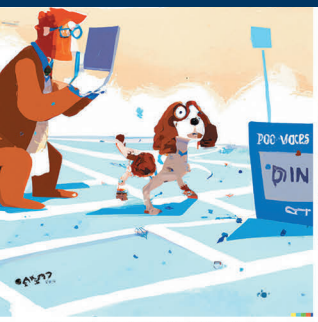
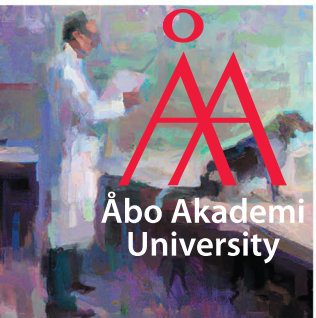
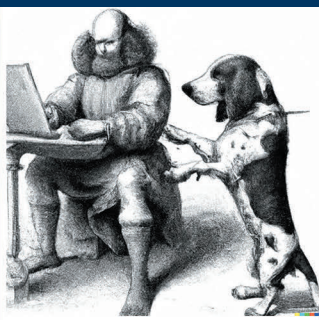
Tomas Träskman

Between Movement and Platform

Exploring the Sociomateriality of Accountability in Platform Organization and its Performative Consequences







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Cover:

Tomas × DALL·E

Human & AI

The pictures on the cover were created on the platform DALL-E 2. DALL·E 2 is a new AI system that can create realistic images and art from a description in natural language. The descriptions given by Tomas to DALL-E were different variations of the sentence "A researcher and a welsh springer spaniel puppy exploring a digital platform."

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Faculty of Social Sciences, Business, and Economics
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Writing a dissertation about a growing disruptive phenomenon in contemporary society poses many challenges. Just when you think you have a handle on things, a new critical paper, a news article, a new facet of a social movement, a new event, a new technology forces you to consider an insert here, expand there, and in general, reorient your thinking. This dissertation on platform organization has become a platform of its own. Paraphrasing Ray Oldenburg (1989), it has become a "Great Good Place" where several people have engaged in conversations and different academic activities.

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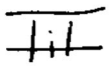
Ängholm, Korpo 4.8.2022



Abstract

Digital platforms represent a growing disruptive phenomenon. Platforms are engaging since they trace peers, consumers, and citizens, organize social movements, manage distributed innovation, and aid in the governance of cities in terms of distributed agency and autonomy. As different tracing and evaluative infrastructures form and disclose new forms of interaction and trust, platforms give shape to new subjectivities, properties, and relative positions that have not hitherto been defined. This dissertation investigates the emergence of this phenomenon, the accounting practices and infrastructures that underpin this new form of organizing, and possible consequences in terms of accountability that arise in platform organizing.

This doctoral dissertation aims to contribute to the understanding of how and where accountability is performed in platform organization.

The dissertation draws on different sources from a spiral case study to provide a body of empirical evidence about platformization and accountability. In terms of the approach, the dissertation works under what Orlikowski & Scott (2014) describe as the "broad banner of sociomateriality," a perspective where materiality is seen as constitutive of all organizational practices. Thus, the dissertation introduces a practice theoretical approach focusing on practice as sociomaterial configuring.

The empirical context of the first two papers is sharing economy practices and platforms in Finland. The first paper examines how disruptive activities emerge, while the second considers platform-mediated peer trust in the light of "nordic exceptionalism" and high trust societies. The empirical context of the third paper is Open Innovation platforms. This paper develops a performative theory of openness. Drawing on interview and ethnographic data from an empirical case study of the Smart and Wise City Turku spearhead project, the fourth paper explores the tendency in smart cities initiatives to invest in ICT as a means to "wire up" and make technology "do political work" (Woolgar & Neyland, 2013, p. 17). The paper's central theoretical concept of "thinking infrastructure" highlights how new accounting practices (e.g., on digital platforms) operate by disclosing new worlds where the platforms and the users discover the nature of their responsibilities to the other.

When a platform performs accountability, it enables new modalities of distributed agency and distributed authority. When someone or something does

not count on a platform, one needs to think critically about the boundaries, constraints, and exclusions that operate through the particular sociomaterial practice of platformization.

Through the four empirical research papers and a kappa, this dissertation contributes to understanding how, where and when accountability is performed in platform organization. The findings highlight the sociomateriality of accountability in platform organization and its performative consequences.

Abstrakt

Digitala plattformar representerar ett växande disruptivt fenomen. Plattformar är intressanta eftersom de gör allt från att spåra användare, konsumenter och medborgare, organisera sociala rörelser, hantera distribuerad innovation och hjälper till att styra städer. När olika spårande och evaluerande digitala infrastrukturer formar och avslöjar nya former av interaktion och tillit, ger plattformar form åt nya subjektiviteter, egenskaper och relativa positioner som hittills inte har definierats. Denna avhandling undersöker uppkomsten av detta fenomen, redovisningspraxis och infrastrukturer som ligger till grund för denna nya form av organisering och möjliga konsekvenser i termer av ansvarsskyldighet som uppstår på plattformar.

Det övergripande syftet med denna doktorsavhandling att bidra till förståelsen av hur och var ansvarsskyldighet utförs i plattformorganisation.

Avhandlingen bygger på olika källor från en spiralfallsstudie och tillhandahåller en mängd empiriska bevis i relation till begreppen plattform och ansvarsskyldighet. Avhandlingen placerar sig under det som Orlikowski & Scott (2014) beskriver som "sociomaterialitetens breda baner", ett perspektiv där materialitet ses som konstituerande för alla organisatoriska praktiker. Således introducerar avhandlingen ett praktikteoretiskt förhållningssätt som fokuserar på praktiken som sociomateriell konfiguration.

Den empiriska kontexten för de två första artiklarna är delningsekonomi och plattformar i Finland. Den första artikeln undersöker hur disruptiva aktiviteter uppstår, medan den andra betraktar plattformsförmedlad tillit i ljuset av "nordisk exceptionalism". Den empiriska kontexten för den tredje artikeln är plattformar för öppen innovation. Denna artikel utvecklar en performativ teori om öppenhet. Med utgångspunkt i intervjuer och etnografiska data från en empirisk fallstudie av spjutspetsprojektet Smart and Wise City Turku undersöker den fjärde artikeln smarta städer och trenden att investera i IKT som ett sätt att "koppla upp" och få teknologi att "göra politiskt arbete" (Woolgar & Neyland, 2013, s. 17). Artikelns centrala teoretiska koncept "tänkande infrastruktur" belyser hur nya redovisningsmetoder (t.ex. på digitala plattformar) fungerar genom att avslöja nya världar där plattformarna och användarna upptäcker arten av deras ansvar gentemot den andra.

När en plattform fördelar ansvar möjliggör den nya modaliteter för distribuerad handlingskraft och distribuerad auktoritet. När någon eller något inte räknas på en plattform, måste man tänka kritiskt på de gränser, begränsningar och

uteslutningar som verkar genom den speciella sociomateriella praktiken plattformisering.

Genom de fyra empiriska forskningsartiklarna och en kappa bidrar denna avhandling till att förstå hur, var och när ansvarsskyldighet uppstår i plattformsorganisation. Resultaten belyser den sociomateriella ansvarsfördelningen i plattformsorganisation och dess performativa konsekvenser.

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1. Introduction

> - Since the world is changing quite rapidly, we certainly do have an increasing number of new phenomena to take into account.
>
> (Petri Manninen, Inspector General, Finnish Tax Administration, 2016).

The above quote comes from the tax authorities, an old and familiar infrastructure in our society, a "boring thing," "singularly unexciting," as Susan Leigh Star probably would portray it. It "takes some digging to unearth the dramas" (Star, 1999, p. 377) in infrastructure. The words of the inspector general were part of a more extended conversation between him and me on the subject of a time banking community that caused drama in Finland at the time.

The time bank, *Stadin Aikapankki*, emphasized certain freedom from state power as it explored the daily practice of time banking. The practice was, according to the time bank, beyond the reach of the tax authorities. Nonetheless, since the time bank was situated in the greater collective project of Finland, the tax authorities required the time bank to account for its activities. What surprised me in the conversation was that much of what the inspector general said during our discussion challenged not just the assumptions of the social movement we discussed. It also challenged much of the theory I was reading at the time, including theorization on self-organization and citizen activism (Harvey, 2012; Rantanen & Faehnie, 2017) and inertia caused by social acceleration (Rosa, 2013). Taken together, these assumptions paint a bleak picture of tax authorities as a professionalized but overstaffed, unresponsive machine with little interest in innovation or engagement with civil society. During the conversation, I learned that confrontations such as the one between the time bank and the Finnish tax authorities are endemic for all types of alternative currencies. Questions that emerge from such confrontation should be answered for alternative exchange systems to play a more significant role in society. The tax authorities took the utopian experiment seriously. They seemed surprisingly curious and apt to make sense of a world that changes "quite rapidly" and adapt to that new brave world, if necessary. The tax authorities also needed information to fulfill their purpose as tax authorities. You could say that they needed some accounts to build trust. Thus, formal control would add to trust. The time bank, however, saw things differently: by asking for accounting information, the tax authorities *did not* trust the time bank.

The problem for the time bank was that the digital platform it used to organize its members was also easy to access. The tax authorities used it as a "tracing infrastructure" (Power, 2019) that monitors the platform's actors and objects and make them visible, thus making the time bank open to possible interventions.

The present thesis argues that when studying the relationship between the social and the material in the context of our increasingly digital society, we must consider relationships of accountability in addition to exploring different infrastructures. When we omit the redistribution of accountability relationships that new tools and technologies such as platforms perform, we overlook how these technologies reconfigure the territory of the common and allow new voices and responsibilities to enter into the political space.

The example of time bank is one example of an organization embedded in technology that attempts to construct new ideas and practices beyond traditional boundaries and thereby challenge societal beliefs and norms. Such "social movement organizing" (Davis, et al., 2005) is more and more happening on "platforms" (Constantinides, et al., 2018; Parker, et al., 2016; Kornberger, et al., 2017), socio-technical "infrastructures" (Larkin, 2013; Pujadas & Curto-Millet, 2019; Star, 1999) and practices which an entire stream of new research ground in a relational and performative ontology (Cecez-Kecmanovic, et al., 2014; Hultin, 2019; Orlikowski, 2007) In this "sociomateriality" (Orlikowski, 2010; Orlikowski & Scott, 2008) entities, human beings, and things exist only in relations: they are performed and continuously brought into being through relations. These infrastructures are a form of control that determine the potentiality of any place within the network, defining "what is possible and actual" (Hopwood, 1996 paraphrased in Kornberger et al. 2017); they "think" by "valuing, tracing, and governing" (Bowker, et al., 2019), which has implications for accountability in the infrastructure, as it performs a substantial redistribution of accountability (Scott & Orlikowski, 2012; Shotter, 2013; Stark, 2009). This doctoral dissertation is thus concerned with how these forms of organizing realize responsibility and accountability—in the double sense of performing and understanding them.

This research is grounded in an empirical case study of platform organizing, mainly in the context of a nordic welfare state, Finland. This context is characterized by high levels of trust, relative strength, and autonomy of political solutions and universalistic policies targeting the neediest and including the whole population. In addition, Finland's digital performance scores the highest ratings (EC, 2020), together with other nordic countries, and is among the global

leaders in digitalization. The case study represents a "critical case study" (Flyvbjerg, 2006), in the accountability literature, as well as theorizations on the emergence of new practices and sociomateriality. "Nordic exceptionalism" makes it into something of an "extreme case." The dissertation extends and consolidates literature seeking to problematize the received views on technology in social life through further reflection upon accountability in platform organizing. In my articulations and emphasis here, the dissertation makes some particular contributions, notably the following. My accountability delineation, which includes an appreciation of intelligent accountability, and limits to transparency and accountability, contribute to better understanding of how, where, and when accountability is performed in platform organization. As the dissertation extends the unit of analysis to different practices in heterarchies, it produces "exemplars" (Flyvbjerg, 2006) of what is actually happening "beyond accountings hierarchical consciousness" (Hopwood, 1996).

1.1 Background: a new social movement

In the early stages of my research, another brave new world was emerging. According to Ruth Levitas, for a better society to be located in the future at all, then some notion of change, and an agency capable of affecting this, is necessary (2011). The notion of change was, in this case, "sharing." The emerging sharing economy was a social movement (Botsman, 2016; Kornberger, et al., 2018; Schor, 2014) and a "disruptive force" (PwC, 2016). The capable agency for a better society was trickier to identify, and according to some, disruption came from practices that social movement theory would identify as practices of "self-transformation" (Davis, et al., 2005; Munro, 2014) and "counter conduct" (Davidson, 2011), while other identified technology as the driving force. According to representatives of the later perspective: the idea of sharing was not new; hence, what was different now, was that technology was introduced to the concept (Gansky, 2012; John, 2013). Both popular and academic debates talked about "disruption," not just with regard to platforms or sharing economy. A historical examination of the concepts of disruption and disruptive innovation shows that they have their antecedents in the idea of "creative destruction," a significant element in the European Zeitgeist of the early twentieth century that was first introduced to economics by Werner Sombart and later conceptualized by Joseph Schumpeter (1947). In the mid-2010s, disruption was the new black; it was everywhere. It still is.

In the context of sharing and platform economy, disruption has been caused by peer production and sharing practices (Benkler, 2017; Botsman & Rogers, 2010;

Chase, 2015; Gansky, 2012; Kramer, 2016), and technology like digital platforms (McAfee & Brynjolfsson, 2017; Shaughnessy, 2015; Srnicek, 2016), thus creating a need to manage disruption (Gans, 2016; Linkner, 2014). However, what puzzled me, was questions like: how does one make sense of disruption and novel innovations? Is disruption or novelty an organized environment of practical activities? How does novelty or disruption emerge? How do you, for example, make disruption detectable? How does one account for it? How do you, with the words of Garfinkel (1967), make novelty or disruption "tell-a-story-about-able"? And, how do you trust a "disruptor" (Ansari & Krop, 2012), i.e., someone that aims to creatively destroy your world to replace it with something that they call better? Someone like the timebank, *Stadin Aikapankki*.

1.2 Discovering something emerging between movement and platform

> For me, it all started when Facebook arrived in Finland, and suddenly one had 500 friends/…/ next, I started the *Refuge Hospitality Club*, where a chain of events started from just a joke that unexpectedly turned out to be some kind of 'action-space,' something I view as the action-space of social movements, that then gathers a group of people, that is sort of a tabula rasa, a loose definition that then accumulates enthusiasm, energy, and people self-organize, and then people are like "well, I could do something" and then suddenly people are doing workshops in the refuge-center, someone is collecting winter clothes, and someone acquires all that is needed for a newborn child, while someone else is doing a city guide /…/ and just the mechanism that something like this can happen this efficiently, this fast, and the fact that I can turn another page today, and does the same thing happen on it? It was in the middle of all this that I started to grasp what it meant if we are all interconnected; my big revelation was that in this world, we do not need organizations since now people can self-organize. (Pauliina Seppälä 2017, Co-founder of Yhteismaa)

The above monologue lasted approximately 60 seconds but written down on paper, Pauliina Seppäläs' account of her first actions in the sharing economy is lengthy. It is, however, a wonderful illustration of what happens when people are in the midst of something novel in all its haphazardness. The potential of new collective framings of other social worlds emerging just by turning a "new page" is as fascinating as puzzling. What confounded me in accounts of what popularly was called the sharing economy was the relationship between disruption and technology. According to these accounts, technology had capacities. Technology, especially in the form of "platforms," brought people together; it made sharing possible, produced movements, and created unexpected things. It was, at times,

in line with Woolgar and Neylands (2013) thinking on mundane governance, made to do political work. However, if disruption happens when people meet on a digital platform, from where does one approach it? Where does one begin when "meatspace" is fused with cyberspace? Where does one end? What kind of frame of mind is necessary for understanding platform-organized disruption? Is there a peculiar epistemological trait, vocabulary, or performance unique to such disruption? With what sort of instruments do disruptive phenomena on platforms offer themselves as subjects of study?

Existing approaches to studying technology and organization have tended to focus on the potential and use of platforms, as in prescriptive studies on a platform revolution (Parker, et al. 2016) or a platform society (van Dijck, et al., 2018) or conceptual papers (e.g. Kornberger et al. 2017). Distributed production is presented as an emerging paradigm, and platforms organize this production. In terms of what is distributed, new bifurcations and conceptualizations compete for the scholar's attention depending on if, for instance, production is distributed (Benkler, 2017), knowledge is distributed (Lakhani & Panetta, 2007), innovation is distributed (Kornberger, 2017; Lakhani, et al., 2013), trust is distributed (Botsman, 2016; Sundararajan, 2016), control is distributed (Kornberger, et al., 2017) or authority is distributed (Stark, 2009). What all these distributed organizational forms seemed to share is their digital infrastructure: digital platforms.

This present thesis began from a set of contradictory observations arising from the fieldwork that led me to problematize some of the most powerful narratives and assumptions offered by the literature on platforms. The literature was often prescriptive and highlighted correct usage of potential information and communication technologies (ICT) to achieve success. In contrast to this I found that in the interaction between technology, new constellations of actors, and contextual conditions one could learn more about the emergence of something novel. Critical studies herald sharing economy as a path to a more sustainable future and a cure to hyper-consumption. But often, they ignored the materiality, i.e. the infrastructures that all sharing economy practices, commercial and collaborative, share, i.e., the platform. In Seppäläs narrative, the story begins with Facebook. Technology, interdependence and human inquiry are all linked: "[i]t was in the middle of all this that I started to grasp what it meant if we are all interconnected /…/ we do not need organizations, since now people can self-organize." My observations indicated an ongoing, unfinished world where not only sharers but also platforms learn and transform as the phenomenon unfolds. This present thesis is motivated by the

observations that distributed production happening between platforms and movement discloses new worlds where the platforms and the users discover the nature of their responsibilities to the other.

As a matter of illustration, in a research project, I was involved with in 2015-2016, a fellow researcher could not make sense of the time bank mentioned above and asked me if I could take a stab at it. Time banking was so "utopian" according to him that it could maybe interest me. I did a study and learned among other things, that what we had approached as a novel economic practice dated back to the 1960 or, at times, as far away as some utopian societies that existed at the end of the 19th century. In Finland, time banking was, however, new and coincided with other emerging distributed organizational initiatives that all fell under the umbrella term sharing economy. Such observations resonate well with Schumpeter's take on disruption as a process:

> whose every element takes considerable time in revealing its true features and ultimate effects, there is no point in appraising the performance of that process *ex visu* of a given point of time; we must judge its performance over time... (Schumpeter quote in Kumaraswamy, et al., 2018, p. 1030).

Thus, in Schumpeter's view, disruption is temporal.

What further surprised me was the lack of research on actors in specific contextual conditions. In studies on new practices, it is common to focus on the most powerful actors (Strang & Meyer, 1993). While theorization on the emerging sharing economy focused on *Airbnb* and *Uber*, the time bank, *Stadin Aikapankki*, was the practice that caused the most disruption in Finland at the time. Theorization of sharing economy has continuously struggled (and still does) from a shortage of exemplars, which in its turn, according to Flyvbjerg (2006), can lead to a scientific discipline being an ineffective one. The lack of insights into real-life practices has undoubtedly made the debate somewhat ineffective regarding the effects of sharing economy. For example, in 2015, Oliver Blanchard wrote a provocative piece of writing where he, in frustration, identified that all the talk of a sharing economy, independent of if it focused on market size or ecological footprint, is led by the examples of *Uber, Airbnb*, and *Lyft* (2015). According to Blanchard, this led to skewed terminology: "It's a lot like trying to classify pizza as a vegetable: you can if you want," he wrote (2015). Blanchard and others (e.g. Goodale, 2015; Scholz, 2017) criticized an ongoing generalization in media and academia based on just a few examples, which confused regulators and actors trying to make sense of the new sharing economy practices. In Finland, the sharing practices mentioned by Blanchard

did not strike with the force described by the news, corporate reports or academic debate. This did not hinder many; including Finnish government authorities from crying wolf and starting to organize different environments of practical activities to manage this disruptive phenomenon. The work of the Inspector General, Manninen is an example of the organization of practical activities around disruption. Another such environment can be found in Denmark, where the government started a partnership called the "*Disruptionsrådet*" to tackle all kinds of disruption. What intrigued me in all of this was partly the outcomes of sharing economy practices, like the carnivalesque *Restaurant day* and the *Sauna day* that were not so much about sharing material possessions (food and space), but about eating together or telling stories in saunas. In these innovative practices, the organizations seemed to know how to perform sharing economy, thereby suggesting "the possibility of alternative emergent presents" (Kumaraswamy, et al., 2018) to the ones offered by Airbnb and Uber.

Innovation performance measurement consists of "knowing performance, but also about doing performance" (Johanson & Vakkuri, 2018). Nevertheless, at times there were surprises with consequences. One outcome of the sharing economy, was the production of alternative identities where strangers shared with strangers, which Judith Schor (2014) conceptualized as 'stranger sharing.' According to, Spicer & Böhm (2007), outcomes such as experimentation with "alternative identities, aspects of the symbolic economy and cultural innovation" (p. 1675) is reoccurring in social movements. When the practice of stranger sharing, moved online on digital platforms, different calculative devices in these infrastructures created values that in no way were stable but moved in different directions. According to Rachel Botsman (2017), the simple accountability mechanisms in digital "distributed trust" infrastructures reduced "the unknown enough for people to take a risk and do things differently" (p. 30). What attracted my attention was the difficulties actors had in understanding if the values created resulted from social movement or technology. For instance, the accounting devices on platforms created transparency. Ostensibly a neutral practice, accounting is a system and craft for "making visible" (Dillard & Vinnari, 2019) the activities of an actor. However, as Strathern (2000) has noted, there is "nothing innocent" about transparency, which was also the case in the sharing economy. The absence of "skilled labor" on *Stadin Aikapankkis* website and annual reports caught the tax authorities' attention. The guiding principle for all interaction in the time bank is that everyone's time is of equal value. This new practice that the time bank disclosed did not measure on the tax authorities' indicators. In a letter to the tax authorities, *Stadin Aikapankki* criticized the

authorities since they should make more effort to make sense of this new reality and its value for society (Stadin aikapankki, 2013). Another consequence of the emergence of sharing economy was that the traditional Finnish practice of 'talkoot' got under scrutiny. Talkoot, is a gathering of friends and neighbors organized to accomplish a task, such as repairing a roof, a church or, cleaning a park. Ironically this practice is close to the "real sharing" that, for instance the above-mentioned Blanchard, Goodale and Scholz call for, especially now, that the sharing economy has been institutionalized, and, in their view, instrumentalized by private interests. From an accountability aspect, the transparency generated by platform accountability mechanisms made *performance* visible; however, this performance was, as John Roberts puts it, "decoupled from actual performance" (2009, p. 364). Accountability, "promises," according to Roberts interpretation of Judith Butlers thinking, identity: it is "the condition of *becoming* a subject who *might* be able to give an account" (Roberts, 2009, p. 959, emphasis added). Such a becoming is a precarious process. Movements might, with the words of Kornberger et al. (2017) fall apart or ossify; platforms can turn into labor markets for hitherto non-commercialized spheres of life. This was at least what according to many happened with *Stadin Aikapankki:* it fell apart as it could not secure its recognition by the "big Other", the tax authorities, i.e. the guarantor of its status as a subject that might have been able to give an account.

Such a tragic reading of the sharing economy fails however to recognize the dynamism of the phenomenon. Firstly, central members of the time bank acknowledged that the process of being held accountable was useful, as it helped them understand some of the actual effects of what they were doing. Secondly, the process between the tax authorities and the time bank continues, and the inspector general, as well as others from the tax authorities, have participated in joint publications that promote shared learning on sharing economy organization (e.g. Harmaala, et al., 2017). Very early on, the tax authorities stated that the time bank was not a threat, but rather something to be approached with curiosity, since it could expand our society's capacity for action. Thirdly, as Lounsbury & Crumley (2007) have shown, understanding new practice creation requires attention to the multiplicity of actors that interactively produce change. Focus on the single tragic case, teaches us a lot. In the case of timebanking, one learns how new practices become established (or fail) via legitimacy. Nevertheless, this reading is easily ignorant of all the other new practices between movement and platform(s) that might be able to give account. Understanding more of at least some of these practices, might not only project these utopian alternatives with some "existential density" (Jameson, 2005), but also help accounting to recover parts of its social significance. In the context of

organizations, it is as Roberts (2009) puts it, the "reality of interdependence that needs to be managed" (p. 967). This holds true for organizations in general, but applies even more to distributed organizational practices and their infrastructures.

1.3 Research agenda and casing of the research

> There is nothing that generates more enthusiasm and excitement than seeing that what I contributed actually contributes to what it is that we are trying to do. That is interestingly an incredibly powerful source of nudging the crowd in an effective direction. (Ralph Welborn, Chief Executive Officer of Imaginatik)

The quote above is from the empirical material analyzed in paper three. In the interview, Welborn describes something called the *Kudos ranking system,* a digital open innovation infrastructure that seeks to actively engage the crowd in idea valuation. *Kudos* is an accounting device that allows for judgment, search, and selection. It can be understood in terms and as an extension of literature on 'accounting as mediating devices' (Miller & O'Leary, 1987; Millo & MacKenzie, 2009; Pollock & D'Adderio, 2012; Kornberger, et al., 2017) as it generates enthusiasm and direction and affords for "matching, interaction, and relations among peers on the platform to be achieved in distinctive and consequential ways" (Fourcade M. & Healy, 2013). Nonetheless, what is this a case of?

The idea of theoretical framework is to enable inquiry and dialogue with existing literature by defining the main concepts of the research. According to Ragin (1992), social scientists as empirical researchers face two main problems: the theoretical realm's equivocal nature and the empirical realm's complexity. Casing is invoked to make the linking of ideas and evidence possible. In this dissertation, cases were, in line with Ragin, "not one thing or another," but way stations "in the process of producing empirical social science" (1992, p. 225). Although the quote at the beginning of this chapter suggests that platformization enhances performance, some of the things happening on platforms do not necessarily produce valuable results (Garud & Munir, 2008). Innovation, especially "disruptive innovation" (Christensen, 1997), is but one example. So how does novelty emerge as tell-a-story-about-able? And who can account for it? According to Garud, et al. (2015) different philosophical assumptions about space and time, invites varying forms of theorization and different vantage points for acting and researching emergence. In this study, I, in line with Garud et al's (2015) recommendation, adopt a temporal approach to the emergence of platform organizing. Actors' knowledge of something novel or disruptive emerging is gained not via passive observation but by describing an ongoing flow of praxis where "things" exist as "doings" (Shotter, 2013, p. 33). Regarding the novel (the "doings"), I adopt a practice theoretical approach (broadly defined Reckwitz, 2002; Schatzki, et al., 2001; Schatzki, 2002) for examining the sociomateriality (Orlikowski, 2000; Orlikowski, 2007; Scott & Orlikowski, 2012) of platform organization and accounting devices, providing a way of

understanding the differences I observe in terms of performativity (Butler, 1993; Callon, 2007; Revellino & Mouritsen, 2015). From a performativity perspective, all kinds of actors like online communities (Barrett, et al., 2016), political movements (Butler, 2015) and disruptors (Kumaraswamy, et al., 2018) explore ideas and new practices (Lounsbury & Crumley, 2007) that are shaped by memories of the past, aspirations of the future and contextualized by the settings within which they practice and operate (Kumaraswamy, et al., 2018). During my research, I was able to observe the unfolding of several distributed organizational forms. Therefore, this study is well suited to address both the creation and emergence of new practices organized on platforms (platformization), accounting as infrastructuring practice, as well as tracing-(Power, 2019) evaluating infrastructures (Kornberger, et al., 2017), and accountability.

1.4 Focus of the study

The previous section presented a general outline of different vantage points one can take in order to explore the emergence of the disruptive phenomenon of platform organizing. In this section, I, first conceptualize the emerging distributed practices as "platform organization" or simply "platformization". Following this, I elaborate on a more particular focus on accountability and accountability relations on platforms.

In general, a platform is any physical, social, technological *base* on which sociotechnical processes are built (Anttiroikko, 2016, emphasis added)). The idea of a base implies, as Schultze's and Orlowski's early explorations of the metaphors that are shaping this emerging reality suggest: an "underlying *infrastructure* [in platforms], that does not impose a specific structure, but affords a freer, edgeless organization" (2001, p. 57, emphasis added). Infrastructure(s) create the grounds on which platforms operate. (Constantinides, et al., 2018; Garud, et al., 2006; Larkin, 2013). I define a digital platform as a sociomaterial infrastructure that enables value-creating interactions between external producers, consumers and other peers through different architectures of participation and evaluative infrastructures.

However, in a relational ontology, it is not only important to ask what platforms *are*, but what they *do, and to whom*. Platforms, with the words of Langley and Leyshon (2017, p. 11) enroll users "through a participatory economic culture and mobilize code and data analytics to compose, an immanent infrastructure". The primary function of platforms is *not* to actually organize production or to innovate, but to provide the conditions in which distributed actors, such as peers and innovators can do so (Constantinides, et al., 2018; Kornberger, 2017). In van Dijck's (2013) terms, platforms are not simply in the business of intermediating *connections* but of actively curating *connectivity*.

Such a broad definition captures the flow between movement and platform in, for example, sharing economy organizations on platforms (Kornberger, et al., 2018), and smart city governance platforms (Castelnovo, et al., 2016), plus the underlying infrastructure that underpins them. Although the platforms operating in different domains of digital circulation are somewhat different, I argue in line with Langley and Leyshon (2017) that they nonetheless share a distinctive logic and set of sociomaterial practices of intermediation.

In this Kappa, I analyze platform organization as platformization, i.e., as a verb, the tactics of thinking and operating multisided platforms to provide

architecture and infrastructure for intermediation is conceptualized as platform organization or simply platformization (I use the word interchangeably henceforth). Platform organization is viewed as practice, more specifically as a sociomaterial practice. As I will illustrate in the different papers of this dissertation, such practices can be time banking, sharing economy, open innovation, or a smart city: Stadin Aikapankki, Nappinaapuri, or, for instance, Smart and Wise City Turku. Together these provide advantageous settings to consider platform organization. Accounting practices, in turn, help structure platform organization (Kornberger, et al., 2017). Pujadas and Curto-Millet (2019) argue that platforms tend to be unproblematically presented as the infrastructure of the sharing economy—as matchmakers of supply and demand. This brings us to the more particular focus of this study: accountability.

In Susan W. Scott's and Wanda J. Orlikowski's paper "Reconfiguring relations of accountability: Materialization of social media in the travel sector," they draw on Roberts's notion of accountability. They emphasize three specific contributions to the analytical purchase of understanding processes of accountability online. These are the sociomateriality of accountability, examining the reconfiguration of relations that constitute it, and highlighting its performativity. This dissertation heeds their call for more empirical exploration of the sociomateriality of accountability and its performative consequences. The evaluative infrastructures on platforms continuously make visible and assess the performance of individuals to create a match and control quality. This transparency far exceeds the passive image of a simple making visible or neutral matchmaking. As I argue in paper 4, accountability relationships are redistributed as technology cognitively configures and reconfigures actors. Focus on a platform will not offer a complete blueprint specifying what the organizational structure ought to be, instead, a platform provides "a framework for the conduct of life" (Venkatraman & Henderson, 1998. p. 33). The "making visible" of peers on platforms starts, to paraphrase Roberts (2009, p. 958), to "change that which is rendered transparent." Thus, these emerging, disruptive technologies overflow 'not yet framed' (Callon, 2007) parameters and static impact factors used by more traditional research to measure the impacts of technological innovations.

1.5 Research setting

> AN: In the future, 90 % of the cities' services will be done by organizations like NGOs and companies. The city will do the remaining 10 % and act mainly as a facilitator.
>
> TT: But what will the city's role be if others do 90 %?
>
> AN: No one actually cares who provides or pays for the service.
>
> (Anri Niskala 2019, Open Participation Specialist, Smart and Wise City Turku)

The account above exhibits the proposition made in the previous section stating that the function of organization design in platform organization is not actually to organize production but to provide the conditions in which distributed actors, such as peers and innovators, can do so. The vision of the future city presented by Anri Niskala disrupts many of the policies, regulations, and assumptions regarding how a city as an organization should be governed. The organization that the public manager is envisioning requires us (both in practice and research) to move from a hierarchical consciousness (Hopwood, 1996), and 'look across' to more heterarchical settings. After all, 90 % of what is happening in the city might not happen within the organization of "the city." As I, influenced by Roberts, suggested above on the matter of accountability: it is the reality of interdependence that needs to be managed. The empirical setting where I conducted my investigations is the context of digital platforms. They are studied in situated use, during the imagining and designing of them and their infrastructures. This is a setting where "things" are more readily appreciated as wholes (Kautz & Jensen, 2013), where "system builders imagine" (Edwards, 2003) platforms and infrastructures, and what we call governance boils down to issues of traceability across organizational boundaries where "responsibility may not always be clear and is subject to continuous negotiation" (Power, 2019).

Concerning inquiry into what is left out when one is unable to escape accountings hierarchical consciousness, it was Hopwood (1976) who argued that accounting researchers needed to pay much more attention to the ways in which the broader social and economic environment impacted accounting. A decade later, Granovetter (1985) reacted to the "under- and oversocialized" research accounts of economic activities that were "paradoxically similar in their neglect of ongoing structures of social relations" (p. 481). For instance, Granovetter argued that investigations into if behavior is rational or instrumental is "more readily seen, if we note that it aims not only at economic goals but also at sociability, approval, status, and power" (1985, p. 506) Now, over three decades later in research

situated in the same context as this study, Kornberger et al. (2018) still struggle with the same challenges as Hopwood and Granowetter as they find it necessary to "rethink the sharing economy" since the organization of sharing is undertheorized. They find that in research on the sharing economy, rational and instrumental economic goals for sharing have overshadowed what Granovetter would call sociability and approval, which in its turn, according to Kornberger and his colleagues, means that the "moral dimensions" of sharing have been left out. Their study reveals "a moral sharing dimension that differs from the status quo materialistic treatments of economic transactions in most sharing economy examples" (Kornberger, et al., 2018, p. 26). In their study, these authors end up understanding sharing as "two-dimensional." In the present thesis, I try to avoid such dualism and conceptualize values in line with Revellino & Mouritsen (2017) as "relational forces that need connections to come to life." Revellino and Mouritsen, show that innovations, "which are born to defend private interests, can generate public goods" (2017, p. 450), thus creating new accountability relations. The opposite is also true. Traces and accounts of the moral dimension were "there" from the beginning of the social movement that started the sharing economy. However, I argue that the accumulation of the traces happened outside of "the status quo" since its accounting devices were tuned to materialistic treatments of economic exchange.

In this study, I build on studies on heterarchical settings (Kornberger, et al., 2017; Scott & Orlikowski, 2012; Stark, 2009) and explore the relationship between calculative practices and emerging practices in platform organization. In my inquiry into platform organization, I draw from accounts from management, accountability, and innovation theory, as well as information systems studies, sociology, and trust research to make "conceptual leaps" (Klag & Langley, 2013) into the emerging and disruptive nature of platformization. Following the course traced by Hopwood and Granowetter, the unit of analysis is extended beyond the organizational boundaries of the firm (or single organization) and economic activity is seen, in conjunction with Granowetter, only "as a special, if important, category of social action" (1985, p. 507).

Digital platforms provide a unique setting for studying the emerging disruptive phenomenon of platformization and emerging forms of accounting and other calculative practices.

1.6 Aim of the research

Set against the landscape provided above, this doctoral dissertation aims to contribute to understanding how new practices emerge and become organized and what implications this has for accountability. Hence, my aim is to explore, empirically and conceptually, how practices of organization on platforms emerged and examine the role of accounting practices in organizing distributed activities and practices. I am particularly interested in exploring the sociomateriality of accountability in platform organization. A second motivation for the study is to understand how infrastructures such as trust and evaluative infrastructures demonstrate the performative dynamics of platformization. Thereby the study contributes to academic discussions on accountability and new practice creation, thence participating in academic and broader societal discussions on accounting for human actors, and the impact of accounting technologies upon human subjectivities and evaluation.

1.6.1 Research Questions

A tight and evolving analytical framework (Dubois & Gadde, 2002) was applied in the study. Because of the emergent and, at times, disruptive nature of the phenomenon studied, I adopt a performative approach (Kumaraswamy, et al., 2018) to it, where the perspective on emergence was that of temporal emergence. Philosophically, this lens is, according to Garud et al. (2015), concerned more "with different ways of participating in an ongoing, unfinished world than with discovering the realities of an already complete and stable world" (p. 9). A performative approach to disruption and emergence enables the actors such as disruptors and innovators to engage in actions, learn, and transform as the phenomenon unfolds. Poetically put, the performative approach can in the words of Sverre Raffnsøe, Andrea Menicken, and Peter Miller, help my study "articulate how organizational ordering is also a fascinating and thought-provoking flight into the dusk" (p. 22). Less poetically put, this dissertation essentially studies how people create and shape their practices and how practices shape their creators. Accounting technologies play a vital role in the context of platform organization in organizing contemporary economic and social life. The calculative instruments of accountancy "actively shape what and who counts" (Raffnsøe, et al., 2019).

Conceptually, my interest has been to understand better how new and at times, disruptive practices emerge. The questions of accountability and trust while acting in the presence of uncertainty is also of conceptual interest. Empirically, I have sought to understand how and why distributed practices such as sharing

and platformization emerged as alternative practices for exchange and what role tracing and evaluative infrastructures have in this organizing. Wherefore, I have formulated the overarching conceptual research question addressing the empirical work in the different papers as follows:

- How and where is accountability performed in platform organization?

To answer this question, I have conducted four empirical studies. In all papers, I draw on empirical material from the empirical context of the "siblings" (Kornberger, et al., 2018) platform organizations and/or sharing economy organizations. I analyze this context by switching conceptual lenses and by systematic combining in a process where empirical fieldwork parallels the theoretical conceptualization (Dubois & Gadde, 2002). The first study examines how disruptive activities emerge and asks the following question:

- How do disruptors perform disruption?

The second study examines how trust theory can contribute critically to better our understanding of emergent digital platform designs for trust building and potentially new forms of trust in society. The study discusses the suggested value of platform organization. Trust- or evaluative infrastructures on platforms disclose a new form of relationality in which trust between anonymous actors comes into existence. The paper refines theory as it investigates the accounting-trust nexus as enacted by human and non-human actors, detailing how accounting becomes entangled in the activities performed to find and manage trustworthy peers on platforms. The paper addresses the following question:

- How do sharing economy theory and sharing economy platforms suggest that trust is built and done on digital platforms?

The third study takes a performative orientation and examines how the achievements of distributed innovation are managed, measured, and demonstrated. The paper addresses the question:

- Where is open innovation performed, and how is accountability distributed in platform-organized open innovation?

The fourth study focuses on the design and implementation of platform organization in a smart city. It contributes to the call to analyze the ways in which

people, objects, and technologies are organized in terms of accountability (Roberts, 1991) and how technologies are made to "do" political work. The paper addresses the following question:

- How does ICT cognitively configure smart city actors, and how does this smartness redistribute accountability relationships?

Combining the findings of the papers with the theoretical aims, this dissertation shows how the emergence of platform organization as a sociomaterial practice was achieved by collective action that mobilized meaning (sharing) and resources (technology) in support of new activities. Affordances emerged from the relation between the technology and actors, or differently put: people started to create ways to do things together by organizing their practices via or on platforms and ended up being organized by their practices. Practice variation is explained by the performativity of accountability and accounting devices, where new insights inspire actors to do new things. By mobilizing the theory of sociomateriality and by drawing on accounting research, this dissertation contributes to a better understanding how, where and when accountability is performed in platform organization. The findings highlight the sociomateriality of accountability in platform organization and its performative consequences. Additionally, this study emphasizes accounting for the temporal, moral and societal aspects of emerging practices, the dynamics between unfolding technology, practice, and participating people, and calls for empirically grounded conceptualization of sociomaterial practices.

1.7 Structure of the dissertation

This dissertation comprises two parts: The Kappa and the four papers. The introductory part consists of six chapters. In this chapter, I have outlined the background for the study and the empirical phenomenon and established the scope and aims of the research. Chapter 2 positions this study in relation to three approaches to the study of the emergence of practices and technologies and introduces sociomateriality theory as an alternative. I review the intellectual roots of sociomaterial thinking and discuss how the emergence of platforms can be understood. For exploring emergent platform organization in particular, I draw on insight from research in accounting for platforms, information system studies, and on practice theory and highlight the sociomateriality of accountability. In Chapter 3, I introduce the empirical context. Chapter 4 presents methodological choices and the research process and elaborates on the fieldwork and the analytical process conducted for this dissertation. Chapter 5 comprises summaries of the four essays and hence presents the findings and key

concepts used in the separate studies. It also provides answers to the theoretical research question raised in this dissertation. Finally, chapter 6 discusses the study's theoretical contributions and practical implications, draws conclusions, outlines limitations, and suggests avenues for further research.

2. Theoretical motivations: Platform organizing, sociomateriality, and accountability

> Hey, all lovely grandmothers. Our family's 3-year-old child would like a grandma. Our 10-year-old and 7-year-olds would also be delighted with the new family member 😊.
>
> We hope we get to know a real, nice grandmother.
>
> (Runo, Nappinaapuri (Nifty Neighbor) platform)

In practice, trust is, according to Mouritsen & Thrane (2006) "evaluation, it is accountability, and above all, it is a strong moralizing argument" (p. 273). On sharing economy platforms, products or services are, as I describe in the first and second paper of this dissertation, usually offered by private individuals, resulting in three different targets of trust that is, "trust towards peer, platform, and product" (Hawlitschek, et al., 2016b). Nevertheless, what exactly happens when a family like the one we encounter above goes online to find a "real godmother"? What are they doing? What is the platform doing? Moreover, in terms of trust and accountability, how does one perform as "a real, nice grandmother?"

To understand such complex questions, I work under what Orlikowski & Scott (2014) describe as the "broad banner of sociomateriality," a perspective where materiality is seen as constitutive of all organizational practices (Orlikowski & Scott, 2008). In this section of the dissertation, I will describe what positioning oneself under this banner means and introduce the study's conceptual framework. The purpose of this theoretical chapter is two-fold. First, it reviews frameworks for research on platform organization that have surfaced in the field of organization studies. These are theorization on platform organizing (sub-section 2.1.1) and different studies focusing on 'infrastructure' (sub-section 2.1.2) Second; this section introduces sociomaterial theory as an approach to the study of platform organization (sub-section 2.2). This theory has its intellectual roots in ethnomethodology, socio-technical systems perspective, ANT, and practice theory (Cecez-Kecmanovic, et al., 2014), theories of which some, especially the 'practice turn' (Whittington, 2003), have as Gond et al. (2016) emphasize, resonated well with other "turns" in organization and management scholarship, for example, the "material turn" (sub-section 2.2.2) and especially the "performativity turn" (sub-chapter 2.2.3). Finally, in sub-section 2.3, I present a theoretical framework for the study of accountability to provide

general guidelines to better understand the sociomateriality of accountability and its performative consequences.

2.1 Platforms configure different actors with a common narrative

More specific definitions of platform organizations include "O2O-platforms" (McAfee & Brynjolfsson, 2017) or "matchmakers" (Evans & Schmalensee, 2016), where their digital infrastructure is primarily seen as extensions of existing models of independent contracting, improved by the dramatic reduction in transactions costs (Benkler, 2017). Some view the move to platforms as replacing traditional forms of organizing. The lack of traditional structural mechanisms seems to partly free the collaboration from concerns of social conventions, ownership, and hierarchy (Botsman & Rogers, 2010; Faraj, et al., 2011). Others highlight that in platform organizing, matchmaking is not enough since cultivating user capability becomes as strategically important as reducing transaction costs. (Van Alstyne & Schrage, 2016). Empirical studies have found platform organizations that enable sharing and collaboration (Sundararajan, 2016), leveraging status and preferences (Levina & Arriaga, 2014), and facilitate the possibility of unconstrained recombination and interactions among individuals (Hughes & Lang, 2006; Kallinikos & Tempini, 2014), and leveraging user innovation (Franke & von Hippel, 2003). Finally, according to Faraj et al. (2011) a platform can become a "great good place" (Oldenburg 1989) akin to "a neutral meeting place in face-to-face environments (e.g., a neighborhood bar, a park, a memorial), where social conventions are democratic, and people engage in conversations or in their own activity" (p. 1233).

In the paper "Accounting, Organizing, and Economizing: Connecting Accounting Research and Organization Theory," Peter Miller and Michael Power propose that accounting is "also a mediating practice, meaning that it links up different actors with a common narrative and may constitute a network of relations within and beyond the boundaries of the enterprise." On the face of it, approaching sharing economy platforms such as *Nappi Naapuri* or S*auna Day* (of which I tell more in paper 2) or their more known counterparts *Uber* and *Airbnb*, in terms of mediating practices, seems a relevant approach. Accounting is one of many practices whereby interdependence is managed on the platforms. The common narrative in Millers and Power's theorization is however the narrative of the market and economic rationality. Accounting, understood this way, is argued to remake its objects through the ability to corner, capture, stabilize, or close: accounting "envelops" its objects (Miller & Power, 2013, p. 562). It territorializes

by fencing in. However, how are we to approach the 'new worlds' that studies which discuss the sharing economy phenomenon in terms of for instance, disruption (e.g. Shaughnessy, 2015; Scholz, 2017) and emergence (e.g. Hira & Reilly, 2017; Mazzela & Sundararajan, 2016; Schor & Fitzmaurice, 2015) and social movement (e.g. Botsman & Rogers, 2010; Schor, 2014)? If there is something new and valuable there 'in the dusk', what "new accountings" (Miller & Power, 2013) for these new objects of value are brought to the fore?

As an illustration, in the study "Collaborating and Connecting: The emergence of the sharing economy", Schor & Fitzmaurice (2015), identify three characteristics "that can help define which practices warrant inclusion in this emergent economy" (p. 415). These characteristics are the sharing between strangers, digital technologies that facilitate trust, and finally, sharing economy "*practices* and *platforms* ability to involve such consumers in practices they previously refrained from" (Schor & Fitzmaurice, 2015, emphasis added). The platform is, in this case, separated from sharing economy practices and incorporated into the analytic vocabulary as an independent variable or mediator of organizational processes. The three emerging characteristics shape platforms and "how disruptive to mainstream market models a platform may be." (Schor & Fitzmaurice) Hence, the possible outcome of disruption is a break with the mainstream market model. Martin (2016) approaches disruption in a similar way. He frames disruption in terms of a traditional binary (sustaining or disruptive) and observes that although "critique of hyper-consumption was central to the emergence of the sharing economy niche, it has been successfully reframed by regime actors as purely an economic opportunity." Martin's categorical distinctions (sustainability or a nightmarish form of neoliberal capitalism) do not simply report, describe or represent reality but also constitute and perform it. The approaches found in the sharing economy literature to the disruptive and emerging phenomenon of platform organization are often ideological approaches to the phenomenon, which is interesting as it sparks debate on the political economy of sharing economy. However, on a less positive note, such framing practices led to practices where research on sharing economy and even academic events on the emerging sharing economy organized themselves into binary formats in line with a traditional division between business and social. The "disruptors" were in line with Kumaraswamy et al. (2018), offered the opportunity to frame their research and or innovation "to attract the support of at least some of its members." Such accounting territorialization is, in conjunction with March (1987), significant in shaping the preferences of the very actors for whom it provides "information." In terms of sharing economy, the social (sharing) strand criticized the business (economy)

strand for lack of accounts on "real sharing" practices. In contrast, the business strand asked for information on what made sharing economy into "real" economic entities. New conceptualizations of platformed organized sharing that covered both its economic and moral dimensions were scarce, something that Kornberger et al. (2018) lamented on in their analysis of an outlier case in the paper "Rethinking the sharing economy: The nature and organization of sharing in the 2015 refugee crisis".

In 2017 Martin Kornberger, together with Jan Mouritsen and Dane Pflueger, published the paper "Evaluative Infrastructures: Accounting for Platform Organization." The paper uses platform organization as a tool for thinking the shift from management accounting to "evaluative infrastructures." This they do in order to "explicate an analytical vocabulary" that allows accounting research to characterize evaluative infrastructures as a novel mode of accounting and to go beyond the "hierarchical consciousness of accounting" (Kornberger, et al., p. 12). According to the authors, conceptually, this shift entails:

> a focus on relationality (evaluative infrastructures do not represent or reference but relate things, people and ideas with each other); generativity (evaluative infrastructures do not territorialize objects but disclose new worlds); and new forms of control (evaluative infrastructures are not centers of calculation; rather, control is radically distributed, whilst power remains centralized). (Kornberger, et al., p. 1)

This paper made me revise my "theoretical platform" (Dubois & Gadde, 2002). Some of the shortcomings (caused by a framing approach to disruption) described above in sharing economy theory, are presented in a different light in the paper. The authors observe that evaluative infrastructures "are at play at *Uber* just as well as at its cooperative twin, the mobility platform *LaZooz*," and as such evaluative infrastructures "span ideological boundaries" (Kornberger, et al., 2017). This matched many of my empirical observations. Moreover, the paper, more of a thinking paper, sparked my curiosity. For instance, what are "the new worlds" that evaluative infrastructures disclose? In terms of accounting and accountability, are there "new accountings" emerging here, and what are, for instance, the accountability relationships between new and old worlds? In this dissertation, I, at times discuss organizational accountability. Still, I use the term primarily in line with Garfinkel's ethnomethodological sense i.e., mutual accountability, and as stated by Gray et al. (1996) "The duty to provide an account /…/or reckoning of those actions for which one is held responsible".

As a matter of example, the time banking community mentioned in chapter 1, is, in specific ways, such a new world. While it lacks a more advanced evaluative infrastructure, it has a "wants and offerings list" where members can contribute to the community. Thus, ethnomethodolically understood, to visualize interactions in the time bank, it made available (accountable) accounts. Such accounts are available for scrutiny (accounting) of other interactors (Woolgar & Neyland, 2013). A surprise "interactor" appeared, and the "list,", or differently put, the digital "architecture of participation" (Lakhani & Panetta, 2007), disclosed the information to the tax authorities when they assessed the accountability of the timebank (more on this in section 5.1).

While going back and forth between my revised framework, data sources, and analysis, it was not uncommon for proper evaluative infrastructures to be absent, which contributed to further development of the framework and triggered the search for complementary theoretical concepts, such as the concept "ecology of devices." Thus, the observations, added new dimensions to platform organization, which eventually resulted in a new view of the phenomenon itself. For instance, the sharing on platforms, where they "relate things, people and ideas with each other" and disclose new worlds and "new subjectivities" (Kornberger, et al., 2017) can be seen in terms of relationality (as Kornberger, Mouritsen and Pflueger do), but also from a performativity perspective. A relational perspective affords, according to Kumaraswamy, et al. (2018), disruption dynamics to be seen not just as unfolding "at the level of specific or individual firms, but also at the inter-firm and ecosystem levels (p. 1032)." This supports the idea of 'looking across" (Hopwood, 1996) in heterarchically organized systems such as platforms. A performative approach to new/disruptive practices helps explain other facets of platform organization. Performativity sheds light on temporal emergence and the dynamics of practice and practice variety (Lounsbury, 2008), where incumbents and disruptors explore ideas that are "shaped by memories of the past, aspirations of the future and contextualized by the settings within which they operate (Kumaraswamy, et al., 2018, p. 1032)." The existence of such subjectivities of the past as "the real grandmothers" in the "new world" of the Nappi Naapuri platform indicates that past, present, and future are entwined and continuously constructed and reconstructed in the activities on the platform.

2.1.1 A typology of the platforms studied

This subsection presents a typology of the primary domains and platform types studied in this dissertation. This typology is inspired by Langley & Leyshon (2017) typology. Their typology categorizes platforms into "Online Exchange

Markets, Social media, and user-generated content, Sharing economy, Crowd-sourcing, Crowdfunding and P2P lending", however when confronted by the empirical world, I adapted this typology to "match" (Dubois & Gadde, 2002) theory and reality.

2.1.1.1 Social media and Sharing platforms

> We help create a fun, free, responsible, sustainable, and collaborative city life. (Jaakko Blomberg, Co-Founder of SE initiative Common Ground, 2015)

The research process started from the sharing economy, but the notion of platform did not surface in the analysis of the data collected. Instead we had a 'social movement.' In the interviews done in 2015-2017, a common attribute that sharing economy initiatives in Helsinki expressed was that they identified themselves as part of a global social movement that aimed to create new practices to transform the ways society operates—propelled by "exciting new technologies" (Schor, 2014) activists, such as "sharers" connected with others, around the globe in the wake of the financial crises 2007-2008 (Botsman, 2016; Castells, 2012). In *Occupy Wall Street*, an idea and a hashtag became a worldwide movement, where Occupy was "everywhere" (Castells, 2009; Schneider, 2011). According to accounts by people, I interviewed for this dissertation, shared collective identity and "collective action frames" (Klandermans, 1997; Snow, et al., 1986) were made possible by Facebook, Google Maps, and Facebook. Thus, the early sharing economy was organized by what falls into the category 'Social media and user-generated content platforms. ´

Social movement theory catches the micro mobilization (Snow, et al., 1986) that occurred at the time, as well as sharing economy's production of another world (Castells, 2012; Schneider, 2011). From an accountability perspective, social movement organizations are interesting since such organizational practices are, according to Munro (2014), "ethical exercises" that have been developed by organizations to cultivate "unconventional" forms of subjectivity (Calhoun, 1993). Such organization needs to create agents capable of challenging the status quo (Scully & Creed, 2005) and in the case of the sharing economy, "not owning" promised both agency and unconventional subjectivity. As I and Nathalie Hyde-Clarke show in paper one, the literature on sharing economy many times discusses the phenomenon in terms of a contrast between the promises and hopes of the early movement and a more or less dystopian collection of current practices (e.g. Fitzmaurice, et al., 2016; Rinne, 2018; Scholz, 2017; Slee, 2013).

Although sharing is a human behavior that has existed for a long time, it is an undertheorized concept and includes several differing logics (John, 2013). The

innovative aspect of sharing economy is that it is a market form in which strangers—rather than kin and communities—share goods and services directly with each other, and not always for financial gain (Fitzmaurice and Schor 2015; Schor 2015). This contemporary sharing economy creates new ways of transforming those goods and services into opportunities for what has been termed "collaborative consumption" (Botsman & Rogers, 2010). This notion is predicated on decentralized peer-to-peer relationships rather than existing market actors in order to mediate exchange. The concepts of 'sharing,' 'collaboration,' and 'peer-to-peer' all stress the social aspect of the sharing economy. A common trait in the sharing economy is a desire for justice, to solve collective action problems, and create better communities (Fitzmaurice, et al., 2016; Harmaala, et al., 2017; Träskman & Hyde-Clarke, 2016).

In the dissertation, I take the sharing economy to mean digitally enabled, peer-to-peer exchange platforms for goods and services that connect under-utilized capacity with demand or offer access-over-ownership by enabling sharing in the form of renting, lending, reselling, or swapping (Botsman & Rogers, 2010; Frenken & Schor, 2017; Möhlmann, 2016; Möhlmann & Geissinger 2018). Equally important to this materialistic dimension of sharing economy is the sharing of concern, help, and hope. Sharing economy manifests varying degrees of digital and physical exchange, and this definition considers the phenomenon's socioeconomic, and technological aspects. In addition to new physical sharing activities like Sauna Day and food sharing, understanding the specific material practices at work through the internet, social media, and platforms is central to understanding how sharing economy is accomplished in practice.

2.1.1.2 Open innovation platforms and peer production

> In my experience, organizations typically start by building programs and potentially using digital platforms to support them. Software platforms are especially useful because they provide scale, transparency, the ability to store and research knowledge and ensure governance and accountability. When deployed using the proper guidance and incentives, platforms amplify meaningfulness. (Oana- Maria Pop, 2020, Head of Open Innovation Hype)

Pop's quote represents an account where technology is infused with political capacity: transparency on platforms provides accountability; it amplifies meaningfulness. The dissertation considers different innovation intermediaries and their platforms for open innovation. The appreciation for exploring these emerging systems developed as I was "zooming in and zooming out" of practices and open innovation platforms were mentioned as benchmarks when communities (e.g. Faehnle, et al., 2017) and/or cities (e.g. Anttiroikko, 2016;

Muñoz & Rodríguez, 2019) are "becoming smart," as public managers "heed of what has happened in the overall socio-technological reorganization of global material assemblages" (Karppi & Vakkuri, 2020, p. 6). The typology of Langley & Leyshon (2017) identifies Kickstarter as a "crowdfunding platform," which does not catch what is happening on the open innovation platforms, like the one in the account above. Therefore, it gets its own category in this dissertation.

The Linux operating system and the commons-based peer production Wikipedia provide the most famous examples of alternative forms of organization where most of the needed knowledge resides outside the organization (Lakhani & Panetta, 2007). However, in terms of accountability, research needs to examine who is performing open innovation and for whom. The online crowdfunding communities *Indiegogo*, *Kickstarter*, and *Mesenaatti.me*, function as fascinating object lessons as they bring together people that fund and pre-order products and services, such as films, educational material, and campaigns, that *do not exist yet*. Distributed innovation unleashes entrepreneurial energy, creates new kinds of work, and changes public institutions. In Finland, the *Finnish National Libraries'* crowdsourced project "Digitaalitalkoot" (Digital Volunteers) invited everyone to become a "part of restoring history." The challenge lay in deciphering and indexing difficult newspaper fonts used in Finland in the 1800s and the beginning of the 1900s that was the decorative "German type." A design involving crowdsourcing and gamification organized 100 000 visitors on a website, they contributed over 344 000 minutes of their time and completed over six and a half million microtasks. The Finnish Libraries' thankful response read (Ekholm, 2012):

> We believe crowdsourcing holds the future. It enables libraries to share responsibility with our users and to appreciate their expertise. We learn to connect with a whole new group of people who want to give something back to society.

In terms of efficiency (solve-rate) and cost-effectiveness, studies show the performance of this kind of challenges and competitions is considerably better than if the task would have been done internally in a firm or an organization (Geerts, 2009; Hall, 2010; Lakhani, et al., 2013). While innovation performance in the context of the firm is measured by evaluating, for instance, innovation strategy, portfolio management, project management, and organizational culture (for a more comprehensive framework Adams, et al., 2006), the performance achievements described in the lines of the library include sharing responsibility and "appreciation of expertise *outside of the boundaries of the organization"* (Lakhani, et al., 2013, emphasis added). The library builds a connection to "a

whole new group of people" who holds the future but wants to give back to society. This kind of innovation performance has its breeding ground in sharing (Pazaitis, et al., 2017) , human cohabitation (Gibson-Graham, 2008) and belonging (Gibson-Graham , 2010). The *loci* of innovation is organized in "the open" (Kornberger, 2017), "O2O platforms" (McAfee & Brynjolfsson, 2017), in complex organizational boundaries (Lakhani, et al., 2013), and in to harness the "wisdom of the crowd" (Surowiecki, 2005).

Open innovation refers to "a distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization's business model." (Chesbrough & Bogers, 2014). According to Chen & Vanhaverbeke (2019), external innovation resources do not simply flow into companies as, "open innovation highlights the entire innovation system" (p.192). One of the major contributions of an open innovation approach is, according to Gassmann & Enkel (2004), the perception "that the locus of knowledge and the locus of innovation need not necessarily be the same" (p. 15). Recent literature has sought to map concepts of open innovation to more general theories about the hierarchical firm and its boundaries (Lakhani & Panetta, 2007; Vanhaverbeke & Roijakkers, 2013). In terms of their design, I build on Kornbergers (2016) three design parameters for distributed information systems, i.e., firstly, "interfaces structure interaction." They afford communication between heterogeneous elements while maintaining their differences. Second, modular, granular, and integrative "architectures of participation" provide a" language through which network innovators with varying degrees of commitment, motivation, and skills can articulate their contributions" (Kornberger, 2017, p. 186); Finally, "evaluative infrastructure," defined as "methodologies and technologies of valuation" that are distributed across innovation networks, "encompass rankings, ratings, and a myriad of other evaluation devices through which products are being compared, commensurated, and categorized" (Kornberger, 2017).

Regarding accountability in open innovation, scholars tend to refer to Starks's (2009) notion of "lateral accountability." For example, Taylor et al. (2019) suggest that heterarchy, of which openness is one facet, needs "distributed authority." Distributed authority is facilitated through lateral accountability, "whereby the traditional principles of vertical authority no longer hold, but rather, managers and their team members can be accountable to multiple units, or teams, across the organization" (Taylor, et al., p.1639). The management of peer production has been addressed by writings arguing that we need to rethink

the role of the manager and the role of the firm. For example, Benkler (2017) argues that firms need "cooperative capacity," while Kornberger, inspired by Der Derian, reimagines the manager as a diplomat that governs "the ungovernable—the anarchical society—through discursive and cultural practices" (p. 190). To retain coherence of the research in open innovation, Chesbrough & Bogers (2014), and in contrast to researchers going beyond the firm, suggest scholars adopt a consistent definition of "open innovation" that differs from "open collaborative innovation." Dahlander & Gann (2010) also recommend more precision in conceptualizing open innovation to make progress in research on the changing nature of innovation processes and "that if firms are to develop viable strategies for innovation management" (p. 705). The ostensive definitions by these authors explain causal models where open innovation elements predict value creation *for the firm*. However, the question of openness, or how "open" open innovation is, is from the performative perspective adopted in this dissertation, a matter of how peers, in different situations, mobilize open innovation elements on platforms and how these open innovation elements are bent, connected and allowed to do certain things but not other things. In practice, the firm, or as I discuss in paper 4, the city has to consider the external crowd's performance, and at times put resources into its training and education.

2.1.1.3 Smart city platforms

> *The city is a place and a platform.* (Tommi Laitio, Executive Director, Culture and Leisure Helsinki City. 31.5.2018).

The words by Tommi Laitio were enunciated during the launch of Helsinki's first participatory budgeting initiative and platform. They exemplify a smart city discourse where research and public managers refer to a "virtuous circle" in which technologies such as digital platforms fuel an acceleration in citizen engagement and innovation (e.g. Anttiroikko, 2016; Muñoz & Rodríguez, 2019). In the ideal scenario, technology enables citizens to create public services together, while in smart cities, citizens are collectively governed by "smart governance" (Johnston, 2010; William, et al., 2018). According to Anttiroikko and his colleagues (2014) a platform orientation in public governance allows public organizations to "manage policy informatics and interactive processes in a coordinated manner" (p. 329). Their description highlights the ostensive aspects of smartness. In addition, a platform approach "makes it possible to extend the collaborative dimension of governance in the form of co-design, co-creation, and co-production" (Anttiroikko et al). The latter platform approach builds on the same logic and affordances as the open innovation platforms presented in the subsection above. When shifting the perspective from an ostensive to a

performative one, the focus shifts from the use of ICT, to how they work in "actually existing smart cities" (Shelton, et al., 2015).

In paper 4, I studied the Smart and Wise Turku spearhead project, which, according to the council, combines "the goal of carbon neutrality with the Smart City concept (Kaupunginhallitus, 2017)". A key idea in the subsequent paper is that technology cognitively configures and reconfigures actors (Grossi et al., 2020; Kitchin, 2014; Meijer, 2018).

In the words of Grossi et al. (2020, p. 638), the urban governance literature highlights "the cognitive value of new technologies" and the power dynamics between actors, which then work together to redistribute accountability relationships. The idea is that better information generates better urban governance, as smart technologies help manage visibilities, guide cognition, and shape decision-making. I elaborate on this cognitive aspect of technology in the following subchapter (2.1.2); this chapter highlights a challenge when researching emergence. In my study, when confronted by the empirical world, a match between theory and reality was difficult to discern since no platform existed yet. The city was only about to take the first step in the intentional production of meaning and the production of a platform, or as one of the consultants involved put it, the city tried to "find an understanding of how Turku should evolve in this "platform thinking" (Consultant, 2018, Solita Oy).

By choosing a spearhead project, the city wanted to highlight the potential of digitalization for the social, environmental, and economic development of the city and its services (Smart City). Conversely, the city council acknowledged, that success requires the involvement of city residents, customers, and stakeholders. As the services become more sophisticated and demand more sophisticated skills, the city must ensure that the citizens' engagement is adequately supported (Wise City).

Another reason for the study was that a research project titled "Sustainable resilience policies and inter-organizational performance control designs" enrolled me. This particular research project focused on "developing and implementing performance measurement/management and control systems that improve accessibility and usefulness of Smart City project information to policymakers and end users *seamlessly* (emphasis added)." I was, early on, confronted by 'active data' (Dubois & Gadde, 2002), where the city officials' attempts to 'fit' SC models with Turku's reality resulted in a new line of thinking (Eisenhardt, 1989) about the phenomenon itself. Data was collected from smart city stakeholder meetings, workshops, and meeting memos. Efficiency had been brought to the picture by our

project, and performance measures were discussed. Statements, such as the one describing a 'seamless' performance measurement system (PMS), as well as the City Governments' official statements echo the smart city paradigms' high modernist and very strongly normative project of planning the future. In the smart city, the Big Data-driven 'control room', often treated as the smart city's emblematic heart (Kitchin, 2015; Marvin, et al., 2015) is a reoccurring illustration of control and smart governance. No such control room (nor PMS, nor platform) existed, and it was still under development three years after the start of the smart city I studied. The city/platform I studied thus bore much resemblance to the accidentally smart city as described by Dourish (2016, p. 37), the city that "becomes smart … without a master plan, and with a lot of patching, hacking, jury-rigging and settling."

2.1.2 Thinking infrastructures

> /…/we have the education center *Mustikka*, which is specifically for immigrant women who have experienced domestic violence or something like that. It is a place for women and we have a partnership agreement with it, [since] they represent a target group who needs capabilities different than what the city offers/…/ (Anri Niskala 2019, Open Participation Specialist, Smart and Wise City Turku)

Women's practices of sociality have never been foregrounded as political or meaningful. Still, in a study on such practice in Cairo, Elyachar (2010), shows how historically constituted channels of communication were mobilized and made visible and "could begin to serve as infrastructure for new infrastructures" (p. 460). In the conversation with the public manager of Smart and Wise City Turku (at the beginning of this section), something similar happened. First, she identified people, activities, and facilities that form a community of practice that the city cannot serve properly. However, she then points to other ways to live in and of the city's infrastructure. The next thing that happened during our conversation was that the public manager directed her mind toward the future, imagining possibilities that platform organization could provide. She immediately identified two third-sector-run platforms (i.e. outside of the boundaries of her organization) that the city could partner with. Such tactical activities engage in "platform *thinking"* (Constantinides, et al., emphasis added), what I call 'platformization.' It is a practice where, in the words of Constantinides et al. (2018, p.12), "infrastructures are undergoing a process of platformization as architectural, and governance control points are opened through digitization."

The concept of "infrastructures," either trust, digital, invisible, or evaluative, reoccurs in the literature on platforms. Platformization is adopted to improve

performance. Scholars often use infrastructure as a heuristic and strategic tool to suggest that platforms generate social, technical, material, and symbolic value on both global and local levels (Bijker, et al., 2012). However, a definition of the concept is seldom offered (e.g. Mazzela & Sundararajan, 2016). According to Kornberger et al, infrastructures are "assemblages of technical artifacts, institutional arrangements, cultural habits, and social conventions" (2017). Larkin (2013), describes them as matter that enable the movement of other matter. Infrastructure is a relational concept with relational properties. For instance, for a cook, a water system is integral to making a dinner; for a plumber, it is a target for repair. Their peculiar ontology "lies in the facts that they are things and also the relation between things" (p.329). People commonly regard railroad tracks, bicycle lanes, electrical power plants, wires, Wi-Fi and the internet as infrastructure. As an illustration, drawing on a case study of land occupations and informal settlements in the city of Belo Horizonte in Brazil, Amin (2014), argues that infrastructures – visible and invisible– are deeply implicated in not only the making and unmaking of individual lives, but also in the experience of community, solidarity and struggle for recognition. The hyper-visible and constantly evolving infrastructural developments make the atmosphere of the place:

> the bricks, corrugated metal and plastic tanks assembled for the houses, the poles, wires and tubes put into place to pirate water and electricity, the spaces cleared for play areas, churches, roads and toilet blocs, and the vehicles, mobile phones and televisions facilitating contact with the outside world (Amin, 2014, p. 141).

It takes little effort to envisage the pervading mood of Belo Horizonte; its infrastructure is easy to "smell" (Robbins, 2007). However, what is the atmosphere and smell of digital infrastructures? Spontaneously, a change of analytic vocabulary seems relevant, when moving from one kind of matter to digital matter. Nevertheless, with regard to the seamless web of technology and society, John Law argues for a principle of 'generalized symmetry', meaning that "the same type of explanation should be used for all the elements that go to make up a heterogeneous network whether these be devices, natural forces, or social groups" (Law, 2012, p. 107). Building on Law, Bijker et al. argue that the point with generalized symmetry is not, as in sociology, to emphasize a particular type of element, i.e. ,the social rather "it is to discover the pattern of forces as these are revealed in the collisions that occur between different types of elements, some social and some otherwise" (Bijker, et al., 2012, p. 33). In the matter of infrastructure, a generalized symmetry makes sense, since infrastructure is, according to Robbins, "neglected because it belongs to the public domain, all

other tokens of belonging effaced, owned in effect by no one (2007, p. 26)." Infrastructures are "unruly" (Larkin, 2013) and "boring things" (Star, 1999). All such things help explain why authors avoid definitions of infrastructure. So how does one make it appear? Bowker and Star (1999), propose the concept of "boundary infrastructure" to capture how any working infrastructure provides an evolving system of boundary objects which multiple communities of practice (be these within a single organization or distributed across multiple organizations…) can simultaneously "plug into" to collaborate. Boundary infrastructures are plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites for various kinds of commitments to work in concert (Bowker & Star, 1999; Star, 2010). In terms of the example at the beginning of this section, the immigrant women employe and plug into the infrastructure of the city, they have different commitments but still work in concert with the city.

To make infrastructuring activities visible, the dissertation extends the conceptualization of infrastructure with 'thinking infrastructure' as described by Bowker et al. (2019) and Pflueger et al. (2019). While the public manager in Turku engages in platform thinking, 'thinking infrastructure' tries to capture how platforms "think." Thinking infrastructures emphasize, according to Pflueger et al., "the capacity of accounting to produce tentative knowledge, questions, and possibilities for innovation and action" (p. 250). Actors also think with infrastructure. To think infrastructure, according to these authors, we need continued attention to background and mundane activities that, as part of the cumulative and distributed efforts of various actors, may contribute to sustain and shape organizational and institutional contexts. Platforms "render visible, knowable and thinkable complex patterns of human interaction in and out of the market, in feedback loops of learning, reformatting and redoing" (Bowker, et al., 2019, p. 1). Finally, it is essential to acknowledge that the invisibility of infrastructure is mobilized (Larkin, 2013) for economic and political purposes. Pujadas & Curto-Millet (2019) apply "thinking infrastructures" to show that a platform is not just a digital infrastructure that enables a match. They show how *Uber* drivers have become "ontologically absent in that their capacity to define themselves is at the mercy of the invisible thinking infrastructure that determines their being." By defining something as a neutral digital platform, Pujadas & Curto-Millet, argue that platformization also involves boundary-making that redefines social responsibility. Thus, one could say that, similar to the old tunnels of Boston and Soviet plumbing mentioned by Robbins (2007), digital infrastructure "smells" when unattended.

2.2 Sociomateriality: introducing a practice theoretical approach to emergence

In this chapter, I introduce a practice theoretical approach that focuses on practice as 'sociomaterial' configuring. Thereby I distinguish my study from studies that approach practice as the product of seemingly bounded actors acting and interacting in situated practices. Instead, I situate the study in the sociotechnical paradigm that attempts to capture the *emergence* of practices and technologies. Sociomateriality is in contrast to an ontology of "being" grounded in a relational or "becoming" ontology (Hultin, 2019). To understand platformization and how technology "acts," we, as researchers, need new epistemological tools, practices, and conceptual vocabularies to investigate and account for these realities (Hultin, 2019; Kornberger, et al., 2017).

2.2.1 Practice theory: background

Since the turn of the millennium, "practice theories" or "theories of social practices" have formed a conceptual alternative that has attracted much attention. One can find elements of the theory in Bourdieu's praxeology (1990), and Anthony Giddens (1984) develops his version of practice theory in the framework of a "theory of structuration," heavily influenced by the "late Wittgenstein." Giddens has been particularly influential in the information system studies domain, informing, for example, the development of Orlikowskis' (2000) practice-based perspective. Reckwitz (2002) positions authors such as Garfinkel, Latour, and Butler in the praxeological family of theories. To approach practice theory as a family of theories is helpful since, although the different theories view phenomena as produced in everyday action, as organized around shared practical understandings, and as enacting particular structural orders (Schatzki 2002), there is no universal theory or definition of social practice (Schatzki, et al., 2001). The turn to a practice lens is seen in studies on organizational control and management accounting (Ahrens & Chapman, 2007; Ahrens & Mollona, 2007), trust (Mahama & Chua, 2016) and studies on strategy (Whittington, 2003). The perspective has proved helpful in understanding the use of technology in organizations (Orlikowski, 2000), organizational routines (Feldman, 2000; Feldman & Pentland, 2006) and institutional theory (Lounsbury, 2008). In organization studies, the practice lens has shifted attention from organization as an entity to the understanding organization as something that is enacted and comprises various practices in interplay (Gherardi, 2001; Orlikowski, 2000; Schatzki, et al., 2001).

In conjunction with Whittington (2011), a commitment to practices defines a standard research question: if activity relies on practices and practices exist through activity, then what are the respective roles of individual improvisation and social practices? For instance, does accounting or strategy stretching across society have a role in the forming the practices of local or temporal organizations such as social movement organizations, and vice versa? According to Whittington, for accounting and similar societal practices, "practice–theoretic research can never be purely "micro' or 'macro'; the other is always present, even if temporarily not center-stage" (2011, p. 185). The introduction of technology, such as platforms, to practice and the organization of it extends Whittington's research question at least one step further since one needs to ask what the role of technology is in the interplay of individual improvisation, social practices, and technology.

In studies on accounting as practice, accounting is embedded in a diverse entanglement of other practices. Accounting is a "representational practice" (Roberts, 2001) that may hierarchize, normalize, compare and exclude (Zahir-ul-Hassan, et al., 2016). What accounting "does" needs to be read off its embeddedness in situations. In addition to that, the lens "also confirms the actorhood of 'materialities' (Mahama & Chua, 2016, p. 44)" i.e., the way in which objects "act." This brings us to approaches aiming to understand practice in terms of sociomateriality and performativity.

2.2.2 Sociomateriality

Contemplating technology, Edwards (2003) observes how technology has come to mean "high tech," while what used to be technology, like sewers, railroads, ceramics, screws, no longer counts as technology. In short, he notes, these "sociotechnical systems have become infrastructures" (Edwards. p. 185). Nonetheless, they form the stable foundation of modern social worlds. People who study how technology affects such social worlds increasingly recognize "its dual, paradoxical nature" (Star & Ruhleder, 1996). It is "both engine and barrier for change; both customizable and rigid; both inside and outside organizational practices" (p. 111). A theory guides attention, but in terms of the study of "the human," "the social," and "the technical" and their interplay, we need to train our "more subtle vision" (Barad, 2007) and attend to small but consequential differences. The "when" of technology and infrastructure, their "complete transparency"—is, according to Star and Ruhleder (1996), an "organic one," evolving in response to the community evolution and adoption of infrastructure as natural, involving new forms and conventions that "we cannot yet imagine." In platform organizing, we encounter new practices, experiments, and locally

tailored applications that begin to interweave themselves with elements of infrastructure (for example, saunas in the case of *Saunaday* and homes in the case of *Airbnb*) to create a unique and evolving hybrid. The idea of an evolving organic transparency hides the fact that there are instances when transparency is less complete, even opaque. This dissertation is more concerned with those instances that one cannot yet imagine. Thus, we need a theory to understand an ontology of becoming. A sociomaterial approach operates with such an ontology.

Orlikowski (2007) and Gherardi (2012) refer to sociomaterial practices when discussing the constitutive entanglement of technology and everyday practices. It is essential to acknowledge that, as a theoretical apparatus for studying information systems and organizations, sociomateriality "is in its infancy" (Scott & Orlikowski, 2013). For researchers, including me, this implies that one is walking side-by-side with, rather than climbing onto the shoulders of giants in the spirit of Clifford Geertz's words. In Lotta Hultin's account of how she became a sociomaterial researcher, she presents a process of thinking, rethinking, tuning in, tuning out, and stitching together, where Hultin is "gradually becoming attracted to and convinced by the assumptions and potential of the sociomaterial approach" (2019, p.92). My dissertation journey is a similar process of gradual attraction combined with critical doubt. A platform builds on loops of interdependence and interaction in ways I only now begin to "suss out."

Conceptually, sociomateriality introduces a new vocabulary and concepts such as "constitutive entanglement," "intra-act," "relationality," "performativity," "affordances," and "sociomaterial assemblages" (Leonardi, 2013) that one first has to understand, savor, and adopt, or choose not to adopt. It was not an approach I chose light-mindedly. Nonetheless, sociomaterialitys' focus on performativity, relationality, and generativity offered scholars I read a useful analytical tool in understanding platform organization and why it differed from other forms of organization. Thus, I arrived at sociomateriality via conceptual contributions (such as Lounsbury & Crumley, 2007; Revellino & Mouritsen, 2015; Volkoff, et al., 2007) exploring phenomena, such as innovation, "that move forward, transform things and create new attachments" (Revellino & Mouritsen) and start "with the ontological position that innovations are continually produced" (Orlikowski, 2000, p. 414). For these studies, change and an ontology of becoming is approached through the lens of performativity. Subsequently, I also learned that I, as a researcher, could/should perform "sociomateriality" or "socio-materiality." This is, however, a debate outside of this study's scope. Therefore, I refer the reader to the original debate (Leonardi, 2013; Mutch, 2013; Scott & Orlikowski, 2013)

Sociomateriality is one of the most popular, most cited, most debated, and most critiqued topics in the fields of management and information systems (Leonardi, 2013; Leonardi, et al., 2012). Information System (IS) scholarship tends to stress sociomateriality as a new way for its specific field to investigate and theorize about IS in organizations and society at large. Sociomateriality has attracted accounting scholars seeking new vocabularies to reconcile the human/social and technological dimensions of IS (e.g. Kornberger, et al., 2017; Pollock & D'Adderio, 2012). Especially the work of Wanda J. Orlikowski and her colleagues spans both fields (Barrett, et al., 2016; Orlikowski & Scott, 2014; Scott & Orlikowski, 2012).

Sociomateriality attempts to decenter both the human actor as well as "the material" or "the technical" as it privileges neither humans nor technologies but focuses instead on their "constitutive entanglements" (Orlikowski, 2007; Orlikowski, 2000). The underlying assumption of sociomateriality is that "there are no beings, social or material, no subjects and objects, no research and researched" (Hultin, 2019, p. 91). Rather, all assumed actors, entities, and categories are understood as relational enactments, and research is concerned with examining a world of becoming (Hultin, 2019; Leonardi, 2013). In sociomateriality, "apparatuses" (Barad, 2007), such as accountability systems and accounting devices, are part and parcel of representational practice (Miller & Power, 2013; Roberts, 2001). Phenomena are understood as entangled in practice with the schemes and devices that trace and assess value. For instance, Mahama & Chua (2016) investigate the "accounting-trust nexus as enacted by human and non-human actors" and detail how accounting devices become entangled in the activities performed in alliances to "find and manage trustworthy suppliers as well as to 'discipline' them when 'doing' distrust" (p.30). Thus, systems and devices concentrate observations in specific ways; their representations make certain properties become determinate (Barad, 2007), while others are specifically excluded (Orlikowski & Scott, 2014).

This dissertation explores the early phases of technological change when platforms are new, salient, and controversial. In this phase, one must understand how the system might be realized and what it is good for. However, a paradox regarding technology is that it can be good for new things and practices to emerge, but it can also be employed for "decidedly pre-modern purpose" (Edwards, 2003). As an illustration of sociomateriality, one might consider the telephone. With reference to Fischer (1992), Edwards argues that the telephones' users were the ones who shaped its "sociability." But is this a distinct form of sociability compared to earlier forms of sociability? In the literature on sharing economy and open innovation, critical voices have argued that there is

little new to the phenomena since sharing and innovation have both existed for a long time. Hence, some could not understand if something new was emerging from these phenomena. New vocabularies are introduced to allow researchers to be more sensitive to how organizational realities transform practices. For example, in terms of platforms some authors highlight the relational aspect of platform organization and argue that the devices on platforms do not represent or reference but "relate things, people and ideas with each other" (Kornberger, et al., 2017, p. 79). Such fixation on how we see, who we see, what we see, and what counts as being seen point to different optics or "scopic regimes" (Jay, 1988) where we encounter performative struggles (Cabantous & Gond, 2011) where different systems of knowledge and power shape what can be understood as valid and valuable. Thus, as pointed out by Roberts (2009) visibility, or rather transparency, is also performative, and devices act as productive forces as they "discipline through observation" (Flyverbom, et al., 2015) and generate norms for conduct and counter-conduct.

2.2.3 Performativity

The notion of performativity is the key to understanding how sociomaterial studies differ from socio-material studies and other studies produced within the socio-technical paradigm. Performativity has emerged as a highly generative concept that has inspired social scientists and stimulated theory building in various disciplines, including organizational and management theory (Gond, et al., 2016). John Austin introduced the formulation 'performative utterance' in his 1962 book *How to Do Things with Words*. For him, the issuing of a specific kind of utterance is the performing of an action (Austin, 1962). By and by, the related term 'performativity' became a relatively common and popular term and several interpretations by social scientists and philosophers such as Lyotard, Butler, Callon, and Barad. In management theory, this has, according to Gond et al., led to the coexistence of several foundational perspectives on performativity (2016). In this dissertation, I pull on Silvana Revellino and Jan Mouritsen (2017), who draw on Judith Butler's interpretation of performativity. Performativity is, according to them, a "pervasive movement that proceeds from one stage to another when new *information* ex-cites the development of even further technologies for provoking and making things real" (p. 454). Accounting activities are fundamental in this movement, as they convey information. Accounting creates visibility and transparency by way of information. Accounting, in this dissertation, is seen in line with a broad delineation and beyond the limits of narrower delineations of accounting, such as those strongly shaped by professional accounting. It is, in line with Gallhofer et al. (2015, p.

853,) "representation (descriptive or prescriptive) that involves the giving or rendering of an account – where an account is the exposition of the state and the functioning of things past/present/future."

Further, performativity assumes, according to Orlikowski & Scott (2014), the notion of performance but points to a further claim: "that reality is enacted through performance" (p.12). D'Adderio & Pollock (2014), for example, demonstrate how modularity theory performs a modular organization. Rather than contextualizing an activity by putting something or someone in context, a performative approach "identifies the practices that are constitutive of and implicated in the world" (Orlikowski & Scott, 2014). McKinlay (2010) describes the difference between performativity and performance by likening the latter to an actor who consciously follows – or refuses to follow – a script. Performance is a bounded act, while performativity is a process concept that seeks to escape – or at least to reject – the dualism of structure and agency (McKinlay, 2010, p. 234-235). In their study on the changeability of organizational routines, Feldman & Pentland (2006) also relate performativity to resistance. They distinguish between the ostensive and the performative aspect of routines. The ostensive aspect of the routine "is the idea"; the performative aspect "the enactment" (Feldman & Pentland, 2006, p. 102). The two aspects can, as Feldman (2000) has shown, help us understand performance in practice, as answers to questions about how tasks are accomplished in organizations might differ depending on if the respondent' is concerned with is management (control) or labor. Reflection on this example shows why it might be problematic to approach practice as the product of seemingly bounded actors acting and interacting in situated practices. Management and labor, these communities of practice cannot be considered in isolation since their various doings are closely interconnected. In organizations built on heterarchy, interconnectedness becomes "power-charged" (Donna Haraway in Scott & Orlikowski, 2012) as peers on platforms, and managers and their team members can be accountable to multiple units, or teams, across the organization (Stark, 2009). Thus, one needs to examine their common "doings"."

A sociomaterial perspective will look at how elements of the task (for example a platform) are mobilized and related to effects that themselves are invented in the network where the platform is given meaning. Inspired by Star (2010), one can say that the platform's materiality "derives from action, not from a sense of prefabricated stuff or ''thing''-ness" (p. 603). A performative lens looks at platforms as a "boundary object" that can be "bent to situations" (Mouritsen, 2006), hence its performativity. This is how I could study a platform in paper 4 without the "existence" of a platform. The platform was not a thing; rather it was

an object of action; it makes infrastructure appear, and it forms the boundaries between groups through flexibility and shared representation "that may be quite vague" (Star, 2010) but still quite useful.

2.3 Accountability of those involved in platform organization

> … Without designing for digital trust, the sharing economy might never have emerged. (Möhlmann & Geissinger, 2018)

Trust is a crucial problem that any relationship of mutual interdependence must address. Platforms "render visible, knowable and thinkable complex patterns of human interaction in and out of the market, in feedback loops of learning, reformatting and redoing" (Bowker et al., 2019, p. 6). According to studies (Kornberger, et al. 2017) on accounting for platforms, platforms produce paradoxes of power as they distribute control while centralizing power. In this section, I present a theoretical framework to study questions of trust and accountability on platforms. In chapter 6, I further explicate an analytical vocabulary that highlights accountability in terms of "reflexivity." I bring the sociomaterial and the accountability perspectives into one discussion. I suggest that accountability on platforms is to be considered a 'reflective material discursive' encounter that needs to consider "limits to accountability" (Messner, 2009).

Calls for more trust, transparency, and accountability are regularly voiced in academic literature and public discussions (Miller & Rose, 2008; Munro & Mouritsen, 1996; Roberts, 2009; Strathern, 2000; Woolgar & Neyland, 2013). Many authors have raised questions about the omnipresence of trust- and accountability- talk (Brown, 2013; Rached, 2016), that tells:

> very little about the concrete configurations of accountability, the specific values, and ends, if any, it is supposed to attain, let alone the exact settings in which it should apply or the functions it should fulfill (Rached p.318).

According to O'Neill (2002), "[g]ood systems of accountability/…/can improve trustworthiness, and may offer helpful evidence for placing and refusing trust intelligently. But they do not and cannot supersede trust". What, who, and when to trust on a platform is complex as moving online" brings its own issues" (Scott & Orlikowski, 2012) to accountability relationships. Nevertheless, in conjunction with Rached (2016), "however large the diversity of accountability relationships" can be, and despite their particularities, there is a:

> core analytical structure that can be enclosed by a set of rudimentary descriptive questions: Who accounts to whom? For what and on the basis of which standards? How and when? Under pain of what consequences? (p. 324)

Rached offers a temporal perspective on accountability. One where accountability is a matter of *when* and *where*. For Roberts (2009), accountability is "the condition of becoming a subject who might be able to give an account" rather than a mere giving of an account by an already formed subject. Intra-acting on a platform for performing particular realities, seems to imply a shift from the "ordinary cycle of accountability" (Schmitter, 2004) which revolves around exchanges of information, justification, and judgment. Instead, performativity draws attention to "ways of acting that are already assumed to be appropriate and legitimate" (Hultin, 2019, p. 93) by the circulating flow of agency through material-discursive practices. As Messner notes (2009, p 927), the "act of accounting for oneself thereby co-constitutes the self, rather than merely communicating information about the self." Being held to account is to subject oneself to a situation of accountability. According to him, the accountable self is not only exposed in this way but "limited in its accountability" in so far as the scene of the address is mediated by a set of norms that are not of the self's own making. The performative "unintended effects" (Roberts, 2009, p. 958) of this mediated self are "such that the making visible starts to change that which is rendered transparent." In contrast, Roberts suggests that a solution might be found in a more "intelligent accountability." Roberts (2009, p. 966):

> transparency must rely on periodic snapshots that capture performance at a moment of time, intelligent accountability extends over time and thereby affords the opportunity to test commitments against outcomes in a way that makes the manipulation of performance less easy, and promotes understanding of the complex interdependencies that underlie discrete indicators.

Understanding complex interdependencies implies that one knows "multiple accountabilities." The remedy to the tyranny of transparency is, according to Roberts, a balance between transparency and face-to-face accountability. Trust, in this view, requires judgment, and repeated face-to-face engagement. However, on platforms, this is not necessarily the case. To trust in the context of platforms is, as Kornberger et al. (2017, p. 13) argue, "the result not of constructions but of infrastructural disclosure that brings into being a plane of possibilities that did not exist beforehand." New visibility "affordances" (Bygstad, et al., 2016; Leonardi, et al., 2012) capture "the tendency for individuals to use digital technologies in ways that make information viewable to others within or outside

the organization" (Flyverbom, et al., 2016, p. 100). However, while engaging in such transparency, one must not divert one's gaze from the fact that "matter comes to matter" (Barad, 2003) more and more. The thinking infrastructures presented in subsection 2.1.2 currently make important decisions historically made by people. They are increasingly important to individuals' lives. Still, they have caused a range of concerns revolving mainly around the unfairness, discrimination, and opacity (Kroll, et al., 2017) that ungoverned digitally enabled "visibility management" (Flyverbom, et al., 2016) produces.

To cite Dillard & Vinnari (2019, p. 19), transparency through disclosure is offered "as a panacea for most every ill that confronts an individual, entity, community or society." The same holds true for trust online. For example, with regards to algorithms, Edwards and Veale (2017, p. 19), observe how "transparency in the form of a "right to an explanation" has emerged as a compellingly attractive remedy since it intuitively promises to open the algorithmic "black box" to promote challenge, redress, and hopefully heightened *accountability*" (emphasis added). How a platform is designed will shape the kinds of interactions and processes that can emerge (Barrett, et al., 2016; Levina & Arriaga, 2014). Nonetheless, the accountability mechanisms and legal standards that govern what platforms do, think and decide have not kept pace with technology (Kroll, et al., 2017).

Accountability in platform organizing differs from traditional accountability, which revolves around a power-holder and a "significant other." Traditional accountability is, according to Bovens, a "*reflective discursive encounter*" (2010, emphasis added) between accountor and accountee. Accountability can involve different stakeholders, where social forms of accountability, which operate in a horizontal fashion, "tend to be better suited to induce reflexivity and learning" (Bovens, 2010) in the one who is held to account. The encounter is discursive since the one held to account has to have "narrative capacity" (Messner, 2009). There are social conditions that structure account giving, "the norms to which we subscribe, and the exposure to some other person whom we are to address" (Messner, p. 924).

Finally, how and where accountability is performed online is, according to Scott and Orlikowski (2012,) a critical ongoing empirical question. They emphasize the role of materiality in online accountability and other phenomena that we typically consider social. Against the backdrop of practice-based studies that foreground human activities, Scott and Orlikowski conceptualize the social and the material as ontologically entangled and organizational phenomena as enactments in *material-discursive practices* (Orlikowski & Scott, 2014, emphasis

added). Scott and Orlikowski argue that performativity shifts the focus away from independent objects and properties to discursive materiality; where agency is, in the words of Barad (2003), the "enactment of iterative changes to particular practices through the dynamics of intraactivity" (p. 827). On platforms, we encounter the "mutual constitution of entangled agencies" (Barad, 2007, p. 33), something that in turn draws attention to the "possibilities and accountability of intra-acting for performing particular realities" (Cecez-Kecmanovic, et al., 2014, p. 811). Platform organizations and their tracing and evaluative infrastructures are from a sociomaterial perspective to be understood as material-discursive practice or what Barad calls 'apparatuses.' These apparatuses "enact what matters and what is excluded from mattering" (Barad, 2007, quoted by Orlikowski & Scott, 2014).

3. Research context: digital platform economy in Finland

The infrastructures of the Nordic Welfare States are a unique mixture of political rationality, administrative techniques, and material systems, telling a very special story about government practices. However, when it comes to technology, does context matter? In a reflection on systems thinking and technopolitics, Larkin (2013), depicts how a technical system first originates in one place, growing in response to particular ecological, legal, political, and industrial techniques native to that area. All the instances of sharing economy have origins and growth stemming from the tech-driven culture of Silicon Valley (Hamari, et al., 2015; van Dijck, et al., 2018). As the system grows into a networked infrastructure, it must, according to Larkin, "move to other places with differing conditions, technological standards, and legal regulations, elaborating techniques of adaptation and translation" (p. 330). That being so, it seems conspicuous that context is essential and that the materiality of technology has consequences for political processes. As a further deduction, when it comes to platforms, many of the technologies, including digital infrastructures originate from a context characterized by liberalism. This entails, as scholarship on technopolitics has pointed out, "a form of government that disavows itself, seeking to organize populations and territories through technological domains that seem far removed from formal political institutions" (Larkin, 2013, p. 328). This way, it is fair enough to discuss what happens when these technologies move to a Nordic Country.

3.1 The geopolitics of digital platforms

> Global platform development is market driven. The supply continues to grow strongly. There are thousands of different platform solutions available globally and in different markets. (Solita 2019, "Digitaalisten alustojen kehitystarpeet Turun kaupunkiympäristössä" - report to Turku City)

In today's competitive environment, companies like *Amazon, Google, Netflix,* and *Airbnb* have upended their respective industries by leveraging economies of scale and scope in unprecedented ways (McAfee & Brynjolfsson, 2017; Parker, et al., 2016). The successful ones today are those that can drive these economies not just within their immediate organizational boundaries, but beyond them, by leveraging digital channels to build a surrounding ecosystem of buyers, partners, and suppliers. 'Boundary resources' such as Application Programming Interfaces (APIs) and software development kits (SDK) facilitate the emergence of

ecosystems based on principles of a layered, modular architecture (Constantinides, et al., 2018). APIs are not only the digital interfaces that provide the standard means to access the capabilities of platforms. As products and services are consumed through digital channels, for example, mobile, or digital means within a physical channel, for instance a tablet within a store or in a public institution like a library, APIs have become instrumental as the channel for products and services to be consumed in a digital age. For example, *Salesforce.com* generates 50% of its revenue through APIs, *Expedia.com* generates 90%, and *eBay*, 60% (Iyer & Subramaniam, 2015).

In principle, a platform ecosystem allows all kinds of newcomers to enter. In the view of Constantinides et al. (2018), in contrast to non-digital infrastructures, "digitization feeds into the ability of an infrastructure to remove any dependence on location for completing a process" (p.3). As a result, platforms stimulate the distribution of expertise across geographical and organizational boundaries. In practice, however, virtually all platforms are dependent on an infrastructural core of the platform ecosystem dominated by the 'American Big Five,' i.e. *Apple, Amazon, Alphabet, Microsoft,* and *Facebook* (van Dijck, et al., 2018). This core is only counterbalanced by the China-based and controlled ecosystem (*Tencent, Alibaba, Baidu*, and *J.D. Com*). For instance, a big platform like *Airbnb* embeds *Google Maps* into its infrastructure, while *Netflix* relies on *Amazon Web Services*. Macro, meso, and micro scales of time, space, and social organization, are thus intertwined, which requires "multiscalar" (Edwards, 2003) analysis when it comes to technology. Studies approaching platforms on a macro scale see them as producers of the very "social structures we live in" (van Dijck, et al., 2018), they are not only socially shaped, they are social through and through (Edwards, 2003). In contrast, technology studies mainly work on the micro and meso levels, which can be an obstacle in terms of understanding, for example, techno-scientific solutions to proposed public problems. Analysis on multi scales requires an enormous depth of knowledge, and in the papers of this dissertation, I covered as much 'infrastructural territory' as possible.

In the report to Turku City (Paper 4) quoted above, a platform is defined as "Digital platform = technology + business model + co-development." This definition shows that platform developers understand that platforms, especially the huge platforms, are not neutral constructs; they come with specific norms and values inscribed in their architecture, encoded in their data policies, algorithms, and business models (van Dijck, et al., 2018). From the point of view of studies done on a macro level, these platforms have shown few obligations toward state-organized collectivity and the infrastructure the state or city

provides (Jin, 2015). In section 3.3, I describe how scales are bridged as Facebook organizes global social movements that are then performed on a microscale in Finland. In paper 3, Skoog and I show how a global technology company embeds the platform infrastructures designed by innovation intermediaries as it tries to shift to 'openness.' External crowds and "innovation intermediaries play a more prominent role in firms' innovation processes" (Frishammar, et al., 2019, p. 161); an eco-system-oriented view replaces a firm-centric view of innovation processes. For this dissertation, a sociomaterial approach brought with it a procedure where my co-authors and I followed connections and links between events, groups, organizations, and objects from the context described in this section to the context described in the following sections, where we considered, in line with Woolgar & Neyland (2013), "when, where, and how" platforms are "achieved," that is apprehended and experienced. In conjunction with Larkins thoughts on the expansion of technical systems presented at the beginning of this chapter, we had to consider that adaption and translation will happen when we move to another context, such as the one presented in the next section, with differing conditions, technological standards, and legal regulations.

3.2 Finland a welfare state

The geographical location of Finland in the northern European periphery, on the one hand, and between Sweden and Russia, on the other hand, has greatly influenced the nation's historical development and the state and the evolution of what it is to be a citizen in the country. Saukkonen (2013) has called attention to Finland's profound identity as nation-state, marked by a deep-rooted peasant tradition, strong social cohesion, and solidarity within the national community. In the early 20th century, the great majority of Finns still lived in rural areas, and agriculture was the overwhelmingly dominant form of production. The transformation into a modern industrial society and its "technocultural environment" (Edwards, 2003), involved changes in infrastructure bridging both micro and macro levels. For instance, in a study on constructing trust during this period, Lammi & Pantzar (2012) argue that in "the 1920s and 1930s, consumers were procreated by 'letting them see into' [using short films] the production in factories and thus reassuring them that things that are produced in factories can be good and usable" (p.167). Thus, technology not only portrayed the ideal of the modern consumer but also created it. After the second world war, Finland experienced rapid industrialization, which engaged significant parts of the society and its citizens. This period trained subjects in a particular relationship to state power, and belonging in and influencing society are essential elements for understanding the society that emerged. System trust (Luhman, 2012/2014)

is high in terms of institutions and technology. Digital inclusion, and "openness", which includes trusting public managers with personal data, are high (Kuovo & Kankainen, 2009). Currently, "openness and digitalization" is also part of the government program (Valtiovarainministeriö, 2019). Thus, people in Finland share data, use apps, and are accustomed to balancing privacy concerns with a functional welfare state. Regarding consumption, the importance of consumer choices, not only for the consumers themselves but also as a means of exercising influence, characterize "cooperative society" (Lammi & Pantzar, 2012).

Finland is one of the Nordic countries, which in turn, have been held up as prominent examples of social democratic welfare states, characterized by relative strength and autonomy of political solutions and universalistic policies which not only target the neediest but include the whole population. Collective political action is regarded as crucial to minimizing differentiation and preventing social exclusion (Delhey & Newton, 2005). Providing equal educational opportunities regardless of gender, social class, and geographical background has been a fundamental idea in the Nordic education policies during the major part of the twentieth century. Later such politics were extended to include religion, ethnicity, and special needs. Access to education refers not only to education as a good that is free for everyone but also to the possibility of taking advantage of it and to experience personal benefits, that is, acquisition of knowledge of high quality and belonging to a social community. The basic requirement that education, even at the tertiary level, is free of charge, is more or less taken for granted and is not an issue of political debate. All the Nordic countries meet these requirements. (Arnesen & Lundahl , 2006)

3.3 Sharing economy practices and platforms in Finland

> Slush, Restaurant Day and Linux have all stemmed from the same operational culture. They work on a platform principle and aim to connect communities to projects that benefit everyone. (Virve Miettinen in Pulkkinen & Nurminen, 2017)

The empirical context of this study is specifically platforms, but also their "sibling" (Kornberger, et al., 2018), sharing economy practices. The emergence of the sharing economy in Finland has been the subject of studies with a sociological perspective of the phenomenon (Faehnie, et al., 2016; Grönvall & Nylund, 2015; Harmaala, et al., 2017), as well as studies on the motivation to participate in sharing economy (Hamari, et al., 2015). It is, however, interesting to note that even though almost all the authors of these studies come from Finland, the phenomenon is mostly discussed in terms of the context described

in section 3.1: big global sharing economy platforms, like *Uber* and *Airbnb*, and the literature that had a major stake in mainstreaming sharing economy (e.g. Botsman & Rogers, 2010; Gansky, 2012; Owyang, 2016). The need for a "Nordic model" for the sharing economy has been advocated (Mäenpää & Faehnie, 2017), and although many Nordic initiatives are presented, little academic attention has been given to discuss them in terms of idiosyncrasy or in relation to the context of the Nordic welfare state. The strategy of branding oneself as a sharing city has been adopted by Gothenburg (Sweden), where Göteborg Sharing City is a public initiative that presents itself as a part of the collaborative movement, supported by the city of Gothenburg since "sharing economy, building on circular principles and trust," should be enabled by the city (Öhrwall, et al., 2017). In Finland, similar strategies have been discussed (Drake, et al., 2016) but have not been implemented.

A common trait in the sharing economy is a desire for justice, to solve collective action problems, and create better communities (Fitzmaurice, et al., 2016). Finland's political economy has a longstanding commitment to political democracy, which facilitates the organization of individuals or small groups to launch their own initiatives. Like its Nordic neighbors, Finland is a welfare state with a strong tradition of social security, equality, gender equality, individualism, and good government. According to the initiator of many emerging sharing economy practices, Timo Santala, this means that Finland is incredibly ripe for sharing: "we have inbuilt in our politics the idea that if someone has more, we should share it, and the state will distribute [resources] equally" (Santala, quoted in Bergren Miller, 2015). It has become commonplace among political elites and in popular debates to discuss variations of "Nordic exceptionalism" (Lawler, 1997), a topic I present in the next section. Santalas' words can be read in line with many Nordic debates that echo assertions that Nordic countries are not only exceptional but also "better" (Browning, 2007).

In Helsinki, several groups of strangers connected to create a more equal and fair economy. All kinds of tinkering and experimenting was initiated to achieve that aim. Stadin Aikapankki was a direct reaction to the economic crises, as it sought to change the current capitalist system due to what was attributed as the "unhappiness it breeds socially […] creating huge inequalities" (Van der Wekken, 2015, interview). New digital technology is at the center of sharing economy practices; unsurprisingly, some of the initiatives in Helsinki follow the Finnish open source tradition, started by Linus Torvalds and Linux in the 1990s (Grönvall & Nylund, 2015). Initiatives like *Sharetribe* and *Yhteismaa* present

their services and events in terms of an enabling function as tools that allow all of us to fulfill ourselves and develop the world around us.

In Finland, sharing economy is known for the social and citizen-engaging events and platform services organized by *Yhteismaa* (Harmaala, et al., 2017). *Yhteismaa* calls itself a social innovations group, which has organized several events where the whole of the city is invited—usually for a day—to participate in everyday activities, such as cleaning (Siivouspäivä/Cleaning Day), eating (Illallinen taivaan alla / Dinner under the Sky), and sauna (c.f. the above mentioned, Sauna Day). Since 2015, *Yhteismaa* has also developed a sharing economy platform called *Nappi naapuri*. In paper 2, me and my co-author label such one-day events as 'pop-up utopias' that could be perceived, in line with Bakhtin's (1968) concept of the carnivalesque, as a world that is turned upside-down, but only for a day, after which things go back to normal.

A report from 2017 (PwC, 2017) confirmed that the sharing economy phenomenon was an emerging trend globally but has not emerged in Finland. By 2016, the report identified 37 sharing economy platforms in Finland, while 8 % of the population had used sharing economy platforms (compared to 30% in the rest of the EU). Transactions mount, according to PwC, to 100 million, where crowdfunding is the biggest sharing economy sector. In 2016, sharing economy was, according to PwC, expected to grow fast (1.3 billion € in 2020). Yet, according to another report from 2019 (Mats Nylund, et al, 2019), sharing economy still shows modest growth. In Nordic government policy documents concerning sharing economy, Nylund et al(2019) recognizes a general demand from government officials to understand the sharing economy better. In terms of trust, it is interesting to note that when sharing economy platforms were asked for ideas and opinions on how their operational environment could be developed in Finland; the most popular suggestion was to increase cooperation between sharing economy platforms and ministries (PwC, 2017). Tax issues were a concern, but the respondents suggested "a smarter" design of the tax authorities' digital interface so as to make it easier for sharing economy peers to inform about monetary exchange happening on platforms. In addition to this, the platforms suggested inter-organizational collaboration between different platforms.

3.4 Nordic exceptionalism

Empirical evidence from the Nordic countries has already problematized and even overthrew some of the generalizations made in many studies on trust. Especially Bo Rothstein and his colleague's studies on trust and social capital

have been presented as a critique of existing, mainly American, trust theory (Trädgårdh, 2012; Kuovo et al. 2012). For example, Fukuyama proposes that welfare state interventions have an eroding effect on social capital in his hypothesis on crowding out. However, research done in the Nordic Countries shows that a strong welfare state goes hand in hand with high levels of social capital (Kääriäinen & Lehtonen, 2006; Rothstein, 2003; Rothstein & Uslaner, 2005; Rothstein, 2011). The idea of Nordic Exceptionalism (Lawler, 1997) on the matter of trust suggests that generalized explanation models and global trust patterns, such as Edelman's (2017) talk of a worldwide fall in trust, should be approached with reservation. Looking from a historical perspective, the debates about, and studies of, trust have been more intense in places where trust is low or eroding (Trädgårdh, 2012).

For this reason, high levels of trust might be there in terms of performance, but the concept itself is not mentioned in the "story of achievement" (Corvellec, 1996). By analogy, in studies on foreign aid policy, the lack of "Europeanisation" in the nordic foreign aid is explained by the simple fact that the Nordic countries already had well-developed foreign aid policies. The lack of ideational fit that existed was by the Nordics "seen as something that should be solved through normative changes in the EU, and not the other way around" (Elgström & Delputte, 2017, p. 36). Recent surveys on trust in institutions, globalization, and solidarity report that citizens in Denmark, Sweden, and Finland trust institutions and "are the most likely to be positive about globalization, and they see it as an opportunity for economic growth" (European Commission, 2017). Hence, Nordic Exceptionalism prevails in the matter of trust, which does not imply that different digital evaluative infrastructures are unnecessary; instead, I suggest that such exceptionalism could pave the way for new and different trust practices.

4. Methodology

Case studies provide unique means of developing theory by utilizing in-depth insights into empirical phenomena and their contexts (Dubois & Gadde, 2002). In chapter 3, the context of the study was presented. This chapter presents the methodology of the dissertation. I begin the chapter by giving the justification regarding why I chose an abductive approach to case study research and why I chose to concentrate on studying platform organization mainly in the Nordic context. As the methods used for generating empirical material and the analysis process have been described in more detail in each of the papers, in this chapter, I focus on expanding a sociomaterial approach to the study of practices, elaborating on the research process and introducing the empirical material analyzed in this dissertation. This is followed by presenting the collection of empirical material and analysis processes. Throughout the chapter, I discuss and articulate an understanding of what the ontological position underlying a sociomaterial approach implied for epistemology in my study and show how the onto-epistemological research practices I have enacted in the papers have come to produce different kinds of knowledge.

4.1 A case study methodology

As researchers, we should "try harder to make interpretations specific to situations" (Dubois & Gadde, 2002). As my aim is to examine how and where accountability is performed in platform organization and, more specifically in the context of a Nordic welfare state, I chose a method to understand the interaction between a phenomenon and its context, i.e., in-depth case studies. As noted in section 1.2, study on new practice variation has tended to focus on strong actors. Scholarship on platform organization is no exception as there is a strong focus on the centralized platform model that exhibits similar qualities such as a centralized, profit-driven intermediary and extensive automation of user interactions. Such platforms are not necessarily, representative of the more socially-embedded, community-oriented aspects of, for example, the sharing economy, as they tend, as discussed in section 1.5, to leave out the moral dimension of social movements. Thus, we need to understand platformization as a sphere, or rather relational performative enactment of technologies, peers (such as workers, consumers, altruistic participants, developers), and more or less distributed provider/governors.

For this purpose, I adopted a case-study approach. According to Yin (2009), a case study is suitable for investigating distinct, under-researched phenomena. As

Hansen (2011, p.110) states, Yin is the "obligatory passage point" of case study research. This is something I found out also in practice, as a reviewer of the first paper, dictated that Yin could not be ignored, and the article should be revised. We revised it, and the paper adopted Yin's methodology since it proved helpful in analyzing the outcomes of interventions on *Stadin Aikapankki*. Thus, we defined the research as: "an empirical enquiry about a contemporary phenomenon (e.g., a "case") set within its real-world context—especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2012). The context and conditions of the Nordic welfare state in which the case appears were essential to its understanding. Actually, the high levels of trust in the Nordic countries need to be studied within an even broader context (Trädgårdh, 2012). According to Trädgårdh, trust covaries with equality, gender equality, individualism, and good government, but this is only the case with the kind of trust that Trädgårdh calls "cool trust" (*sval tillit*). In the Nordic variant of modernization, the emancipation of the individual led to cool trust, a cooler (than the "hot" relations described by, for instance, Putnam 2001 in for example, families and clans, but more widespread trust. Trädgårdh applies a historical perspective to understand the roots of trust. According to him, the key to the mystery of cool trust is found in the triad of family, law, and the individual, which he and Henrik Berggren call "Swedish state individualism" (Trädgårdh, 2012). The case study method offered a greater consideration of this broader context and the social norms rather than a mere analysis of an isolated unit or variable.

For Yin, the research design is a "blueprint" that determines the questions to be asked, the data to be collected, and the appropriate analytical techniques. Especially in the first two papers, I was highly influenced by specific techniques taught in Ph.D. courses on qualitative methods. Hence, I subjected the work to what Timmermans & Tavory (2012) describe as a "series of tedious and time-consuming methodological sequences" involving coding, categorizing of interview transcripts, and memo writing, as presented by, for example, Charmaz (2006) and Strauss (1987). All these designs ensured that I thoroughly familiarized myself with the data. I applied "theoretical sensitivity," consisting of the "ability to have theoretical insight into an area of research, combined with an ability to make something of insights" (Glaser & Strauss, 1967), but as argued by Timmermans & Tavory (2012) these early commitments to inductive approach created "epistemological and practical" dilemmas. I deviated somewhat from Yin as I, in line with Ragin (1992), "cased" the empirical material in different theoretical ways as I went along. Coding was performed manually. Coding and categorizing continued throughout the whole process. Still, they proved helpful in a slightly different manner than what grounded theorists first

intended as I, in line with Hultin (2019), started to understand them in "genealogical terms"—that is, "understand why certain categories became seen as more obvious than others" (Hultin, s. 101).

What kind of knowledge about the organizational realities of the sharing economy, then, did I produce in adopting these analytical methods? Looking at the first paper, it is now clear that I adopted qualitative methods in a manner that Piekkari & Welch (2018) distinguish as "qualitative positivism," which involves "positivistic assumptions about the nature of social reality (ontology) and the production of knowledge about this reality (epistemology)" (p.346). I maintained a tendency to understand the time bank and, for instance, the interviewees as autonomous subjects acting according to intentions and interests and *not* conforming to the dominant order in Finland that had been developed by bureaucracy, public managers, and new public management, institutional norms, and discourses. At times I fell into what Langley & Abdallah (2011) identify as the trap of "having nothing but a boring sequential narrative to tell" (p. 217). Second, in paper two, I first adopted the "Gioia method" in the coding and categorizing of mainly interviews, slowly I moved away from the "rigor" of Gioia (2013) towards an approach based on "systematic combining" grounded in an "abductive" logic, as presented by Dubois & Gadde (2002). This I did to better foreground the performativity of platform-organized practices. Although the Gioia method does lead to process models of how people make sense over time, these models sometimes seem to describe phenomena at a high level of aggregation since the coding process, as argued by Langley & Abdallah, generates "decontextualization." The interviewees become functions of something other than themselves, as "symbols and representations" (Hultin, 2019) of that which some practices or events have in common with others but not what they do *not* have in common. The need for "performative sensibility," that highlights how there is always a good deal of natural practice variety that results from the idiosyncratic performances of actors as they enact a particular practice" (Lounsbury & Crumley, 2007, p. 997) was the motivation for a different case study methodology.

Several studies have highlighted the limitations of the "linear schools" of Yin, Gioia, and Eisenhardt (Langley & Abdallah, 2011; Piekkari & Welch, 2018; Welch, et al., 2011). According to Langley & Abdallah, the practice turn, offers the potential to understand organization somewhat differently, "throwing light on its implicit, sociomaterial and recursive nature, something that is largely absent in the two templates" (2011, p. 223) of Yin and Eisenhardt.

Gherardi (2001; 2012), Orlikowski (2000), and Nicolini (2009) provide holistic toolkits to see and account for how change and possibilities of transformation are enacted in the arbitrary relational enactments between very detailed mundane, everyday work practices and wider organizational or institutional scenes. Gherardi (2012) has introduced a "spiral case study" with which a researcher moves from a research situation and an interest in the individual entering a community of practitioners and becoming familiar with their situated working practices. Gradually the researcher moves the focus on interacting communities, industries and society at large. This case study methodology allows, according to Gherardi (2012), technologies to be more vocal, adopting an "ethnography of objects" (Bruni, 2005), which, she argues, enables us to study the performativity of technology as it emerges in situated practices. In my case, an understanding of the "dynamics of emergence" (Cecez-Kecmanovic, et al., 2014) developed, especially in papers 3 and 4, as I iteratively did in-depth inquiry in different "not pre-given" (Gherardi, 2012) units of analysis and then expended the focus to other locations by following emerging relations. Nicolini (2009) describes this strategy as "zooming in and zooming out" of practice. Cecez-Kecmanovic et al. (2014) state that the objective of this practice is to: "develop an appreciation and articulate the dynamics of practice by observing and experiencing from different angles and perspectives how entities, people and technologies, their boundaries, properties, and identities, are continuously performed, what the consequences are and for whom" (p. 821). This methodological approach was helpful for my purpose to create an understanding of and theorize the "logic of practice" (Tsoukas, 2017).

The case study method, focusing on rich contextual insight and subjective experiences, was a source of theoretical insight. A good illustration of this is paper 4. The term platform is seemingly straightforward. Nonetheless, when situated in Finland's social and historical structure, famous for its high measures of digital inclusion and openness (Kuovo, et al., 2012), the nordic and historical context helped me rethink the phenomenon. Anomalous findings, in the form of incongruities and breakdowns, reoccur in the paper. At times, the public managers had little to no control over Turku's smart city's performance, or—as Kitchin (2014) termed it—the epistemology. For example, in 2019, the Future Today Institute recognized Turku as the seventh smartest city in the world. The city emerged as a unit of accountability via a class of industry-identified indicators. Value creation in SCs was thus externalized and occurred without the division or focal point unit being able to control it hierarchically.

While zooming in and out, I observed how data did not measure participation, thus organizing the boundaries of the smart city; therefore, all those concerned with engagement were suddenly outside the SC's epistemology. Regarding accountability relations, the ontology made Turku "smart" in the eyes of the industry. Big data collection was clearly important. Resources were used to establish "the first city-owned data company in the world": Turku City Data Oy. This had consequences for SWT, as the director of strategy and director of development were appointed to lead the new unit.

The case study makes it possible to study how the social significance of the phenomenon studied is performed in practice. Performative studies aim, according to Hansen, to "illustrate leakage" from or resistance that is met to the generalizations made in ostensive research that inevitably relates to understanding the performance of a given phenomenon. Paper three shows how open innovation theory performs a technology company. In line with Hansen's take on the method, the ostensive domain literature on open innovation was a source of inspiration, enabling us to relate our performative study to general issues regarding platform organization, thereby generating interest for the study. In paper 4, I illustrate how Smart City elements are, when studied performatively, a priori weakly structured and only find their meaning in the specific situation of the Smart and Wise City Turku project. Thus, in conjunction with Hansen, the performative study of the ostensive domain literature was not meant to lead to analytical generalizations as pursued by Yin in his case study research or theory testing as in Eisenhardt's template. The aim of a performative study and data analysis is to illustrate the specific actions relating to concrete phenomena. From an accounting perspective, the narrative of achievement (Mouritsen, 2006) reflects the relation between internal stability and external flux, where an actor (human or nonhuman) somehow tries to construct, create, outline, frame, and signify something (Hansen, 2011).

4.2 Research process and the collection of empirical material

In the last section, we briefly touched upon parts of the research process that motivated the choice of a case study. In this section, I present how data was generated.

All in all, I collected empirical material from multiple research sites in the platform context in Finland and internationally: 4 early sharing economy initiatives and 27 sharing economy platforms, 6 Open Innovation Platforms, as

well as empirical observations of smart city (SC) project from the design of a SC Platform. The heart of the dissertation is semi-structured interviews and observations. The material consists of 37 interviews, group interviews with public managers in the Turku City administration, a survey (n1066) of one sharing economy platform, ethnographic and nethnographic data from meetings and workshops. Government documents, blogs, corporate case studies, and webinars further added to the empirical material.

This representation of the process of my Ph.D. research process is a reconstruction of past events and of the choices I made at particular points in time. Different confessional accounts (e.g., Hultin, 2019; Schultze, 2000) are becoming essential learning opportunities for qualitative researchers. My presentation here partly mirrors the balancing act between following set plans and the utilization of unpredictable opportunities. I present this process with the help of my research diary and by reflecting back on the four research papers, I wrote during the process.

According to Hansen (2011), in terms of data collection, "more data –more resources" guides the performative study as one "follows the actors" as they attempt to transform society and "as they seek to build scientific knowledge or technological systems" (p. 125). However, it also recognizes "the value of different forms of data, such as interviews, observations, document studies, etc.", since both represent "resources that the researcher can exploit in terms of bringing translations/enactments of theoretical abstractions/ conceptualizations into focus" (p.118).

The process that allowed me to expand my understanding of both theory and the empirical phenomena studied was characterized by careful planning, combined with opportunity and learning from my empirical observations. I acknowledge that a hallmark of scientific research is methodological rigor. Planning served several important purposes, not least ensuring that I did not get completely lost in the exploration. Nonetheless, there are also risks associated with too much inflexibility. For instance, Wiedner & Ansari (2017) describe a process where one, in order to do "good research," carefully plans the study and is as specific as possible about objectives to gain approval from funding bodies and the like. However, such processes take time, and once the researcher is ready to begin the study, the interesting phenomenon will probably already have passed. Hence, they argue that "good" research may generate uninteresting or "poor" results (Wiedner & Ansari). In terms of the phenomenon studied in this dissertation, I could identify instances where planning and approval processes led to the loss of some data that could have been interesting. For example, at the beginning of

the process, the sharing economy was hype but also untheorized. As I describe in section 1.5, the research setting was characterized by dualism, where certain aspects of the setting were uninteresting from a business perspective, which made the persuasion of some of my academic peers to approve the research slower. Such slowness, I now identify, led at times to poorer results, as it led to issues of retrospective sense-making with regard to interviewees. In the context of qualitative research, the objective is to understand a phenomenon in rich detail, preferably from several angles. Such holism requires an "evolving framework" that directs the search for empirical data (Dubois & Gadde, 2002). Thus, my process resembles research, as depicted by Dubois & Gadde, that constantly goes back and forth from one type of research activity to another and between empirical observations and theory. The generation of empirical material, thus, followed an emergent research design (Wiedner & Ansari, 2017).

Another dimension of the process was that part of the data was collected within different research projects, where I was doing research through shared commitments with other (mostly more experienced) researchers. For instance, some parts of the data for the two first papers were collected during 2015-2017 by several researchers in the Helsinki Metropolitan Region Urban Research Program: Katumetro (Katumetro). Interviews focused on understanding the history, organization, and specific details of emerging practices on the ground in everyday activities of sharing economy in Finland. In addition to interviews and surveys, *Katumetro* worked with an action research approach and arranged, facilitated, and took part in several workshops, seminars, and courses around the sharing economy (Kaupunkiaktivismi, 2017). The output of this activity was documented in a book (Harmaala, et al., 2017), policy documents (Faehnle, et al., 2016), journal articles (Grönvall & Nylund, 2015; Träskman & Hyde-Clarke, 2016), working papers, blogs and a Facebook group. For paper two, the fact that the *Katumetro* project was not initially planned to research issues of trust proved to be good for the data. Trust research has shown people's tendency to rationalize their trust when interacting with researchers is a methodological challenge (Lyon, et al., 2015). Now, as "trust" was not singled out as the object of the earlier research interviews or other field sites, I could revisit that material looking for trust clues.

The initial plan for paper 3 was to do a netnography. I had done netnography (Kozinets, et al., 2014; Kozinets, 2002) in the first two papers to study the interface design, the design of participatory architectures, and the design of evaluative infrastructures of different sharing economy initiatives. My research interest was triggered by the assumption that the heterarchical setting of

platforms generates open innovation. I began to search actively for platforms and open innovation platforms through what can be described as snowball sampling. Through interviews, I learned that very few such platforms had emerged at the time in Finland. One crowdfunding platform (Mesennaatti) existed, plus *Sharetribe*. Interviews with the founders are part of my empirical material, as the accounts are fascinating in terms of understanding something novel emerging. In practice, this implied that very little existed in terms of existing digital platforms in Finland at the time, which was exciting but also a dilemma in terms of the focus of my research. I was studying something that had hardly emerged in Finland, and thus I had little in terms of platforms and accounting devices to draw from if I only focused on sharing economy platforms. Therefore, I shifted my empirical context somewhat in search of more empirical material. Since the assumptions in the literature referred to distributed innovation experiences, I started looking for other platforms that engage with external innovators. Thus, I identified *Nokia*, whose strategy documents, reports, history, and white papers seemed like an interesting site. The research began in 2017 as a nethnographic research project. Me and my co-author engaged in the Nokia Open Innovation Challenge (NOIC) to understand how the company organizes its open innovation process. Inspired by Martin Kornberger (2016), we, the authors, then tried to understand the organization done on the platform through the framework described in his study on distributed innovation design. However, it turned out that the crowd was only afforded to experience the interface of the platform. The relative "absence" (from a submitter's point of view) of architectures of participation and evaluative infrastructures resulted in a modification of the original framework much in line with the analytical inference described by Dubois & Gadde (2002). We saw this "anomaly" as an opportunity to modify existing theories on platform-organized innovation.

In terms of interviews, I conducted them based on a semi-structured protocol that developed over time. Most interviews were transcribed. This "active data" (Dubois & Gadde, 2002) was in paper 4, combined with passive data from numerous internal meetings that I recorded to capture how meanings were constructed and negotiated among team members in the smart city project. Kreiner and Mouritsen (2005) have developed a technique of interview called "the analytical interview," which I found helpful in studying an ontology of becoming. Practice will, according to them, often appear as unproblematic to actors as well as to socialized spectators. By exploring dilemmas, "the interviewer and the interviewee are able to construct the counterfactual image of practice that makes the factual practice significant." It further allows them to

contemplate how practice may change in the future. (Kreiner & Mouritsen, 2005, pp. 154-155)

During the research of papers 3 and 4, "materiality" was introduced to the interviews when for instance, the open innovation platforms' digital interface, the architecture of participation, and evaluative infrastructures were discussed. In paper 4, a PowerPoint had a similar function in the group interviews, allowing us to "dwell in the sociomaterial world" so that I could get closer to the practices at hand and recognize its material and embodied nature (Cecez-Kecmanovic, et al., 2014; Gherardi, 2012; Hultin, 2019).

Lastly, some words on reliability and performative case studies. A study is traditionally considered reliable if another researcher is able to repeat the study and achieve the same results (Yin, 2009). As a consequence of adopting a performative study methodology, the research moves to *realism* rather than reliability. Or, in the words of Scott & Orlikowski (2013), one is exploring information systems and organizations phenomena through "shared commitments to subtle realism" (p. 80). The idea of repetition does not make much sense from a performative perspective because one is studying agency as it "emerges, transforms, and enacts as a temporal and performative flow of practices" (Hultin, 2019, p. 93). It is impossible to experience the same translation twice. A translation will always be a "unique historical event that will never recur" (Hansen, 2011, p. 128).

4.3 Analytical Process

The aim of analysis in a performative study is, according to Hansen (2011), to "produce interesting descriptions of practice that illustrate the heterogeneous, performative, and relational character of theoretical abstractions and conceptualizations" (p. 120). The aim is to unlock established views on a phenomenon's significance and to illustrate "the power of practice" (Hansen). In my analysis, I used what Dubois and Gadde (2002) refer to as a "tight and evolving framework." They say tightness reflects how the researcher has articulated his 'preconceptions.' In my case, the very early preconceptions of novelty emerging were based on readings of, for example, Edward Said, Judith Butler, Ludvig Wittgenstein, and Michel Foucault. Thus, in line with Said, who in turn was influenced by Giambattista Vico, I conceived of disruption as a 'beginning,' i.e., as a first step in the intentional production of meaning and the production of difference from preexisting traditions (Said, 1985). Clear and distinct ideas are the last rather than the first things to be thought; the beginners (for example, an innovator or disruptor) are "imaginative poetic characters"

(Said, 1985, p. 365). A beginning is its own method, and scholarship should see itself as a beginning—as a uniting of theory and practice. Butler, together with Wittgenstein and a Foucault-inspired dispositional analysis, brought me to the preconception that doers are variably constructed in and through the deeds they do, while calculative instruments of accountancy actively shape what and who counts. Taken together, this framework led me to a 'becoming ontology' (Garud, et al., 2015; Hultin, 2019) in terms of analyzing the emergence of something novel.

Each of the four empirical research papers draws on somewhat different conceptual frameworks and also on different parts of the empirical material. As I explain the analysis in more detail in all the empirical essays, I will focus here on the general analytical process underlying these papers.

4.3.1 Analyzing the evolving case

Case studies often contain a "substantial element of narrative" (Flyvbjerg, 2006), which in turn allows for illustrating the above-mentioned power of practice. Good narratives typically approach the complexities and contradictions of real life. At the beginning of the research, I did content analysis of the online material on platforms. I wrote several analytical theme memos on the topics emerging from that material, interviews, and nethnographic observations. These included the themes "sharing economy acts," "social movement and social innovation events," "accounting, digital traces, reputation systems, and trust," "business as usual," "the role of apps and digital platforms," "regulation and control," "economic benefits," "enacting change, new activities, and practices." Examples of events were Sauna Day, acts where exchanges happened on different platforms. Examples of apps that later became platforms were *Sharetribe* and *Piggybaggy* (presented in paper 2). I treated both events and platforms as objects, and the representations of these objects played an essential role in the analysis process. In line with Garud et al.'s (2015) take on Pierce, these objects can be understood as semiotic tools "that help us abductively imagine what may emerge in various futures by inviting alternative and fluid interpretations of objects and their histories" (p. 10-11). I used *Evernote*, an app for note taking, organizing, and archiving, and created notebooks for each theme.

In the first paper, we managed to produce a good narrative in the in-depth case study of the time bank by applying a hermeneutic approach in the analysis of the material. Small experiences, anecdotes, and project descriptions were used to understand a general pattern. When I began the process for paper two and tried to explain the motivation for studying trust in the context of sharing economy

and distributed production on platforms, I learned the importance of exemplars and case studies in theorization. I was presenting my research proposal to a group of peer researchers, and it was only when I retold the narrative of the case study in paper one that my peers grasped the motivation for my research. By retelling such anecdotes from my dissertation process, I position myself in an "extended definition" of research, as described by Golden-Biddle & Locke (2007) that includes "the drafting of a formal paper, revision efforts during the review process, and the readings the work receives from the community of scientists" (p.114). Instead of assuming that an investigative effort has achieved closure when the analysis is complete, this position builds on transparency and openness.

On a general level, the analytical process of each paper followed a similar plan. As the study was explorative, the data analysis process was inductive and iterative, with the early stages being more open-ended than the later ones. A hermeneutic approach (Mees-Buss, et al., 2020; Ricoeur, 1983/1984; Van Maanen, 1979) was adopted when analyzing the data. For example, paper two began with a Grounded Theory-approach when analyzing the empirical material (Timmermans & Tavory, 2012; Le Gall & Langley, 2015), informed by a focus on trust while remaining alert to emerging ideas. Since the papers were co-authored, one of the authors, at times, took the role of "a devil's advocate" (Gioia, et al., 2013) who applied an outsider perspective and critiqued interpretations that might "look a little too gullible" (p.19). We cycled through multiple readings of the interviews, blogs, social media postings, reports, white papers, firm presentations, and articles.

Early on in the research, I learned from both doctoral case study methodology courses and literature that analytic rigor lies not necessarily, in demonstrating a systematic process, that is, a tight correspondence between data and theory through the coding process, as recommended by Gioia and Yin, but rather "in the thoroughness of the interpretive process" (Mees-Buss, et al., 2020, p. 15). Rather than rigor being assured through systematic data structuring—that is, procedural rigor- the emphasis is placed on the thoroughness of the interpretive process and the "maintenance of suspicion": that is, what Mees-Buss and her colleagues, building on Van Maanen (1979), term "interpretive rigor."

During the research, interpretative rigor was applied by "probing and heuristics" (Mees-Buss, et al., 2020) to encourage theorizing by opening the process of interpretation to additional insight. This interpretive process was sometimes a collective effort, as Golden-Biddle & Locke (2007) recommended. I showed and presented informants, other scholars, and my Ph.D. seminar group each paper's

evolving analyses and, at times, manuscripts. In the first round of coding paper two, my co-author and I focused on identifying different instances describing cooperation, uncertainty expressed by sharing economy initiatives, and assessments of ability, benevolence, and integrity. A hermeneutic approach (Mees-Buss, et al., 2020; Van Maanen, 1979) was again adopted when analyzing the data. We further engaged with the literature to help structure our interpretations. This analytical process was repeated in papers 3 and 4 but with different conceptual frameworks.

Regarding the next step of interpretation, Mees-Buss et al. (2020) recommend what they label theory-generating heuristics, where the researcher asks, "What is this an instance of theoretically?" This is an ongoing cycle of posing, verifying, and rejecting initial concepts and patterns that already starts during fieldwork. Engaging with literature helps structure interpretations at the first stages of the analytical process. They are then tested against the evidence from the social setting as a whole. For instance, it was only in paper three that I found performativity theory particularly useful in explaining our observations of open innovation platforms. It helped me make sense of my grounded observations of Nokia's open innovation activities. To make sense of the material production of open innovation, I found Volkoff and her co-authors' (2007) theory of technological embeddedness and organizational change valuable. The conceptual framing of ostensive, material, and performative aspects helped me articulate both differences and relationality between the practice of innovation intermediaries and the firm. The "need for theory" is, in line with Dubois & Gadde, created in the process of systematic combining.

Similarly, in paper four, scholarship on thinking infrastructure only made sense after a relatively long process of systematic combining where I went back and forth between empirical observations and theory. I confronted different approaches, such as governmentality theory, stakeholder theory, and theory on urban autonomy with the empirical world. Still, it was only through the lens of thinking infrastructure that I started to understand the relationships and the practices I was observing.

A danger in a case study is that the researcher tries to summarize complexities too early. According to Flyvbjerg (2006), the researcher should consider whether it is desirable to sum up or "close" a case study but keep it open. Dubois and Gadde describe pieces of data in the evolving case as pieces in a jigsaw puzzle or, to be more precise, many different puzzles. The analytical process is characterized by direction and redirection, where the research shift between analysis and interpretation. The researcher identifies relationships and patterns

where some pieces might actually fit another puzzle and are confusing in the jigsaw puzzle you are concentrating on. In writing up the study, one strategy to keep the case open is to "demur from the role of omniscient narrator and summarizer (Flyvbjerg, 2006)": the goal of the case study is to allow the study to be different things to different *people*. Rather than thinking of these people as the readers of the final product, I, inspired by Dubois and Gadde, made the evolving case a platform for discussions with other researchers. An example of such discussions is a review of the first draft of paper two that stated that "the focus on high-trust countries is an interesting one, but from a scientific perspective, I am not convinced by the need to take the level of institutional trust into account at the cost of added complexity." My co-author and I faced a challenge regarding argument and reasoning with qualitative material. Mantere (2017) argues that in terms of balancing theoretical contribution, one should be ambitious and ask what "your data can deliver for the needs of a particular theoretical discourse, and beyond its narrow confines" (p. 376). Our empirical material showed that platforms in the nordic context lacked the evaluative infrastructures that could be observed in low-trust countries. Therefore, we argued that "cool trust" in the nordic countries could explain this. This was our "best explanation" (Mantere, 2017)) for our findings. Thus, we built on trust theory from the nordic countries to extend more general theories on trust. However, this reviewer did not buy our argument because of "added complexity."

There is more than one way to combine empirical material and theory (Dubois & Gadde, 2002) and to interrogate the data so that alternative explanations are given "a fighting chance along your shiny story" (Mantere, 2017) can create discomfort. This is, however, the difference between strong and weak abduction, according to Mantere: "case studies tend to be explained by *multiple* arguments but looking at just one rarely provides a very strong argument" (p. 374, emphasis added). Thus, in the words of Tsoukas, "don't simplify." Nonetheless, and in stark contrast to this, one reviewer of paper three criticized the draft because it "is unclear why the author believes that (simply) "allowing new voices" will lead to more horizontal performance and a change in the accountability system." This was surprising since the paper does not propose or pursue a view of an idealized vision of the SC. As stated in the introduction and the literature review of the paper, the study's view on smart cities is in "contrast with the technocratic and idealized but often unrealized – vision that dominates the social imagination" (Madsen, 2018, p. 2)." The paper draws on studies on the "actually existing smart city" (Shelton, et al., 2015) studies that depict spaces of fulfillment, cooperation, ambiguity, asymmetry, and conflict. This was something that the reviewer, on multiple occasions, ignored. Rather than a vision or norm, the studies I built on

are concerned with emergence, i.e., with different ways of participating in an ongoing, unfinished world, than with discovering the realities of an already complete and stable world. In reply to the reviewer, I wrote the following, which I quote at length:

> Yes, the paper says that there is "poetry in the way new governance and accountability systems trace and reconfigure the territory of the common and allow new voices and responsibilities to enter into the political space." But poetry does not necessarily translate to "ideal". Rather poetic is used in line with Tsoukas's discussion of poetic praxeology (i.e. acknowledges the complicated motives of human action and the moral background of action, makes room for the transmutation of the past into new forms in the present, understands the relatively opaque nature of human intentionality, and allows for chance and recursively operating feedback loops, while accepting the inescapable contextuality and temporality of human action.) Thus, the quote from the PM that the SC is about "something new that may not even be known." Is not used to confirm an ideal of the SC. It relates to the discussion, inspired by Larkin that the SCs "emerges out of and stores within it forms of desire and imagination." Something that I now have tried to emphasize in the contribution and discussion. (Träskman, revision letter)

Review processes are helpful as they help the researcher maintain a skeptical attitude toward the theory that has been constructed and refine one's argument. I investigated the contradiction identified by the reviewer. I found that interpretive rigor includes an examination of the researchers "own perceptual screen" as well as the perceptual screens of others involved in the interpretation of what is occurring within the world of a studied group or phenomenon. The perceptual screen of the reviewer did not allow him or her to see and acknowledge an ontology of becoming.

In terms of this dissertation's analytical process and the writing up of it, the heterarchical setting (section 1.5), was at times an "Achilles heel", that made the case evolve in different directions. To produce interesting descriptions of heterarchical practice that, in line with Hansen's quote above, illustrates the relational and heterogeneous character of theoretical abstractions, brought many challenges. For example, in a review of paper three, one reviewer stated that "/…/the authors' understanding of innovation performance is not comprehensible. I, therefore, recommend that the authors add a section on innovation performance (in particular, how to measure it) to the theory section". The reviewer helpfully suggested some literature (i.e. Adams, et al., 2006; Dziallas & Blind, 2018). We consulted it. However, the problem with the majority of the indicators presented in the reviews was their firm-centric view of

innovation processes. The reviewer had thus ignored our analytical focus: i.e. the setting of our study and motivation for the study. One motivation for the study was to reflexively open up (Alvesson & Kärreman, 2007), our understanding of innovation performance beyond the vocabulary, the preconceptions, and, what Hopwood (1996) called, the "hierarchical consciousness" of the firm. Our case thusly was at a crossroad. In the final stage of the case study there should be no "confusing pieces" left (Dubois & Gadde, 2002). From the reviewer's perspective both innovation intermediaries and the platform were confusing pieces. In the end we adapted the frameworks suggested by Adams, et al. and Dziallas & Blind respectively and found that the majority of indicators also relevant for open innovation fell under the categories "innovation culture" and "knowledge management". This redirection helped us explain why the innovation intermediaries in open innovation highlighted culture and platforms as a means to change the innovation culture of organizations. Thus, when we turned the case from tool to product, instead of having a confusing piece, we had one that could explain the practice in terms of relationality.

Finally, in terms of the overall aim of this dissertation, such instances of redirection and negotiation, helped me identify, observe and analyze the conditions of becoming a subject who might (or might not) be able to give an account. This includes positioning myself and corresponding responsibly and creatively as a researcher.

5. Between movement and platform: Insights from the research papers

This chapter presents a summary of insights from each of the papers of this dissertation.

It provides insight into how responsibility and accountability co-evolve in platformization. Like some of the digital infrastructures and smart ubiquitous technologies presented in the dissertation, accountability seems to be a fairly ubiquitous phenomenon that arises, in some form or other, in nearly all relationships. The relations between peers and platform in terms of accountability and responsibility is, paraphrasing Garfinkel (1967), 'tell-a-story-about-able'.

5.1 Paper 1

In the first paper *Assessing the Potential for "Cultural Disruption" through Sharing Economy: A Case Study of a Time Bank in Helsinki*, presented at the *Third International Workshop on the Sharing Economy* and published in the Open Journal of Social Sciences, I and the co-author Nathalie Hyde- Clarke investigate if a better-networked society has the potential to facilitate utopian ideals that embrace modes of sharing economy through the advent of the better utilization of community resources. The paper was motivated by a desire to understand how a movement emerges as people manage to create an alternative practice.

The theoretical motivation arose from the need to understand better how social movement activists can draw on activity variation to establish a new practice field. Much has been expected of new digital communication spaces capable of linking individuals with each other outside the ambit of governments and mega-conglomerates. However, due to evolving corporate and marketing strategies, and national legal frameworks, there has been no clear demonstration of a truly alternative economic system. The interest in collaborative or sharing economy calls attention once more to this potential. This article presents and analyses a time-banking initiative, Stadin Aikapankki, in Helsinki, Finland.

Our findings emphasize that emergence is characterized by constant struggle at the boundaries that demarcate the social space of the time bank, thus extending on theory on new practice creation (Lounsbury & Crumley, 2007). In this case the fact that the platform designed to organize the exchange of the time banking community, also provided the material for the tax authorities to regulate the time

bank, highlights that focus on actors is crucial to understanding how struggles are played out and boundaries are made, re-made and negotiated.

In terms of accountability-relationships, the time bank suggests a distribution of responsibilities that corresponds to social movement organization (Munro, 2014), where political insurgents, with the words of Castells, "challenge the inevitability of politics as usual and regenerate the roots of our fledgling democracy" (Castells, 2009). They do this by bringing new information, new practices, and new actors into the political system.

Regarding accountability, the activists are responsible to the movement since it creates the possibility of producing another world, which they are responsible for and thus also accountable to. The question of accountability is engaging in social movement organizations, as these entities emerge from autonomy, where they have both the responsibility to "be prepared to break the rules" but also to "take responsibility for our own free action" (McKernan, 2012).

Regarding materiality, the Community Exchange System (CES): a web service that provides the tools for communities to set up and manage exchange and trade in their areas without using money, is used to organize the time bank. In conjunction with Volkoff et al. (2007), organizational elements and the data become embedded in technology. In this case, ICT's material aspect interacts with and "affects their ostensive and performative aspects" (Volkoff, et al p. 843). The social movement members list their activities on CES, and this new information "ex-cites the development of even further technologies for provoking and making things real" (Revellino & Mouritsen, 2017, p. 460). Thus, making the time bank "real."

"Normal theorization" (Lounsbury & Crumley, 2007) happens as the press writes about the time bank: this information ex-cites more members to join the practice of time banking. This anomalous variety is however, socially recognized as a problem by "an opportunistic (interview account)" politician, which instigates field-level politics and negotiations with the tax authorities. The boundaries made by the time bank are negotiated. As a consequence, the time bank is decentered, as it according to the tax authorities uses the infrastructure of the city. The material aspect embedded in the time bank organization, CES is "redesigned" by the tax authorities into an accounting and performance measurement system. The exchanges on CES are thus rendered to "accounts," and account-giving is extended beyond the relationship between peers in the time bank. The accountability shifts from a mutual accountability to organizational accountability, where the time bank is held accountable. The

timebanks interpretation of such "accounting" is that it operates in ways complicit with repressive forms of control and surveillance, in terms of Philp's (2009) distinction, it is interpreted as a "compliance-based" accountability system. According to Roberts (2001), "the most potent disciplinary effects of accounting, and the processes of accountability that it organizes, are to be discerned in those who are 'subject' to the visibility that it creates and the constant surveillance that it makes possible" (p. 1553). Thus, CES configures the time banking community as accountable to the state of Finland. Stadin Aikapankki partly redraws its boundaries and acknowledges that its members are also subject to the visibility and surveillance of the tax office and that some of the activities within the community may be subject to tax and that its members should be aware of this and report these to the authorities. Thus, by redrawing its boundaries, the time bank makes its members accountable.

5.2 Paper 2

Where the first paper examines the emergence of the sharing economy in Finland in terms of disruption, Paper 2, *The Multidimensionality of Trust in the Sharing Economy*, co-authored with Bengt Kristensson Uggla, explores the emergence of distributed trust and platformization in this economy. In chapter 2 of this Kappa, a quote by Möhlmann & Geissinger (2018) asserted that design for trust was necessary for sharing economy. This account and many other accounts from sharing economy theory suggest that social (and political) factors are built into technology. Sharing economy scholars indicate a shift to systems "that are more transparent, inclusive and accountable" (Botsman 2016) and implicate a move from institutional trust to a different kind of trust infrastructure, empowered by technologies that extend an individual's economic community to a digitally vetted subset of the population at large. This allows individuals to engage in what Juliet Schor calls "stranger sharing" (Schor 2015). This kind of sharing enables the sharing economy to be more open, participatory, innovative, and peer-driven than the current economy. The conceptualization of trust is based on findings from IS research examining the nature, the role, the moderators, and antecedents of trust in different online environments (e.g., Etzioni, 2019; Hawlitschek, et al., 2016a).

Our particular motivation for paper 2 is an opening observation made at the beginning of the fieldwork (originating from the empirical data from the *Katumetro* research project (sub-section 4.2) that disclosed an unexpected empirical phenomenon that did not match prior theory on sharing economy. The Finnish sharing economy initiatives identified themselves as part of a global

social movement but did not "design for trust" or rely on the technology (the material) aspects of sharing economy. Thus, the paper sheds new light on how and where trust and accountability are performed in platform organization.

In the theory of Volkoff et al. (2007), the ostensive and material aspects of a routine interact during design and configuration. The performative aspect is latent. According to the theory, the performance of the technology-mediated routine cannot occur until the technology is implemented. However, in Finland, digital trust infrastructures were not implemented, but sharing economy performance still happened, so where in the heterarchical organization was trust "performed"?

By introducing the distinction between high-and-low trust societies (Fukuyama, 2001) we extended the question of trust beyond the taken-for-granted boundaries of the digital infrastructures. Thus, the analysis decentered not only the material aspect of the platform but also the boundary set for the infrastructure. We considered the entangled nature of infrastructures, arguing, in line with Larkin (2013), that the act of defining an infrastructure as a material but invisible infrastructure, as in sharing economy theory, can be seen as a categorizing moment, as a political act. We took a relational view of disruption, where what is disruptive in one context hardly registers or registers differently in another context. Nonetheless, defining "the infrastructure" as omnipresent (as in much of the sharing economy literature) is a political act. It can have performative effects, where, for instance, the information on the regulation of platforms in another context (USA), "in-cites" (Revellino & Mouritsen, 2017), authorities in Finland, to regulate quite different practices. Thus, in terms of accounting, accounting for these new accountings "subjectivizes" (Miller & Power, 2013) sharing economy agents whose attention and working practices are shaped by the possibility of audit and the need to create trails of evidence of proper performance. The paper thus engages in "infrastructure thinking" in line with Pujadas & Curto-Millet (2019), i.e., "a process of ontological reflection that examines the multiple ontologies of actors involved in an infrastructure."

Based on our findings from the case study, we argue that confronted with the current demand for" more" trust, in accordance with a one-dimensional concept of trust, we need to elaborate on a more complex, multi-dimensional understanding of trust. In the paper, we problematize the notion of "trust infrastructures," especially when mobilizing this infrastructure into the public domain. Our findings show that some of the new constructs and sociomaterial practices in sharing economy revolve around an "ideology of trust" (Mouritsen & Thrane, 2006). Trust is the operating principle of these practices, which

sometimes leads to practices like *BlaBlaCar*, where digital trust relations are designed in the form of family relations. Mouritsen and Thrane's conceptualization of trust as a "problematizing activity"—i.e., trust systems are more about the absence of trust rather than its presence. Thus, we argue that the relative lack of digital trust infrastructures on Finnish sharing economy platforms can be explained by the fact that trust was already "there" and only becomes visible when the entangled nature of (trust) infrastructures is considered.

Finally, we demonstrate how representational data, or differently put, our "accountability" on platforms, is also our value as citizens. We allow technology to rewrite the rules of human relationships without considering accountability relations. We argue that many of the reputation systems do not consider mutual or lateral accountability but are, in fact, monitoring systems.

5.3 Paper 3

Paper 3, *Performing openness: How the interplay between knowledge sharing and digital infrastructure creates multiple accountabilities*, published in the Journal of Strategy and Management, develops a performative theory of openness as performed in the context of "Open Innovation." The paper, co-authored with Matti Skoog, focuses on open innovation: a practice and context that some scholars find helpful in understanding how platformization could enhance performance in cities and society at large (Anttiroikko, 2016; Caragliu & Del Bo, 2019). The study aims to address the emergence of platform-organized open innovation (OI). The research had two main aims: the first was to increase the understanding of the performance of OI by investigating how the achievements of OI are measured in situated practices from performative and strategic knowledge management (SKM) orientation. The methodological disadvantages of not pre-given case selection were partially counterbalanced by the second aim of the research, which is to extend existing SKM theory and examine how platforms create knowledge as they include actors and digital devices, thereby potentially redistributing relations of accountability.

Building on performativity theory, the paper studied how the achievements and knowledge created in OI are managed and evaluated in practice. The case description drew on different sources from a spiral case study, as openness is performed by platform, firm, crowd, and innovation intermediaries.

In terms of findings, the paper illustrates how a strategy of digitally enabled openness brings its issues as platforms enable knowledge sharing and perform

a redistribution of accountability. In the heterarchies studied through this research endeavor, managers and their team members were accountable not only to multiple units, or teams, across the organization but also to the crowd. The case material demonstrates that the ecology of devices and their performative struggles create lateral accountability.

While recent streams of research suggest that the context of OI (i.e., distributed sources of knowledge for innovation) shifts the unit of analysis of organization design from the individual firm to networks of actors organized on platforms, Skoog and I, find that the focal firm remains a key conceptual parameter in SKM research, which, in turn, makes it challenging to capture the suggested radicality of OI. We show that in practice, the firm has to consider the external crowd's performance, and at times put resources into its training and education. In terms of accountability, the paper's findings affirm Scott and Orlikowski's (2012) theory that OI platforms redistribute accountability to meet increased demands for transparency.

The findings in the paper demonstrate accountability relations on platforms as a sociomaterial configuring of strategy (challenges formulated by firm plus innovation intermediaries), platform (designed by innovation intermediaries), and external crowd where the entities doing open innovation are also accountable to the crowd. Relations of accountability are understood by innovation intermediaries and open innovation theory as issues of "knowledge management" and transparency, which the digital infrastructure affords. A well-designed open innovation loop creates a "trust cycle." In this ideal built on both transparency as accountability, the platform guarantees that anyone can observe from different perspectives how organization, people as well as "technologies, their boundaries, properties and identities" (Cecez-Kecmanovic, et al., 2014), are continuously performed, what the consequences are and for whom. In this empirical setting, accountability is a means to an end (Rached, 2009). However, the firm can choose to afford different levels of openness on the platform, as demonstrated in the paper. As the empirical data shows, organizations "don't always want to be held "accountable to the expectations of the external crowd. Being held accountable concerning the last question in Rached's analytical structure (subchapter 2.3), i.e., "under pain of what consequences," seems to produce such practices of boundary-making in the management of the "open." For this purpose, 'transparency,' considered in line with Flyverbom et al. (2015), as a productive force, which is both "*conditioned upon* and *conditions* a host of relations, actions, and norms for conduct,", is informative. From the firm's perspective, being open is vital for employee and customer satisfaction,

accountability and legitimacy. As an account from the case study states, they do open innovation since the entity is not "a closed community."

Crowd accountability and IP are often intertwined in the accounts in the data, as well as an indication that the crowd could also be held accountable for the evolution and result of a contribution posted on an OI platform. In one account, an external crowd member is likened to an "author," who owns the idea and can be confronted about it since the "author is accountable to the rest of the community." Such findings are interesting for the present thesis since they point to a practice where OI builds on the expectation that the author *should* hold to account; be open and share contributions, and is also responsible for the idea in a process that involves both serendipity and "relational drift" (Revellino & Mouritsen, 2015). Such observations raise questions as to both the limits of traceability and accountability as we are expecting that author to measure up to multiple and "conflicting accountabilities" (Messner, 2009), which is in itself ethically questionable. A dimension of temporality is introduced to disruption and innovation. IP is a way to end an author being held accountable. Still, transparency could also imply that an author is held accountable for as long as her or his digital reputation trail exists, i.e. for a very very long time. Such temporal perspectives on accountability are informative as the relationship becomes, to paraphrase Rached (2009), an "endless loop" that can permanently restart and configure iterative "cycles of accountability."

5.4 Paper 4

The paper, titled *Smartness and thinking infrastructure: an exploration of a city becoming smart*, was published in the Journal of Public Budgeting, Accounting & Financial Management. The paper explores the emergence of smart city governance with a particular focus on the cognitive value of the new technologies and the different accountabilities emerging in the digital infrastructures attempting to visualize and rationalize urban dynamics.

Drawing on ethnographic, nethnographic and interview data from an empirical case study of the Smart and Wise City Turku spearhead project, the study builds on the assumption that smart cities emerge from the interaction between the characteristics of technologies constellations of actors and contextual conditions.

The results report smart city activities as an organizational process and a reconfiguration that incorporates new technology with old infrastructure. Through the lens of the empirical examples, I am able to show how smart city

actors, boundaries and infrastructures are mobilized, become valuable, and are rendered visible. The smart city's infrastructure traces, values, and governs actors, identities, objects, ideas, and relations to animate new desires and feats of imagination.

The central theoretical concept of "thinking infrastructure" highlights how new accounting practices operate by disclosing new worlds where the platforms and the users discover the nature of their responsibilities to the other. The contribution of this paper is that it examines what happens when smartness is understood as a thinking infrastructure. Different theorizations of infrastructure have implications for the study of smart cities. The lens helps us grasp possible tensions and consequences regarding accountability arising from new forms of participation in smart cities. It helps urban governance scholarship understand how smartness informs and shapes distributed and embodied cognition.

The findings of the study can be read in line with Roberts's (1991) distinction between accounting as technique and a more socializing accountability "that acts as a mirror through which producers and their activity are made visible" (p.363). Infrastructure as an "aesthetic vehicle" seems to afford an accountability in platform organization, where project managers understand the platform as what Roberts would call an "inclusive concept" (1991) through which they are ''held accountable''. To embrace this call to explore the possibilities of accountability proffers, according to Scott & Orlikowski (2012), "analytical potency because it focuses our attention on the ''flow of experiencing," where responsibility is the ability to be responsive to the possibilities of becoming, not just traceable, but accountable in each moment.

Following the dynamics of performativity in the case study, one can observe Turku becoming a subject "who might be able to give an account", when the *Future Today Institute* identified Turku as the seventh smartest city in the world (The Future Today Institute, 2019), and the smartest city in Finland. Institutions are not, according to Rached, built to be accountable in the first place. "Some way or another, however, they are likely to be," and the paper illustrates this. But what is the origin of this accountability? How the city emerged as a unit of accountability was via a class of indicators identified by the *Future Today Institute*. This narrative of achievement did not measure citizen-centricity, thus organizing the boundaries of the smart city so that all those concerned with engagement were suddenly outside of the narrative.

Accountability in smart city governance builds on an "epistemic promise" where "accountability devices may develop /…/the aptitude or the proficiency of an

institution to reach better decisions" (Rached, 2016, p. 338). In the search for distributed autonomy and smart governance, urban governance literature seldom discusses what this requires in terms of the capability of those citizens now involved in policy-making, participatory budgeting and innovation. The paper illustrates how interaction with the Smart and Wise Turku project's (existing and tentative) infrastructure helped actors imagine the opportunities and possibilities provided by smartness. In turn, smart city infrastructure traces, values and governs actors, identities, objects, ideas and relations to animate new desires and feats of imagination.

6. Contributions

In this final chapter, I will discuss the contributions of this study and provide answers to the theoretical research question raised in this present thesis. In addition to providing new insights, the chapter will also, to further aid the process of discovery, discuss new questions that have arisen during the research. Theoretically, I asked, *how and where is accountability performed in platform organization*? To answer this question, I have conducted four empirical studies. Through these four empirical research papers produced as part of this study, this dissertation contributes to a better understanding of the sociomateriality of accountability in platform organization and its performative consequences.

In the first sub-chapter, I reflect on how adopting a sociomaterial approach to practice informs our understandings of accountability in contexts, where actors are, quoting Garud et al. (2015), "constantly engaged in the co-emergence of their selves and their situations." I will conclude by discussing some practical implications (6.2), the limitations of this study (6.3), and further suggestions for future research (6.4).

6.1 Contribution to understanding the sociomateriality of accountability in platform organization and its performative consequences

This dissertation builds on studies that argue that platforms are performative, and in an increasingly digitized world, the data collected and the algorithms used to make decisions based on these data have performativity. By adopting a sociomaterial perspective, this study contributes to theory arguing that we need to acknowledge and examine the "non-neutral performative implications of this co-constitution" (Cecez-Kecmanovic, et al., 2014) and the accountability of those involved (Scott & Orlikowski, 2012). In drawing on the Judith Butler-inspired conceptualization of performativity, this study contributes to the understanding of accounting as a praxis that creates visibility and transparency by way of information. By analyzing emerging patterns of technology-mediated change, the thesis presents several actors whose subjectivity is characterized by them being what Garud and his colleagues call "participant parts" (Garud, et al., 2015) in activities and emerging, ever-changing situations. This technology-mediated change has implications for accountability.

When we bring sociomaterial and accountability perspectives into one discussion, we move from a substantialist ontology to a temporal and relational

one. The ontological position underlying sociomateriality has implications for epistemology. For example, the idea of "planes of possibilities that do not exist beforehand" (Kornberger, et al., 2017) can only be understood as an ontology of becoming, where accountability is performed. In the analysis of infrastructural disclosure and accountability, the material aspect has to be integrated. In the following discussion, I expand on Boven's conceptualization of accountability by adding materiality to the encounter; thus, instead of a reflective discursive encounter, we are faced with a 'reflective material-discursive encounter.' One has to be able to reflect on how and why peers and products come to matter on a platform and in its infrastructure.

So, what can a sociomaterial approach to accountability on platforms bring to earlier discussions? First of all, the present thesis builds on and sharpens theory on how digital infrastructures trace their objects, making them visible and available as objects of and for possible interventions (Kornberger, et al., 2017; Power, 2019), of which sharing and open innovation are but some facets. This dissertation argues in line with these studies that the technologically enabled opportunities for intervention are not given but are performed. This study provides grounded descriptions of the implications of platform organizing with respect to how we make sense of the world and act in it. The move to settings outside of the hierarchical consciousness of the firm, reveal accountability relationships that involve many more actors. Although these relationships build on trust and transparency, the complexity of accountability relationships increases with all nodes involved in such a network. This, in turn, expands the potential and problems with intelligent accountability. Conceptually, this shift entails focusing on the tracing, redistribution, reconfiguration, relationality and disclosing of accountability in platform organization. Platforms generate relations (rather than references) between things, people, and ideas. This relationality reshapes the world contingently around it.

With respect to the potential of intelligent accountability, it was Roberts (2009) who imagined a more compassionate form of accountability that expresses and enacts our responsibility for others, and for each other, rather than just for oneself. He highlights the problems with transparency and points to interdependence and responsibility for the other, which is "inescapable" (Roberts, 2009) since, from the start, the other affects us despite ourselves. Dilemmas as to the limits of accountability come to light when we reflect on this responsibility *for the other* with respect to the distributed material-discursive encounters on platforms. The dissertation's exploration of how and where accountability is performed on platforms shows that the redistribution of

accountability on platforms often translates into multiple demands for accountability. An often-unexpected consequence of interactivity on a platform is that accountability online overflows into the offline world, but in different shapes and with new performance demands. For example, in paper 4, I discuss how distributed agency requires critical scrutiny, as individuals' capabilities (e.g., the ability to engage with smart cities and their ICT) do not align with emerging meta-governance technologies. The public managers stated that exposed groups could be traced in smart cities. Faced with having the responsibility for parts of the smart city's infrastructure that the public managers do not entirely control, as well as groups they felt accountable to and for, led to insights into the consequences of paradoxes of power. It also created a sense of anxiety among the managers. Thus, the tracing infrastructures create an "inescapability" and anxiety that Roberts hardly anticipated or called for. The dissertation provides grounded descriptions of a further danger that Power (2019) identified when he proposed that the identification of risks beyond presumed boundaries will lead to continuous investments in "better" forms of traceability. The empirical accounts in, for example, paper three confirm Power's original proposition, showing that how and where accountability is performed in the platform context is a critical ongoing empirical question. The findings demonstrate open innovation actors who are already creating better traceability infrastructures but fail to assess if such transparency is unambiguously desirable.

Furthermore, such findings demonstrate the emergence of an ever-expanding ecology of devices. The process of connecting multiple agents displays an ambition to explore by relating, an aspiration to build distributed and interconnected responsibility. Quasi-public objects, such as trust, are disclosed through feedback loops, ratings, comments, and other evaluation devices. I argue that these devices should also be reflected upon as new emerging accountability devices, i.e., devices that inform the interaction between accountees and account-holders. Quoting Danielle Hanna Rached, such devices of participation, responsiveness, transparency, and the like, establish "horizontal constraints that can conceivably be traced back to the people" (p. 332). Rached's examination focused on political accountability, is thought-provoking when the tracing is viewed in light of how the traceability infrastructures work on platforms. Infrastructures where traceability becomes "power charged," to use Donna Haraway's term. Traceability infrastructures are, according to Power, simultaneously "ideational, material, and processual." They will "be representable more or less as a kind of audit trail" (Power, 2019). This present thesis shows that accountability not only promises performance, but in the name

of trust it undertakes the production of security and assurance. This undertaking is guaranteed by the capacity "to trace back to the originating components of performance representations" (Power, 2019). The Safety and Security focal point of Turku's Smart and Wise City project (Paper 4) indicates that such traceability infrastructures are being developed in Finland. As citizens cooperate with authorities, more data is produced and safety is achieved performatively; thereupon we have what sociomaterial theory would identify as a "network that configures ontologies" (Cecez-Kecmanovic, et al., 2014).

Second, a sociomaterial perspective combined with the study of thinking infrastructures helps accounting and urban governance scholars more fully engage with notions of distributed and embodied cognition and understand how ICT informs and shapes such cognition. More traces in real-time requires more distributed cognition, i.e., more epistemological work. The knowledge produced online on, for example, smart city and open innovation platforms is constituted by claims to legitimate collective processes (von Hippel, 2005; Scott & Orlikowski, 2012). This empirical study, with its analysis of the emerging patterns of platform-mediated change, show infrastructures that ostensivily and prescriptively afford more collectivity, equality, openness, sustainability and accountability. However, a performative approach problematizes (Alvesson & Sandberg, 2011) prescriptive studies of platform organizing as it includes all manner of localities, circumstances and contingencies. As I show in paper 4, smartness has little to do with an ideal or potential. It emerges, not gradually but asymmetrically and accidentally. Thus, for us scholars, it becomes essential to explore how social and material considerations are mobilized, enacted, become relevant, and are rendered visible. What peers on platforms face is not a monolithic ideal of an entity or system but an ecology of devices (Kornberger, et al., 2017). In terms of where accountability is performed on platforms, the answer is: in this ecology and as a result of performative struggles. Such theorizing of ideals as situated and integrated into existing constellations and contexts helps research push beyond the hierarchical consciousness described by Hopwood (1976).

The issue of context brings a further contribution to the fore. This dissertation strives both methodologically and theoretically for contextualization. Theoretical accounts based on decontextualized data may as different scholars have shown (Mees-Buss, et al., 2020; Van Maanen, 1979), result in interpretations that lack depth and explanatory power because it has been removed from the social setting that imbues the social with meaning. Considering the reflective material-discursive encounters on platforms implies

approaching a broader entanglement between the social and the material. The case of the relative lack of evaluative infrastructures on platforms in the Nordic Countries is a good illustration of this. The interaction between a phenomenon and its context is highlighted repeatedly by the scholars I refer to in my choice of method (e.g., Dubois & Gadde, 2002; Piekkari & Welch, 2018). Theoretically, the studies I build on approach context from different angles. While theorizing on transparency versus accountability, Roberts states that "accountability, in its intelligent form, is in a particular context" (2009, p. 966). Intelligent accountability involves "active enquiry – listening, asking questions, and talking – through which the relevance or accuracy of indicators can be understood in context" (Roberts, 2009, p. 966). From Roberts's perspective, accountability is a learning experience; it is the condition of becoming a subject who might be able to give an account. Sociomaterial approaches to context view it a little differently, augmenting on research on the relationship between the social and the material in the context of our increasingly digital society. For example, Pollock and D'Adderio (2012) talk about the "format and furniture" of ranking devices that not only mediate but also constitute a domain of practice. In sociomaterial studies, context is treated as a prepared environment (Gherardi 2012). In highlighting context, the dissertation builds on this research. It advances insight into how "accounting has a number of properties and dimensions that interact with each other and with the context of which they are part so as to engender a complex social impact" (Gallhofer, et al., 2015, p. 853). My research also extends on those studies by arguing that accounting also intra-acts with infrastructure. Accounting mobilizes visibility and the boundary of infrastructure. Thus, this study joins strands of recent research by Bowker and his colleagues (2019) that try to think past infrastructure as a public good and a mode of distributing and distributed infrastructure in which "agency, cognition and endless potential for misfire is baked into the system as pirate and parasite." This brings me to a further contribution of the present thesis. The idea of "endless potential for misfire" is interesting as it enables us to explore a different and often misunderstood facet of the performance of emerging sociomaterial practices.

Studies on performance, especially when it comes to innovation and knowledge management (e.g. López-Nicolás & Meroño-Cerdán, 2011; Papa, et al., 2020), focus on the development and proliferation of the traditional firm, and its performance indicators (e.g., Adams, et al., 2006; Dziallas & Blind, 2018). In performative studies a different kind of knowledge is produced since this approach to emergence focuses on becoming rather than being. Performance is determined in the context in which it is practiced (Corvellec, 1996). "Stories of achievement" (Corvellec) are situated and integrated into existing constellations

and contexts. Actors do not have to be correct or accurate in their actions. In the highly industry and technology-driven phenomenon of smart cities, there can, as I show in paper 4, be "accidentally smart cities" that try to perform the future rather than predict it. This indicates that technologically enabled opportunities are not given. This is why focusing, as in this dissertation, on ethical and social responsibility is so important. As Cecez-Kecmanovic and her colleagues emphasize, recognizing the co-constitution between the social and the technical "does not imply equality" (2014, p. 825). This is because of performativity: the data collected and the algorithms used to make decisions based on these data, have performativity. According to these scholars, "they produce a lived experience that could be/is becoming very different from our past/ current experience, changing the knowledge/power dynamics of everyday life" (Cecez-Kecmanovic, et al., 2014, p. 825). Different lived experiences identified in this dissertation include social movement activists, sharers, and innovators "intra-acting" with each other and with both physical and digital infrastructure. Through this participation, new patterns of sociality – networked individualism (Castells, 2012) and networked collectivism (Baym, 2010) emerge. The potential of an intelligent accountability can be observed in these empirical settings where Roberts's claim that "transparency and face-to-face accountability always coexist" also seems applicable in platform organizing. My empirical findings also confirm inequality and accountability dilemmas caused by performativity. For example, 'codification' (López-Nicolás & Meroño-Cerdan, 2011) as a knowledge management strategy becomes problematic in open innovation. Managers feel that they should be held to account when the crowd is first invited to innovate for the firm and then made ontologically absent when the knowledge is codified, i.e., translated into products. As Roberts (2009) argues, transparency "works back upon those subject to it." And while firms can create a lack of mutual accountability and argue away different accountabilities by embedding hierarchical organizational logic in platforms so that accountability is not evenly distributed, the managers still perceive themselves accountable to the crowd.

Similarly, and finally, while practicing "counter-conduct" (Munro, 2014), evaluative infrastructures induces sharers on platforms to feel obliged to inform others on the platform about their conduct on the platform monitoring systems. Suddenly, time bank members experience a "becoming accountable" to different entities as the time bank redraws its boundaries. In such a situation, peers again run into the dilemma identified by Power, where actors are increasingly required to govern performance and risk beyond presumed boundaries and are engaged in an accounting that knows multiple accountabilities. Performativity in the settings studied here in this dissertation seems to produce too much

accountability. At the same time, digital technology, while holding out the promise of different accountabilities, new forms of trust, and new organizational cultures, may still be captured by normative and monitoring practices, which may mute "other voices" without an opportunity to mobilize.

In contrast to sharing economy trust theorization, this study suggests that much of trust infrastructure, as presented by both scholarship and platforms, has more to do with monitoring and control, which, if not acknowledged, might create a less trusting digital environment. I also demonstrate that high-trust societies like the Nordic countries, with their culture and institutional as well as digital infrastructure are examples of other voices that have been muted in current sharing economy scholarship. This mobilization of their invisibility could hinder the emergence of new forms of trust. Inquiry into how accountability is performed on platforms suggests that from a performative perspective, accountability is a matter of how peers mobilize interdependence and other elements (such as open innovation) on platforms in different situations and how these elements are related, connected, and allowed to do certain things but not others. The empirical findings identify accountable selves that deal with conflicts between various demands and have to speak, in Martin Messner's words "several languages at the same time". Thus, intra-acting for performing particular realities produces tensions and dilemmas and a need to speak several languages in different forums. Sometimes a "sharer" is an environmental hero building a more sustainable world, in the next moment another thinking infrastructure traces and "tags" the peer as something else. The question of whether the tagged peer, organization or platform should actually be accountable is relevant, as peers in both networked individualism and networked collectivism might feel responsible for autonomously managing all tensions and dilemmas that arise in the particular realities that they are performing in.

6.2 Practical implications

In their paper on the sociomateriality of information systems, Cecez-Kecmanovic, Galliers, Henfridsson, Nevell, and Vidgen, call for the future direction of sociomaterial studies to be "practically relevant" (2014). They argue that the focus on the epistemological and ontological aspects of a sociomaterial lens "has arguably produced a body of literature that is even less accessible and relevant to the everyday person than is much of our academic literature" (p. 826). This section is a modest answer to that call.

In the beginning, the emerging sharing economy movement was depicted as a major force that, according to academic and popular debate, might either change the status quo or replace it. This study shows that focusing too narrowly on the narratives of achievement of large actors devalues the activities and practices that performatively actually might produce such alternatives. The idea of one emerging monolith (sharing economy, or platform economy) disrupting and replacing another is problematic since it has implications as regulation needs to be credible while being inclusive, policing misbehavior without stifling experimentation and innovation. The value of including the platforms themselves as enforcers of the self-regulatory solution has been advocated (Cohen & Sundararajan, 2015). This dissertation shows that accountability relationships where platforms are accountable to *no* "outside" groups are problematic, as long as the platform can be the one that defines what its boundaries are. Therefore, a self-regulatory solution for the platform economy must have some form of transparency and governmental oversight.

Another central implication of the study of the sociomateriality of accountability will be to help managers (of public institutions, social movement organization and firms) address the many issues of purpose and scope that prove problematic in platform organization. The study shows how even, large companies, cities, and municipalities, to get the most out of ICT, work with all kinds of platforms. For example, in paper 4, we identified 80 platforms that the Platform Economy Model of Turku and consequently the public managers of Turku have to consider. This dissertation problematizes models built on assumptions that peers and citizens increasingly contribute directly to the evolution of a better society and sustainable cities. ICT's promise to transform urban governance into smart city governance "where ICTs are integrated into strategies for citizen participation and the co-production of public services and policy" (William, et al., 2018) redistributes accountability. This study shows that distributed production creates complex accountability relationships, where the manager responsible for platformization can become accountable to multiple units, or teams, across the organization. Accountability is not given in advance of action in a cause-and-effect relationship, nor does it belong to any one actor. Agency and accountability are constantly forming and transforming from within the action itself. The potential failure of a platform initiative is associated with the complexity and dynamics of large infrastructures and the entangled nature of infrastructures. Thus, failures are not primarily symptoms of poor project management.

In terms of practice, the contributions of this dissertation can be used as a sensitizing device to help understand tension in organizations and other

stakeholders' goals and raise awareness that many of the technologies are not as neutral as generally perceived. Platforms are complex assemblages that require sensitivity to context and the specifics of technologies. In terms of accounting, planning a platform organization may, in line with Andon et al. (2007), "need to be balanced by an acceptance of allowing accounting technologies to emerge in a manner that is in keeping with their relational and performative nature" (p.303). In the introduction of emerging technologies, managers seek both flexibility and standardization. In dealing with such big infrastructures, the managers have to analyze what should be standardized and what should be allowed to change. For managers responsible for platform initiatives understanding the sociomateriality of accountability in platform organization may help them to articulate their value positions and relate them to values embedded in technologies, infrastructures, policies and strategies. In terms of the design and implementation of trust-control infrastructures, it is helpful for managers to understand that standardizing by way of platformization most likely is in tension with national infrastructures, and the introduction of digital infrastructure could perform a worse society than the relatively nice one that we already live in.

6.3 Limitations

Due to the theoretical commitments made and the methodological approach taken in this dissertation, the limitations are related to how practice is presented. Studying the emergence of novel practices from a temporal perspective is challenging. It calls, as Garud et al. (2015) observe, "for nonrepresentational methods that go beyond discursive considerations to recognize the ephemeral and dynamic becomingness of human experience as a continuous flow of creative action." From a sociomaterial perspective, researchers not only make conceptual choices for describing the practice of the researched but are also affected by the research practice itself. The different papers show shifts in focus in my observations that depend on at least three things. Firstly, my study of practices has generated an immense database of disparate kinds of information. I acknowledge that the papers of this dissertation were partially guided and pragmatically affected by various research projects and the "complex task" (Langley & Abdallah, 2011) of communicating my research in the context of journal articles and different research projects that allowed me to fund and present my research and relate to ongoing academic discussions.

Secondly, discussions of sociomateriality, "the most practical of topics" (Leonardi, 2013) have, to this point, remained highly philosophical. As I discuss

in chapter 4, the theory is new, which implies that it is not quite yet a ''turn'' in the epistemological sense. A gradual attraction to and understanding of the approach and what separates a becoming ontology from other ontologies brings its limitations as the choice of a theoretical foundation has very practical implications on what kind of empirical study one builds. For instance, it was pretty late in the process that I learned that the intervening hyphen in 'socio-materiality' brought a different ontology. In my defense, in light of the debate regarding sociomateriality that is still going on, such conceptual confusion still occurs regularly in academic papers and events.

In line with Hansen's discussion on the relationship between different types of research and Hultin, 2019, as well as Scott & Orlikowski (2013), this study argues in favor of research identifying commonalities and mutuality among theories that explore subtle realism. Nonetheless, for this study, the gradual attraction and the following shift of focus implies a process of progressive learning and application of new conceptual vocabularies and new epistemological practices. This has, in turn, resulted in some contradictions and compromises in terms of emphasizing some aspects while exploring the relationships between the social and the material. For instance, in the study of the sociomateriality (without the intervening hyphen) of practices, a Barad (2007) inspired play with the word 'intra' (intra-dependence, intra-action and intra-relations) is common (e.g., Scott & Orlikowski, 2012). In this dissertation, compromises in such use of some of the vocabulary have been made, mainly for the sake of communicating the research in other academic contexts such as accountability research. I acknowledge openly that, sometimes, the social takes precedence in the study, with the material merely affording some social/human intention. Thus, the study sometimes fails to, "develop nuanced language that does not betray" (Mazmanian, et al., 2014) coconstitutive relationality.

6.4 Avenues for further research

There are a number of avenues for future research arising from the conclusions and contributions of this dissertation on the one hand and the limitations on the other hand. A challenge for platform organization and research is how to account for those instances when peers move outside the platform's calculations and metrics. Artificial intelligence and a new generation of platforms combined with the internet of things and artificial intelligence is depicted as the solution by both research and industry. My concern with such accounts of future performance is that they separate notions of the social and material and predefined views of

boundaries and properties. Thus, how and where accountability is performed in digital infrastructures is a critical ongoing empirical question.

Performativity is consistent with the idea of governmentality. Governmentality focuses our attention on how practices, knowledge, and power become interconnected to enact particular governed subjects (Rose, et al., 2006; Spence & Rinaldi, 2014). Although this study touches upon questions of governmentality, and the conduct of conduct through platforms, further research on how governmentality allows us to make visible the performative nature of evaluative infrastructures is an exciting avenue for research. In the study of smart governance in paper 4, a new form of governable subject, the "smart citizen," is emerging when government and e-participation platforms coconstruct individual duties where citizens must be capable in innovation and organize themselves on platforms. Accounts from public managers, as well as new programs and new job titles in the empirical data, point to the making of policies that regulate and create subjectivities, where citizens are held to be accountable in terms of how innovative they are. Hence, a new kind of accountability is becoming socialized or rather "sociomaterialized."

Finally, this study and other studies (e.g., Introna, 2016) suggest that governance practices understood as sociomaterial assemblages with more or less performative outcomes cannot locate themselves outside of the performative flow. Which raises the question: do the new digital practices of governance themselves need to be governed? In other words, do we need thinking infrastructures that think and imagine unexpected subjectivities and infrastructures? Such research takes us on "accounting avenues," as depicted by Pflueger et al. (2019) and Revellino & Mouritsen (2017), where accounting does not create a stable reality that knowledge requires. Instead, "accounting is about thinking" (Pflueger, et al., 2019) it is concerned with the becoming of accountability.

I believe that these ideas represent fruitful opportunities for future work.

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