutional environment affected by blockchain technology.

Exclusion – no consequence

The occasion of 'no consequence' – number eight on most mentioned identified consequences for the bank – has been excluded from the analysis. No legitimation process is needed if there is no particular social norm or value to conform to. However, the bank may use these instances that have been identified as 'no consequence' to gain legitimacy by communicating towards the audiences that blockchain technology is not changing the social norms and values.

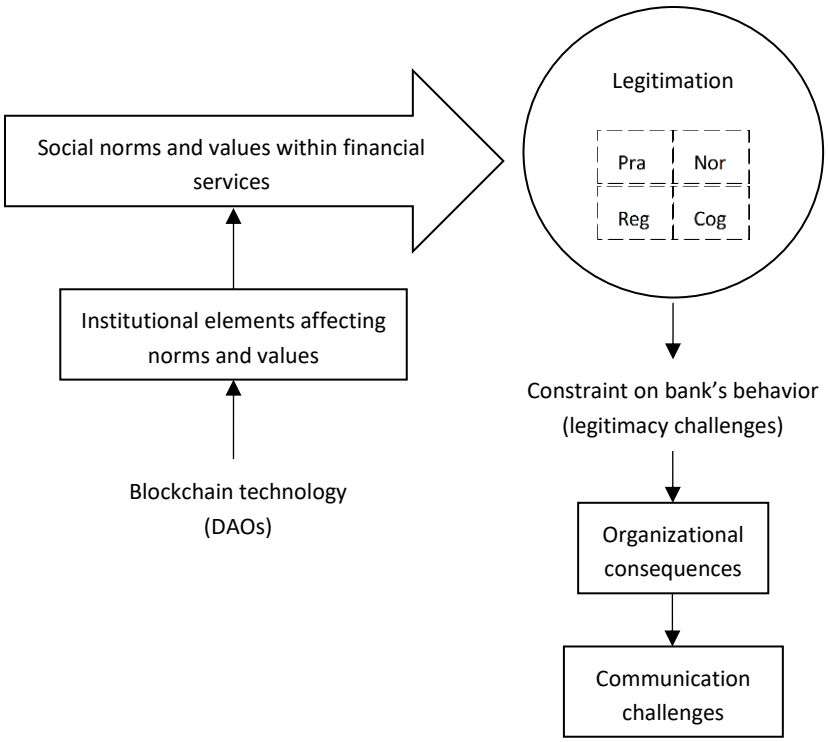


Figure 26: Initial framework – communication challenges when blockchain affects the legitimacy of banks

In section 11.1.3, the identified challenges are discussed for the development of a communication strategy that is provided in Part IV. In the next chapter, the identified communication challenges are confronted in a focus group setting to identify the target groups and legitimation strategies resulting from these challenges.

9

Identifying Target Groups and Legitimation Strategies for the Communication Challenges

The identified communication challenges form the basis on answering the third sub-question, yielding results for identifying the target groups and legitimation strategies of these challenges in a focus group setting:

SQ3 Which target groups and legitimation strategies can be identified by confronting the communication challenges within a focus group setting?
   a. Which legitimation strategies can be applied?
   b. What are the most relevant target groups and implications?

9.1 Focus group method

The goal of the focus group session was to identify the target groups and legitimation strategies of the identified communication challenges in the previous chapter (Figure 27). The results contribute to the development of a framework for banks to manage their organizational legitimacy affected by blockchain technology and improve the innovation strategy. These communication challenges are based on the environment's future expectations for banks caused by blockchain technology and cover four domains: technology, regulatory, moral, and cultural. Within each domain, the legitimation strategies and target groups have been identified by discussing the issues when banks use different legitimation strategies to tackle these communication challenges.

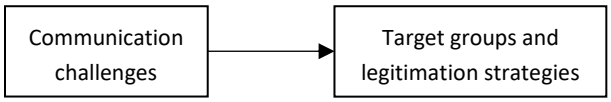


Figure 27: Conceptual model of the qualitative approach

9.1.1 Participant sampling

A judgment sampling approach was used to select the participants for this study. This approach allowed for a selection of candidates that reflect some knowledge on the topic which provided valuable perspectives on the research (Harrell & Bradley, 2009). It also included a convenience, or opportunity sampling approach. This non-probabilistic approach provides a sample to the researcher by its virtue of access (Bryman, 2012). In other words, participants were selected based that reflected knowledge on the fields of banking and blockchain. These participants, all were consultants within the company EY. As a result, five consultants have been approached for this study. These consultants have expertise on advising banks, especially on regulatory aspects. Everyone had some prior knowledge on blockchain technology and its possible consequences.

9.1.2 Focus group setup

The duration of the focus group was two hours. The moderator executed the process following a predeveloped protocol. This protocol can be found in Appendix 2.1. The protocol consists of three parts: the introduction, the case analysis, and the closing.

During the introduction, the moderator explained the project context. It covered a brief elaboration on the main research objective and the dynamics of organizational legitimacy. Thereafter, the purpose of the focus group was explained which was to identify target groups and appropriate legitimation strategies by linking the communication challenges with possible legitimation strategies. Moreover, a consent form was signed concerning the participation of the focus group (Appendix 2.3). The introductory part was closed by stating how the case analysis will be executed.

At the beginning of the case analysis, the recording was started. Thereafter, the moderator provided the consultants with various cases showing the communication challenges and possible legitimation strategies that have been identified in chapter 8 covering the four domains – i.e. technology, regulatory, moral, and cultural. Their task was to identify the target groups and legitimation strategies when banks have to deal with the communication challenges. The time spent on each domain was approximately 15-25 minutes, and within that time, the consultants were asked three questions:

A. Who are the target groups in each situation?
B. Which legitimation strategies can the bank use best on the target groups in each situation?
C. What are the implications of using these legitimation strategies?

The closing part briefly evaluated the focus group session and provided information on the next steps and considered the expectations for the results.

9.1.3 Execution process

The focus group was moderated by the researcher who directed the session and allowed for a dynamic interaction between the participants to resolve the issues that have been addressed. The session has aimed to involve the advisors in the process of identifying the target groups and legitimation strategies by asking their perspectives on the provided communication challenges. The participants are set into the right mindset by providing enough context to the subject matter. This was also done by introducing each new domain with additional context.

The location of the focus group was within the company of EY. This accustomed and comfortable environment created an open and transparent conversational setting.

9.1.4 Data collection

The consultants were provided worksheets to write down the answers to each question (Appendix 2.2). Moreover, enough space was provided to write any additional notes. For each domain, each participant was encouraged to write down as much information as possible. After the focus group session, the worksheets were collected for the data analysis. The focus group was transcribed in such a way that notes were written down that elaborated on each provided answer. In this way, the information that was not written down during the discussions could still contribute to the data analysis.

Finally, the data interpretation was done by the researcher, who also moderated the focus group. The next section provides an overview of the provided answers during the focus group and, where possible, an elaboration of the provided answers.

9.2 Results – Focus groups

This section provides the results of the focus group session. Each section shows the results of the particular domain that was addressed during the discussions. It includes the outcomes to the questions asked – in so far as this was possible – and a description on the process. Due to circumstances, four out of five consultants were able to participate in this focus group session. The consultants are labeled as consultant A, B, C, and D. The complete overview of answers provided per consultant can be found in Appendix 2.4.

9.2.1 Technology domain – identified target groups and pragmatic legitimation strategies

Within the technology domain, blockchain brings several communication challenges to the bank with respect to pragmatic legitimacy. The banks need to deal with these communication challenges to remain legitimate in the future.

As explained to the participants, the technology domain consists of challenges in where the bank will be pragmatically judged by its stakeholders. The bank remains legitimate if they conform to practical satisfaction. For instance, customers want to use a particular bank because the offered products and services have certain technological features that align with the needs of the customer. Or customers simply need a certain level of convenience that is reached by conforming to that challenge. The pragmatic legitimation strategies can be used to show alignment with the expectations of the environment within this domain. The target groups and legitimation strategies that have been identified for each challenge can be found below.

Respond to needs *– meet the substantive needs of various audiences (i.e., respond to client tastes). Demonstrate results*	
Pragmatic communication challenge	**Target groups**
Technological transformation	Employees (back-office), customers
Decentralized data ownership	Supervisor (Dutch Data Protection Authority), regulator
Role shift	Customers
Increased competition	Executive and supervisory board

Responding to the needs of various audiences was seen as an appropriate legitimation strategy for four pragmatic challenges: (1) With the technological transformation, banks will have to change current business processes and move to blockchain-based solutions on places where blockchain is proved to be more efficient to keep up with changes in the technological environment. The employees and customers of the bank were identified as target group to deal with this challenge. The employees can judge the bank on the adoption of blockchain and decide whether they want to work for the bank or not. Especially the back-office, since have to deal with this new technology. Customers can have certain technological preferences and the bank can target these customers by showing that it is conforming to the new expectations.

Consultant B: "Customers can like the fact that blockchain is used for certain processes."

(2) With decentralized data ownership, banks are put into a technological environment which forces them to: shift to blockchain-based information infrastructures, think more about how to use data as a corporate resource, be content with less data to calculate risks. The supervisor and regulator were identified as target groups to deal with this challenge. The regulator and Dutch Data Protection Authority (DDPA) as supervisor have to be shown that the technological transformation is in line with the banking permissions. (3) The role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management. Customers were identified as target group to deal with this challenge. (4) With an increased competition, banks are put into a technological competitive environment which forces them to: exit unprofitable market segments, copy the first mover's strategy, acquire innovative startups, or engage in partnerships. The executive and supervisory board were identified as target group to deal with this challenge, since these decisions have to be made top-down.

Advertise product *– persuade constituents to value the innovation offerings*	
Pragmatic communication challenge	**Target groups**
Decentralized data ownership	Regulator, customers
Role shift	Shareholders, regulator, customers

Advertising of products was seen as an appropriate legitimation strategy for two pragmatic challenges: (1) the challenge concerning decentralized data ownership can be dealt with by targeting the regulator and the customers. (2) Role shift, with as target groups the regulator, shareholders, and customers.

Co-opt constituents *– build alliances with potential constituents; highlight (exaggerate) the extent of constituent participation in the innovation*	
Pragmatic communication challenge	**Target groups**
Increased competition	Shareholders, customers
Customer participation	Customers

Building alliances with potential constituents was seen as an appropriate legitimation strategy for two pragmatic challenges: (1) Increased competition, with as target groups the shareholders and customers. (2) With customer participation, banks are put into a technological environment which forces them to: involve customers in deciding

the organization's output, and reward customers for valuable contributions to the organization. Customers were identified as target group to deal with this challenge.

Build reputation *– trade on the organization's strong reputation in related activities*	
Pragmatic communication challenge	**Target groups**
Decentralized data ownership	Regulator
Increased competition	Executive and supervisory board
Customer participation	Customers
Shaped by the future	Customers

Building reputation was seen as an appropriate legitimation strategy for four pragmatic challenges: (1) Decentralized data ownership, with as target group the regulators. (2) Increased competition, with as target group the executive and supervisory board, since these decisions have to be made top-down. (3) Customer participation, with the customers as target group. (4) Regarding shaped by the future, banks are put into a technological environment in which the different actors must agree on the platform to be used, limiting the possible choices for innovation. Customers were identified as target group to deal with this challenge.

Develop legitimacy by organizing collective marketing and lobbying efforts	
Pragmatic communication challenge	**Target groups**
Shaped by the future	Suppliers, competitors

Developing legitimacy by organizing collective marketing and lobbying efforts was seen as an appropriate legitimation strategy for the pragmatic challenge shaped by the future. Suppliers and competitors were identified as target groups to deal with this challenge. Both of these stakeholders have to agree on the platform to be used.

9.2.2 Regulatory domain – identified target groups and regulative legitimation strategies

Within the regulatory domain, blockchain brings several communication challenges to the bank with respect to regulative legitimacy. The banks need to deal with these communication challenges to remain legitimate in the future.

As explained to the participants, the regulatory domain consists of challenges in where the bank will be legally judged by its stakeholders. The bank remains legitimate if they are compliant. For instance, banks have KYC and other reporting obligations that can be a constraint for the organization. Or banks will have to conform to new regulations that include aspects of blockchain technology. The regulative legitimation strategies can be used to show alignment with the expectations of the environment within this domain. The target groups and legitimation strategies that have been identified for each challenge can be found below.

Signal that the new practice operates in accord with relevant laws and regulations	
Regulative communication challenge	**Target groups**
Regulatory transformation	Regulator, legal supervisor, customers

Signaling that the new practice operates in accord with relevant laws and regulations was seen as an appropriate legitimation strategy for the regulative challenge: regulatory transformation. With this challenge, banks will have to comply with regulations that also include the legal aspects of blockchain technology to keep up with changes in the regulatory environment. The regulator, legal supervisor, and customers of the bank were identified as target group to deal with this challenge. The bank can perform the revised reporting that complies with the relevant rules and laws to the regulator and supervisor.

Methods for the bank to implement these strategies are: determine communication channels, create planning for compliance, form test and focus groups, involve the regulator in changes and innovations to show actions, and communicate with clients.

Develop legitimacy by organizing collective lobbying efforts* **included after practice round*	
Regulative communication challenge	**Target groups**
Regulatory constraint	Regulator, legal supervisor, customers

Develop legitimacy by organizing collective lobbying efforts was seen as an appropriate legitimation strategy for the regulative challenge: regulatory constraint. This legitimation strategy was not provided by the framework of Kaganer et al. (2010) but has been included after a practice session. During this session, the consultant mentioned this strategy as a potential legitimation process within this domain. With this challenge, banks innovative potential concerning blockchain is limited due to regulatory aspects involving duty of care, KYC/AML, and reporting obligations. The regulator, legal supervisor, and customers of the bank were identified as target group to deal with this challenge. The regulator and supervisor are the stakeholders who judge the bank on these constraints. Customers who judge the bank as not aligning with their demands can be targeted to show that the bank is legally constraint.

Methods for the bank to implement these strategies are: determine legal boundaries and show this to regulator and supervisor, organize the message and measure the communication needed for the collective lobbying.

9.2.3 Moral domain – identified target groups and normative legitimation strategies

Within the moral domain, blockchain brings several communication challenges to the bank with respect to normative legitimacy. The banks need to deal with these communication challenges to remain legitimate in the future.

As explained to the participants, the moral domain consists of challenges in where the bank will be morally judged by its stakeholders. The bank remains legitimate if they conform to moral values. These moral values are not explicitly mentioned but the conformity to these challenges will be judged on a normative basis. For instance, banks will have to comply with regulations that also include the legal aspects of blockchain technology to keep up with changes in the regulatory environment. Banks that do not comply will be regarded as immoral – e.g. not trustworthy, dishonest etc. Another challenge addresses that role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management. Similarly, in this case banks that do not show behavior conforming with these expectations will be regarded as immoral – e.g. not trustworthy, unfair etc. The normative legitimation strategies can be used to show alignment with the expectations of the environment within this domain. The target groups and legitimation strategies that have been identified for each challenge can be found below.

Produce proper outcomes – *produce concrete meritorious outcomes*	
Normative communication challenge	**Target groups**
Regulatory constraint	Customers, society
Regulatory transformation	Customers, society
Decentralized data ownership	Customers
Role shift	Customers
Increased competition	Customers
Shaping the future	Customers

Producing proper outcomes was seen as an appropriate legitimation strategy for six normative challenges: (1) With regulatory constraint, banks innovative potential concerning blockchain is limited due to regulatory aspects involving duty of care, KYC/AML, and reporting obligations. (2) With regulatory transformation, banks will have to comply with regulations that also include the legal aspects of blockchain technology to keep up with changes in the regulatory environment. Banks can change their operations and policies in line with the adopted morale. This can later be

proved with concrete outcomes. For both regulatory constraint and transformation, customers and the society in general were identified as target groups. (3) With decentralized data ownership, banks are put into an environment which requires them to: shift to applying data analytics on individual customers, think more about how to use data as a corporate resource, put more effort in sustaining social stability, and shift to self-sovereign IDs for customers. (4) The role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management. (5) With an increased competition, banks are put into a competitive environment which forces them to: acquire innovative startups and engage in partnerships. (6) Regarding shaped by the future, banks are put into a technological environment in which the different actors must agree on the platform to be used, limiting the possible choices for innovation. Customers were identified as target group to deal with the final four challenges.

Embed in institutions *– embed new practices in established institutions (e.g., through cooptation of respected entities)*	
Normative communication challenge	**Target groups**
Decentralized data ownership	Customers
Role shift	Customers

Embedding in institutions was seen as an appropriate legitimation strategy for two normative challenges: (1) Decentralized data ownership and (2) role shift. For both, the customers were identified as target group to deal with this challenge. The bank can show trustworthiness by showing that the organization cooperates with respected entities.

Offer symbolic displays – *portray outputs, procedures, and structures as conforming to moral norms*	
Normative communication challenge	**Target groups**
Regulatory constraint	Customers, society
Regulatory transformation	Customers
Decentralized data ownership	Customers, society
Role shift	Customers, society
Increased competition	Customers, society
Customer participation	Customers, society
Shaping the future	Customers, society

> *Consultant B: "In all situations you would have to show your customers that you are being moral, because they care about these principles. I would say also regulators and shareholders, but first customers."*

Offering symbolic displays was seen as an appropriate legitimation strategy for all normative challenges: (1) regulatory constraint, (2) regulatory transformation, (3) decentralized data ownership, (4) role shift (5), increased competition, (6) customer participation, and (7) shaping the future. With customer participation, banks are put into an environment which forces them to: involve customers in deciding the organization's output, reward customer's for valuable contributions to the organization, make sure customers have sufficient knowledge for contributions. Except for (2), customers and the society in general were identified as target groups. The customers were identified as target group for the regulatory transformation. The bank can adjust marketing communications with appropriate messages conforming morale. In all cases, the best method for implementing this strategy was to get expertise from outside by hiring a marketing firm.

Proselytize – *attempt to convert current beliefs*	
Normative communication challenge	**Target groups**
Increased competition	Customers
Customer participation	Customers

Attempting to convert current beliefs was seen as an appropriate legitimation strategy for two normative challenges: (1) increased competition and (2) customer participation. For both, the customers were identified as target group to deal with this challenge.

9.2.4 Cultural domain – identified target groups and cognitive legitimation strategies

Within the cultural domain, blockchain brings several communication challenges to the bank with respect to cognitive legitimacy. The banks need to deal with these communication challenges to remain legitimate in the future.

As explained to the participants, the cultural domain consists of challenges in where the bank will be judged on a cultural basis by its stakeholders. The bank remains legitimate if they conform to cultural values. These cultural values are not explicitly mentioned but the conformity to these challenges will be judged on a cognitive basis. As explained in 3.1.1.2, the cognitive evaluation is founded on comprehensibility and taken-for-grantedness (Suchman, 1995). Cognitive challenges are those that have become part of the culture, meaning that the bank *want to* change their behavior (Palthe, 2014). For instance, banks are put into an environment which requires them to put more effort in sustaining social stability and shift to self-sovereign IDs for customers. Those organizations that do not comply will not be understood as a bank – maybe as a different entity, but it will lose its legitimacy as a bank. The cognitive legitimation strategies can be used to show alignment with the expectations of the environment within this domain. The target groups and legitimation strategies that have been identified for each challenge can be found below.

Mimic standards *- mimic most prominent and secure entities in the field*	
Cognitive communication challenge	**Target groups**
Decentralized data ownership	Society
Role shift	Society
Power shift	Society
Customer participation	Society
Shaping the future	Society

Mimicking standards was seen as an appropriate legitimation strategy for all normative challenges: (1) With decentralized data ownership, banks are put into an environment which requires them to put more effort in sustaining social stability and shift to self-sovereign IDs for customers. (2) The role of the bank will shift to different models as blockchain will change or remove certain business processes. (3) With power shift, banks are put into an environment in which they have less power to define norms and standards**.** (4) With customer participation, banks need to gain trust in the customers' added value. (5) With shaping the future, the bank is put into an environment in which they have to adopt a different strategic focus than its competitors. For all challenges, the society in general was identified as target group as society determines the culture.

Establish and promote new standards and models	
Cognitive communication challenge	**Target groups**
Decentralized data ownership	Customers, society
Role shift	Customers, society
Power shift	Customers, society
Customer participation	Customers, society
Shaping the future	Customers, society

Mimicking standards was seen as an appropriate legitimation strategy for all normative challenges: (1) decentralized data ownership, (2) role shift, (3) power shift, (4) customer participation, and (5) shaping the future. For all challenges, the customers and the society in general were identified as target groups. This strategy is seen as most

effective in case the bank would be the first to promote the 'new rules of the game'. If otherwise, mimicking standards would be alternative.

9.3 Legitimation as liberty or constraint

Figure 28: Identified legitimation strategies as constraints and liberties on bank's behavior

So far, this chapter has identified the target groups and legitimation strategies in each domain. The legitimation process limits the bank's behavior – as constraints – or create opportunities for legitimation – as liberties. Based on the dynamics of each element as discussed in section 3.1.1.3, the regulative and cognitive are considered rigid, whereas the normative element – also including the pragmatic element – is dynamic. In other words, the cognitive and regulative legitimation strategies are constraints on the bank's behavior. Banks must adopt these strategies to avoid illegitimacy. In contrast, the pragmatic and normative legitimation strategies are liberties on the bank's behavior, creating opportunities for strategic processes of legitimation (Figure 28).

9.4 Conclusion SQ3

This chapter answers the third sub-question which aimed to identify target groups and legitimation strategies by confronting the communication challenges within a focus group setting. The results of the focus group show the identified target groups and legitimation strategies in the technology, regulatory, moral and cultural domain. Each domain represents one of the legitimacy elements that affect organizational legitimacy. The identified target groups and legitimation strategies contribute to the development of the strategic approach for managing organizational legitimacy and the final innovation strategy framework (Figure 29).

Each legitimating element – pragmatic, normative, regulative, and cognitive – has a different effect on organizational legitimacy. Within this project's context, it is argued that the normative legitimacy element of the bank is the most dynamic and important. The pragmatic element contributes to the development of a legitimation strategy for organizational legitimacy as this element has much in common with the normative element. The legitimation processes corresponding to these elements are liberties on the bank's behavior, creating opportunities for strategic processes of legitimation.

The cognitive and regulative legitimation strategies are constraints on the bank's behavior. Banks must adopt these strategies to avoid illegitimacy. The relevance of the regulative element is shown in Part II, where the organizational consequences acknowledged numerous issues concerning legal aspects. The cognitive element is the most foundational element, providing frameworks on the operation of social systems on which the normative and regulative systems are constructed (as discussed in section 3.1.1.2). Although this element is considered to be rigid and difficult to influence, looking into this element can still contribute to avoid the bank's illegitimacy.

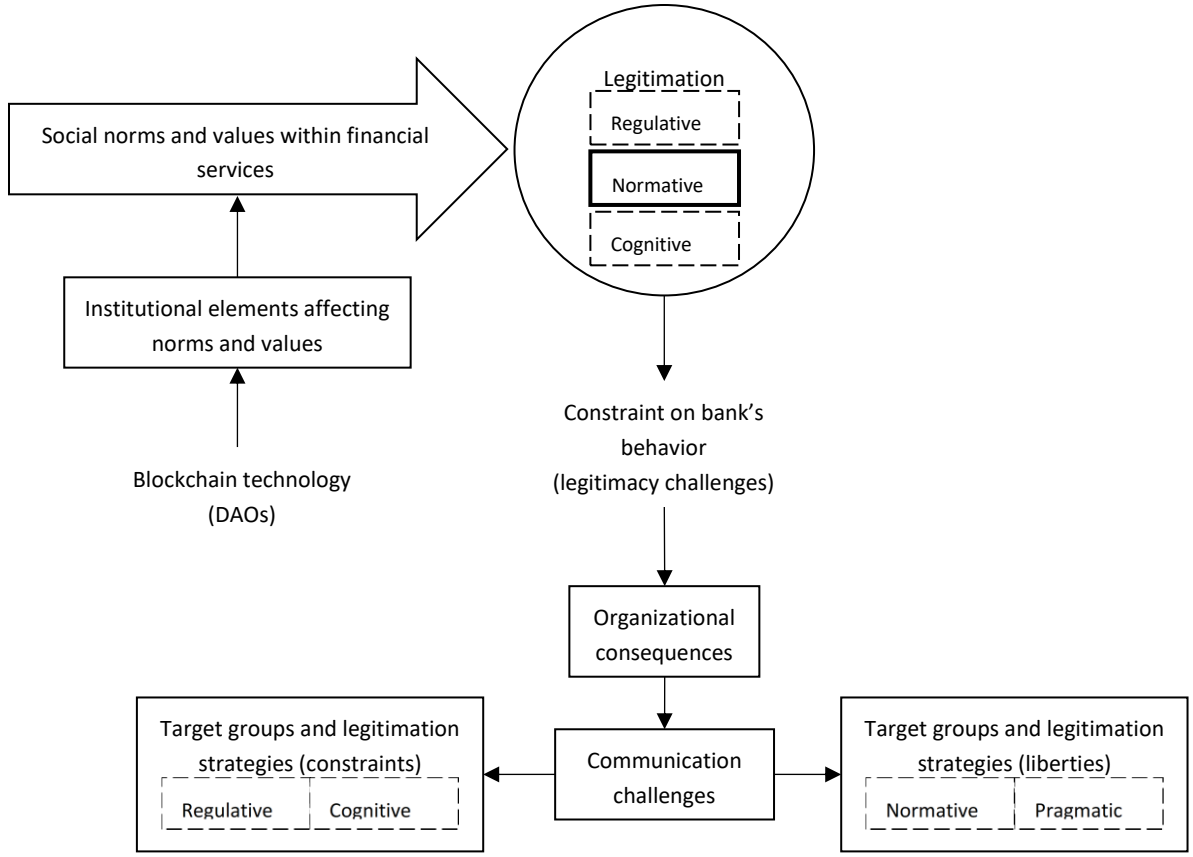


Figure 29: Initial framework – identified target groups and legitimation strategies when blockchain affects the legitimacy of banks

9.4.1 Participants' interpretation

As explained, the introduction of the focus group covered a brief elaboration on the main research objective and the dynamics of organizational legitimacy. Thereafter, the purpose of the focus group was explained which was to identify target groups and appropriate legitimation strategies by linking the communication challenges with possible legitimation strategies. The introduction gave the consultants an understanding of the dynamics of organizational legitimacy and the purpose of the focus group. However, more elaboration was shown to be necessary on the project context. The interpretation of the communication challenges and the higher purpose of tackling these challenges was shown to be difficult to grasp during the execution of the focus group.

Technology domain – pragmatic legitimation

The communication challenges in the technology domain were discussed first. The technology domain consists of challenges in where the bank will be pragmatically judged by its stakeholders. The bank remains legitimate if they conform to practical satisfaction. It took more time than expected to put the consultants into the right mindset. A continuous explanation was necessary by the moderator in order for the communication challenges to be understood correctly by every consultant. To illustrate, with decentralized data ownership, banks are put into a technological environment which forces them to: shift to blockchain-based information infrastructures, think more about how to use data as a corporate resource, and be content with less data to calculate risks. This challenge was difficult to imagine for the consultants, since it addresses an issue that is based on potential future expectations, and it is not a current requirement for organizational legitimacy. As a result, the initial response was that this situation is unlikely and cannot be a legitimate expectation. The situation seemed to be evaluated with the current social norms and values within the institutional environment. Target groups and legitimation strategies have been identified for each challenge. However, due to time constraints, there was no discussion on the possible implications of each strategy.

Regulatory domain – regulative legitimation

The communication challenges in the regulatory domain were discussed second. The regulatory domain consists of challenges in where the bank will be legally judged by its stakeholders. The bank remains legitimate if they are compliant. The consultants have much expertise on the bank's regulatory contexts, and it was shown to be easy to identify the target groups and appropriate legitimation strategies. Regulation plays a big role for banks and the communication challenges concerning legal compliance were relatively easy to grasp as this process of legitimation is similar to the consultant's own professional institutional context.

Moral domain – normative legitimation

The communication challenges in the moral domain were discussed third. The moral domain consists of challenges in where the bank will be morally judged by its stakeholders. The bank remains legitimate if they conform to moral values. Also, here, continuous explanation was necessary by the moderator in order for the communication challenges to be understood correctly by every consultant. The initial response from the consultants was that they were missing the value that is being addressed with these communication challenges. When discussing normative judgements by stakeholder groups, the consultants mentioned that it would have helped if the communication challenges directly addressed a particular value, so that the normative legitimation process would be easier to grasp.

Cultural domain – cognitive legitimation

The communication challenges in the cultural domain were discussed at the end. The cultural domain consists of challenges in where the bank will be judged on a cultural basis by its stakeholders. The bank remains legitimate if they conform to cultural values. At this part, three consultants were left for the discussion as one consultant had to attend another meeting. It was quickly determined that the society plays a role for cognitive legitimation. The example that came up – and seemed easy to grasp – for explaining this legitimation process involved the following: the cognitive legitimation process entails the appropriate behavior of a bank described by a random person on the street. In other words, the understanding of what a bank is described by the general public. As a result of this common understanding, the appropriate strategies and target groups were quickly identified.

Overall group dynamic

In general, a focus group allows for a direct opportunity to resolve conflicting information. It thus can raise both positive and negative effects of the results that have been identified in the literature review and interview sessions. It is a highly dynamic setting, in which the outcome very much depends on the overall group dynamic. The consultants have expertise in a similar domain. However, for each consultant, the amount of work experience, the personality traits, and the behaviour within a group setting varied. In other words, every participant had his own interpretation of the subject matter in which the moderator had to establish a common understanding.

In the next chapter, a strategic approach is described that banks can adopt to manage its organizational legitimacy from a communication perspective.

10

A Strategic Approach for Organizational Legitimacy

In this chapter, the results of the systematic literature review (chapter 7) and the focus group (chapter 9) are used to develop a strategic approach for the bank to manage their organizational legitimacy affected by blockchain technology. It aims to answer the fourth and final sub-question which states:

SQ4 How can the identified best practices and results of the focus group session contribute to the development of a strategic approach for managing organizational legitimacy?
   a. Which legitimation strategies and corresponding target groups are most relevant?
   b. Which identified best practices are most relevant?
   c. How can the best practices be linked to the target groups and legitimation strategies?

This strategic approach is integrated in the final innovation strategy framework in chapter 13 (Part IV) which aims to generate insights in how the different elements of blockchain technology can affect the legitimacy of banks, providing the adequate managerial implications, and which possible communication strategies can be used to manage organizational legitimacy. This chapter mainly focusses on the description of the process itself. A more elaborated legitimation strategy is developed in Part IV. This part also implements the key findings from the discussion and implications of blockchain technology affecting the organizational legitimacy of banks.

10.1 Strategic approach for managing organizational legitimacy

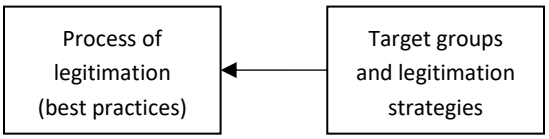


Figure 30: Conceptual model of strategic approach for banks to manage organizational legitimacy

The strategic approach involves the combination of the identified best practices for managing organizational legitimacy, and the identified target groups and legitimation strategies as a process of legitimation as depicted in Figure 30 and is part of the larger framework discussed in this project. First, (1) a selection is made of the relevant legitimation strategies and target groups that have been identified during the focus group. Thereafter, (2) the best practices that are suitable for this legitimation process contribute to the improvement of the selected legitimation strategies. Together with the identified target groups, (3) a communication strategy can be developed for the bank to manage their organizational legitimacy affected by blockchain technology. The following sections elaborate on each step.

10.1.1 Selecting the relevant legitimation strategies and target groups

The first step involves the selection of the relevant target groups and legitimation strategies. Depending on the element, the target groups and legitimation strategies identified in chapter 9 are either constraints or liberties on the bank's behavior. As shown in Figure 31, the bank can either adopt an institutional approach (by conforming) or a strategic approach for managing its organizational legitimacy:

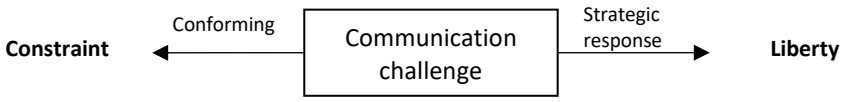


Figure 31: Two possible responses for banks on each communication challenge

The institutional approach is adopted to deal with constraints on the bank's behavior and focusses mainly on institutional isomorphism – i.e. being similar to the environment. Constraints merely limit the banks behavior and will not affect the social norms and values of the as a desired process of legitimation. Instead, it will contribute to the further institutionalization of the environment. The constraints are the legitimacy elements that are considered rigid and difficult to change and thus in this case, isomorphism is the suitable approach for managing organizational

legitimacy. As discussed in section 3.1.1, institutional isomorphism can contribute to the survival of an organizational and eventually increase organizational performance (Meyer & Rowan, 1977). Part II viewed organizational legitimacy from an institutional approach and identified the regulative and cognitive element as constraints for isomorphic behavior. Furthermore, chapter 9 identified the target groups and legitimation strategies that can be adopted to manage organizational legitimacy for these elements.

Strategically affecting the social norms and values through processes of legitimation requires targeting dynamic elements that are subjected to change. The liberties are the legitimacy elements that are dynamic and can be used as a strategic process for legitimation for the bank. Liberties create opportunities for banks – to expand the space of appropriate organizational behavior. The corresponding elements for these legitimacy opportunities are discussed in Part II and involve the normative and pragmatic elements. Subsequently, these legitimacy elements contribute to the development of a communication strategy for managing organizational legitimacy as depicted in Figure 32 and is part of the larger framework discussed in this project.

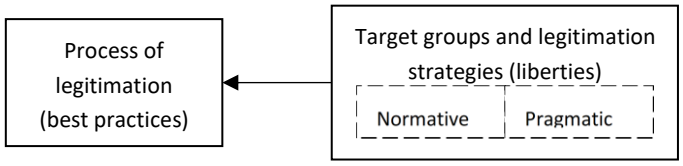


Figure 32: The relevant legitimacy elements for the strategic legitimation process

By focusing on the target groups and using the legitimation strategies in the technology (pragmatic) and moral (normative) domain, the bank expands the space of appropriate behavior. In other words, the consequences of blockchain technology resulting from the normative and pragmatic legitimation process can be used as an opportunity by the bank to influence 'the rules of the game' in their advantage.

Normative legitimation strategies and target groups

As discussed in section 9.2.3, for normative processes of legitimation, banks can either:

- Produce proper outcomes to customers or society as a whole
- Embed new practices in established institutions of the customers
- Offer symbolic displays to customers or society as a whole
- Attempt to convert the current beliefs of customers

For these normative legitimation strategies, it is argued that it is better for the bank to get expertise from outside by hiring a marketing firm. Providing that, banks should produce proper outcomes when solving the challenges, and the outcomes should be communicated towards the customers or society as a whole. Demonstrating the innovation is one way of doing this. Embedding new practices in established institutions of the customers is achieved through cooptation of respected entities (e.g. the central bank or the government). Offering symbolic displays to customers or society as a whole by portraying outputs, procedures, and structures show conformity to moral norms. Finally, banks can attempt to convert the current beliefs of customers by proselytizing.

Pragmatic legitimation strategies and target groups

As discussed in section 9.2.1, for pragmatic processes of legitimation, banks can:

- Meet the needs of employees, customers, regulators, or the higher management board
- Advertise the product or service to the regulator, shareholders or customers
- Build alliance with shareholders or customers
- Build reputation with customers, regulators, or the higher management board
- Organize collective marketing and lobbying efforts towards suppliers or competitors

For these pragmatic legitimation strategies, banks are perceived as practically useful primarily by responding to the needs of their audiences. Depending on the challenge that is being addressed, banks can either target the internal

or external stakeholders. Advertising of products was seen as an appropriate legitimation strategy for targeting the regulator, shareholders, and the customers. It involves persuading these stakeholders to value the innovation offerings. Furthermore, the bank can build alliances with shareholders and customers and highlight the extent of their participation in the innovation process. Banks should engage in reputation building towards customers, the higher management board, and regulators and trade on the organization's strong reputation to deal with the communication challenges. Organizing collective marketing and lobbying efforts towards suppliers and competitors can be used as way for bank to reach agreement on the platform to be used between these actors.

In the end, choosing the right strategy for the particular legitimation process depends on the effect of blockchain technology on the institutional environment and the resulting consequences on the bank. As discussed, these effects and organizational consequences have been identified in chapter 4 (Part II) and the resulting communication challenges that have to be dealt with have been identified in chapter 8 (Part III). After the relevant legitimation strategy and target groups have been selected, the relevant best practices can be linked to improve the strategy.

10.1.2 Selecting the relevant best practices for managing organizational legitimacy

With the selected legitimation strategy and corresponding target groups, the identified best practices in chapter 7 contribute to the improvement of the legitimation strategy. First, there needs to be looked at which element is being legitimated to identify the relevant best practices. As discussed in chapter 7, each context in which these best practices occur can contribute to different legitimacy elements (Table 20).

Table 20: The appropriate contexts to consult for each legitimacy element

Legitimacy element	Context
Regulative	General, financial services
Pragmatic/Normative	General, healthcare, public sector
Cognitive	General, public sector

After selecting the relevant legitimacy element, the best practices in the relevant sector should be adopted to improve the legitimation strategy. It is unlikely that all relevant best practices contribute to each particular legitimation strategy. The fit between the best practices and legitimation strategy, and its improvement also depends on the target group and the challenge that is being addressed. Text box 1 shows an example of how such a communication strategy can be developed.

Text box 1: Example of the development of a communication strategy as a process of legitimation for the bank to manage the effects of blockchain technology on the organizational legitimacy

To illustrate, one of the identified consequences for the bank involved *institutional isomorphism – technology adoption.* In this context, blockchain pressurizes banks to shift from current practice to blockchain-based solutions:

(1) Organizational consequence: *institutional isomorphism – technology adoption*

How can the bank turn this into an opportunity and benefit from this consequence? As identified in chapter 8, banks will be pragmatically judged by their stakeholders for this *technological transformation* as communication challenge:

(2) Communication challenge: *technological transformation*

The appropriate strategies that can be adopted are those identified in the technology domain linked with this challenge:

(3) Legitimation strategy and target group: *respond to needs – meet the substantive needs of customers and employees and demonstrate results*

The best practices that can be used for this legitimation strategy can be found in the general, healthcare, and public sector context. For each legitimation strategy, best practices can be selected that fit the target group:

(4) Best practices:
Customers
- Demonstrate the technical superiority of the innovative practice, characteristic or form over existing alternatives;
- Address the root cause of negative attention through technical actions

Employees
- Utilize informal channels at the lower level of the organization to guide organizational change;
- Obtain behavior of pro-blockchain executives using typified identities and frames originating from the broader societal logic

Now for both target groups, a communication strategy can be developed.

(5) Banks will have to change current business processes and move to blockchain-based solutions on places where blockchain is proved to be more efficient to keep up with changes in the technological environment. Banks can respond to these needs by:

- investing in blockchain-based solutions and demonstrate the superiority of the new practice to customers (e.g. change KYC process to offer higher financial inclusion and show this new process)
- by mimicking the behavior and visions of pro-blockchain executives that reflect the larger market needs and guide organizational change for employees by using informal channels through lower levels of the organization (e.g. revise internal mission statement and inform employees directly)

These communication strategies are only a few examples of the possible methods and tools that can be adopted. Depending on the bank's own mission, resources, and capabilities it should select the most appropriate solution. Also, the best practices should be reviewed from time to time to make sure certain actions are adopted – e.g. being consistent in content of response toward all stakeholders. Moreover, certain actions should be avoided – e.g. solely focusing on individual actors.

10.1.3 Framework of the strategic approach

The dynamics and legitimation process of the strategic approach are shown in Figure 33. As described, the bank influences the social norms and values within the banking sector that are affected by blockchain technology through their own processes of legitimation. This process of legitimation is a communication strategy that is constructed to respond to the institutional effects of blockchain technology on the larger market segment in an opportunistic way. It starts by looking at the legitimacy challenges that are induced by blockchain technology and the resulting organizational consequences for the bank. Thereafter, as described in the example on the previous page, an appropriate strategy can be developed for the bank to expand the space of appropriate organizational behavior.

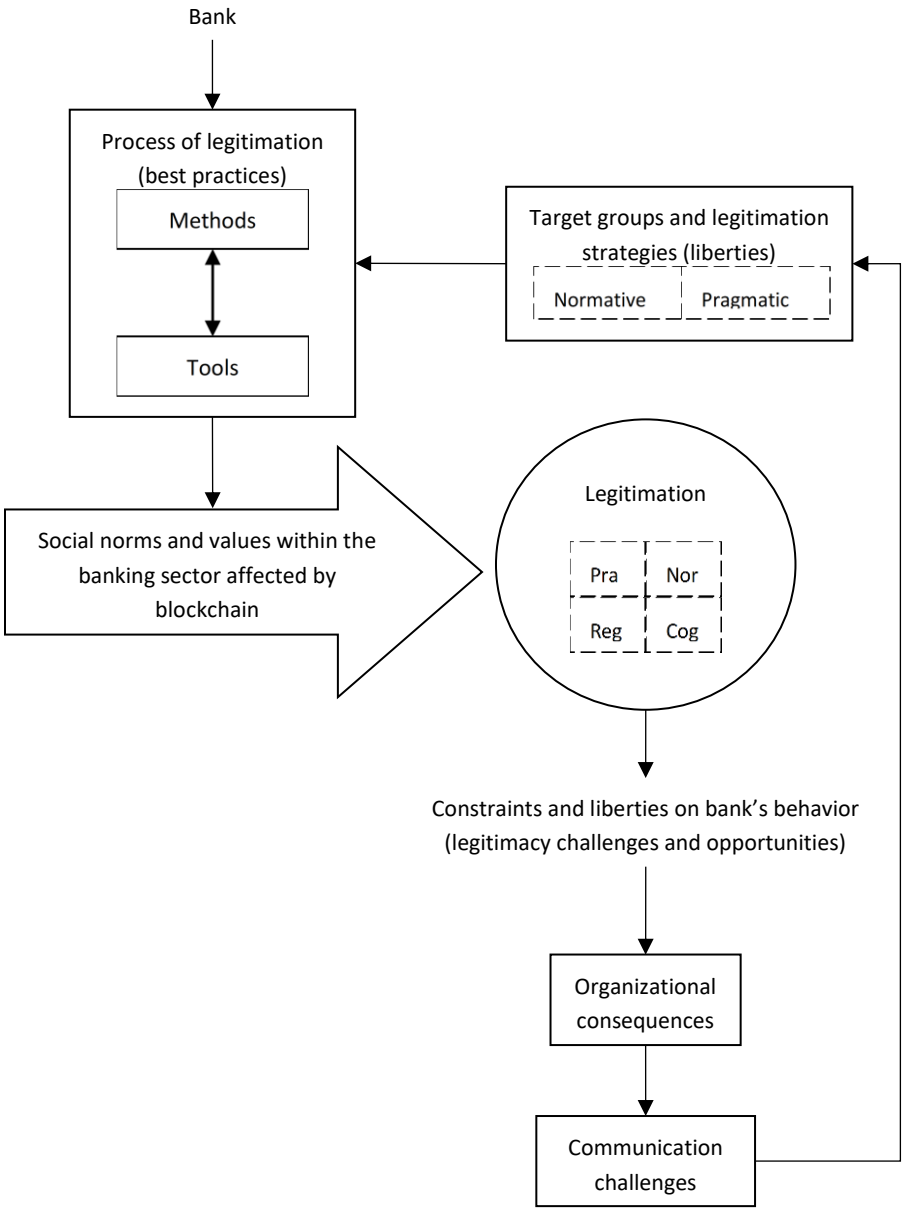


Figure 33: Initial framework – Strategic approach for banks when blockchain affects organizational legitimacy

10.2 Conclusion SQ4

This chapter aimed to answer the fourth sub-question. The identified best practices and results of the focus group session contributed to the development of a strategic approach for managing organizational legitimacy by integrating the results into the initial framework for engaging in strategic processes of legitimation. This approach describes the way in which banks can select the appropriate best practices, legitimation strategies, and target groups to engage in processes of legitimation to affect the social norms and values that are affected by blockchain technology. It has been answered by first identifying the most relevant best practices, legitimation strategies, and target groups. Thereafter the identified best practices for managing organizational legitimacy, and the identified target groups and legitimation strategies have been combined as a process of legitimation. This approach has been integrated in the framework of organizational legitimacy (Figure 33) and can be used for the banks to deal with the effects of blockchain technology on the institutional environment. Part IV provides the innovation strategy framework by integrating the results from Part II and III. Moreover, it provides a legitimation strategy integrating the key findings of both parts.

11

Discussion

11.1 Discussion of results

This section discusses the results of the research project. It provides an interpretation of the most significant results and compares it to other research. Moreover, the importance of the findings is discussed to highlight the practical relevance. In section 11.1.1, the findings are discussed that highlight the importance of communication to manage organizational legitimacy. Thereafter, section 11.1.2 evaluates the best practices. In section 11.1.3, the significance of the communication challenges is discussed. Section 11.1.4 evaluates the importance of the focus group findings which are the identified target groups and legitimation strategies. To conclude, section 11.1.5 discusses the strategic approach for managing organizational legitimacy.

11.1.1 Communication for organizational legitimacy

Within this project's context, organizational legitimacy is granted when the actions of the bank are seen as appropriate within the perception of the bank's audiences along the social norms and values of its industry segment. It is argued that communicating with these audiences plays a major role for managing organizational legitimacy. Regardless of the legitimacy element, it is important that the bank establishes a value congruence between the organization and their stakeholders (Colleoni, 2013), and as has been explicitly mentioned these legitimating activities rely heavily on communication between the organization and its stakeholders (Barnett, 2003; Colleoni, 2013; Khan, 2018; Massey, 2001; Pollach, 2015; Suddaby et al., 2017; Suddaby & Greenwood, 2005). How banks position themselves towards these stakeholders and what kind of communication strategies they implement are important factors for the outcome of the legitimation process. Also, whether the audiences support the organization with necessary resources. However, this project merely focused on the effect of communication of the legitimation process as this is argued to be the most significant. Different methods such as adapting the output, goals, and methods of operation of the organization to current definitions of legitimacy are also considered to be effective ways for managing legitimacy (Dowling & Pfeffer, 1975). Managers should remain open and critical towards the strategies provided in this project and also look for other possible methods to align with the social norms and values.

11.1.2 Best practices for managing organizational legitimacy

The results of the systematic literature review yielded an overview of best practices for managing organizational legitimacy from a communication perspective. These best practices include drivers and barriers. Both contribute to the improvement of formulating legitimation strategies for organizations. The different contexts that have been identified for each best practice are based on the researcher's interpretation. The best practices that were identified in the general context for instance, were primarily discussed in the introduction part of the research paper. Meaning that these best practices are collections of earlier work and describe results from other studies. It could be that the contexts of these cited studies occurred in very specific contexts and that the generalizability of these results is questionable.

Furthermore, the results of the best practices are provided in such a way that they can be used in a flexible manner. As mentioned in section 7.2.2, the distinction between communication tools and methods is not always clear as both are mentioned interchangeably in literature. For example, it can be unclear if using metaphors and narratives to justify organizational change can be referred to as a method or a tool. Metaphors are devices that make the task of communication something easier, but it is also a way of communicating something. As in either case it can increase the legitimacy of an organization (Khan, 2018; Suddaby & Greenwood, 2005), the overlapping tools and methods are not explicitly addressed. Instead, the emphasis is on the fact that these drivers can be used to manage the legitimacy of the bank. This also holds for the barriers as they are presented in a similar manner. Providing a recommendation on when to use which best practice would presume that the researcher has knowledge on the context of each legitimation process and the demands of the audiences which is highly improbable. Managers can best benefit from these best practices by first identifying the appropriate legitimation process – i.e. pragmatic, normative, regulative, or cognitive – and corresponding target groups. Thereafter, an effective strategy can be designed based suitable to the context. It is recommended that those practices are selected that are economically

viable for the organization, legal, and socially accepted within the institutional environment (Dowling & Pfeffer, 1975).

Communicate about values

Communicating about values, either through Corporate Social Responsibility (CSR) programs or otherwise, can help organizations to gain legitimacy. The evaluative purpose of values can directly be linked to the concept of organizational legitimacy (Yao et al., 2015). Legitimacy for an organization is high when it aligns with the values that it is measured against (Riel & Fombrun, 2007, Chapter 7). Therefore, communication about values directly appeals to wider belief systems and thus also appeals to audiences that propose other positions than the organization (Suddaby & Greenwood, 2005). In this way, value-based strategies can be used to signal the appropriateness of organizational behavior. Values are usually related to ethics, but it can also serve other processes of legitimation (Schultz & Wehmeier, 2010). In a sense, showing regulatory compliance is also a way of signaling values – i.e. the values of the regulators. Managers can enact the value of an innovation by placing the expectations on the individual (Yao et al., 2015). However, the values that are addressed have to conform with the wider social norms and values as a sole focus on the individual can negatively influence the legitimacy of an organization (Suddaby et al., 2017).

Corporate Social Responsibility

Banks can engage in Corporate Social Responsibility (CSR) activities for managing legitimacy. CSR is a business model for organizations to be socially accountable to their internal and external stakeholders (Chen, 2019). It is argued that organizations that manage their legitimacy effectively by engaging in CSR activities (Abdullah & Abdul Aziz, 2013; Camilleri, 2018; Heath & Waymer, 2015; Pollach, 2015; Schultz & Wehmeier, 2010; Suddaby et al., 2017; Suddaby & Greenwood, 2005; Yao et al., 2015). Examples of CSR activities include sponsorships, provision of research proposals, supporting environmental issues, community support programs, health support programs, and financial support for art and culture (Abou-El-Fotouh, 2019).

This business model seems to be a widely accepted strategy to show alignment with the social norms and values within the institutional environment. It is therefore highly appropriate for the bank to implement this business model – if not done already – and use other identified best practices to even further improve this model. Organizations that communicate about values, and combine business activities with philanthropy may increase the resources that can be drawn upon to legitimatize the organization (Heath & Waymer, 2015). Moreover, written corporate discourses including CSR standards can be used to gain and challenge legitimacy of different subjects (Phillips, Lawrence, & Hardy, 2004).

Narratives

The application of narratives is explicitly mentioned as a communication driver for managing organizational legitimacy. Narrativization, or telling a story can provide evidence of acceptable behavior for current changes in the organization and future practices (Hyndman & Liguori, 2018). Stories enable an organization to communicate their core values and the essence of their behavior. It is a way to integrate the identity of the organization into the conveying message (Blomgren et al., 2016). Managers can strategically affect the social norms and values by invoking narratives that promote a preferred set of organizational elements (Khan, 2018). However, successful stories – those that will be remembered – resonate with the core values of the audiences that transcend any temporal and cultural differences (Littlejohn & Foss, 2011, Chapter 5). The mission of the bank – reflecting their core values – should be carefully integrated as multiple senses within a narrative can create intersubjective meanings that make the story more fragile and temporary (Khan, 2018).

Barriers for legitimacy

In general, banks should avoid misalignment with the social norms and values as it can lower the legitimacy of the organization (Colleoni, 2013; Karlsson et al., 2005; Sataøen & Wæraas, 2015; Yao et al., 2015). Managers engaging in dialogue without the alignment of values of the wider institutional environment can result in a negative legitimation process. It is for good reason that this aspect is highlighted – as legitimacy is founded on conformity with larger belief

systems. Banks should make this a top priority when engaging in processes of legitimation. One method to achieve this conformity is to define social norms and values jointly through dialogue (Pollach, 2015; Schultz & Wehmeier, 2010).

11.1.3 Communication challenges

The formulation of the communication challenges is based on the organizational consequences identified in Part II. Since the participants of the focus group have little to no prior knowledge on the topic, each challenge was provided with sufficient context on the topic without the use of unnecessary jargon. The context of the communication challenges was based on the quotes provided with each organizational consequence to make the challenge as accurately as possible. Interpretation of the communication challenge may still differ as the description without jargon could lead to the loss of information.

The framework that has been used for the categorization of the different communication challenges involves a similar research context and captures the legitimation dynamics specifically in the IT innovation domain (Kaganer et al., 2010). The framework provides highly generic strategies and should therefore be regarded as a starting point for banks that want to engage in processes of legitimation.

11.1.4 Legitimation strategies and target groups

Within each domain, different target groups have been identified and legitimation strategies have been linked to the communication challenges.

Selection process

The validity of the focus group results should be considered carefully as not every domain was discussed as intended. The interpretation of the communication challenges and the higher purpose of tackling these challenges was shown to be difficult to grasp during the execution of the focus group. As discussed in Part II (section 5.2.2.1, topic 1), when the institutional effects of blockchain technology are not fully understood, when goals are ambiguous, or when the environment creates symbolic uncertainty, it can result in isomorphic processes. This was also visible during the focus group, in which the consultants were modeling the focus group situation to the current situation, which increased the difficulty of understanding the aim of the study. Subsequently, the consultants needed a better perspective on the underlying cause of the communication challenges and a better understanding of the institutional effects of blockchain technology. Moreover, the occurring symbolic uncertainty relates to the difficult to grasp relation between the communication challenges and some of the legitimation processes. It was shown to be helpful when the moderator used real-life examples to explain why a certain communication challenge leads to a particular process of legitimation. A more successful selection process can be achieved by either including participants in the focus group that have a complete understanding of the legitimation process and the institutional effects of the technology or include more real-life examples with each legitimation process and communication challenge to ensure a common understanding within the group. Also, managers should first select the most relevant organizational consequences so that only a few communication challenges have to be confronted during the selection process. It will result in a more in-depth analysis and it leaves more time for valuable discussions which are key features for conducting focus groups.

Regulative legitimation

For managing the regulative element of legitimacy, it is clear that banks should signal towards the regulatory bodies and their customers that their innovative practices operate in accord with relevant laws and regulations. This can be done by determining communication channels, creating a planning for compliance, forming test and focus groups, involving the regulator in changes and innovations to show actions, and by communicating with clients. On places where banks are legally constraint – limiting their innovative potential – the bank should develop legitimacy by organizing collective lobbying efforts also towards the regulatory bodies and their customers.

Communication professionals should determine the legal boundaries and show this compliance to the regulator and supervisor. Organize the message and measure the communication needed for the collective lobbying.

By doing this, banks gain regulative legitimacy while at the same time, create an institutional environment that provides the most flexibility for organizational behavior. It has been found that the bank has enough capabilities and expertise to implement these regulative legitimation strategies.

Normative legitimation

For normative processes of legitimation, it is argued that it is better for the bank to get expertise from outside by hiring a marketing firm. For instance, in the case that banks offer symbolic displays to the customers and general public to show conformity with moral norms. Managers should carefully assess whether the processes of legitimation should be outsourced or developed internally. When the underlying judgment is based on normative aspects, external parties may have a better perspective on the appropriate implementation strategy. Communication professionals can still decide for themselves the appropriate legitimation strategy and target groups. Providing that, banks should produce proper outcomes to their customers, meaning that the results of addressing the challenges should be communicated towards the customers. Demonstrating the technical superiority of the innovative practice, characteristic or form over existing alternatives can contribute to the alignment of moral expectations (Tumbas et al., 2017). Converting the current beliefs of the customers was seen as an appropriate legitimation strategy in some cases. However, banks must be careful adopting this strategy as proactive attempts at proselytization may attract hostile attention (Suchman, 1995).

Pragmatic legitimation

Banks can be perceived as practically useful primarily by responding to the needs of their audiences. Depending on the challenge that is being addressed, banks can either target the internal or external stakeholders. Employees can prefer organizations that promote innovative activity and thus banks can invest in blockchain to attract new types of employees. Customers can have certain technological preferences and the bank can demonstrate the new innovative practices to gain pragmatic legitimacy. Furthermore, banks should engage in reputation building towards customers, the higher management board, and regulators. Reputation is shown to be useful when stakeholders are pressurized to make more rapid decisions due to external pressures (Riel & Fombrun, 2007, Chapter 2). Banks are put into a technological environment in which different actors must agree on the platform to be used, limiting the possible choices for innovation. Moreover, a technological competitive environment forces banks to react to these external pressures. Communication professionals can manage these challenges by building on the bank's reputation.

Cognitive legitimation

Banks can deal with the cognitive communication challenges by taking the first mover advantage and establish new standards and models. Banks that do not have this advantage better mimic the standards of those already existing. Promoting new standards and models towards customers and society is a way for bank to change 'the rules of the game'. However, it is difficult to assess the effectiveness of these strategies as the taken-for-granted quality of institutional rules in the banking sector makes dramatic instabilities in the cognitive legitimation unlikely (Meyer & Rowan, 1977). Successful management of organizational legitimacy requires a focus on the most dynamic element. And as argued in Part II, the structural features and allowed procedures of the banks are closely aligned with moral evaluations. Any form of instability will be first noted in the normative element as cognitive legitimacy is more deeply ingrained in the audience's culture. Thus, the cognitive element may be a process of legitimation for banks to affect the social norms and values, but managers should first address normative legitimation strategies as these will be more effective in the short term.

> *"Gaining legitimacy is a proactive enterprise and involves three primary strategies: conforming to societal expectations, selecting supportive stakeholders, and creating new ideas of what is legitimate behavior" (Massey, 2001, p. 158).*

In the end, selecting the appropriate strategies and target groups enable banks to engage in processes of legitimation for managing the organizational legitimacy that is affected by blockchain technology. Therefore, the process remains

valuable and in part shows how the effects of communication on organizational legitimacy contribute to the improvement of the innovation strategy of banks in an institutional environment affected by blockchain technology.

11.1.5 Strategic approach for organizational legitimacy

Banks could strategically affect the social norms and values by engaging in processes of legitimation (Dowling & Pfeffer, 1975). The strategic approach enables the bank to deal with the effects of blockchain technology on the social norms and values, changing the legitimation process of the organization. Depending on the legitimacy element, the consequences from this affected legitimation process are constraints or liberties for the bank.

Institutional constraints

Constraints involve the regulative and cognitive element. These are the rules and procedures that the bank must adopt in order to remain a legitimate entity. Banks must align with the regulative element as a form of legal compliance. Moreover, "[cognitive] legitimation strategies are not always intentional or conscious, and their use usually decreases with time, when justifications are less needed as a change becomes accepted or a new practice is taken for granted" (Hyndman & Liguori, 2018, p. 5). Banks should consider both the regulative and cognitive legitimation processes as a way of conformity. For regulative legitimation, conformity increases the legitimacy of banks in the eyes of the regulators, which aligns with their interest in a stable financial system. For cognitive legitimation, conformity has a positive effect on legitimacy in the eyes of the media, who represents and records the norms and values of the public (Deephouse, 1996).

Institutional liberties

Liberties, however, are the consequences that the bank can respond to through processes of legitimation. It involves either a pragmatic or normative process of legitimation and the strategic approach enables the bank to select suitable legitimation strategies and target groups. The strategic approach is developed to improve the innovation strategy of the banks. Managers and communication professionals should improve the legitimation strategies by using the best practices for managing organizational legitimacy. Since this approach is designed to change the social norms and values affected by blockchain technology, managers adopting this approach must review the bank's resources, capabilities, and mission before developing the appropriate strategy to ensure alignment with the organization's vision. Moreover, banks can increase their flexibility to change in response to environmental demands by being proactive and anticipating stakeholder demands and environmental developments that can cause the organization's legitimacy to be questioned (Massey, 2001). In other words, the social norms and values should be assessed continuously to evaluate the effectiveness of the communication strategy.

The possibility exists that managers not attempt, in their developed strategies, to gain legitimacy from the wider social norms and values, but rather try to manipulate the society's view of the organization and not tell the truth about reasons for their programs (Woodward et al., 1996). This may pose problems for the executives to take these actions seriously.

11.2 Limitations and future recommendations

This section addresses the limitations of the research project. Furthermore, for each limitation a recommendation will be provided which can be considered for potential future research projects.

11.2.1 Limitation 1 – Research scope

Best practices for managing organizational legitimacy

The identification of best practices primarily focused on the methods and tools that support organizations to manage and gain legitimacy. This strategy has resulted in an overview of best practices for managing organizational legitimacy that managers and communication professionals can use to develop a suitable legitimation strategy. It is argued that the organizational attributes of age, size and performance are important determinants of legitimacy. Older firms have a higher chance of developing strong exchange relationships, become part of a power hierarchy, be endorsed by powerful social actors and have an aura of inevitability (Deephouse, 1996). Moreover, organizations which are more visible then others and which dependence on social and political support is relatively high will be more affected by the constraints of legitimacy (Dowling & Pfeffer, 1975). Size may affect legitimacy as larger banks may have more social ties and endorsements from their actors in their external environment. Performance is valued by society and might therefore also affect legitimacy.

Recommendations

Future projects could put more emphasis on how these methods and tools could be used in different contexts. For instance, what are the appropriate communication strategies for legitimacy for smaller bank compared to the bigger ones? It can be argued that there is a difference between the bigger and smaller banks in how they affect the social norms and values. Thus, it can be interesting to research which best practices can be best adopted within these different settings.

Significance of best practices

The significance of the best practices is based on the context in which they have been identified. This was done by linking the best practices to a certain legitimation process based on the research context. However, how the research context relates to each legitimacy element is primarily based on the interpretation of the researcher. As a result, the best practices may also be effective for other processes of legitimation. Moreover, the effectiveness of the best practices in each context have not been considered. The focus was primarily on the number of occurrences of the best practices in each context.

Recommendations

Future research can focus on the underlying dynamics of why certain best practices are shown to be effective in particular contexts. In this way, communication professionals can better select the appropriate best practices to improve the communication strategy for managing organizational legitimacy. Furthermore, the effectiveness of the best practices should be researched in terms of numbers – for instance, profitability. Organizational legitimacy is argued to be vital for the organization's access to resources, hence its survival. However, there is no data available on how the best practices would result in an increase of resources, or the specifics of these resources.

Interrelated aspects of legitimation process

This project merely focused on each legitimation process as an individual driver for organizational legitimacy. The interrelated aspects of the legitimation processes have not been considered. It is thus unclear how strategically affecting the social norms and values through one process of legitimation would affect another.

Recommendations

Future research can focus on the interrelated aspects of the legitimation processes. For instance, how can the regulative element affect the normative element? And what is the overall effect on organizational legitimacy? One can imagine that showing legal compliance is also a way of signaling moral and trustworthy behavior for an organization.

11.2.2 Limitation 2 – Strategic perspective on organizational legitimacy

Stakeholder dynamics

The issue that the interests and needs of stakeholders may change over time has not been considered in this research project. The bank's audiences are heterogeneous and constantly changing, and continuous satisfaction of these audiences may therefore be challenging (Massey, 2001). As has been recommended, managers should monitor the social norms and values from time to time to ensure appropriate behavior. How this should be done has not been considered.

Recommendations

Future research can look into how organizations can be proactive and anticipate stakeholder demands and environmental developments that can cause the organization's legitimacy to be questioned. What could potentially change the interests and needs of the various audiences? Organizations that have a better view on these needs can quickly anticipate the demands of the audiences and have a competitive advantage over other organizations to conform or respond strategically.

Predicting effectiveness of legitimation strategies

This project has provided a process of selecting appropriate legitimation strategies for managing organizational legitimacy. The strategies have not been tested and thus the question remains open what the effect of these legitimation will have on the institutional environment and in turn the legitimacy of the organization. That being the case, "transitions are difficult to predict beforehand, and social scientists may be hard put to formulate useful intervention strategies without falling victim to the cardinal methodological sin of sampling on the dependent variable" (Suchman, 1995, p. 593). In other words, it can be difficult for communication professionals to assess when the legitimation strategy will show its effectiveness and legitimation strategies may need to be changed in time to remain effective.

Recommendations

Future research can focus on how organizations can assess the effectiveness of legitimation strategies and how to measure the changes in the dependent variable after implementing the strategy. It may be useful for an organization to assess when conformity of strategically responding to the social norms and values is the appropriate action for the organization.

Too much focus on differentiation

It has been argued that too much focus on differentiation can be endanger the legitimacy of an organization. "Organizations that omit environmentally legitimated elements of structure or create unique structures lack acceptable legitimated accounts of their activities. Such organizations are more vulnerable to claims that they are negligent, irrational, or unnecessary" (Meyer & Rowan, 1977, p. 349). In other words, organizations that engage in legitimating activities that are too detached from the current social norms and values will be ignored. However, what the boundaries of these processes of legitimation are have yet to be determined.

Recommendations

Future research can identify what the boundaries are of the different legitimation strategies in which the strategies are still perceived as appropriate by the various audiences. Two points are important here. First, the content of the legitimation strategy should be regarded as appropriate. When is the content that is being

communicated not considered appropriate anymore? And secondly, the legitimation strategy itself should be perceived as legitimate. When does a legitimation strategy loses its legitimacy? Research looking into these questions could possibly identify the critical elements that are necessary for an organization to thrive, as well as the crucial elements for each strategic process of legitimation.

11.2.3 Limitation 3 – Research design

Systematic literature review

The search term of the systematic review was designed in order to find communication factors that only positively affect legitimacy. In this case there have also been identified negative factors. However, probably more barriers could have been identified if the search term allowed for it. It would have provided more factors which to avoid and could improve the legitimation strategy.

Recommendations

For the identification of more best practices, the search term should allow for factors that should be avoided for illegitimacy. Moreover, the inclusion of another database such as Web of Science could have resulted in an identification of more factors.

Qualitative approach

The qualitative approach enabled the collection of data in a more exploratory way (Yin, 1994). One challenge with a qualitative approach is to accomplish external validity and reliability on the research outcomes – the results of the focus group are open to interpretation and only one session has taken place. For these reasons, it will make a difficult case to generalize the findings and to make the outcomes replicable.

Recommendations

Future studies can conduct more focus group sessions for better results. It will have to include more examples and less jargon for a smoother process. As a result, a more reliable overview can be created of the identified legitimation strategies and target groups.

11.2.4 Limitation 4 – Focus group

> *"Focus group protocols should avoid questions that might make participants overly uncomfortable. … Questions should emphasize the participants' knowledge about a topic rather than make them feel unknowledgeable." (Harrell & Bradley, 2009, p. 86).*

Focus group – Changing perspectives

It was shown to take more time to put the participants into the right mindset than expected. The participants have been introduced into the project's context and were explained the basic principles of organizational legitimacy. However, when diving into the different case studies, further elaboration was needed on the legitimation process within each domain. Especially, in the cases that the communication challenge did not explicitly addressed a particular value.

To illustrate, the moral domain proposed situations in where the bank will be ethically judged by its stakeholders. One situation addressed that the role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management. Based on the interview results, the institutional environment of the bank – their stakeholders – will judge the actions of the bank from a normative perspective, meaning that the bank will feel the need to change their behavior because they *ought to* (Palthe, 2014). This shows that the banks should have a clear idea of the underlying causes of the legitimation process before choosing the target groups and appropriate strategies.

Recommendations

For a smoother process the focus group should include more examples and less jargon. The practical relevance can be made more explicit when real-life examples are included to put the participants into the right mindset. Moreover, using fewer abstract terms makes the material more comprehensible for different stakeholder groups. Lastly, it is recommended to dive deeper into one domain instead of changing the legitimation process for a more in-depth analysis on the practical implications of the legitimation strategies. Here, it is important that the researcher first determines the most relevant process of legitimation.

Another way would be to provide different communication challenges and let the participants decide for themselves which legitimation process is most appropriate. Now, the researcher has determined beforehand how the legitimacy elements relate to each challenge but having different perspectives on the appropriate legitimation process can increase the effectiveness of the strategic approach.

Focus group – Participant's interpretation

The institutional analysis in Part II focused on the identification of the underlying causes of each organizational consequence. Without this knowledge, it is shown to be difficult to understand the specific challenge that the organization has to address. For instance, in the moral domain, one consultant mentioned that *"not conforming to these situations can also be a form of moral principle. It shows the customer that the bank 'knows what's best for the customers'."* However, what is misunderstood here is the fact that these situations are the results from a moral perspective. So, the underlying value is not explicitly visible, since the consequence is a result from a normative evaluation. In other words, banks should comply to these situations to show their alignment with the social norms and values, but to identify the underlying value, the different institutional elements of blockchain technology that affected these social norms and values should be reviewed.

Recommendations

Future studies should focus more on the underlying legitimation processes that form the basis of each challenge. Participants will then better understand why overcoming the challenge is a requirement for the organization and not an option as legitimacy is a minimum condition for an organization to thrive. Moreover, the emphasis should be on the way to communicate the situations, and whether these situations will occur or not. The developed communication challenges should be viewed as a new set of rules on which the organization has to comply. The identified process to overcome the rules will then contribute to the improvement of the innovation strategy.

Focus group – Selecting target groups

A central issue for legitimacy research is identifying who has collective authority over legitimation in any given setting (Deephouse & Suchman, 2008). This issue was also perceived during the focus group. One consultant mentioned that "*if we're talking about the legitimacy of a bank – that you have to show the environment that you are a bank – I would suggest that we have to target all stakeholders in every case."* However, the idea of legitimacy for an organization is to maintain access to valuable resources. These resources are provided by particular stakeholder groups and these are different for every organization. In the case of the bank, customers provide the organization with different resources than for instance a shareholder or a regulator.

Recommendations

After selecting the target groups, it is recommended to determine which resources each of these stakeholder groups provide to the organization. Some resources may be crucial for the organization and some may be less crucial. By having an overview of these crucial and less crucial resources an identification can be made of the appropriate target groups in each situation. The stakeholder groups that provide the most crucial resources can be targeted first.

Focus group – Participant profiles

The participating consultants had expertise on advising banks, especially on regulatory aspects. Everyone had some prior knowledge on blockchain technology and its possible consequences. However, their expertise broadly covered a similar domain which could have resulted in a narrower interpretation of the possible legitimation strategies and target groups.

Recommendations

Future research should include participants with different professional backgrounds to provide more perspectives on the case. For instance, by also including communication professionals, a more critical attitude can be provided on the selected legitimation strategies and the practical implications of implementing these strategies.

11.2.5 Limitation 5 – Data interpretation

From organizational consequences to communication challenges

The communication challenges were developed by selecting the appropriate legitimacy element for each organizational consequence and by providing the participants enough context for the challenges without unnecessary jargon. The problem is that there is little way of screening or testing for an investigator's ability to do a good case interpretation (Yin, 1994). Linking the consequences to the legitimacy element was based on the provided quotations and context during the interview sessions in Part II. However, the low number of interviewers raises the issue of having sufficient context. Moreover, some information may have been lost by turning the consequences into communication challenges.

Recommendations

Identify which underlying social norms and values are being challenged with each scenario. As discussed in section 5.3.2, this could be done by first developing concepts that explain blockchain technology from an institutional perspective. These concepts can be used as probes during the interview to address the implication on the social norms and values. It increases the validity and reliability of the interview process as the participants can be steered more precisely to the underlying institutional element causing the challenge.

Coding in NVivo

The best practices were identified by using the software NVivo. As this research project has a very big exploratory nature, these best practices are very much based on the interpretation of the researcher and are therefore difficult to validate. For instance, in some occasions, best practices were mentioned that showed a high level of abstraction and some were more practical. However, no distinction has been made while searching for these best practices.

Recommendations

The internal reliability and internal validity can be improved by having multiple people interpreting the data as a kind of triangulation. Having different perspective on the same data set could improve the identification of possible best practices and can increase the accuracy. Future projects can put more emphasis on the level of abstraction of each best practice to get a better perspective of its significance in multiple contexts.

11.3 Unexpected results

Best practices – Institutional contexts

Much legitimacy research has focused on the institutional contexts of the public sector and the healthcare sector – especially hospital environments. It could be the case that legitimacy plays a bigger role within these institutional contexts. In the public sector, legitimacy is seen as important since governments constantly try to find a balance between the values of state-controlled organizations and society. Successful legitimation is a result of transforming cultural values into observable actions (Abdullah & Abdul Aziz, 2013). Hospitals deal with human lives, and aligning with social norms and values is an critical factor for their survival (Sataøen & Wæraas, 2015).

At the moment of writing, the theoretical importance of legitimacy within the banking sector has not been given as much emphasis as the healthcare and public sector. The reason for this could be the varying crucial legitimacy elements for the organizations within in each context. Banks now may be considered to be primarily depended on the regulative element, but the appropriate way of how data is managed may change due to blockchain technology. The normative and pragmatic elements may be the new critical processes of legitimation for the organization in the future.

Communication challenges – The pragmatic element

In Part II, the pragmatic element is included in the normative element since both of these elements shared commonalities on the normative evaluation of the organization (Díez-de-Castro & Peris-Ortiz, 2018). Both are founded on the audience perception of a bank being honest and trustworthy, and whether certain activities are the right thing to do. However, the pragmatic view lays its foundations in the calculated self-interests of the organization's audiences, both on practical and more substantial levels (Suchman, 1995). It involves the evaluation of the organization's utility, or practical usefulness. For instance, customers may use a particular bank because they offer online banking services. This has no direct relationship with the normative element. For this reason, the normative and pragmatic element were considered separately.

Many interpretations of legitimacy

> *"When investigating the concept of legitimacy, with so many different perspectives, it is important to be able to clearly identify which type of legitimacy is being measured, at each moment and in each case" (Díez-de-Castro & Peris-Ortiz, 2018, p. 8).*

The existence of many different interpretations for legitimacy and the contributing elements for organizational legitimacy make it even more important to clearly define the concept of organizational legitimacy and each contributing element within the specific project. The effectiveness of each communication strategy really depends on the definition of the underlying legitimation process.

12

Conclusion

This chapter discusses the conclusions of the research project. First, in section 12.1, the answers are presented to each sub-question. Thereafter, the main research question is answered. Section 12.2 discusses the contributions of the research project. And finally, section 12.3 provides a reflection on the research project.

12.1 Conclusion

The SEC project involved a strategic perspective on organizational legitimacy. The strategic approach depicted legitimacy as an operational resource for organizations to affect the social norms and values. It emphasized the ways in which organizations instrumentally manipulate and deploy communication strategies in order to achieve legitimacy. The aim of this research project was to improve the innovation strategy of banks by using communication for managing the organizational legitimacy affected by blockchain technology. This was done by identifying the role of communication for organizational legitimacy, identifying the best practices for managing this legitimacy, and identifying legitimation strategies and target groups from the organizational consequences which have been identified in Part II. Together, the best practices, legitimation strategies, and target groups have been combined to develop a strategic approach for managing the organizational legitimacy of banks in an institutional environment affected by blockchain technology. The objectives have been achieved by means of a case study, a systematic literature review, and a qualitative approach. In order for the main research question to be answered, a set of sub-questions has been answered first.

12.1.1 Answer SQ1 – Best practices

Which best practices are relevant for managing organizational legitimacy for banks from a communication perspective?

a. What are the success factors, and the relations between the factors, for managing organizational legitimacy for banks?
b. Which communication tools can be identified for the purpose of managing organizational legitimacy?

The relevant best practices for managing organizational legitimacy for banks from a communication perspective have been identified by means of a systematic literature review. The systematic review produced a list of communication drivers and barriers that combined form the best practices for managing organizational legitimacy. Depending on the legitimation process – pragmatic, normative, regulative, or cognitive – the bank should include or avoid different elements to gain or maintain legitimacy. Banks should communicate about values, engage in CSR activities, and include narratives in their communication strategies to strategically affect the legitimation process. Moreover, dialogue without the alignment of values of the wider institutional environment can result in a negative legitimation process for the bank.

12.1.2 Answer SQ2 – Communication challenges

Which relevant communication challenges for banks can be identified from the organizational consequences of banks affected by blockchain technology?

This question has been answered by means of a case analysis. The communication challenges that have been developed involve four domains.

The technology domain involves a pragmatic process of legitimation. From a pragmatic perspective, banks are seen as appropriate if they conform to the institutional environment and shift from current practice to blockchain-based solutions. Distributed data ownership changes the way in how the bank should manage data. A role shift for the bank is seen as the new norm. The increase in competition results in different strategies for the bank to adopt. With the rise of distributed organizations, banks ought to include customers into their business processes. And finally, a higher path dependency requires banks to show their limited possible choices for innovation.

The regulatory domain involves a regulative process of legitimation. From a regulative perspective, banks are seen as appropriate if they conform to the institutional environment and shift from their current legal compliance to

regulations including blockchain aspects. Moreover, banks are legally constraint due to certain regulatory obligations. In a way, signaling this to the environment also shows their legal compliance.

The moral domain involves a normative process of legitimation. From a normative perspective, banks are seen as appropriate if they conform to the institutional environment and shift from their current legal compliance to regulations including blockchain aspects Moreover, banks are legally constraint due to certain regulatory obligations. In both cases, showing legal compliance is also a way of being moral and trustworthy. Distributed data ownership changes the way in how the bank should manage data. For instance, customers may perceive it as fairer if they have more control in how their data is managed. A role shift for the bank is seen as the new norm as the current organization will not be seen as moral. The increase in competition results in different strategies for the bank to adopt. With the rise of distributed organizations, banks ought to include customers into their business processes. And finally, institutional differentiation is a way for banks to take a different strategic focus and follow their own mission and strategy.

The cultural domain involves a cognitive process of legitimation. From a cognitive perspective, banks are seen as appropriate if they conform to the institutional environment. Distributed data ownership changes the way in how the bank should manage data. For instance, it can be perceived as taken for granted that customers are more in control of their own identity. A role shift for the bank will occur. Banks will have a lower institutionalization power – i.e. less power to set norms and standards within the institutional environment. With the rise of distributed organizations, banks want to trust their customers if they will be participating in sustaining business processes. And finally, institutional differentiation is a way for banks to take a different strategic focus and follow their own mission and strategy.

Within each domain, different generic legitimation strategies have been provided that formed a starting point for the selection of the appropriate strategy to tackle each challenge.

12.1.3 Answer SQ3 – Legitimation strategies and target groups

Which target groups and legitimation strategies can be identified by confronting the communication challenges within a focus group setting?

a. Which legitimation strategies can be applied?
b. What are the most relevant target groups and implications?

Confronting consultants involved in financial advisory services with the communication challenges has resulted in numerous legitimation strategies and target groups for the bank. For each process of legitimation, the most significant strategies have been mentioned.

Regulative legitimation strategies and target groups

For managing the regulative element of legitimacy, it is clear that banks should signal towards the regulatory bodies and their customers that their innovative practices operate in accord with relevant laws and regulations. On places where banks are legally constraint – limiting their innovative potential – the bank should develop legitimacy by organizing collective lobbying efforts also towards the regulatory bodies and their customers.

Normative legitimation strategies and target groups

For normative processes of legitimation, it is argued that it is better for the bank to get expertise from outside by hiring a marketing firm. Providing that, banks should produce proper outcomes to their customers, meaning that the results of addressing the challenges should be communicated towards the customers. Demonstrating the innovation is one way of doing this.

Pragmatic legitimation strategies and target groups
Banks are perceived as practically useful primarily by responding to the needs of their audiences. Depending on the challenge that is being addressed, banks can target the internal or external stakeholders. Furthermore, banks should engage in reputation building towards customers, the higher management board, and regulators.

Cognitive legitimation strategies and target groups
Banks tackle the cognitive communication challenges by taking the first mover advantage and establish new standards and models. Banks that do not have this advantage better mimic the standards of those already existing. Promoting new standards and models towards customers and society is a way for bank to change 'the rules of the game'.

The regulative and cognitive legitimation process limit the bank's behavior – as constraints – and the normative and pragmatic legitimation process create opportunities for expanding the institutional playing field for the bank – as liberties. Along this line, the identified target groups and legitimation strategies are implemented in the innovation strategy framework in Part IV.

12.1.4 Answer SQ4 – Strategic approach

How can the identified best practices and results of the focus group session contribute to the development of a strategic approach for managing organizational legitimacy?

a. Which legitimation strategies and corresponding target groups are most relevant?
b. Which identified best practices are most relevant?
c. How can the best practices be linked to the target groups and legitimation strategies?

The identified best practices and results of the focus group session contributed to the development of a strategic approach for managing organizational legitimacy by integrating the results into the initial framework for engaging in strategic processes of legitimation. This approach describes the way in which banks can select the appropriate best practices, legitimation strategies, and target groups to engage in processes of legitimation to affect the social norms and values that are affected by blockchain technology. For strategically affecting the social norms and values, banks have to select normative and pragmatic processes of legitimation. The consequences corresponding to these legitimacy elements enable the bank to expand the institutional field, creating liberties on the bank's appropriate behavior. For this, the appropriate target groups have to be selected. These target groups have been identified during the focus group session and these stakeholders have the most influence on the legitimation process for the bank associated with the specific challenge that has to be addressed.

Depending on the bank's own mission, resources, and capabilities it should select the most appropriate information that is being communicated. However, it is important that banks communicate about values, engage in CSR activities, and include narratives in their communication strategies to strategically affect the legitimation process. Dialogue without the alignment of values of the wider institutional environment could result in a negative legitimation process for the bank. The complete framework is provided in Part IV and shows the overall identified dynamics of how blockchain technology affects the institutional environment of banks and their legitimacy.

12.1.5 Answer main RQ and key insights

The main research questions states:

How can the effects of communication on organizational legitimacy contribute to the improvement of the innovation strategy of banks in an institutional environment affected by blockchain technology?

This research question has been answered by means of a case study, a systematic literature review, and a qualitative approach. The effects of communication on the organizational legitimacy of banks in an institutional environment affected by blockchain technology are depicted in Figure 34.

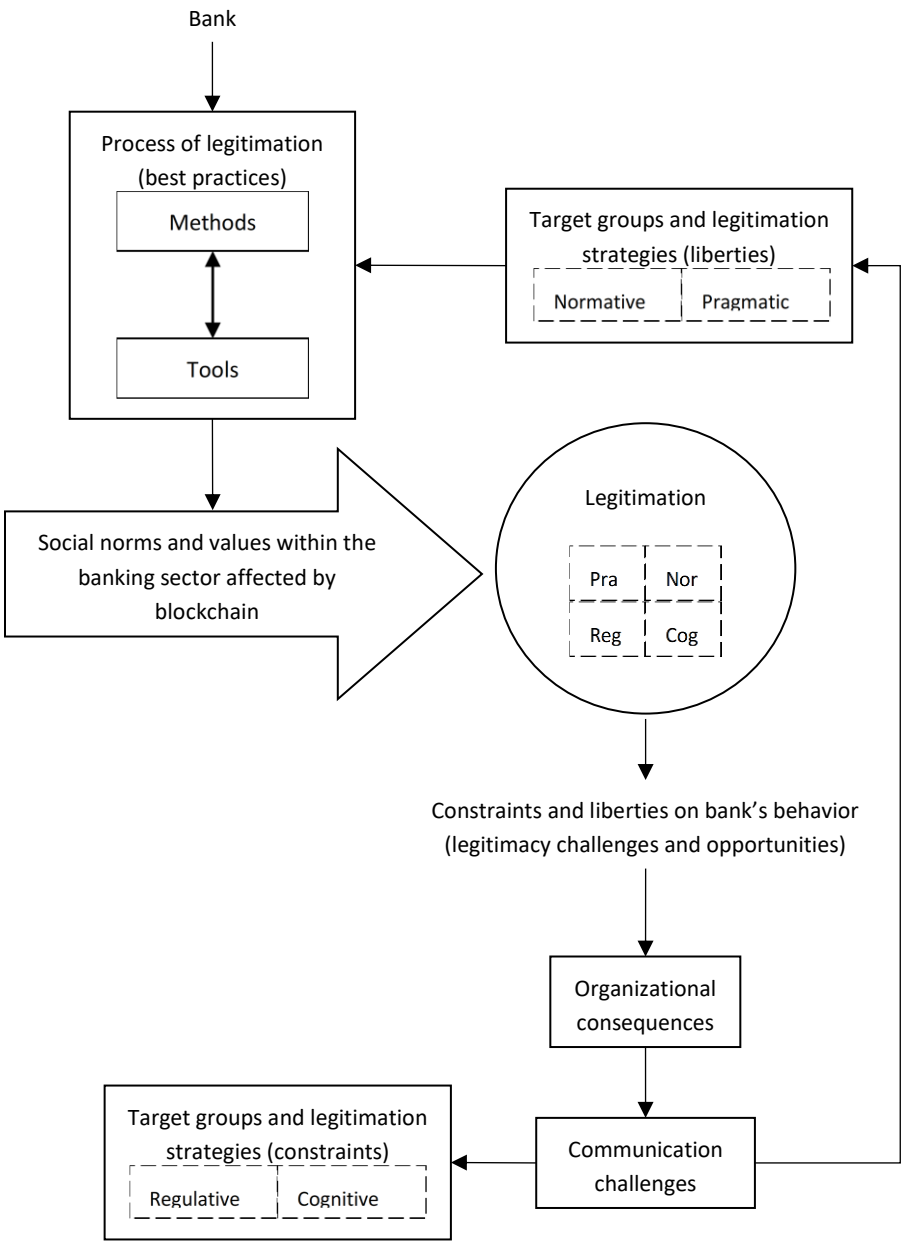


Figure 34: Initial framework – The effects of communication on the organizational legitimacy of banks in an institutional environment affected by blockchain technology

This initial framework shows the dynamics of the legitimation process for banks when the institutional environment is affected by blockchain technology, and how the bank can use communication to manage these changes. It is a way banks to react to the new institutional rules – which are the communication challenges – that blockchain technology introduces. Bank should conform to these rules or strategically respond by engaging in processes of legitimation. Part II primarily focused on the bank's conformity to the new institutional environment and this project, Part III, aimed to identify the methods and tools in which communication contributes to the blockchain innovation process for banks. It involved the development of a strategic process in which different best practices and legitimation strategies are selected to enable banks, to not only conform to the new institutional rules, but also to expand the institutional playing field. In consequence, supporting banks to differentiate while at the same time being legitimate. In Part IV, this framework is integrated into the final innovation strategy framework.

12.2 Contributions of the research

This section describes the contributions of the research. First, the contributions to the practice of Science Communication are discussed. Thereafter, the gained insights are provided which can have scientific relevance. The final section provides a reflection on the research project and a concluding remark.

12.2.1 Contributions to the practice of Science Communication

This research project could have contributions for the practice of Science Communication (SC) in several ways. As mentioned, the domain of SC contributes to the quality of new and emerging technologies by attuning to societal demands. It considers the design and optimization of strategic communication processes within and between organizations and society.

The role of the knowledge broker

One of the most challenging – and also most rewarding – aspects of this research project was to translate the theoretical findings into practical terms. Organizational legitimacy is a term that is not commonly used in professional environments and therefore, defining this concept and understanding the underlying dynamics are of utterly importance. In this project, the definition of organizational legitimacy was based on earlier work:

> Organizational legitimacy is the perception of the bank's audiences that the actions of the bank are seen as appropriate along the social norms and values of its industry segment.

Explaining a banking expert that "the institutional elements of blockchain may affect the social norms and values of its larger environment and legitimacy is granted to the bank by conforming to these changed social norms and values" does not generate the desired results. The best results were produced by making these issues as clear as possible. Translating jargon into understandable terms and using examples to explain the dynamics of the legitimation process were the most effective methods for discussing this material. A takeaway for knowledge brokers that would like to understand the consequences of institutional pressures on a particular organization is to use examples that fit into the perspective of the members of the organization. To illustrate, in the banking sector, an example for that has been used for pragmatic legitimation processes was that, nowadays, customers expect banks to have an app for their online banking services. This has been made possible by the introduction of the internet and smartphones. Banks that do not provide this service are seen as irrelevant for many customers. In the same manner, the novelties of blockchain technology may add new features to the new expected norm on which the bank can anticipate.

Expectation management for communication professionals

With blockchain technology having both social and economic implications, the interaction between innovators and society is important for meaningful innovation. In the practice of Science Communication, the advantages of social interaction during innovation processes are already acknowledged (Leeuwis & Aarts, 2011). The outcome of this project enables the bank to manage the expectations the organization's stakeholders. Science communicators may gain insight in the ways to create value alignment between parties by adopting the strategic approach that is depicted in the framework. Responsible innovation could be enabled by having a clear idea on the expected norms for organizational behavior and the legitimation strategies enable the ability for meaningful conversations between the organization and its stakeholders.

Dutch Blockchain Coalition

The strategic approach to manage the bank's organizational legitimacy – when the institutional environment is affected by blockchain technology – may provide insights for the Science Communication (SC) section and their involvement in the Dutch Blockchain Coalition. The different organizations involved in the coalition can recognize the importance of communication and stakeholder interactions during processes of innovation. Additionally, the framework also acknowledges the importance of including the values of the wider environment before engaging in

processes of legitimation. Comparable this project's context, the coalition itself can be perceived as a tiny institutional environment in which blockchain technology is affecting the expectations of the different parties. The communication professionals should use the different legitimation strategies from this project to improve the value alignment between the participants which could improve the collaborations within the coalition.

12.2.2 Scientific contribution

This section describes the gained insights which have scientific relevance. It will discuss the new insights that have been identified and contribute to the further development of communication for legitimacy theory.

The SEC project involved a strategic perspective on organizational legitimacy. The strategic approach depicted legitimacy as an operational resource being purposive, calculated, and frequently oppositional. It emphasized the ways in which organizations instrumentally manipulate and deploy – mainly through communication with its stakeholders – evocative symbols in order to achieve legitimacy (Suchman, 1995). The strategic perspective provided an outward look and has a more actionable approach on how the organization can manage legitimacy. It contributed to the understanding in which banks could manage or alter the effects of blockchain technology on the organizational legitimacy. Some insights that have been gained during the project are discussed below.

1) The identification of the communication tools and methods for managing legitimacy, and current practices concerning communication for organizational legitimacy show great variety in levels of abstraction. Researchers looking into this matter may recognize the need for a better overview of these best practices for managing legitimacy.
2) The research design can contribute to projects which need to translate theoretical success factors into practical communication strategies for financial organizations. Moreover, the systematic literature review can contribute to research projects which need to identify best practices concerning communication for organizational legitimacy and organizational communication strategies.
3) The developed strategic approach shows that legitimacy theory can be used for managing innovation processes for banks. Legitimacy theory mainly describes how organizations show appropriate behaviour by aligning with stakeholder's expectations – i.e. institutional isomorphism. This project aimed to identify methods in which an organization can engage in strategic processes of legitimation to increase organizational performance. It shows how to translate high-level expectations into actionable processes of legitimation.
4) In literature, scholars either adopt a strategic perspective or institutional perspective on organizational legitimacy. Solely focussing on strategic processes legitimation may not be enough for gaining legitimacy. "A too simplistic mirroring, recitation or translation of social expectations in the dominant code easily leads to mere symbolic communication. A too intensive claiming of legitimacy is easily seen as very idealized and increases distrust, especially if today's recipients of corporate communication know the informal corporate motives and do not really expect corporate altruism." (Schultz & Wehmeier, 2010, p. 20). This research project combined both perspectives. Researchers could first adopt an institutional perspective to gain a better understanding of the legitimation processes within the institutional environment and thereafter, use a strategic perspective to manage their processes of legitimation.

12.3 Reflection

Focus on organizational legitimacy or reputation

It remains a challenge to assess the effectiveness of engaging in communicative processes of legitimation. However, this should not take away the importance of focusing on organizational legitimacy. Perhaps, many communication professionals and innovation managers rather focus on reputation building instead of legitimacy, since the outcome of reputation building is way more visible then 'only' showing appropriate behavior to the environment. It may be true that organizations with a high reputation have a better competitive advantage in the existing institutional environment. However, innovation processes can change the institutional environment in such a way that even

companies with a high reputation can become bankrupt. The major difference of focusing on managing legitimacy instead of reputation building for an organization is the starting point. Whereas reputation mainly focusses on the traits of the organization – and how it can distinguish itself from other organizations – legitimacy focusses on the social norms and values of the wider environment. Legitimacy is therefore valuable when innovations change the rules and procedures in the institutional environment that organizations must adopt to remain relevant and necessary. A high reputation for behavior that is seen as unnecessary does not contribute to the organization's survival. To illustrate, one of the reasons the clothing store V&D went bankrupt was because they were too late with recognizing the value of selling clothes online. Being good at selling clothes in physical stores does not matter when the new norm is to buy clothes online.

Interpretation of legitimacy literature

Institutional theory, especially legitimacy theory primarily focusses on social structures which can be rather abstract. It has been argued that communication is a crucial aspect for managing legitimacy. Legitimacy can only be granted if the organization is showing appropriate behavior towards its stakeholders. The importance of legitimacy for an organization is argued to be crucial for its performance and literature suggests that without it, the organization cannot exist. However, the actual practical challenges of legitimacy theory and how it can contribute to the increased performance of an organization is rather vague. What literature fails to point out is how the theoretical aspects translate back to practical terms: In which case is the legitimacy of an organization questioned? And how difficult is it to recover from it? Probably, the most valuable aspect of managing legitimacy is to gain an understanding of the social norms and values of the wider institutional environment. Organizations will understand what is required of them on levels varying from pragmatic to cognitive evaluations. When the varying needs of the wider social system are clear, organizations can easily interact, collaborate, and serve the audiences without losing its necessity. It is expectation management for the bank's innovation processes.

12.4 Concluding remark

In general, it is argued that the best way for organizations to gain legitimacy is by conforming to the environment. However, during processes of innovation, the institutional environment is dynamic, and thus conformity can be a challenge for the organization. Blockchain will in some way affect the institutional environment of the bank and communication professionals may use this as an opportunity to engage in processes of legitimation. By understanding the legitimation process of the organization, banks can expand the space of appropriate behavior.

Communication professionals of banks may perceive the legitimacy for the organization as taken-for-granted and do not see any reason for engaging in legitimating processes. However, when legitimacy is questioned, and environmental demands are changed, any legitimating attempts will be seen more skeptically and external and internal public opinion sometimes re-translate the corporate communications opportunistically (Schultz & Wehmeier, 2010). With the potential disruptive impact of blockchain technology in the financial services industry, communication professionals will have a harder time in the re-establishment of the bank's appropriate behavior if no proactive actions are taken to manage the organization's legitimacy. Adopting a strategic approach is beneficial for communication departments of banks to provide insight in ways to position themselves towards potential and existing customers.

Part IV

Integrating the Two Perspectives

13

Constructing an Innovation Strategy Framework

13.1 Final frameworks

This section describes the final frameworks developed in Part II and Part III of the research project. The framework of Part II describes the effects of blockchain technology on the bank's institutional environment and how this in turn affects the legitimation process for the organization. The framework of Part III describes the effects of communication on the organizational legitimacy of banks in an institutional environment affected by blockchain technology.

13.1.1 Contribution of MOT – Institutional perspective

Final sub-question MOT:

SQ4 How can the identified organizational consequences contribute to the development of a framework supporting banks to improve the innovation strategy?

In Figure 35, the framework is depicted which has been developed in Part II. It shows the institutional effects which blockchain technology induces on the social norms and values within the banking sector through normative (and in this part also including pragmatic) processes of legitimation. The effects on the normative legitimation process – i.e. the legitimacy challenges – directly affect the organizational legitimacy of banks which act as a constraint on the bank's organizational behavior. These constraints are moral obligations who act as drivers for organizational change enforced by the larger socially constructed system and bring various consequences for the bank. The response of the bank to these constraints should be economically viable, legal, and legitimate. Together, these three factors should form the focus of the bank's activities that make the organization's actions appropriate along the social norms and values of its wider industry segment.

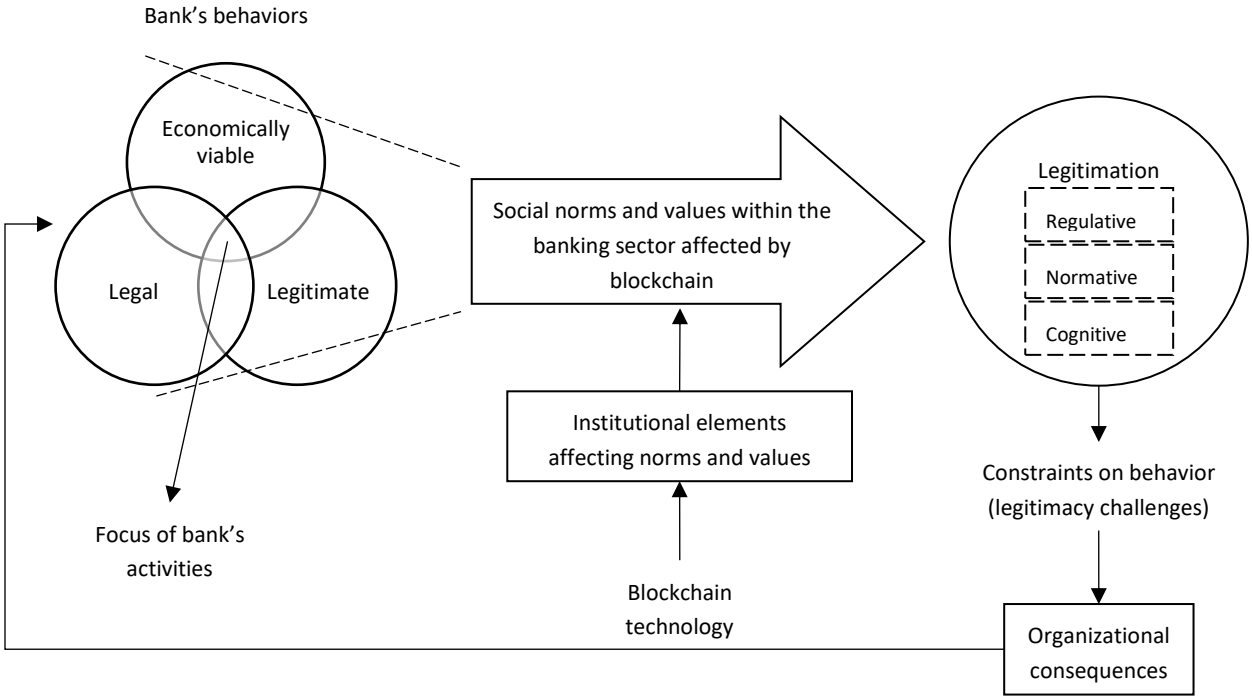


Figure 35: Developed framework Part II – Focus of bank's activities resulting from the organizational consequences induced by blockchain technology

However, other than conforming, banks can also strategically respond to the effects on the institutional environment by using communication. It is a way for banks to influence the institutional environment and expand the field of appropriate behavior for the organization.

13.1.2 Contribution of SEC – Strategic perspective

Main RQ SEC:

How can the effects of communication on organizational legitimacy contribute to the improvement of the innovation strategy of banks in an institutional environment affected by blockchain technology?

In Figure 36, the framework is depicted which has been developed in Part III. It shows the dynamics of the legitimation process for banks when the institutional environment is affected by blockchain technology, and how the bank can use communication to manage these changes. It is a way banks to react to the new institutional rules that blockchain technology can introduce. Banks using the strategic approach can identify the appropriate target groups and legitimation strategies to deal with the organizational consequences induced by blockchain technology. Together with the best practices, banks are enabled to engage in processes of legitimation to expand the institutional playing field: differentiate while being legitimate. The next section combines both frameworks into one innovation strategy framework.

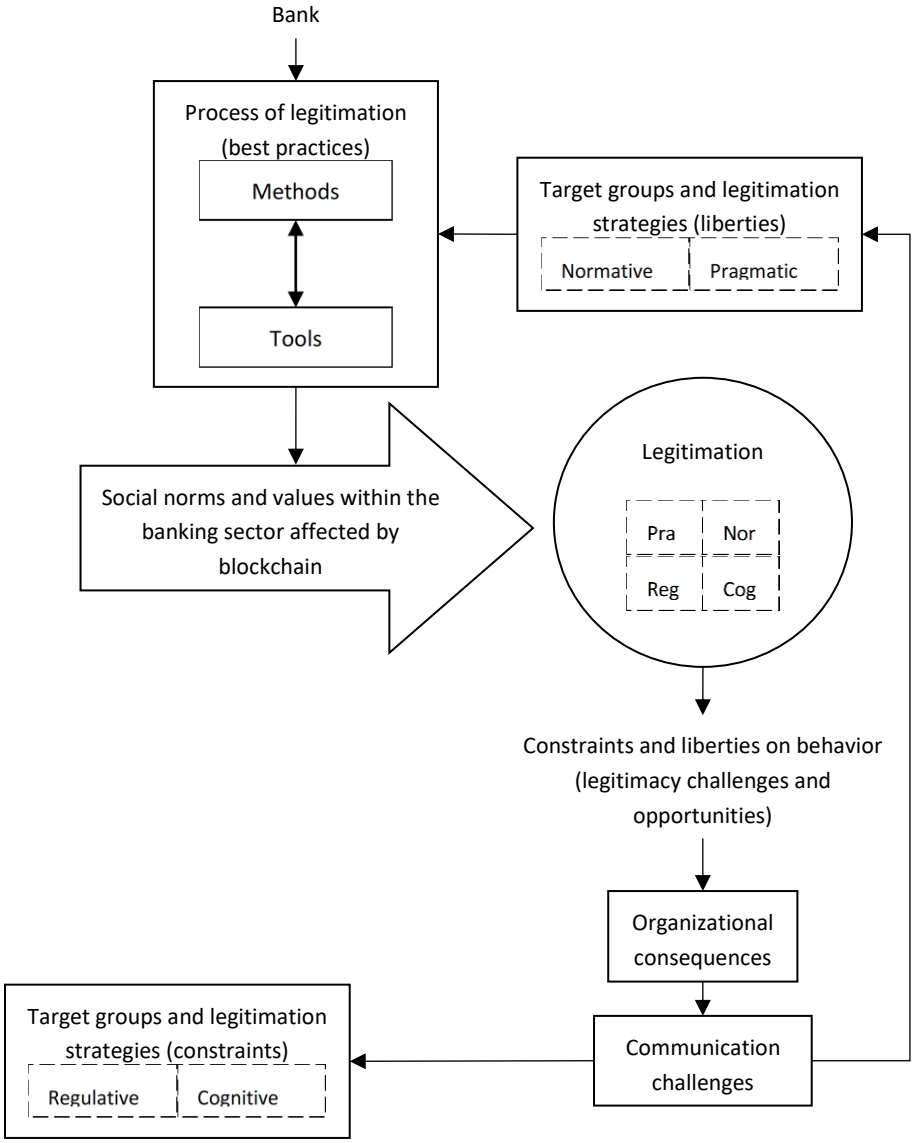


Figure 36: Developed framework Part III – The effects of communication on the organizational legitimacy of banks in an institutional environment affected by blockchain technology

13.2 The bigger picture – Innovation Strategy Framework

The institutional and strategic perspective on organizational legitimacy both contributed to the development of the final innovation strategy framework (Figure 37). The institutional perspective enabled an inward look into the socially constructed environment and was shown to be suitable for analyzing the effects of blockchain technology on the legitimacy of the bank. The strategic perspective provided an outward look and has a more actionable approach on how the organization can manage the effects of blockchain on the legitimacy of the bank. This through communication with the bank's stakeholders.

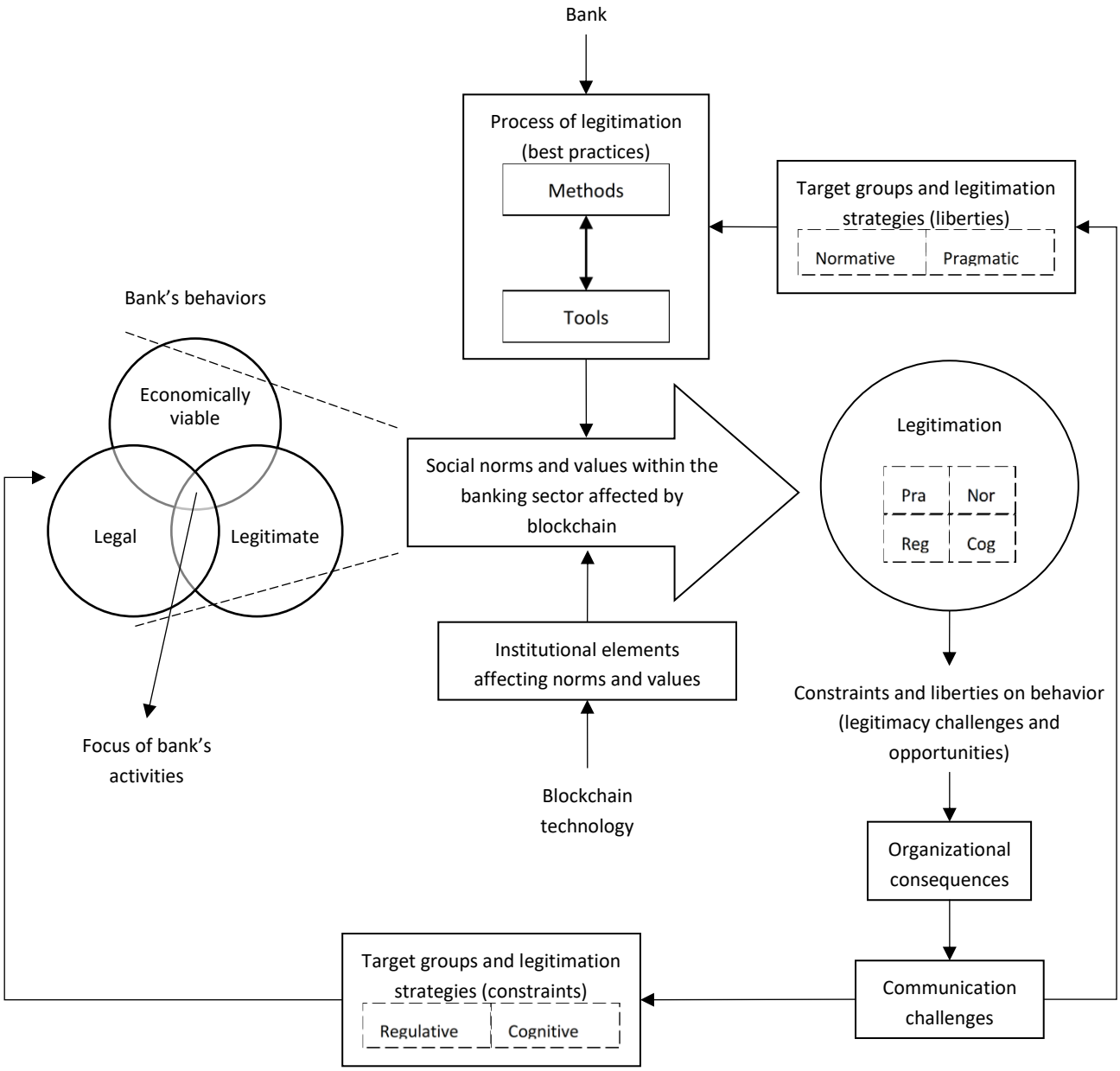


Figure 37: Innovation strategy framework for banks in an institutional environment affected by blockchain technology

The framework enables the improvement of the innovation strategy for banks dealing with blockchain technology. The project has analyzed many elements within this framework resulting in different overviews. The research project has generated an overview of:

- The design principles of blockchain technology;
- An institutional perspective of blockchain technology;
- Organizational legitimacy – definitions and dynamics;
- Normative legitimacy challenges – how blockchain technology affects the social norms and values within the banking sector as DAOs through normative processes of legitimation;
- Organizational consequences – the effects on the bank due to the changes in the legitimation process;
- Communication challenges – the process of legitimation that needs to be adopted to deal with each organizational consequence;
- The appropriate target groups and legitimation strategies for each organizational consequence;
- Best practices for managing organizational legitimacy from a communication perspective

From these overviews, managers gain insight in the consequences of blockchain technology on the organizational legitimacy of the bank and select the appropriate organizational responses to these effects – conform or react. The following section provides an example legitimation strategy resulting from this framework by implementing the key findings of the research project.

13.2.1 Legitimation process and expectation management for institutional isomorphism

Figure 38 shows the legitimation process for banks dealing with the organizational consequence of institutional isomorphism induced by blockchain technology. This section explains this particular effect of blockchain technology on the legitimacy of the bank and the appropriate responses the organization could adopt.

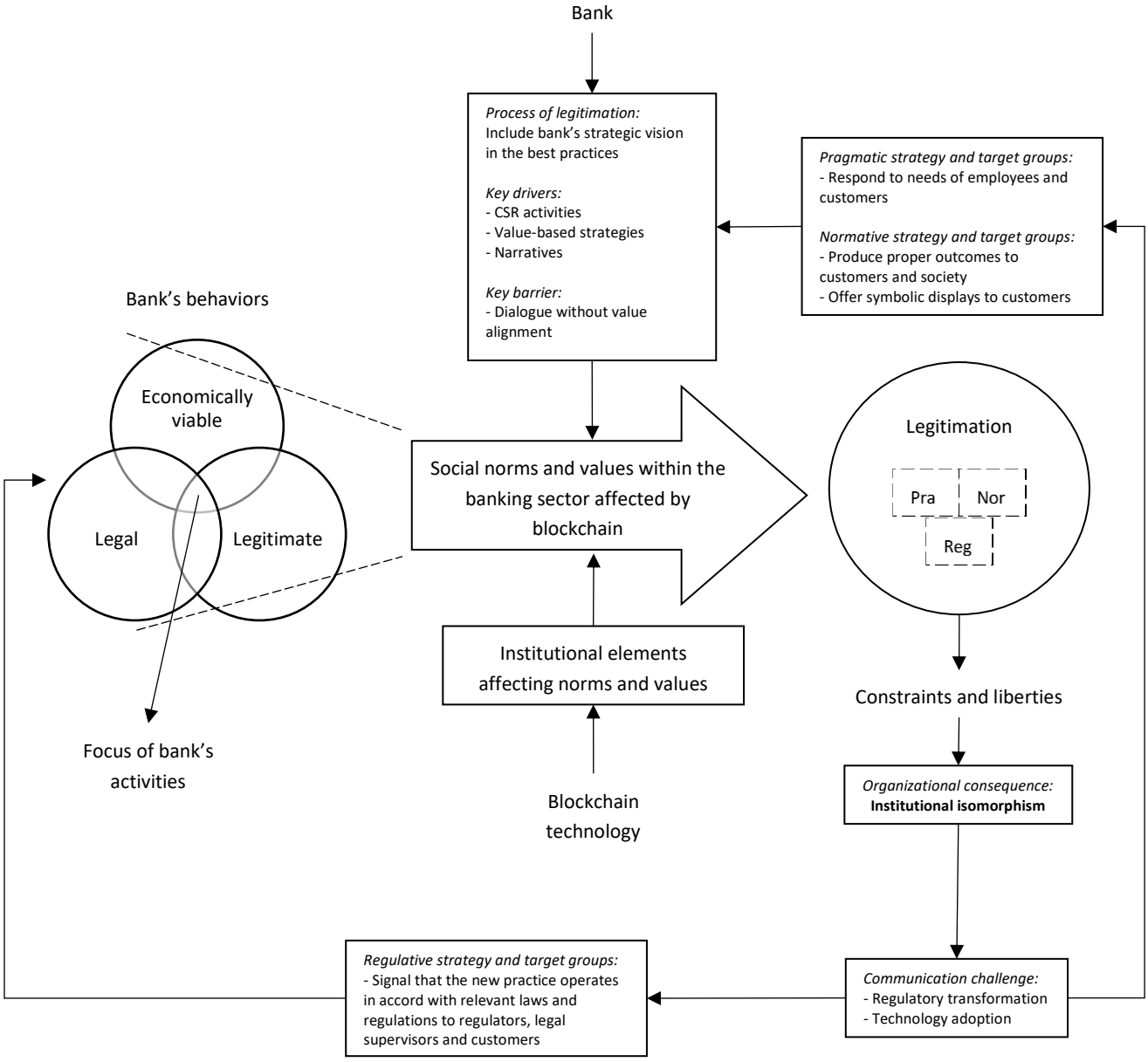


Figure 38: How banks can deal with the organizational consequence of institutional isomorphism induced by blockchain technology

Based on the institutional perspective on blockchain's design principles, seven normative legitimacy challenges have been developed – the normative element was shown to be the most dynamic, and thus most significant element that can affect the organizational legitimacy of banks. These legitimacy challenges show how the design principles of this technology affect the social norms and values within the banking sector by viewing blockchain as a DAO (Figure 39). Due to these changes in the institutional environment, members of the bank feel they ought to change their behavior.

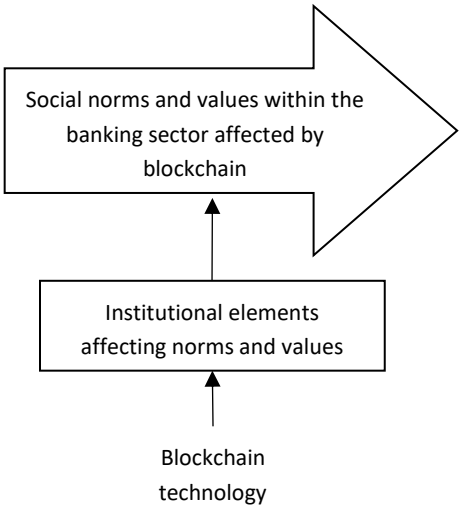


Figure 39: Effect of blockchain on the social norms and values

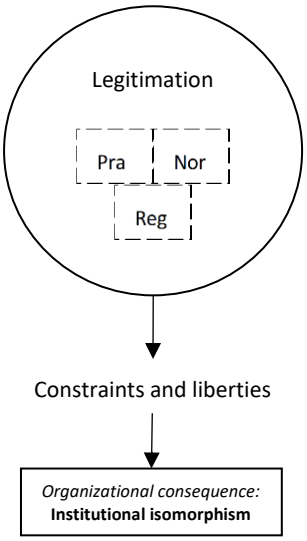


Figure 40: Institutional isomorphism as major organizational consequence

The major consequence that occurred due to the change in the legitimation process for the organization involved institutional isomorphism (Figure 40). Institutional isomorphism is the similarity of processes and structures between organizations and occurred as a key consequence as a result from every legitimacy challenge. Meaning that each design principle of blockchain contributes to this organizational consequence. Within this project, institutional isomorphism has two components: blockchain pressurizes banks to shift (1) from current banking practices to blockchain-based solutions and (2) from current regulation to regulations including blockchain aspects. The outcome of this legitimation process for the bank relating to institutional isomorphism can either be a constraint or a liberty on the organization's behavior. It depends on process of legitimation the bank adopts to respond to this outcome – regulative and cognitive legitimacy as constraint; pragmatic and normative legitimacy as liberty.

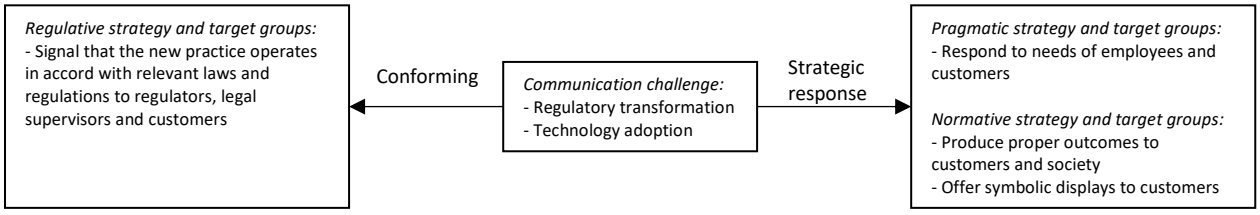


Figure 41: Conforming or strategically responding to the communication challenge

The translation of the two components of institutional isomorphism into the communication challenges: (1) technology adoption and (2) regulatory transformation showed that banks can engage in pragmatic processes of legitimation for the first challenge, and regulative and normative processes of legitimation for the second challenge. In other words, the appropriate actions for the bank in response to the consequence of institutional isomorphism both involve conformity and strategic actions (Figure 41).

13.2.1.1 Conforming to regulatory transformation – Organizational constraint

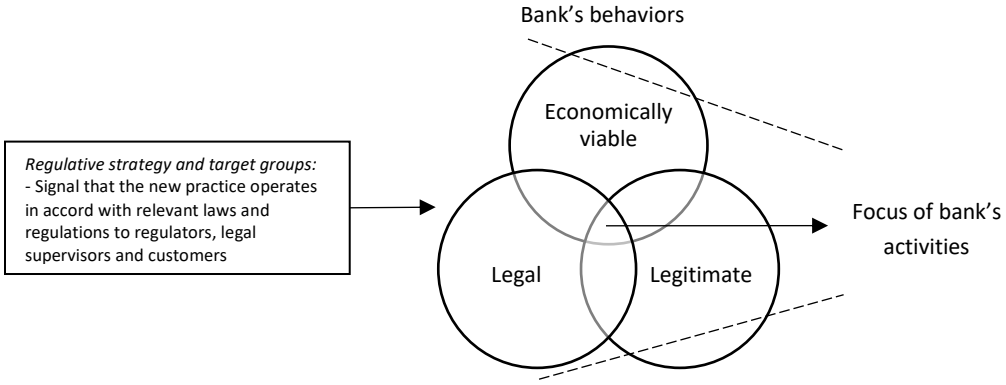


Figure 42: Conforming to regulatory transformation

Conforming to the communication challenge of regulatory transformation means that banks must adopt the identified regulative legitimation strategies to avoid illegitimacy. It is therefore a constraint on the organization's behavior:

Regulative legitimation: Banks must signal that new adopted regulatory aspects that include blockchain aspects operate in accord with relevant laws and regulations to regulators, legal supervisors and customers

The bank should do this in a way that is economically viable, legal, and legitimate for the organization. In other words, managers should ensure that the organization has the resources and capabilities to signal this to the stakeholders. Also, the signaling process itself should conform with what is legally allowed. Moreover, the signaling process of the bank should be perceived as appropriate for that particular entity – how do other banks should their compliance?

13.2.1.2 Strategic actions towards regulatory transformation and technology adoption – Organizational liberties

Strategic actions for the communication challenges of regulatory transformation and technology adoption create legitimacy opportunities for the banks. The bank could adopt these pragmatic and normative legitimation strategies to engage in processes of legitimation (Figure 43). It thus acts as a liberty on the bank's behavior:

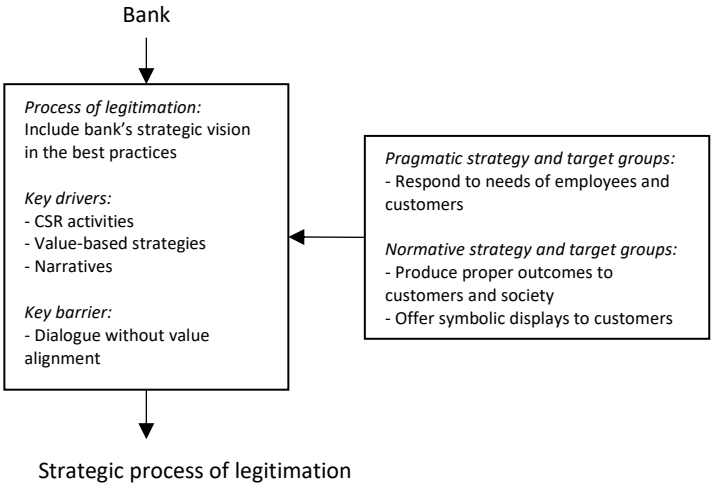


Figure 43: Strategic actions toward regulatory transformation and technology adoption

Technology adoption

Pragmatic legitimation: (1) Banks should respond to the needs of employees and customers when they shift from current banking practices to blockchain-based solutions – meet substantive needs and demonstrate results

The employees judge the bank on the adoption of blockchain and decide whether they want to work for the bank or not. Customers have certain technological preferences and the bank could target these customers by showing that it is conforming to the new expectations.

Regulatory transformation

Normative legitimation: (2) Banks should produce proper outcomes to customers and society when shifting from current regulations to regulations including blockchain aspects

(3) Banks should offer symbolic displays to customers when shifting from current regulations to regulations including blockchain aspects

Developing and implementing these strategies could be done internally or by hiring a marketing firm. Providing that, banks should produce proper outcomes to their customers, meaning that the results of the shift towards the regulations including blockchain aspects should be communicated towards the customers or society as a whole. Offering symbolic displays to customers or society as a whole by showing the bank's outputs, procedures, and structures affected by the new blockchain regulations can show conformity to moral norms.

These three strategies show how banks could signal their appropriate behavior towards the institutional environment. However, it does not include the way in which the bank expands the institutional playing field yet. This is where the best practices and the organization itself come in. Overall, the key drivers that have been identified for organizational processes of legitimation are to engage in CSR activities, use value-based strategies, and to use narratives. Other best practices can always be included if they fit the context of the legitimation process.

Before adopting the best practices, banks should review their resources, capabilities, and vision before developing the appropriate strategy. In this way, the bank pursues the organization's objectives in a legitimate manner without being merely constraint by the institutional environment.

Final strategic process of legitimation – Technology adoption

(1) Banks should respond to the needs of employees and customers when they shift from current banking practices to blockchain-based solutions – meet substantive needs and demonstrate results

Banks can determine these needs by looking at the novelties of blockchain and engaging in dialogue with the employees and customers. Furthermore, banks that for example focus on sustainability (e.g. Triodos Bank) can include this while shifting from current banking practices to blockchain-based solutions. To illustrate, the bitcoin verification protocol, proof of work, is known for its high energy demand and damaging environmental impact. The bank can introduce an innovative CSR scheme such as the provision of research proposals that aims to improve this verification process and reduce its environmental impact. In this way, the bank can respond to the needs of the customers and employees by introducing blockchain-based solutions while at the same time focusing on their own mission.

Final strategic process of legitimation – Regulatory transformation

(2) Banks should produce proper outcomes to customers and society when shifting from current regulations to regulations including blockchain aspects.

Banks produce proper outcomes by using standard-setting initiatives (industry-initiated codes, guidelines, labels, certificates) when shifting from current regulations to regulations including blockchain aspects. These new initiatives could be included in the already developed institutionalized structures and practices that the bank uses to justify their legal compliance towards society. In cases of larger banks, other banks could also be targeted since the midsized banks generally outsource the regulatory transformation processes for compliance.

(3) Banks should offer symbolic displays to customers when shifting from current regulations to regulations including blockchain aspects

Banks offer symbolic displays by using metaphors and narratives to justify organizational change. When shifting from current regulations to regulations including blockchain aspects, banks communicate economic rationales. For

instance, when using these narratives and metaphors, the bank shows their increased transparency and contribution to financial inclusion – which are enabled by blockchain – due to the shift in regulation. This aligns with the bank's personal vision to making banking clear and easy for customers (e.g. ING).

Banks should avoid misalignment with the social norms and values as it lowers the legitimacy of the organization Moreover, banks increase their flexibility to change in response to environmental demands by being proactive and anticipating stakeholder demands and environmental developments that cause the organization's legitimacy to be questioned. In other words, the social norms and values should be assessed continuously, and if needed, adjust the final legitimation strategies to ensure their effectiveness.

13.3 Generalizability of the framework

This section discusses the generalizability of the overall framework and the potential applications out of the scope of this research project. First and foremost, it must be mentioned that this research project is highly explorative. Many assumptions have been made to make the research project feasible within the possible timeframe. It is advised to first read the discussion sections of both research projects before adopting this framework into other research projects. Having said that, various results that have been collected can be applied within other domains, and the selected case within this research project – blockchain technology and banking – could presumably be substituted with other cases as well if they work along similar assumptions and arguments. As mentioned in the previous section, the research project has generated an overview of:

- The design principles of blockchain technology;
- An institutional perspective of blockchain technology;
- Organizational legitimacy – definitions and dynamics;
- Normative legitimacy challenges – how blockchain technology affects the social norms and values within the banking sector as DAOs through normative processes of legitimation;
- Organizational consequences – the effects on the bank due to the changes in the legitimation process;
- Communication challenges – the process of legitimation that needs to be adopted to deal with each organizational consequence;
- The appropriate target groups and legitimation strategies for each organizational consequence;
- Best practices for managing organizational legitimacy from a communication perspective

These overviews and analyses all contributed to the development of the final framework and possibly some of these results can be applied on other domains as well.

13.3.1 Generalizability for institutional technologies

The first factor that is discussed is that of the selected innovation: blockchain technology. Within this research project, blockchain has first been explained along the seven design principles of Tapscott & Tapscott (2016). These principles have been complemented with other research – primarily those indicating the consequences of blockchain technology on financial services. Next, an institutional perspective on blockchain analyzed how this technology could affect social and economic systems and competes alongside with organizations. In short, within this innovation strategy framework, blockchain technology has been analyzed from a technical and institutional perspective.

Now how would this apply for other innovation processes? The framework is suitable for other technologies or innovations with potential disruptive social and economic implications. Institutional change is enforced when technologies not only contribute to efficiency gains but also change the social dynamics within the existing system. For instance, historical researchers could look into the effects of the internet on the social norms and values within the banking sector and how this changed the legitimation process over time. Moreover, researchers with a more future perspective could focus on the effects of artificial intelligence (AI) on the social norms and values within the banking sector and determine the future expectations for the bank regarding this technology.

13.3.2 Generalizability for institutional environments

Now, another case element that has been analyzed within this project is the institutional environment of banks. The dynamics and evaluation criteria for organizational legitimacy have been developed for the social norms and values within the banking sector and in result, the normative legitimacy element has been determined to be most dynamic element that is susceptible to change due to environmental pressures. Moreover, the banking sector is argued to be highly institutionalized and unprepared for disruptive changes, mainly due to cognitive and regulative processes of legitimation.

This application of this innovation strategy framework may show value in institutional environments which have similar process of legitimation. Applying this framework may generate valuable insights for other types of financial services. For instance, the insurance sector – in which blockchain technology is also argued to have a potential disruptive impact.

Other institutional environments which are considered are healthcare and governments. Both have been discussed widely in legitimacy research and legitimacy is argued to be crucial for entities operating in these environments. Additionally, blockchain could have disruptive implications in both of these sectors as well. Within the healthcare sector, blockchain removes the need of paper records, allowing doctors to access digital health records immediately – which are crucial in life-threatening emergencies. Blockchains may lower opportunistic behavior within governments by providing voting systems, smart contracts and transparency (Marr, 2018).

13.3.3 Generalizability of strategic approach for managing organizational legitimacy

The strategic approach that has been developed in this project aims to support banks with expectation management. It is a way to develop appropriate organizational – and communicative – actions in response to external pressures induced by blockchain technology. Banks could respond by conforming to the new expected norms or engage in strategic processes of legitimation. The legitimation processes that have been considered include pragmatic, normative, regulative, and cognitive legitimacy. Within this project's context, strategic processes of legitimation are enabled by adopting pragmatic and normative legitimation strategies. The target groups that have been identified correspond to the particular consequence induced by the considered innovation process.

The strategic approach may be applicable for other organizations that are affected by blockchain technology under the same conditions. Probably, in the insurance sector will apply similar processes of legitimation and organizations only will have to determine the appropriate target groups based on the consequences of blockchain within that particular industry. When considering other environments, such as healthcare or governments, the appropriate legitimation processes have to be determined as well since the organizations here may consider other legitimation processes as liberties or constraints.

13.3.4 Generalizability of the overall innovation strategy framework

From a high-level perspective, this framework could be adopted by organizations that want to develop or gain insights in the appropriate actions in response to external pressures induced by innovation processes. Organizations must first apply an institutional analysis to create an understanding of the legitimation process of the institutional environment and how the particular innovation may affect the corresponding social norms and values. Next, after the potential consequences for the organization have been identified, the appropriate legitimation strategies and best practices are selected to develop a suitable response or strategic action towards the target groups that provide the crucial resources in the legitimation process for the organization.

For enabling this high-level applicability of the framework, it should first be made more user friendly. A clear and well-arranged approach should be developed that shows how managers and communication professionals should use or create the generated overviews for improving the innovation strategy of the organization.

13.4 Conclusion

This chapter has discussed the final frameworks that have been developed using an institutional and strategic perspective on organizational legitimacy and the particular case for this research project. Also, it combined both frameworks into the final innovation strategy framework. This framework has then been described and an appropriate response for the bank has been developed by implementing the key insights from this research project. The chapter concluded by discussing the generalizability of the final innovation strategy framework.

Many more possible organizational actions can be developed based on the research findings from Part II and III. Managers and communication professionals gain insights in the appropriate actions for the bank by looking at the organizational consequences induced by blockchain technology and the potential processes of legitimation the bank should adopt to meet, or better, transcend these expectations.

> *"Legitimation is frequently viewed as a prerequisite for the institutionalization of new ideas and practices" (Hyndman & Liguori, 2018, p. 5).*

Applying legitimacy theory to the introduction of innovative technologies within existing institutional environments enables insights in the future expectations of appropriate behavior for organizations partaking in these environments. Challenging highly institutionalized firms to conform to new social norms and values induced by the particular innovation could produce creative and legitimate solutions that fit the expectations of the larger environment. Engaging in strategic processes of legitimation enable organizations to expand the institutional playing field and gain competitive advantage by differentiating in a legitimate way.

References

Abdullah, Z., & Abdul Aziz, Y. (2013). Institutionalizing corporate social responsibility: effects on corporate reputation, culture, and legitimacy in Malaysia. *Social Responsibility Journal*, *9*(3), 344–361. https://doi.org/10.1108/SRJ-05-2011-0110

Acheson, N. (2018). What is Bitcoin? Retrieved June 21, 2018, from https://www.coindesk.com/information/what-is-bitcoin/

Allen, D. W. E. (2017). Discovering and Developing the Blockchain Crypto-Economy. *SSRN Electronic Journal*, 1–26. https://doi.org/10.2139/ssrn.2815255

Aronczyk, M., Edwards, L., & Kantola, A. (2017). Apprehending public relations as a promotional industry. *Public Relations Inquiry*, *6*(2), 139–155. https://doi.org/10.1177/2046147X17706411

Aste, T., Tasca, P., & Di Matteo, T. (2017). Blockchain Technologies: The Foreseeable Impact on Society and Industry. *Computer*, *50*(9), 18–28. https://doi.org/10.1109/MC.2017.3571064

Barnett, M. L. (2003). Falling Off the Fence? *Journal of Management Inquiry*, *12*(2), 185–196. https://doi.org/10.1177/1056492603253040

Benet, J., & Greco, N. (2018). Filecoin: A Decentralized Storage Network, 1–36. Retrieved from https://filecoin.io/filecoin.pdf

Bentov, I., Lee, C., Mizrahi, A., & Rosenfeld, M. (2014). Proof of Activity: Extending Bitcoin's Proof of Work via Proof of Stake. *Cryptology EPrint Archive*, *452*(3), 1–19. https://doi.org/10.1145/2695533.2695545

Blomgren, M., Hedmo, T., & Waks, C. (2016). Being Special in an Ordinary Way: Swedish Hospitals' Strategic Web Communication. *International Journal of Strategic Communication*, *10*(3), 177–194. https://doi.org/10.1080/1553118X.2016.1176569

Brummette, J., & Zoch, L. M. (2016). How stakeholders' personal values influence their value expectations for legitimate organizations. *Corporate Communications: An International Journal*, *21*(3), 309–321. https://doi.org/10.1108/CCIJ-12-2015-0085

Bryman, A. (2012). *Social Research Methods*. *Social Research Methods* (4th ed.). Oxford University Press. https://doi.org/10.1017/CBO9781107415324.004

Camilleri, M. A. (2018). Theoretical insights on integrated reporting: The inclusion of non-financial capitals in corporate disclosures. *Corporate Communications: An International Journal*, *24*(4), 567–581. https://doi.org/10.1108/CCIJ-01-2018-0016

Chen, J. (2019). Corporate Social Responsiblity (CSR). Retrieved February 28, 2019, from https://www.investopedia.com/terms/c/corp-social-responsibility.asp

Colleoni, E. (2013). CSR communication strategies for organizational legitimacy in social media. *Corporate Communications*, *18*(2), 228–248. https://doi.org/10.1108/13563281311319508

Das, P., Verburg, R., Verbraeck, A., & Bonebakker, L. (2018). Barriers to innovation within large financial services firms: An in-depth study into disruptive and radical innovation projects at a bank. *European Journal of Innovation Management*, *21*(1), 96–112. https://doi.org/10.1108/EJIM-03-2017-0028

Davidson, S., De Filippi, P., & Potts, J. (2016). Disrupting Governance: The New Institutional Economics of Distributed Ledger Technology. *Ssrn*, 1–27. https://doi.org/10.2139/ssrn.2811995

Davidson, S., De Filippi, P., & Potts, J. (2018). Blockchains and the economic institutions of capitalism. *Journal of Institutional Economics*, 1–20. https://doi.org/10.1017/S1744137417000200

Deephouse, D. L. (1996). Does isomorphism legitimate? *Academy of Management Journal*, *39*(4), 1024–1039.

Deephouse, D. L., & Suchman, M. (2008). Legitimacy in Organizational Institutionalism. In R. Greenwood, C. Oliver, K. Sahlin, & R. Suddaby (Eds.), *The SAGE Handbook of Organizational Institutionalism* (pp. 49–77). SAGE Publications.

Díez-de-Castro, E., & Peris-Ortiz, M. (2018). *Organizational Legitimacy: Challenges and Opportunities for Businesses and Institutions*. (E. Díez-De-Castro & M. Peris-Ortiz, Eds.) (1st ed.). Springer International Publishing. https://doi.org/10.1007/978-3-319-75990-6

Dijkstra, A. M., de Bakker, L., & van Dam, F. (2014). At a glance. In F. van Dam, L. de Bakker, & A. M. Dijkstra (Eds.), *Science Communication, a knowledge base* (1st ed., p. 262). Utrecht: Boom Lemma Uitgevers.

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, *48*(2), 147–160. Retrieved from http://www.jstor.org/stable/2095101

Dowling, J., & Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *Pacific Sociological Review*, *18*(1), 122–136.

Drescher, D. (2017). Blockchain basics: A non-technical introduction in 25 steps. *Blockchain Basics: A Non-Technical Introduction in 25 Steps*. https://doi.org/10.1007/978-1-4842-2604-9

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The Academy of Management Review*, *14*(4), 532–550.

Golant, B. D., & Sillince, J. A. A. (2007). The constitution of organizational legitimacy: A narrative perspective. *Organization Studies*, *28*(8), 1149–1167. https://doi.org/10.1177/0170840607075671

Harrell, M. C., & Bradley, M. A. (2009). *Data Collection Methods. Semi-Structured Interviews and Focus Groups Same as Report (SAR)*. *RAND National Defense Research Institute*. RAND Corporation. https://doi.org/978-0-8330-4889-9

Hayes, A. (2016). Decentralized banking: Monetary technocracy in the digital age. *New Economic Windows*, 121–131. https://doi.org/10.1007/978-3-319-42448-4_7

Heath, R. L., & Waymer, D. (2015). Unlocking Corporate Social Responsibility: Minimalism, Maximization, and Neo-institutionalist Resource Dependency Keys. In *CSR Communication Conference 2015* (pp. 35–46). Faculty of Social Sciences.

Hybels, R. C. (1995). On Legitimacy, Legitimation, And Organizations: A Critical Review and Integrative Theoretical Model. *Academy of Management Journal*, (1), 241–245.

Hyndman, N., & Liguori, M. (2018). Achieving radical change: a comparative study of public-sector accounting in Westminster and Scotland. *Accounting, Auditing & Accountability Journal*, *31*(2), 428–455. https://doi.org/https://doi.org/10.1108/AAAJ-04-2016-2527

Iansiti, M., & Lakhani, K. R. (2017). The truth about blockchain. Retrieved September 8, 2018, from https://hbr.org/2017/01/the-truth-about-blockchain

Ishmaev, G. (2017). Blockchain Technology as an Institution of Property. *Metaphilosophy*, *48*(5), 666–686. https://doi.org/10.1111/meta.12277

Jacob, S. A., & Furgerson, S. P. (2012). Writing Interview Protocols and Conducting Interviews: Tips for Students New to the Field of Qualitative Research. *The Qualitative Report*, *17*(42), 1–10. Retrieved from http://nsuworks.nova.edu/tqr/vol17/iss42/3%0AThis

Jentzsch, C. (2016). Decentralized Autonomous Organization to Automate Governance. *SlockIt*.

Kaganer, E. A., Pawlowski, S. D., & Wiley-Patton, S. (2010). Building Legitimacy for IT Innovations: The Case of Computerized Physician Order Entry Systems. *Journal of the Association for Information Systems*, *11*(1), 1–33. https://doi.org/10.17705/1jais.00219

Karlsson, T., Honig, B., Welter, F., Leora, S., & Sadaovski, A. (2005). A Cross-National Comparison of Incubated Organizations: An Institutional Perspective. In D. A. Shepherd & J. A. Katz (Eds.), *International Entrepreneurship* (Vol. 8, pp. 165–184). Emerald Group Publishing Limited.

Khan, A. S. (2018). Institutions and sensemaking of change: Institutional frame switching as sensemaking of microfinance in a Pakistani commercial bank. *Journal of Organizational Change Management*, *31*(3), 532–556. https://doi.org/10.1108/JOCM-01-2017-0001

King, B. G., & Whetten, D. A. (2008). Rethinking the Relationship Between Reputation and Legitimacy: A Social Actor Conceptualization. *Corporate Reputation Review*, *11*(3), 192–207. https://doi.org/10.1057/crr.2008.16

King, S., & Nadal, S. (2012). PPCoin: Peer-to-Peer Crypto-Currency with Proof-of-Stake. *Self-Published Paper*, 1–6. Retrieved from https://pdfs.semanticscholar.org/0db3/8d32069f3341d34c35085dc009a85ba13c13.pdf

Lachance, N. (2016). Not Just Bitcoin: Why The Blockchain Is A Seductive Technology To Many Industries. Retrieved January 14, 2019, from https://web.archive.org/web/20160506014435/http:/www.npr.org/sections/alltechconsidered/2016/05/04/476597296/not-just-bitcoin-why-blockchain-is-a-seductive-technology-to-many-industries

Lamarque, E. (2005). Identifying Key Activities in Banking Firms: a Competence-Based Analysis. *Advances in Applied Business Strategy*, *7*, 29–47. https://doi.org/10.1016/S0749-6826(04)07002-7

Langenohl, A. (2008). How to change other people's institutions: Discursive entrepreneurship and the boundary object of competition/competitiveness in the German banking sector. *Economy and Society*, *37*(1), 68–93. https://doi.org/10.1080/03085140701760882

Le, J., & Bartlett, J. L. (2014). Managing impressions during institutional change - The role of organizational accounts in legitimation. *Public Relations Inquiry*, *3*(3), 341–360. https://doi.org/10.1177/2046147X14540912

Leeuwis, C., & Aarts, N. (2011). Rethinking communication in innovation processes: creating space for change in complex systems. *Journal of Agricultural Education and Extension*, *17*(1), 21–36.

Littlejohn, S. W., & Foss, K. A. (2011). *Theories of Human Communication* (10th ed.). Long Grove: Waveland Press, Inc.

MacDonald, T. J., Allen, D. W. E., & Potts, J. (2016). Blockchains and the boundaries of self-organized economies: Predictions for the future of banking. *New Economic Windows*, 279–296. https://doi.org/10.1007/978-3-319-42448-4_14

Marr, B. (2018). Here Are 10 Industries Blockchain Is Likely To Disrupt. Retrieved March 21, 2019, from https://www.forbes.com/sites/bernardmarr/2018/07/16/here-are-10-industries-blockchain-is-likely-to-disrupt/

Massey, J. E. (2001). Managing Organizational Legitimacy: Communication Strategies for Organizations in Crisis. *Journal of Business Communication*, *38*(2), 153–183. https://doi.org/10.1177/002194360103800202

Maurer, J. G. (1971). *Readings in organizational theory: Open system approaches* (1st ed.). Ney York Random House.

McAndrews, J., & Roberds, W. (1999). *Payment Intermediation and the Origins of Banking* (11 No. 99). Atlanta.

Meyer, J. W., & Rowan, B. (1977). Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, *83*(2), 340–363. https://doi.org/10.1086/226550

Mukherjee, A., & Nath, P. (2003). A model of trust in online relationship banking. *International Journal of Bank Marketing*, *21*(1), 5–15. https://doi.org/10.1108/02652320310457767

Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. *Www.Bitcoin.Org*, 9. https://doi.org/10.1007/s10838-008-9062-0

Nason, R. S., Bacq, S., & Gras, D. (2018). A behavioral theory of social performance: Social identity and stakeholder expectations. *Academy of Management Review*, *43*(2), 259–283. https://doi.org/10.5465/amr.2015.0081

Nienaber, A. M., Hofeditz, M., & Searle, R. H. (2014). Do we bank on regulation or reputation? A meta-analysis and meta-regression of organizational trust in the financial services sector. *Marketing Intelligence and Planning*, *32*(5), 367–407. https://doi.org/10.1108/IJBM-12-2013-0146

Noir, C., & Walsham, G. (2007). The great legitimizer: ICT as myth and ceremony in the Indian healthcare sector. *Information Technology & People*, *20*(4), 313–333. https://doi.org/10.1108/09593840710839770

OFX Group Ltd. (n.d.). How long does a bank to bank transfer take? Retrieved September 13, 2018, from https://www.ofx.com/en-au/faqs/how-long-does-a-bank-to-bank-transfer-take/

Ogden, S., & Clarke, J. (2005). Customer disclosures, impression management and the construction of legitimacy: Corporate reports in the UK privatised water industry. *Accounting, Auditing & Accountability Journal*, *18*(3), 313–345. https://doi.org/10.1108/09513570510600729

Palazzo, G., & Scherer, A. G. (2006). Corporate legitimacy as deliberation: A communicative framework. *Journal of Business Ethics*, *66*(1), 71–88. https://doi.org/10.1007/s10551-006-9044-2

Palthe, J. (2014). Regulative, Normative, and Cognitive Elements of Organizations: Implications for Managing Change. *Management and Organizational Studies*, *1*(2), 59–66. https://doi.org/10.5430/mos.v1n2p59

Parsons, T. (1960). *Structure and process in modern societies*. Glencoe, Illinois, Illinois: Free Press.

Patelli, L., & Pedrini, M. (2014). Is the Optimism in CEO's Letters to Shareholders Sincere? Impression Management Versus Communicative Action During the Economic Crisis. *Journal of Business Ethics*, *124*(1), 19–34. https://doi.org/10.1007/s10551-013-1855-3

Phillips, N., Lawrence, T. B., & Hardy, C. (2004). Discourse and institutions. *Academy of Management ReviewAcademy of Management Review*, *29*(4), 635–652.

Pollach, I. (2015). Strategic corporate social responsibility: the struggle for legitimacy and reputation. *International Journal of Business Governance and Ethics*, *10*(1), 57–75. https://doi.org/10.1504/IJBGE.2015.068685

Riel, C. B. M. Van, & Fombrun, C. J. (2007). *Essentials of Corporate Communications*. New York: Routledge.

Ruef, M., & Scott, W. R. (1998). A Multidimensional Model of Organizational Legitimacy: Hospital Survival in Changing Institutional Environments. *Administrative Science Quarterly*, *43*(4), 877–904. Retrieved from http://www.jstor.org/stable/2393619

Sataøen, H. L., & Wæraas, A. (2015). Branding without Unique Brands: Managing similarity and difference in a public sector context. *Public Management Review*, *17*(3), 443–461. https://doi.org/10.1080/14719037.2013.841976

Scholte, A. (2018). *Tokenized Ecosystems for Business Processes*. Delft University of Technology.

Schultz, F., & Wehmeier, S. (2010). Institutionalization of corporate social responsibility within corporate communications. *Corporate Communications: An International Journal*, *15*(1), 9–29.

https://doi.org/10.1108/13563281011016813
Scott, W. R. (1995). *Institutions and Organizations. Ideas, Interests, and Identitities.* London: SAGE Publications.
Scott, W. R. (2004). Institutional theory. In G. Ritzer (Ed.), *Encycopedia of Social Theory* (pp. 408–414).
Scott, W. R. (2008). *Institutions and Organizations: Ideas and Interests* (3rd ed.). Los Angeles, CA, CA: SAGE Publications.
Seidel, M. D. L. (2018). Questioning Centralized Organizations in a Time of Distributed Trust. *Journal of Management Inquiry*, *27*(1), 40–44. https://doi.org/10.1177/1056492617734942
Siddaway, A. (2014). What is a systematic literature review and how do I do one? *University of Stirling*, *1*(1), 1–13. https://doi.org/10.1016/j.jmwh.2009.03.017
Siegel, D. (2016). Understanding The DAO Attack. *Coindesk*.
Song, J. (2018). Why Blockchain is Hard. Retrieved September 13, 2018, from https://medium.com/@jimmysong/why-blockchain-is-hard-60416ea4c5c
Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *The Academy of Management Review*, *20*(3), 571–610.
Suddaby, R., Bitektine, A., & Haack, P. (2017). Legitimacy. *Academy of Management Annals*, *11*(1), 451–478. https://doi.org/http://dx.doi.org/10.1007/BF00583989
Suddaby, R., & Greenwood, R. (2005). Rhetorical strategies of legitimacy. *Administrative Science Quarterly*, *50*(1), 35–67.
Tapscott, D., & Tapscott, A. (2016). *Blockchain Revolution*. *Blockchain Revolution*. https://doi.org/10.1515/ngs-2017-0002
Tumbas, S., Berente, N., & vom Brocke, J. (2017). Born Digital: Growth Trajectories of Entrepreneurial Organizations Spanning Institutional Fields. *38th International Conference on Information Systems (ICIS)*, (December), 1–20.
Turner III, D. W. (2010). Qualitative Interview Design: A Practical Guide for Novice Investigators. *The Qualitative Report*, *15*(3), 754–760. https://doi.org/http://www.nova.edu/ssss/QR/QR15-3/qid.pdf
Van der Sanden, M. C. A., & Meijman, F. J. (2004). Evidence-Based Science Communication: An Essay. *Science Communication*, *25*(3), 272–287. https://doi.org/10.1177/1075547003262662
van Esterik-Plasmeijer, P. W. J., & van Raaij, W. F. (2017). Banking system trust, bank trust, and bank loyalty. *International Journal of Bank Marketing*, *35*(1), 97–111. https://doi.org/10.1108/IJBM-12-2015-0195
Vermaas, P. E., Tan, Y. H., van den Hoven, J., Burgemeestre, B., & Hulstijn, J. (2010). Designing for Trust: A Case of Value-Sensitive Design. *Knowledge, Technology & Policy*, 1–15. https://doi.org/10.1007/s12130-010-9130-8
Verschuren, P., & Doorewaard, H. (2010). Designing a Research Project. *Chemistry & …*, 65–90. https://doi.org/10.1007/s13398-014-0173-7.2
Woodward, D. G., Edwards, P., & Birkin, F. (1996). Organizational legitimacy and stakeholder information provision. *British Journal of Management*, *7*(4), 329–347. https://doi.org/10.1111/j.1467-8551.1996.tb00123.x
World Bank. (2018). Financial Inclusion on the Rise, But Gaps Remain, Global Findex Database Shows. Retrieved September 20, 2018, from http://www.worldbank.org/en/news/press-release/2018/04/19/financial-inclusion-on-the-rise-but-gaps-remain-global-findex-database-shows
Yao, S., Brummette, J., & Luo, Y. (2015). Balancing between organizations and society: Exploring Chinese organizations' legitimacy efforts. *Corporate Communications*, *20*(1), 90–110. https://doi.org/10.1108/CCIJ-08-2013-0054
Yin, R. K. (1994). Case study research: Design and methods second edition. *Applied Social Research Methods Series*, *5*, 1–53. https://doi.org/10.1016/j.jada.2010.09.005
Young, K. (2018). There's A Facebook Alternative, It's Called Self-Sovereign Identity. Retrieved February 8, 2019, from https://www.coindesk.com/theres-alternative-facebook-called-self-sovereign-identity

Other references

Abou-El-Fotouh, H. (2019). Corporate Social Responsibility in Banks. *Corporate Governance Institute.* Retrieved 20-03-2019 from https://corgovinstitute.com/corporate-social-responsibility-banks-2/

Diar. (2018). Venture Capital Firms Go Deep and Wide with Blockchain Investments. *Diar - The Weekly Institutional Publication and Data Resource Analyzing Digital Currency & Assets, 2*(39). Retrieved 13-02-2019 from https://diar.co/volume-2-issue-39/

Fenech, G. (2018). Scalability on the blockchain – is there a solution?. *Forbes.* Retrieved 13-02-2019 from: https://www.forbes.com/sites/geraldfenech/2018/12/16/scalability-on-the-blockchain-is-there-a-solution/#4a0e8652397d

Hill, S. & Nunn, J. (2018). Animated Storyboard: What Are Systematic Reviews? *Cochrane Consumers and Communication.* Retrieved 26-10-2018 from: https://cccrg.cochrane.org/animated-storyboard-what-are-systematic-reviews

TU Delft, (n.d.1). MSc Management of Technology. *The objective of the programme.* Retrieved 06-02-2019 from: https://www.tudelft.nl/onderwijs/opleidingen/masters/mot/msc-management-of-technology/

TU Delft, (n.d.2). MSc Science Education and Communication. *Track: Science Communication. Master's Programme.* Retrieved 04-02-2019 from: https://www.tudelft.nl/en/education/programmes/masters/science-education-and-communication/msc-science-education-and-communication/science-communication-track/

Skinner, C. (2018). Are you pulling my blockchain? *Chris Skinner's Blog.* Retrieved 18-12-2018 from: https://thefinanser.com/2018/12/are-you-pulling-my-blockchain.html/

Vermont Statutes. (2017). Title 12 - Court Procedure Chapter 81 - Conduct Of Trial § 1913 Blockchain enabling – US Legislative Code. Justia US Law. Retrieved 14-05-2018 from: https://law.justia.com/codes/vermont/2017/title-12/chapter-81/section-1913/

1 Appendices – Part II

1.1 Definitions of legitimacy

1.2 Interrelated aspects between legitimacy challenges and design principles

1.3 Interview protocol

1.4 Interview consent form

1.5 List of interview codes

1.6 Coded organizational consequences per expert resulting from legitimacy challenges

1.7 Identified organizational consequences per legitimacy challenge

1.1 Legitimacy definitions

Table 21: Definitions of legitimacy

Google Scholar results	***Definition***	**Source**
813	*"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)
48	*"Legitimation is the process whereby an organization justifies to a peer or superordinate system its right to exist"*	(Maurer, 1971, p. 361)
48	*"appraisal of action in terms of shared or common values in the context of the involvement of the action in the social system"*	Parson (1960) p. 175
41	*"Organizations seek to establish congruence between the social values associated with or implied by their activities and the norms of acceptable behavior in the larger social system of which they are a part."*	(Dowling & Pfeffer, 1975)
9	*"Organizational legitimacy, the acceptance of an organization by its external environment"*	(Deephouse, 1996)
1	*"Organizational legitimacy refers to ... the extent to which the array of established cultural accounts provides explanations for [an organization's] existence"*	Look in: DiMaggio (1991) Constructing an organizational field as a professional project: U.S. art museums, 1920-1940. In W. W. Powell & P. J. DiMaggio (Eds.), The new institutionalism in organizational analysis: 267-292. Chicago: University of Chicago Press.
1	*"… an organization is seen as being legitimate when it operates according to the socially constructed standards that have been established within its specific market or industry segment"*	(Brummette & Zoch, 2016)

1.2 Analysis of interrelated aspects of legitimacy challenges and the design principles of blockchain

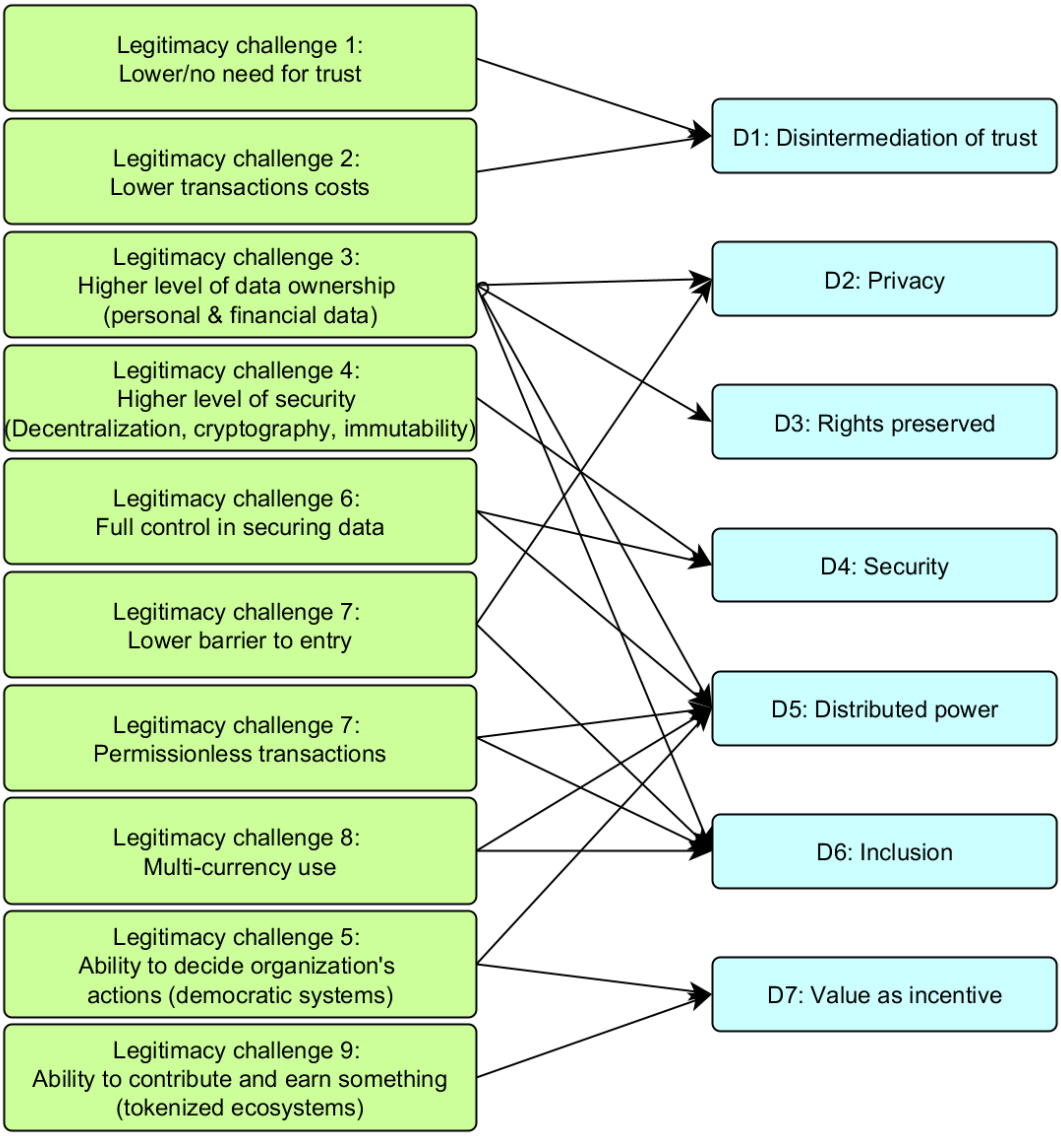


Figure 44: Interrelated aspects between legitimacy challenges and design principles

1.3 Interview protocol

Each legitimacy challenge is labeled as C1 – C9, in the same manner the corresponding scenarios have been labeled as S1 – S9.

Interview protocol

Introduction

Introduce yourself: name, study background

Hand over consent form and sign off

Introduce the research project

Purpose: Bank's customers have a certain expectation of what a bank should do (legitimacy). The novel aspects of blockchain technology can affect this expectation. The goal of this session it to identify the consequences for the bank when the expectation of the customer is changed. This to evaluate theoretical results with the practical relevance. The results of this session will then be used to develop an innovation strategy for the bank.

Execution: I am interested in how different banking experts, like you, can be involved in the process of identifying these consequences. First, I would like to know you a little bit better and afterwards I would like to hear your thoughts about what the organizational consequences for the banks will be in case of this altered expectation. Each time based on a different scenario.

During the brainstorm session I am interested in your view. So please do not be afraid to share your thoughts and opinions. If anything is unclear during the session, then please let me know. Before we continue, I would like to ask if it is okay that this session will be recorded. This would be of enormous help for analyzing the data. I can assure you that everything will be anonymized.

Turn on audio recorder

Start interview

Make the participant feel comfortable and ask about their interests, expertise, and other relevant background info – connect

Tell what you know about the person and ask for additional information

- Could you introduce yourself a little more?
    - What is your study background and work situation?
    - What is your experience with blockchain?

Transition: Now I want to propose to you some scenarios based on several findings in literature. Afterwards, I am interested in the organizational consequences from your perspective.

Brainstorm C = Challenge / S = Scenario / Q = Question

DISINTERMEDIATION OF TRUST

C1: DAOs, removing trusted third parties, offer products and services to customers that mitigate opportunism which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a lowered need for trust.

S1: "Imagine that customers do not see any reason to make use of a bank, because there is no need for a trusted third party to verify transactions anymore."

Q1: What are the organizational consequences for the bank?

What if the bank wants to show the customers that they are still relevant in order to maintain their position?

a. How to decentralize processes? (Disintermediation of trust)

DISINTERMEDIATION OF TRUST

C2: DAOs, removing trusted third parties, offer products and services to customers with low transaction costs which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers are offered products and services with lower transaction fees.

S2: *"Imagine that competitors offer products and services that without any additional transaction costs (because transactions costs are practically zero)."*

Q2: What are the organizational consequences for the bank?

What if the bank wants to show their customers that transaction costs are removed or extremely low?

a. How to transfer money abroad without additional costs?
b. How to exchange currency without additional costs? (e.g. bank as service provider)

PRIVACY / RIGHTS PRESERVED / INCLUSION / DISTRIBUTED POWER

C3: DAOs offer a high level of data ownership rights and privacy to customers which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a higher degree of privacy and data ownership rights.

S3: *"Imagine that competitors offer customers to manage their own personal data and decide for themselves how much information they provide with each transaction as details do not need to be included (e.g. proof of existence). Think of personal data (addresses, ID, etc.), but also financial data (amount of debts, mortgages, etc.)."*

Q3: What are the organizational consequences for the bank?

What if the bank wants to offer their customers to manage their own data and privacy to conform with these expectations?

a. How to remove behavioral data? (Rights Preserved)
b. How to remove details about financial data? (Rights Preserved & Distributed Power)
c. How to disconnect personal data with products? (Privacy & Inclusion)

Introduce towards financial inclusion

DISTRIBUTED POWER / INCLUSION / PRIVACY

C7: DAOs offer customers a higher level of financial inclusion which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers experience a higher level of financial inclusion (permissionless transactions & data ownership).

S7: *'Imagine that customers can easily open and use a bank account, because there is no direct connection between personal information and the account, and all transactions are permissionless."*

Q4: What are the organizational consequences for the bank?

What if the bank wants to lower the barriers for participation in the financial system for its customers?

a. How to disconnect personal data and products? (Inclusion & Privacy)
b. How to enable permissionless transactions? (Inclusion & Distributed Power)

DISTRIBUTED POWER / SECURITY

P6: DAOs offer customers control in securing data which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive that they are in control of their own data security.

S6: *"Imagine that competitors offer their customers to manage their own data security, so the responsibility for securing personal information lies solely with the customer."*

Q5: What are the organizational consequences for the bank?

What if the bank wants to offer their customers the possibility to manage their own data security to conform with these expectations?

a. How to shift the responsibility of securing to the customer? (Distributed Power)
b. How to decentralize data? (Security)

DISTRIBUTED POWER / VALUE AS INCENTIVE

C5: DAOs offer customers more power in determining the organization's output and structure which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a higher power in determining the bank's output and structure.
C9: DAOs offer customers value as incentive to sustain its business which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers can be rewarded for sustaining and improving the bank's business processes.

Imagine that competitors offer customers to:

- S5: *Contribute in deciding the organization's actions (e.g. democratize capital expenditure or how the structure of the organization should be);*
- S9: *Be rewarded for contributing to the organization (e.g. earn tokens by verifying transactions, monitor and/or improve business processes).*

What are the organizational consequences for the bank when customers see this as the new norm?
What if the bank, to conform to these new expectations, want to offer their customers to be:

Q6: Involved in managerial decisions?

a. How to democratize managerial decisions? (Distributed Power & Value as Incentive)
b. How to offer a say in the structure? (Value as Incentive)

Q7: Rewarded for contributions concerning the organization?

a. How to reward customers? (e.g. gamification) (Value as Incentive)
b. How to democratize processes? (Distributed Power)

DISTRIBUTED POWER / INCLUSION (ONLY IF EXTRA TIME)

C8: DAOs offer customers a wider product range, enabling multi-currency use and more choice in governance structures, which can negatively affect the normative legitimacy of banks. Normative legitimacy is granted to the bank when customers perceive a wider range in products and services.

S8: *"Imagine that customers have a high variety in products and services, because exit costs are reduced, and supply has increased."*

Q8: What are the organizational consequences for the bank?

What if the bank wants to offer their customers a higher variety in products and services?

a. How to enable multi-currency use? (Transferwise & Revolut) (Distributed Power)
b. How to offer more products and services? (e.g. personalization) (Inclusion)

SECURITY (ONLY IF EXTRA TIME)

C4: DAOs offer products and services to customers that are secured by decentralization, cryptography, and immutability which lowers the risk of normative illegitimacy. Banks can better manage normative legitimacy by securing its products and services by decentralization, cryptography, and immutability.

S4: *"Blockchain technology enables decentralization of sensitive information, being secured by cryptography, and permanent records in the database."*

Q9: How can banks secure their products and services through:

a. Decentralization
b. Cryptography
c. Immutability

Closing

Be grateful

- Do you have any additional questions or comments?
- Do you want to be informed about the results of the research project?
- **Do you know any other colleague or expert who also might be interested participating in this study?**

1.4 Interview consent form

I volunteer to participate in a research project conducted by a student from Delft University of Technology. I understand that the project is designed to gather information for a research project about the impact of blockchain technology on banking.

1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty.

2. I understand that most interviewees in this research will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.

3. I understand that the student will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

4. Participation involves being interviewed by a student from Delft University of Technology. The interview will last approximately 60 minutes. Notes will be written during the interview. For a reliable analysis, an audio recording of the interview and subsequent dialogue will be made. If I don't want to be recorded, I will let the student know before the interview takes place.

5. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

6. I have been given a copy of this consent form.

_____ _____

Name participant Date

_____ _____

Signature participant Signature investigator

1.5 List of identified codes

Table 22: List of unique codes used to identify the organizational consequences for banks resulting from the legitimacy challenges. An asterisk indicates that only a part of the code is abbreviated.

	Code	Number of occurrences	Abbreviation
1	Distributed data ownership: automated information infrastructure	5	DDO*
2	Distributed data ownership: individual customer evaluation	8	DDO*
3	Distributed data ownership: more data analytics	2	DDO*
4	Distributed data ownership: prevent crisis	8	DDO*
5	Distributed data ownership: self-sovereign ID	11	DDO*
6	Distributed data ownership: increased risk	9	DDO*
7	Distributed Organization: ignorant customers	10	DO*
8	Distributed Organization: trust in customers	2	DO*
9	Distributed Organization: value as incentive	10	DO*
10	Distributed Organization: voting customers	5	DO*
11	External stakeholders: more communication with customers	10	ES*
12	Higher path dependency	14	
13	Illegitimacy	3	
14	Increased competition: exit current market	4	IC*
15	Increased competition: adopt fast follower strategy	12	IC*
16	Increased competition: acquire competitor	3	IC*
17	Increased competition: engage in partnership	8	IC*
18	Increased competition: more payment service providers	5	IC*
19	Institutional differentiation	15	ID
20	Institutional isomorphism: regulatory shift	18	II*
21	Institutional isomorphism: technology adoption	38	II*
22	Internal stakeholders: more communication with shareholders/management	3	IS*
23	Lower customer relationship	6	
24	Lower institutionalization power	27	
25	Lower revenue	1	
26	Lower security costs	3	
27	Lower transaction time	5	
28	Lower transactions costs	6	
29	No consequence: general	15	NC*
30	No consequence: customer convenience	6	NC*
31	Offer free services	1	
32	Offer higher level of convenience	4	
33	Provide more transparency	4	
34	Regulation: duty of care	12	R*
35	Regulation: KYC obligation	28	R*
36	Regulation: reporting obligation	15	R*

37	Role shift: product offering	5	RS*
38	Role shift: platform	4	RS*
39	Role shift: general	14	RS*
40	Role shift: data owner	10	RS*

1.6 Organizational consequences per expert

Table 23: Coded organizational consequences per expert resulting from legitimacy challenge 1 & 2

Design principle	Expert A	Expert B	Expert C	Expert D	Expert E	Expert F
C1: Disintermediation of Trust	Lower transaction time	IC: exit current market	NC: customer convenience	Lower revenue	RS: data owner; RS: general	RS: general
	RS: data owner	IC: more payment service providers	IC: adopt fast follower strategy	IC: more payment service providers; RS: general	II: tech. adoption	II: tech. adoption
	II: tech. adoption	RS: data owner	II: tech. adoption	RS: data owner	RS: product offering	DO: value as incentive; II tech. adoption; RS: platform
	RS: platform	RS: product offering	Higher path dependency; IC: engage in partnership	R: reporting obligation	RS: data owner RS: general RS: product offering	Higher path dependency; IC adopt fast follower strategy; II: tech. adoption; lower institutionalization power
	RS: product offering		RS: general		DDO: increased risk	Lower customer relationship; RS: platform; RS: product offering
	RS: general		II: regulatory shift; lower institutionalization power		Lower institutionalization power	
	IC: adopt fast follower strategy					
C2: Disintermediation of trust	IC: exit current market; IS: more comm. with shareholders/management	IC: more payment service providers	II: tech. adoption; lower transactions costs	ES: more comm. with customers; Lower customer relationship	Higher path dependency	ES: more comm. with customers; lower transaction costs; provide more transparency; RS: platform
	NC	Lower customer relationship	Lower customer relationship; lower transaction time; offer higher level of convenience		II: tech. adoption; lower transaction time; lower transaction costs	Higher path dependency; II: tech. adoption; lower transaction costs
		NC	Lower transaction costs			II: tech. adoption
			IC: engage in partnership; II			Higher path dependency; II:

			tech. adoption; lower institutionalization power			reg. shift; lower institutionalization power; RS: general
			Lower transaction time; NC			Lower transactions costs; NC; provide more transparency
						R: duty of care

Table 24: Coded organizational consequences per expert resulting from legitimacy challenge 3

Design principle	Expert A	Expert B	Expert C	Expert D	Expert E	Expert F
Privacy & Inclusion; Rights Preserved & Distributed Power	R: KYC obligation	Offer free services	R: KYC obligation; R: reporting obligation	NC; R: KYC obligation; R: reporting obligation	DDO: automated information infrastructure; DDO: self-sovereign ID; lower customer relationship	DDO: self-sovereign ID; lower institutionalization power
	R: reporting obligation	Offer higher level of convenience	II: regulatory shift	DDO: increased risk; II regulatory shift	Lower institutionalization power; R: KYC obligation	RS: general
	DDO: increased risk	DDO: prevent crisis; R: duty of care	II: regulatory shift	DDO: increased risk	IC: adopt fast follower strategy; II: tech. adoption	IC: adopt fast follower strategy; RS: data owner
	R: duty of care	Lower institutionalization power			DDO: automated information infrastructure; DDO: self-sovereign ID; lower customer relationship	DDO: automated information infrastructure; DDO: more data analytics; II: tech. adoption; provide more transparency
	R: KYC obligation	R: duty of care			DDO: self-sovereign ID; lower institutionalization power; R: KYC obligation	Higher path dependency; lower institutionalization power
	DDO: automated information infrastructure	DDO: self-sovereign ID			R: duty of care; R KYC obligation; R: reporting obligation	DDO: individual customer evaluation; DDO: more data analytics
	DDO: prevent crisis	DDO: self-sovereign ID			R: KYC reporting obligation; R: reporting obligation	IC: exit current market; ID; RS: general

	DDO: automated information infrastructure; R: KYC obligation				Illegitimacy; II: regulatory shift; NC	NC
	IC: adopt fast follower strategy; II: tech. adoption					DDO: self-sovereign ID; ES: more comm. with customers; higher path dependency

Table 25: Coded organizational consequences per expert resulting from legitimacy challenge 6

Design principle	Expert A	Expert B	Expert C	Expert D	Expert E	Expert F
Distributed Power & Security	R: KYC obligation	II: tech. adoption	ID; NC: customer convenience	II: tech. adoption; lower security costs	RS: data owner	DDO: prevent crisis; NC: customer convenience
	II: tech. adoption	R: KYC adoption	IC: adopt fast follower strategy; II: tech. adoption	NC: customer convenience	II: tech. adoption	II: tech. adoption; RS: general
	Higher path dependency	ID	Illegitimacy	R: duty of care	R: duty of care	RS: data owner
	R: KYC obligation	DDO: prevent crisis; R: KYC obligation	R: KYC obligation; R: reporting obligation		DDO: self-sovereign ID; II: tech. adoption; RS: general	ID
	Lower security costs	DDO: prevent crisis	R: reporting obligation		DDO: individual customer evaluation; DDO: self-sovereign ID; lower institutionalization power	II: tech. adoption
	DDO: increased risk	DDO: self-sovereign ID			II: tech. adoption	RS: data owner
	Lower security costs				R: KYC obligation	ID
	DDO: increased risk				DDO: individual customer evaluation; DDO: self-sovereign ID; offer higher level of convenience; R: KYC obligation	II: tech. adoption
	R: KYC obligation					
	Higher path dependency; lower					

	institutionalization power					

Table 26: Coded organizational consequences per expert resulting from legitimacy challenge 7

Design principle	Expert A	Expert B	Expert C	Expert D	Expert E	Expert F
Distributed Power & Inclusion & Privacy	IC: adopt fast follower strategy; II: tech. adoption	R: KYC obligation; R: reporting obligation	II: regulatory shift; R: duty of care	IC: adopt fast follower strategy; II: tech. adoption	IC: adopt fast follower strategy; R: KYC obligation; R: reporting obligation	ID; NC
	II: regulatory shift	II: regulatory shift; R: duty of care; R: KYC obligation; R: reporting obligation	Lower institutionalization power	IC: more payment service providers; lower institutionalization power	ES: more comm. with customers; lower institutionalization power; R: KYC obligation; R: reporting obligation	NC
	IC: engage in partnership	Lower institutionalization power	Higher path dependency; IC: engage in partnership; II: tech. adoption	DDO: increased risk; II: regulatory shift	ES: more comm. with customers; II: regulatory shift; lower institutionalization power; R: KYC obligation	Lower institutionalization power; RS: general
	IC: acquire competitor	DDO: prevent crisis	DDO: increased risk; DDO: individual customer evaluation; R: KYC obligation			II: tech. adoption; R: KYC obligation; R: reporting obligation
	II: tech. adoption	II: regulatory shift				Higher path dependency; Lower institutionalization power
	II: regulatory shift	DDO: prevent crisis; II: regulatory shift				II: regulatory shift; R: KYC obligation; R: reporting obligation
	IC: acquire competitor; IC: adopt fast follower strategy; IC: engage in partnership					
	IC: engage in partnership					

Table 27: Coded organizational consequences per expert resulting from legitimacy challenge 5 & 9

Design principle	Expert A	Expert B	Expert C	Expert D	Expert E	Expert F
Distributed Power & Value as Incentive	NC	ID	IC: adopt fast follower strategy; II: tech. adoption	ID; R: KYC obligation; R: reporting obligation	NC	NC
	DO: ignorant customers	DO: value as incentive	DO: voting customers; IS: more comm. with shareh/managem.	DO: ignorant customers	NC	Lower institutionalization power
	DO: ignorant customers	DO: ignorant customers	DO: ignorant customers; ID	DO: ignorant customers; DO: voting customers	ES: more comm. with customers; lower institutionalization power	IC: acquire competitor; IC engage in partnership
	DO: value as incentive	DO: value as incentive	II: tech. adoption	IS: more comm. with shareh/managem.	ID	DO: voting customers; ES: more comm. with customers; ID
	R: duty of care	DO: ignorant customers	DO: value as incentive; II: tech. adoption	DO: value as incentive; NC	DDO: increased risk; DO: ignorant customers	IC: engage in partnership; ID
	ID	DO: trust in customers	DO: value as incentive		Higher path dependency; II: tech. adoption	IC: adopt fast follower strategy; II: tech. adoption; RS: general
	DO: voting customers	DO: trust in customers	ES: more comm. with customers		DO: ignorant customers; ES: more comm. with customers; lower institutionalization power	ID
	Lower institutionalization power	DO: value as incentive			DO: value as incentive; II: tech. adoption	
	II: regulatory shift; R: duty of care					
	ID					
	Lower institutionalization power					
	DO: ignorant customers					
	DO: value as incentive					
	DO: voting customers					

Table 28: Coded organizational consequences per expert resulting from follow-up discussion

Design principle	Expert A	Expert B	Expert C	Expert D	Expert E	Expert F
-	-	DDO: individual customer evaluation	II: tech. adoption; NC: customer convenience	DO: value as incentive; NC	R: KYC obligation; RS: general	II: tech. adoption; NC: customer convenience
		DDO: individual customer evaluation	Illegitimacy; lower institutionalization power	Lower transaction time; NC	Higher path dependency	ES: more comm. with customers
		DDO: individual customer evaluation	II: regulatory shift			II: tech. adoption; lower institutionalization power; provide more transparency
		DDO: individual customer evaluation; DDO: prevent crisis	R: KYC obligation			II: tech. adoption
						Offer higher level of convenience

1.7 Identified organizational consequences per legitimacy challenge

1.7.1 Organizational consequences from legitimacy challenge 1 & 2

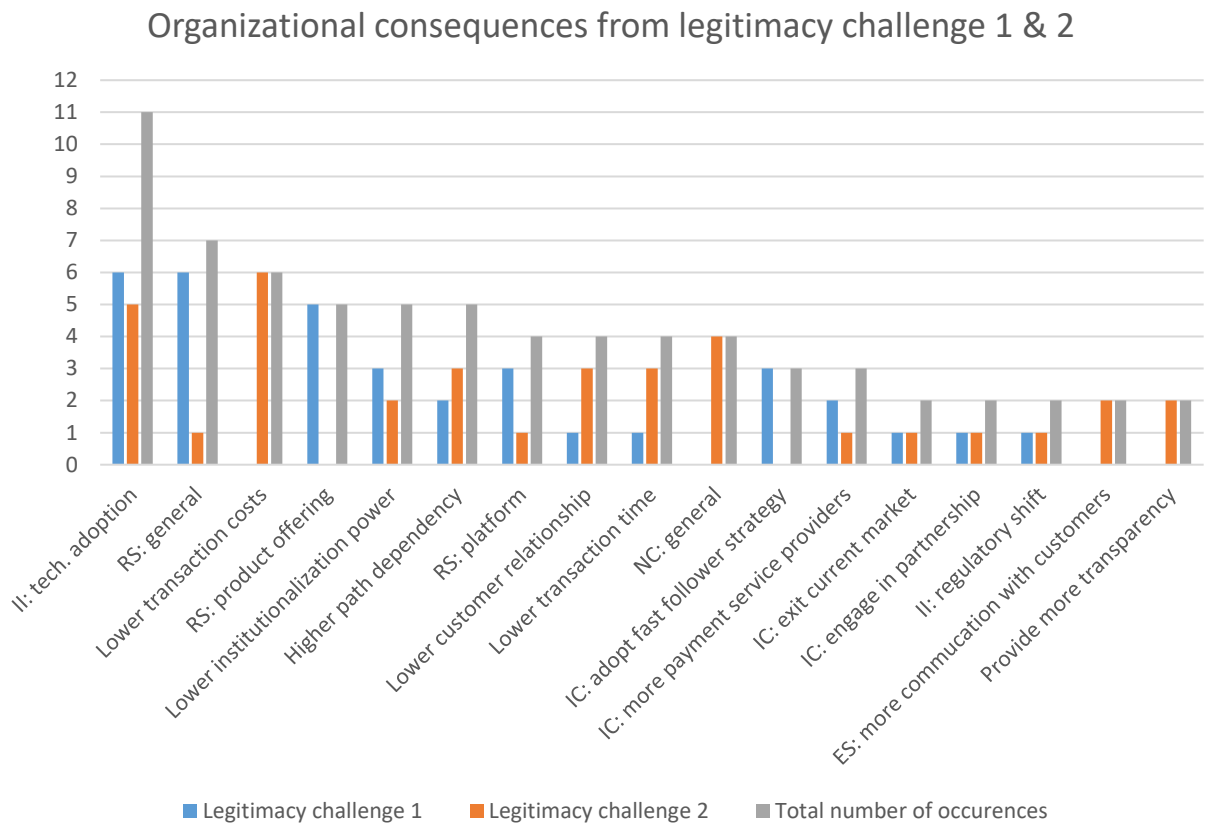


Figure 45: Organizational consequences from legitimacy challenge 1 and 2 mentioned during the expert interviews

Table 29: Identified organizational consequences for legitimacy challenge 1

	Organizational consequence (group)	Organizational consequence (specific)	Occurrences	Total
1	Role shift	General	6	14
		Product offering	5	
		Platform	3	
2	Increased competition	Adopt fast follower strategy	3	7
		More payment service providers	2	
		Exit current market	1	
		Engage in partnership	1	
3	Institutional isomorphism	Technology adoption	6	7
		Regulatory shift	1	
4	Lower institutionalization power			3
5	Higher path dependency			2
6	Lower customer relationship			1
7	Lower transaction time			1

Table 30: Identified organizational consequences for legitimacy challenge 2

	Organizational consequence (group)	Organizational consequence (specific)	Occurrences	Total
1	Lower transactions costs			6
2	Institutional isomorphism	Technology adoption	5	6
		Regulatory shift	1	
3	No consequence	General	4	4
4	Increased competition	More payment service providers	1	3
		Exit current market	1	
		Engage in partnership	1	
5	Higher path dependency			3
6	Lower customer relationship			3
7	Lower transaction time			3
8	Lower institutionalization power			2
9	Role shift	General	1	2
		Platform	1	
10	External stakeholders	more communication with customers	2	2
11	Provide more transparency			2

1.7.2 Organizational consequences from legitimacy challenge 3

Figure 46: Organizational consequences from legitimacy challenge 3 mentioned during the expert interviews

Table 31: Identified organizational consequences for legitimacy challenge 3

	Organizational consequence (category)	Organizational consequence (specific)	Occurrences	Total
1	Distributed data ownership	Self-sovereign ID	7	19
		Automated information infrastructure	5	
		Increased risk	3	
		Prevent crisis	2	
		More data analytics	2	
2	Regulation	KYC obligation	9	18
		Reporting obligation	5	
		Duty of care	4	
3	Institutional isomorphism	Regulatory shift	4	7
		Technology adoption	3	
4	Lower institutionalization power			5
5	Increased competition	Adopt fast follower strategy	3	3
6	No consequence	General	3	3
7	Lower customer relationship			2
8	Higher path dependency			2

1.7.3 Organizational consequences from legitimacy challenge 6

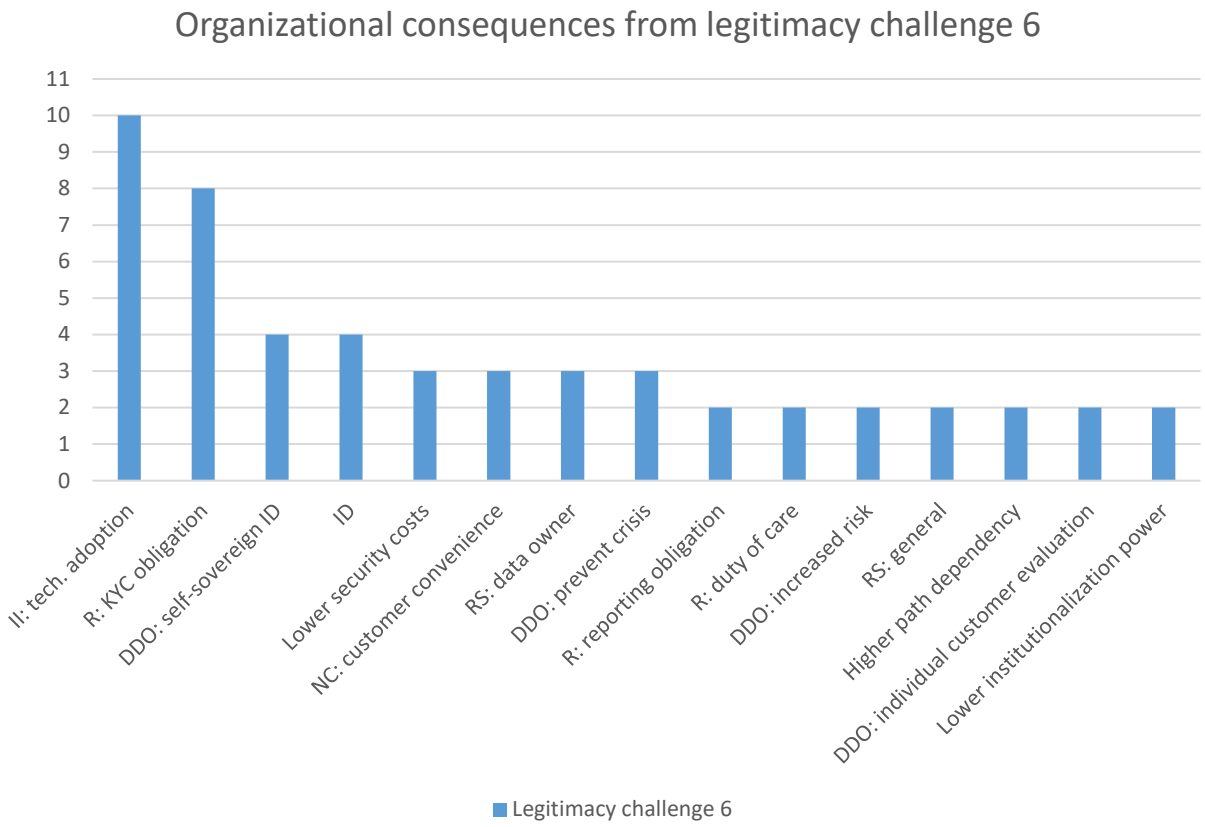


Figure 47: Organizational consequences from legitimacy challenge 6 mentioned during the expert interviews

Table 32: Identified organizational consequences for legitimacy challenge 6

	Organizational consequence (group)	Organizational consequence (specific)	Occurrences	Total
1	Regulation	KYC obligation	8	12
		Reporting obligation	2	
		Duty of care	2	
2	Distributed data ownership	Self-sovereign ID	4	11
		Prevent crisis	3	
		Increased risk	2	
		Individual customer evaluation	2	
3	Institutional isomorphism	Technology adoption	10	10
4	Role shift	Data owner	3	5
		General	2	
5	Institutional differentiation			4
6	Lower security costs			3
7	No consequence	Customer convenience	3	3
8	Higher path dependency			2
9	Lower institutionalization power			2

1.7.4 Organizational consequences from legitimacy challenge 7

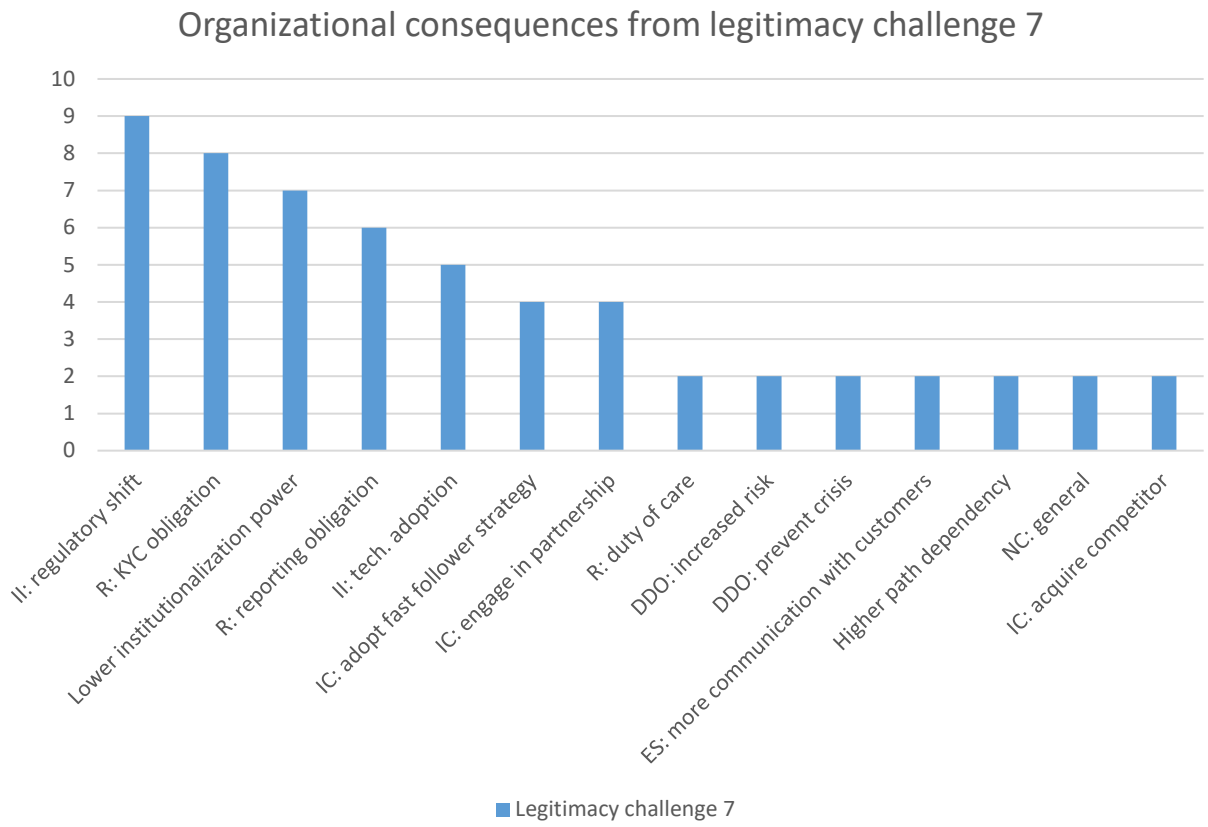


Figure 48: Organizational consequences from legitimacy challenge 7 mentioned during the expert interviews

Table 33: Identified organizational consequences for legitimacy challenge 7

	Organizational consequence (group)	Organizational consequence (specific)	Occurrences	Total
1	Regulation	KYC obligation	8	16
		Reporting obligation	6	
		Duty of care	2	
2	Institutional isomorphism	Regulatory shift	9	14
		Technology adoption	5	
3	Increased competition	Adopt fast follower strategy	4	10
		Engage in partnership	4	
		Acquire competitor	2	
4	Lower institutionalization power			7
5	Distributed data ownership	Increased risk	2	4
		Prevent crisis	2	
6	External stakeholders	More communication with customers	2	2
7	Higher path dependency			2
8	No consequence	General	2	2

1.7.5 Organizational consequences from legitimacy challenge 5 & 9

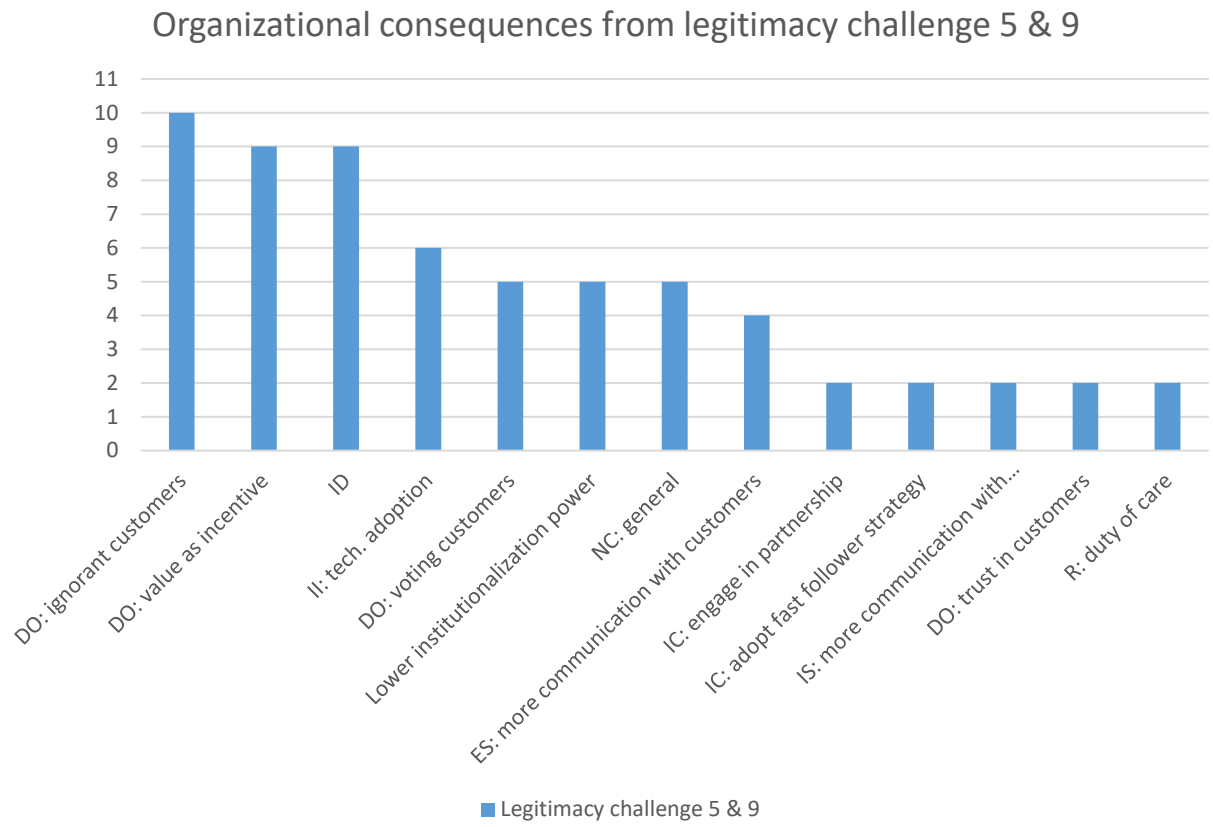


Figure 49: Organizational consequences from legitimacy challenge 5 and 9 mentioned during the expert interviews

Table 34: Identified organizational consequences for legitimacy challenge 5 and 9

	Organizational consequence (group)	Organizational consequence (specific)	Occurrences	Total
1	Distributed Organization	Ignorant customers	10	26
		Value as incentive	9	
		Voting customers	5	
		Trust in customers	2	
2	Institutional differentiation			9
3	Institutional isomorphism	Technology adoption	6	6
4	Lower institutionalization power			5
5	No consequence	General	5	5
6	Increased competition	Engage in partnership	2	4
		Adopt fast follower strategy	2	
7	External stakeholders	More communication with customers	4	4
8	Internal stakeholders	More communication with management/shareholders	2	2
9	Regulation	Duty of care	2	2

1.7.6 Organizational consequences from follow-up discussion

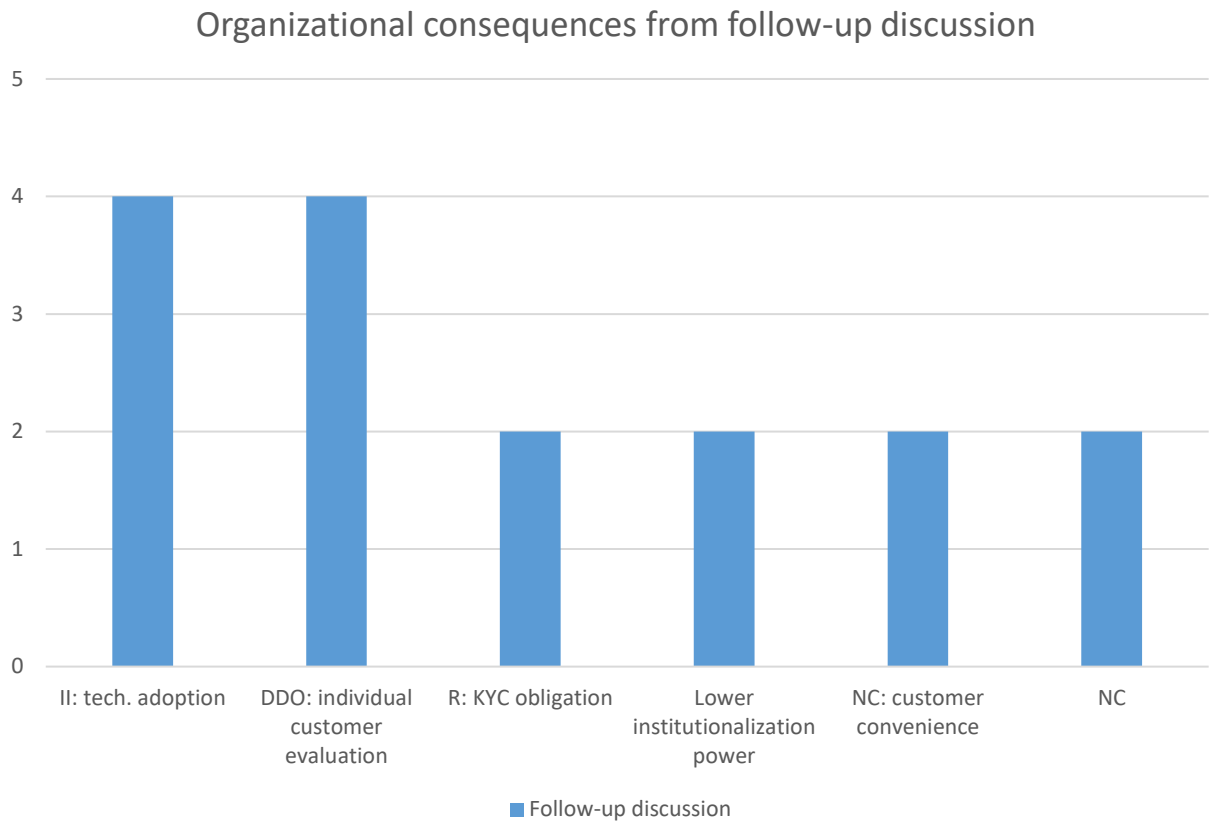


Figure 50: Organizational consequences from follow-up discussion during the expert interviews

Table 35: Identified organizational consequences from follow-up discussion

	Organizational consequence (group)	**Organizational consequence (specific)**	**Occurrences**	**Total**
1	Institutional isomorphism	Technology adoption	4	4
2	Distributed Organization	Individual customer evaluation	4	4
3	No consequence	General	2	4
		Customer convenience	2	
4	Regulation	KYC obligation	2	2
5	Lower institutionalization power			2

2 Appendices – Part III

2.1 Focus group protocol

2.2 Focus group worksheet

2.3 Focus group consent form

2.4 Focus group results

2.1 Focus group protocol

Focus group protocol

To be held on Tuesday 15th Jan 2019 (15:30 – 17:30 pm).

Introduce yourself: name, study background

Introduce the research project

Consent form

Context: The stakeholders of the bank (customers, regulators, employees etc.) have a certain expectation of what the organization should do. Banks are only perceived as a legitimate entity when they conform with these expectations. The features of blockchain technology can affect stakeholder's expectations, both on an economic and social level, since this technology can be used for efficiency gains in validating transactions, but it also eliminates the need for trusted third parties. Within this project, several future expectations have been identified for the bank to remain relevant which will be referred to as organizational challenges. To tackle these challenges, the bank can use different strategies which signal the alignment with these future expectations.

Purpose: The goal of this session it to develop a *communicative approach* for banks to overcome the organizational challenges caused by blockchain technology to improve the innovation strategy. These challenges are based on the future expectations for banks caused by blockchain technology and cover four domains: technology, regulatory, moral, and cultural. Within each domain, we will identify the practical implications that arise when banks use different strategies to tackle these organizational challenges. The different strategies will be provided with the challenges.

Setup: I will provide you with various cases showing the organizational challenges that have been identified for banks within the different domains (i.e. technology, regulatory, moral, cultural). For each domain, different strategies will be given that have to be used to tackle the challenges. I would like to spend approx. 15-25 min on each challenge and in that time, you have to think about:

D. Who are the target groups in each situation?
E. Which legitimation strategies can the bank use best on the target groups in each situation?
F. What are the implications of using these legitimation strategies?

Execution: I am interested in how consultants, like you, can be involved in the process of developing such an approach. Therefore, I am interested in your perspective on this matter. I would like to ask you to write all the information down on the provided worksheets, including thoughts and assumptions (see it as a brainstorm session). If anything is unclear during the session, then please let me know.

Closing: Thank you note.

- Additional questions or comments?
- Next steps
    - What, when?

Organizational challenges

The following section will provide the organizational challenges for banks which are induced by blockchain technology. Depending on the context, the bank must adopt different strategies to be perceived as a legitimate entity when tackling these challenges.

Organizational challenge – technology domain

Blockchain brings several organizational challenges to the bank with respect to technology which are described below. The banks need to keep up with these challenges in order to stay relevant in the future. How can the bank deal with these situations in a legitimate way?

Challenges in where the bank will be pragmatically judged by its stakeholders

- Technological transformation – banks will have to change current business processes and move to blockchain-based solutions on places where blockchain is proved to be more efficient to keep up with changes in the technological environment.
- Decentralized data ownership – banks are put into a technological environment which forces them to: shift to blockchain-based information infrastructures, think more about how to use data as a corporate resource, be content with less data to calculate risks.
- Role shift – the role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management.
- Increased competition – banks are put into a technological competitive environment which forces them to: exit unprofitable market segments, copy the first mover's strategy, acquire innovative startups, engage in partnerships.
- Customer participation – banks are put into a technological environment which forces them to: involve customers in deciding the organization's output, reward customer's for valuable contributions to the organization
- Shaped by the future – banks are put into a technological environment in which the different actors must agree on the platform to be used, limiting the possible choices for innovation.

Strategies for aligning with the expectations in the technology domain

(S1) Respond to needs – meet the substantive needs of various audiences (i.e., respond to client tastes). Demonstrate results.
(S2) Advertise product – persuade constituents to value the innovation offerings
(S3) Co-opt constituents – build alliances with potential constituents; highlight (exaggerate) the extent of constituent participation in the innovation
(S4) Build reputation – trade on the organization's strong reputation in related activities
(S5) Develop legitimacy by organizing collective marketing and lobbying efforts

Questions

A. Who are the target groups in each situation?
B. Which legitimation strategies can the bank use best on the target groups in each situation?
C. What are the implications of using these legitimation strategies?

Organizational challenge – regulatory domain

Blockchain brings several organizational challenges to the bank with respect to regulation which are described below. The banks need to keep up with these challenges in order to stay compliant in the future. How can the bank deal with these situations in a legitimate way?

Situations where banks are legally judged by its stakeholders

- Regulatory transformation – banks will have to comply with regulations that also include the legal aspects of blockchain technology to keep up with changes in the regulatory environment
- Regulatory constraint – banks innovative potential concerning blockchain is limited caused by regulatory aspects involving duty of care, KYC/AML, and reporting obligations.

Strategies for aligning with the expectations regarding regulations

(S1) Signal that the new practice operates in accord with relevant laws and regulations
(S2) Develop legitimacy by organizing collective lobbying efforts

Questions

A. Who are the target groups in each situation?
B. Which legitimation strategies can the bank use best on the target groups in each situation?
C. What are the implications of using these legitimation strategies?

Organizational challenge – moral domain

Blockchain brings several organizational challenges to the bank with respect to moral behavior which are described below. The banks need to keep up with these challenges in order to be viewed appropriate in the future. How can the bank deal with these situations in a legitimate way?

The moral domain involves the honesty and trustworthiness of the bank, but also whether certain activities are the right thing to do – e.g. how the bank determines its use of capital.

Situations in where the bank will be ethically judged by its stakeholders

- Regulatory constraint – banks innovative potential concerning blockchain is limited caused by regulatory aspects involving duty of care, KYC/AML, and reporting obligations
- Regulatory transformation – banks will have to comply with regulations that also include the legal aspects of blockchain technology to keep up with changes in the regulatory environment
- Decentralized data ownership – banks are put into an environment which requires them to: shift to applying data analytics on individual customers, think more about how to use data as a corporate resource, put more effort in sustaining social stability, and shift to self-sovereign IDs for customers.
- Role shift – the role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management.
- Increased competition – banks are put into a competitive environment which forces them to: acquire innovative startups and engage in partnerships.
- Customer participation – banks are put into an environment which forces them to: involve customers in deciding the organization's output, reward customer's for valuable contributions to the organization, make sure customers have sufficient knowledge for contributions.
- Shaping the future – the bank is put into an environment in which they have to adopt a different strategic focus than its competitors.

Strategies for aligning with the moral expectations

(S1) Produce proper outcomes – produce concrete meritorious outcomes
(S2) Embed in institutions – embed new practices in established institutions (e.g., through cooptation of respected entities)
(S3) Offer symbolic displays – portray outputs, procedures, and structures as conforming to moral norms
(S4) Proselytize – attempt to convert current beliefs

Questions

A. Who are the target groups in each situation?
B. Which legitimation strategies can the bank use best on the target groups in each situation?
C. What are the implications of using these legitimation strategies?

Organizational challenge – cultural domain

Blockchain brings several organizational challenges to the bank with respect to cultural acceptance which are described below. The banks need to keep up with these challenges in order to be regarded as meaningful in the future. How can the bank deal with these situations in a legitimate way?

In the cultural domain the audiences specify which banks are allowed to exist, involving appropriate corporate structures and procedures.

Situations in where the bank will be ethically judged by its stakeholders

- Decentralized data ownership – banks are put into an environment which requires them to put more effort in sustaining social stability and shift to self-sovereign IDs for customers.
- Role shift – the role of the bank will shift to different models as blockchain will change or remove certain business processes.
- Power shift – banks are put into an environment in which they have less power to define norms and standards
- Customer participation – banks need to gain trust in the customers' added value
- Shaping the future – the bank is put into an environment in which they have to adopt a different strategic focus than its competitors.

Strategies for aligning with the cultural expectations

(S1) Mimic standards - mimic most prominent and secure entities in the field
(S2) Formalize operations – codify informal procedures
(S3) Professionalize operations – link activities to external definitions of authority and competence
(S4) Seek certification
(S5) Establish and promote new standards and models
(S6) Develop knowledge by promoting activity through third-party actors

Questions

A. Who are the target groups in each situation?
B. Which legitimation strategies can the bank use best on the target groups in each situation?
C. What are the implications of using these legitimation strategies?

2.2 Focus group worksheet

1 Organizational challenge – technology domain

Answers

A. Who are the target groups in each situation?

1. Technological transformation
2. Decentralized data ownership
3. Role shift
4. Increased competition
5. Customer participation
6. Shaped by the future

B. Which legitimation strategies (S1-S5) can the bank use best on the target groups in each situation?

1. Technological transformation
2. Decentralized data ownership
3. Role shift
4. Increased competition
5. Customer participation
6. Shaped by the future

C. What are the implications of using these legitimation strategies?

2 Organizational challenge – regulatory domain

Answers

A. Who are the target groups in each situation?

1. Regulatory transformation

2. Regulatory constraint

B. Which legitimation strategies (S1-S2) can the bank use best on the target groups in each situation?

1. Regulatory transformation

2. Regulatory constraint

C. What are the implications of using these legitimation strategies?

3 Organizational challenge – moral domain

Answers

A. Who are the target groups in each situation?

1. Regulatory constraint
2. Regulatory transformation
3. Decentralized data ownership
4. Role shift
5. Increased competition
6. Customer participation
7. Shaping the future

B. Which legitimation strategies (S1-S4) can the bank use best on the target groups in each situation?

1. Regulatory constraint
2. Regulatory transformation
3. Decentralized data ownership
4. Role shift
5. Increased competition
6. Customer participation
7. Shaping the future

C. What are the implications of using these legitimation strategies?

4 Organizational challenge – cultural domain

Answers

A. Who are the target groups in each situation?

1. Decentralized data ownership
2. Role shift
3. Power shift
4. Customer participation
5. Shaping the future

B. Which legitimation strategies (S1-S6) can the bank use best on the target groups in each situation?

1. Decentralized data ownership
2. Role shift
3. Power shift
4. Customer participation
5. Shaping the future

C. What are the implications of using these legitimation strategies?

2.3 Focus group consent form

I volunteer to participate in a focus group for a research project conducted by a student from Delft University of Technology. I understand that the project is designed to gather information for a research project aiming to improve the innovation strategy of banks by understanding the effects of blockchain on the organizational legitimacy.

1. My participation in this research project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty.

2. I understand that most participants in this research will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to leave the session.

3. I understand that, unless agreed upon otherwise, the student will not identify me by name in any reports using information obtained from this session, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

4. Participation involves actively engaging in discussions coordinated by a student from Delft University of Technology. The session will last approximately 2 hours. Notes and answers will be written during the session. For a reliable analysis, an audio recording of the session will be made. If I don't want to be recorded, I will let the student know before the session takes place.

5. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

6. I have been given a copy of this consent form.

_____ _____

Name participant Date

_____ _____

Signature participant Signature investigator

2.4 Focus group results

Table 36: Identified target groups and legitimation strategies for each pragmatic communication challenge

Pragmatic communication challenges	Target groups	Pragmatic legitimation strategy
Technological transformation – banks will have to change current business processes and move to blockchain-based solutions on places where blockchain is proved to be more efficient to keep up with changes in the technological environment.	Back-office	S1
	Employees	S1
	Customers	S1
Decentralized data ownership – banks are put into a technological environment which forces them to: shift to blockchain-based information infrastructures, think more about how to use data as a corporate resource, be content with less data to calculate risks.	Dutch Data Protection Authority	S1
	Supervisor/regulator	S1, S2, S4
	Customers	S2
Role shift – the role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management.	Shareholders	S2
	Regulator	S2
	Customers	S1, S2
Increased competition – banks are put into a technological competitive environment which forces them to: exit unprofitable market segments, copy the first mover's strategy, acquire innovative startups, engage in partnerships.	Executive and supervisory board	S1, S4
	Shareholders	S3
	Customers	S3
Customer participation – banks are put into a technological environment which forces them to: involve customers in deciding the organization's output, reward customer's for valuable contributions to the organization	Customers	S3, S4
Shaped by the future – banks are put into a technological environment in which the different actors must agree on the platform to be used, limiting the possible choices for innovation.	Suppliers	S5
	Competitors	S5
	Customers	S4

Table 37: Identified target groups and matching strategies (S1-S5) for each pragmatic challenge

	Pragmatic challenge	RO (A)		RE (B)		AN (C)		AG (D)	
1	Technological transformation	Back-office	S1	Customers		Employees	S1	Employees; customers	S1
2	Decentralized data ownership	Dutch Data Protection Authority	S1	Customers		Supervisor	S4; S1	Customers; regulator	S2
3	Role shift	Shareholders	S2	Customers		Customers	S1	Regulator; customers	S2

4	Increased competition	Executive and supervisory board	S1; S4	Customers		Owner; customers	S3	New customers	
5	Customer participation	Customers	S3	Customers		Customers	S4	Customers	
6	Shaped by the future	Suppliers; competitors	S5	Customers		Customers		Customers	

Table 38: Identified target groups and legitimation strategies for each regulative communication challenge

Regulative communication challenges	Target groups	Regulative legitimation strategy
Regulatory transformation – banks will have to comply with regulations that also include the legal aspects of blockchain technology to keep up with changes in the regulatory environment	Regulator	S1
	Legal supervisor	S1
	Customers	S1
Regulatory constraint – banks innovative potential concerning blockchain is limited caused by regulatory aspects involving duty of care, KYC/AML, and reporting obligations	Regulator	S2
	Legal supervisor	S2
	Customers	S2

Table 39: Identified target groups and matching strategies (S1-S2) for each regulatory challenge

	Regulatory challenge	RO (A)		RE (B)		AN (C)		AG (D)	
1	Regulatory transformation	Regulator	S1	Legal supervisor	S1	Legal supervisor; customers	S1	Regulator	S1
2	Regulatory constraint	Customers	S2	Customers	S2	Legal supervisor; customers	S2	*Regulator; customers**	S2

**regulator: to show compliance; customers: to show constraint*

Table 40: Identified target groups and legitimation strategies for each normative communication challenge

Normative communication challenges	Target groups	Normative legitimation strategy
Regulatory constraint – banks innovative potential concerning blockchain is limited caused by regulatory aspects involving duty of care, KYC/AML, and reporting obligations	Society	S1, S3
	Customers	S1, S3
Regulatory transformation – banks will have to comply with regulations that also include the legal	Society	S1

aspects of blockchain technology to keep up with changes in the regulatory environment	Customers	S1, S3
Decentralized data ownership – banks are put into an environment which requires them to: shift to applying data analytics on individual customers, think more about how to use data as a corporate resource, put more effort in sustaining social stability, and shift to self-sovereign IDs for customers.	Society	S3
	Customers	S1, S2, S3
Role shift – the role of the bank will shift to different models: a facilitator of a platform, a producer of complex products on a platform, or a service provider for data management.	Society	S3
	Customers	S1, S2, S3
Increased competition – banks are put into a competitive environment which forces them to: acquire innovative startups and engage in partnerships.	Society	S3
	Customers	S1, S3, S4
Customer participation – banks are put into an environment which forces them to: involve customers in deciding the organization's output, reward customer's for valuable contributions to the organization, make sure customers have sufficient knowledge for contributions.	Society	S3
	Customers	S4
Shaping the future – the bank is put into an environment in which they have to adopt a different strategic focus than its competitors.	Society	S3
	Customers	S1, S3

Table 41: Identified target groups and matching strategies (S1-S7) for each moral challenge

	Moral challenge	**RO (A)**		**RE (B)**		**AN (C)**		**AG (D)**	
1	Regulatory constraint	Society	S1; S3	Customers	S1; S3	Customers	S1	Customers	S3
2	Regulatory transformation	Society	S3	Customers	S1; S3	Customers	S1	Customers	S1
3	Decentralized data ownership	Society	S3	Customers	S3	Customers	S1	Customers	S2
4	Role shift	Society	S3	Customers	S3	Customers	S1; S2	Customers	S2
5	Increased competition	Society	S3	Customers	S3	Customers	S1	Customers	S4
6	Customer participation	Society	S3	Customers	S3	Customers	S1	Customers	S3
7	Shaping the future	Society	S3	Customers	S3	Customers	S1	Customers	S3

Table 42:Identified target groups and legitimation strategies for each cognitive communication challenge

Cognitive communication challenges	Target groups	Cognitive legitimation strategy
Decentralized data ownership – banks are put into an environment which requires them to put more effort in sustaining social stability and shift to self-sovereign IDs for customers.	Society	S1, S5
	Customers	S5
Role shift – the role of the bank will shift to different models as blockchain will change or remove certain business processes.	Society	S1, S5
	Customers	S5
Power shift – banks are put into an environment in which they have less power to define norms and standards	Society	S1, S5
	Customers	S5
Customer participation – banks need to gain trust in the customers' added value	Society	S1, S5
	Customers	S5
Shaping the future – the bank is put into an environment in which they have to adopt a different strategic focus than its competitors	Society	S1, S5
	Customers	S5

Table 43: Identified target groups and matching strategies (S1-S5) for each cultural challenge

	Cultural challenge	RO (A)		RE (B)		AN (C)		AG (D)	
1	Decentralized data ownership	Society	S5; S1			Customers; politics -> society	S5	Customers; society	S5
2	Role shift	Society	S5; S1			Customers -> society	S5	Customers; society	S5
3	Power shift	Society	S5; S1			Customers -> society	S5	Customers; society	S5
4	Customer participation	Society	S5; S1			Customers; potential customers	S5	Customers	S5
5	Shaping the future	Society	S5; S1			Customers; potential customers -> society	S5	Customers	S5

Master thesis
April 2019