Introduction

FinTech and shifting financial system institutions

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Introduction

It is, today, widely known that the financial system as we knew it was shaken to the core by the 2008 global financial crisis. Not only did consumers lose their homes and savings due to bankers' disreputable—and sometimes illegal—practices, but governments also cracked down on this risk-taking. They did this by raising capital requirements, and in some cases requiring banks to ring-fence capital—a measure used by banks to protect assets from less favorable conditions and regulations in particularly hard-hit and high-risk countries.

Therefore, it is not too surprising that financial system actors came to be viewed suspiciously by consumers, firms, and governments. Combined with advances in new technologies and commonplace digital tools such as smartphones, this lack of trust in established financial actors paved the way for new financial technologies, firms, and practices.

The scale of this change, both in Sweden and globally, has been so large that one might say that what was once "taken for granted" in finance has changed. What consumers, bankers, and governments today consider to be normal is not what it once was.

Studies of activities that are "taken for granted," what are known as institutionalized activities, have long been conducted by institutional theorists. However, their starting point is that institutional change is difficult. Incumbents in a field, such as the financial services industry, benefit from things staying the same, and they often have the most power and resources at their disposal to prevent changes to the *status quo* (Scott, 1995). Moreover, all actors in a particular institutional field are influenced by sets of established norms, ways of thinking, and regulations. They therefore tend to gravitate toward similar business models and practices (DiMaggio and Powell, 1983). In so doing, they reinforce existing norms, ways of thinking, and regulations.

Changes are therefore curious when they do occur. The "paradox of embedded agency" suggests that agents, or actors, operating in an established field can only exercise agency within the framework of existing norms, ways of thinking, and regulations (Greenwood and Suddaby, 2006). Institutional theorists are thus intrigued by how institutional-level changes occur, as has clearly been the case with the emergence of FinTech.

Institutional theory not only demonstrates why it is that entrepreneurs and other change agents have to fight against the tide in order to become accepted, but it also gives us some insight into what the mechanisms are whereby changes may occur, and what initiates these changes in the first place. In this chapter, we introduce modern institutional theory as a lens with which to understand and investigate the shifts that the financial services industry has undergone during the past 10 years. Below, we first provide a background to modern institutional theory as an umbrella lens for this book on FinTech before turning to a discussion on each of the four forces that lie at the heart of the institutional shifts in the industry. In presenting these forces, we also relate to the chapters of this book, while intertwining them with each of the chapters.

A modern institutional theory lens on FinTech

The building of new ways of doing things—or the maintenance and perpetuation of old ways—has long been studied through the lens of institutional theory. The first wave of institutional theorists argued that organizing, and thus business, was performed by rational bureaucracies. These rational bureaucracies would, as rational actors, come to the same conclusions about how—and why—businesses should be run in certain ways (Weber, 1978; Selznick, 1996). The introduction of any beneficial new technology under this conception would therefore be adopted and spread through all organizations like wildfire. As a result, there would be little or no room for entrepreneurship as existing organizations would adopt any potentially groundbreaking technologies quickly and efficiently. The reality of organizations, however, is not only that the people who run them are not perfectly rational, but that the technologies—particularly as the advantages that they confer are often uncertain—may also take time to be adopted.

A second wave of institutional theorists, or neo-institutional theorists, therefore began to examine institutionalization through a new lens: one that focused on an actor's cognition and the effects of micro-, meso-, and macro-level norms on both individuals and organizations (DiMaggio and Powell, 1983). These theorists pointed to the importance of cognitive processes, most notably those around norms and informal interactions, in shaping organizations (DiMaggio and Powell, 1983, 1991).

Ultimately, these new institutional theorists outlined three sources of influence when it came to perpetuating—and even potentially reshaping—institutionalized activities. These included not only the all-important *regulations*, but also *cognition* and *norms*. Furthermore, these theorists emphasized the role of the different actors driving the changes in the field. Initial studies pointed to the importance of *peripheral* actors in forcing change within an institutional field (e.g., Battilana, Leca, and Boxenbaum, 2009), while more recent studies have shown how, particularly when it comes to economic activities, *incumbent* actors might be the ones to initiate change (e.g., Greenwood and Suddaby, 2006; Smets, Morris, and Greenwood, 2012). Together, these four forces—regulations, cognition, norms, and external and internal actors—can be used to understand and explore institutional change and how industries transform.

Indeed, it can sometimes be hard to tease apart the effects of different forces. Smets, Morris and Greenwood (2012), in a study of a merger between a British and German law firm, point out that new behaviors are typically embedded in old ones. Moreover, just as incumbent firms do not immediately leave the field when there has been a new innovation, institutional legacies are visible in a field long after firms and businesses have moved on.

The four forces driving change in financial services

Turning to the subject of this book, FinTech and the transformation of the financial services industry, we find evidence of these sources of influence at work within the financial services industry in Sweden.

Regulations: explicit and implicit drivers of change

When one thinks of regulations, one typically thinks of explicit regulations, for instance laws and policies that come from the state. However, when institutional theorists talk about regulations, they refer to the rules in a field that are both explicit and implicit (Thornton and Ocasio, 2008). Explicit regulations remain the simplest to nail down and to closely examine, while implicit rules tend not to change decisively and abruptly in the same way that explicit regulations do. When regulations are explicit and clear, change can potentially be expedited as startups and incumbents do not waste valuable resources on understanding how "things get done around here," but instead invest in activities building their venture. In the case of FinTech, one of the reasons that Sweden may have been more successful than other European countries, such as Italy, is the fact that regulations are clear (Lewan, Chapter 10, this volume).

Past studies of changes in regulations have shown how they have swiftly filtered down to businesses and their economic activities. For instance, in the finance industry in the 1990s, deregulation led to changes in the whole environment in which financial activities were conducted. This deregulation led to a change in consumer expectations, and the market feedback that followed these changes drove firms to change their business models and activities. This response to market feedback shows how it can be in actors' best interests to respond to institutional shifts (Lounsbury, 2002). Thus, market feedback not only promotes change through new activities and organizational forms, but it also deinstitutionalized old forms, leading to their demise (Lee and Pennings, 2002).

Turning to the current wave of change within financial services in Sweden, it is necessary to go back 20 years to the 1990s to understand some of the first regulatory drivers. To promote the early adoption of computers and the Internet across the country, the Swedish government designed a set of subsidies and tax breaks for home PC use, effectively deregulated the telecom market in 1998 (Swedish Competition Authority, 1998), and promoted the development of a physical infrastructure for the Internet. These visionary policy actions were instrumental in paving the way for the emergence of FinTech (Lewan, Chapter 10, this volume).

Computer penetration in Swedish households grew from 28 percent in 1995 to 76 percent in 2000, thereby encouraging the use of computers and the Internet not only by adults, but also by children, who perhaps preferred to stay inside and play with them as opposed to going outside during the cold and dark winters (Skog et al., 2016).

Many of these children have now entered the workforce, and as a result of early computer use are leading the way in developing innovations across a number of sectors (Skog et al., 2016). For example, Sebastian Siemiatkowski, CEO and one of the founders of Klarna, stated in an interview in *The Independent*: "When I was young, my family couldn't afford a computer. But because of this subsidy we could, and from the age of 10 I was always playing around with it. [It] was very visionary of the politicians back then" (Benwell, 2014). Today, Klarna is perhaps the largest FinTech in Europe in terms of customers, with over 60 million end customers facilitating 650,000 transactions daily, and it just recently received its banking license (Klarna, 2017).

Moving forward to the 2008 financial crisis, one of the outcomes from this was an increase in regulations. Since 2008, the banking sector in Europe has undergone one of the most extensive periods of regulatory change in modern history. For example, the United Kingdom's Financial Conduct Authority (FCA), as well as the European Commission, has introduced more than 80 regulations and rules to the domestic market (British Banking Association, 2016).

Regulatory change is a most pressing challenge for firms in numerous industries, for example automobiles and life sciences, yet the difficulty in successfully handling regulatory requirements is most challenging for financial services companies (Freij, Chapter 1, this volume). Thus, while regulatory compliance had enabled incumbents for years to maintain their position due to resulting high barriers to entry, this increase in regulations led to a reverse effect in terms of innovation in the market in the first phase of FinTech (Felländer et al., Chapter 8, this volume). First, the incumbent banks were forced to expend considerably more resources to ensure their compliance with national, regional, and global regulations across all four core areas of banking activities, thereby reducing their available resources to spend on innovation. In general, since the turn of the century, not only have the complexity and volume of each single regulation increased, but there are variations depending on the local jurisdiction, as well as different implications for different business units, for example insurance, retail banking, and investment management. The end result is that today, a major financial services company can have well over 100 regulatory implementation projects currently in progress (Freij, Chapter 1, this volume).

However, niche FinTech startups, initially in the area of payments such as Klarna and iZettle, were able to take advantage of this situation, having only to ensure a relatively limited compliance. Numerous new entrants appeared, and by 2016 around 217 companies had licenses to compete in Sweden in the payment service markets (Arvidsson, Chapter 13, this volume), Second, these stricter regulations hampered the supply of credit from banks, while the creation of new legislation led to increased risk aversion among other traditional financial providers, and as

a result new forms of lending emerged. In Sweden, FundedByMe, CrowdCube, CrowdCulture, and Toborrow entered the crowdfunding segment, thereby offering consumers access to all four kinds of crowdfunding: donation, reward, equity, and lending (Felländer et al., Chapter 8, this volume; Gromek and Dubois, Chapter 12, this volume). As these platforms were merely acting as a platform for transactions and not directly holding financial assets, they were not bound to comply with the same regulations as traditional banks.

Thus, regulatory forces can both directly hamper as well as hasten institutional changes. Within Sweden and abroad, FinTech moved into a second phase in the middle of 2016, in which the industry and government began to understand that "FinTech" was here to stay. Realizing that FinTech solutions have the potential to improve the financial system for the benefit of consumers, regulators and politicians have started several actions to investigate how to best regulate FinTech startups such that these innovative initiatives are not stifled (Felländer et al., Chapter 8, this volume). Due to rigid regulations, the lead time in the financial sector is long, which can be a deal breaker for early-stage startups with little or no investments (Burenstam Linder, Chapter 20, this volume). To improve conditions for startups—although not in Sweden—the FCA in the UK has implemented a "regulatory sandbox." This sandbox is a restricted environment in which FinTech startups and industry incumbents can build and test their FinTech products and services without expending resources on interpreting and attempting to comply with potentially non-relevant regulations (Olsson and Hallberg, Chapter 3, this volume). Furthermore, within this second phase, industry incumbents also began to see that they needed to become more innovative as niche FinTech startups began chipping away at their customer base. Some are now proactively approaching changing regulations not as a threat, but as a platform for innovation instead, for instance through PSD2 (Payment Services Directive II) (Freij, Chapter 1, this volume).

When it comes to these changing rules, many entrepreneurs have treated changes in rules as opportunities for innovation. Indeed, changes in regulations have been seen to drive institutional changes, whether directly or indirectly (Lounsbury, 2002). Sometimes these rules might be implicit. For instance, it is clear that a digital presence is now vital for most modern-day businesses to reach their customers. While no explicit rule has led to this state of affairs, technological progress has made a digital presence an implicit rule—or norm—in modern commerce (DiMaggio et al., 2001).

As these changes lead to changing patterns, new regulatory responses often follow. This is often a consequence of political and social pressure. Indeed, political pressures have been widely observed to impact the legitimacy of existing institutional arrangements by shifting power arrangements in a field (Oliver, 1992). These kinds of power shifts have, in the past, come from crises of performance, changes in an environment, and compelling evidence that the taken-for-granted way of doing things is no longer effective.

The rise in digital businesses, for instance, has necessitated new rules around the collection and use of individuals' data. In Europe, the General Data Protection

Regulation (GDPR) will shortly become national law in European states; these regulations are seen as necessary to ensure that individuals are comfortable sharing their data, and protects those individuals who are less data-savvy (Felländer et al., Chapter 8, this volume; Ingram Bogusz, Chapter 11, this volume).

Cognition: legitimacy and changing beliefs

When it comes to another force driving institutional change—cognition, or how individuals think about and understand the actors and activities within an institutional field—one of the strongest influences within the current financial services transformation concerns the issue of legitimacy. Legitimacy is the degree to which an actor has the right to perform a certain activity, and the legitimacy of institutionalized activities is known to sometimes wax and wane over time (Dacin, Goodstein, and Scott, 2002). When legitimacy is at a low point, this provides opportunities for other activities to emerge and to spread.

In the aftermath of the 2008 financial crisis, it became clear that the field of finance could no longer carry on as it had. Instead, both consumers and governments began to question financial actors' activities—a classic instance in which powerful actors call legitimacy into question. Trust in banking institutions fell to new lows, with financial institutions "consistently at or near the bottom of any survey of public trust" (Flint, 2014, p.1), thereby opening the door for new actors to emerge.

Within Sweden prior to the financial crisis, the financial industry was characterized by high barriers to entry due to not only regulations, but also a high level of trust in existing players, which prevented startups from entering the market. However, the 2008 financial crisis revealed significant inefficiencies within the Swedish financial industry and considerably decreased the level of trust by society in incumbent actors (Felländer et al., Chapter 8, this volume). As a result, the number of Swedish FinTech startups has grown exponentially since 2008. Today, Stockholm boasts a vibrant FinTech startup ecosystem, with the number of FinTech companies numbering well over 100 (Stockholm FinTech Hub, 2017), while Stockholm ranks among the top five cities when it comes to FinTech investment (Gromek, Chapter 9, this volume).

While the loss of legitimacy in existing institutions enabled FinTech startups to enter the scene, these startups, like any startup, often lack the necessary legitimacy to successfully grow their business by attracting and retaining investors and customers. Within the Swedish FinTech startup scene, entrepreneurs have been employing a variety of ways to gain legitimacy, such as appointing well-known key persons to the board, starting collaborations with established actors, and aiming for appearance in relevant media—and in a longer perspective, always taking care of the customers and being reliable for them (Lewan, Chapter 6, this volume). For example, the cryptocurrency exchange Safello focused on ensuring regulatory compliance, with half of its staff working with such issues, while Dreams, the mobile savings app, partnered with an existing bank—Ålandsbanken—in order to leverage Ålandsbanken's reputation.

Recently, as noted above, the payment services unicorn Klarna received its banking license, further cementing its legitimacy in the market.

Furthermore, an initiative to bring legitimacy to the FinTech sector as a whole within Sweden is the creation of the Stockholm FinTech Hub in early 2017. This FinTech hub is an accelerator and coworking space that brings together Swedish FinTech startups, large financial institutions, and regulators to improve communication among these actors and facilitate innovation. Within the first half year from its inception in early 2017, the hub has managed to attract more than 50 members to the physical space, with many more in the virtual community.

Incumbent actors often have the most to gain by supporting the status quo (and often driving out, or ignoring, sources of change). However, when incumbent organizations face decreased legitimacy in the eyes of customers and others, they may be forced to change. In a study of the electric power industry, for instance, a shift away from a belief in regulated monopolies forced incumbent power firms to change their business models—and organizational forms (Sine and David, 2003). In Sweden, as new FinTech startups appeared, established banks endeavored to regain their legitimacy by building trust within Swedish society (Felländer et al., Chapter 8, this volume). However, trust is a dynamic concept. As changes in cognition occur, so do changes in the narrative to maintain and acquire investors and customers in an industry. Thus, established actors need to adjust to fit this emerging narrative, and one means is to mimic successful organizations (or elements of their strategies and managerial actions). This is not only how institutions change, but how organizations ensure their survival—at least until the next shift comes along. Thus, one means to gain back legitimacy that Sweden's established banks employed was to mimic the FinTech startups and develop their own innovative FinTech solutions. Two of the greater success stories are Swish, a peer-to-peer mobile payment system, and BankID, a digital identification app, both of which were created by the traditional banks joining forces, thereby putting Sweden on the map globally for its collaborative, innovative environment. From its inception in December 2012 to November 2016, Swish reached 5 million users, equaling over 50 percent of the Swedish population (Swish, 2016), with 84 percent of all Swedes ages 20–40 using BankID (IIS, 2017) (Felländer et al., Chapter 8, this volume).

Additionally, studies have shown that market feedback can be an invaluable way for incumbent firms to ascertain when norms have changed and how to respond to them (Lee and Pennings, 2002). Within Sweden, we found that the perception among bank managers from various established major Swedish banks was affected by FinTech startups in an unconventional way. This is exemplified by an inversion of what is known as the *Bell Doctrine*, which conventionally states that a dominant actor in a regulated industry can extend into, and dominate, a non-regulated industry. In this case, however, the growth of FinTech startups has prompted the incumbent, traditional banks to adapt and expedite their digital transformation in order to match their competition in order to safeguard sustainability and customer loyalty, thus effectively inverting the concept of the *Bell Doctrine*. Nevertheless, the incumbent, traditional banks' ability to compete effectively is

still challenged and impeded by an asymmetrical regulatory system that has the traditional banks at a disadvantage (Larsson, Chapter 7, this volume).

As an industry transforms, one of the main areas of changes in cognition relates to the definition and understanding of the core value-creation activities within the industry. Traditional core banking activities fall under four subcategories: lending, payments, insurance, and savings. While these categories are well accepted across the globe, the emergence of FinTech and what exactly constitutes a FinTech company has led to a state of confusion. For example, Citibank has extended the four categories to seven categories: lending, payments, blockchain, insurance, wealth management, enterprise finance, and RegTech. Furthermore, two recent reports on British FinTech differed in the size of investment rounds in FinTech ventures by USD 80 million, and two reports on Stockholm FinTech 2015 investments displayed a discrepancy of USD 50 million, or 20 percent of the total investment. The reasons for such a variety of outputs are traced back to a lack of unified definition of FinTech and clarification of what branches of business can or cannot be counted as parts of FinTech industry (Gromek, Chapter 9, this volume).

Recently, a joint effort by representatives from the leading FinTech actors in Stockholm—Stockholm FinTech Hub, the Nordic Tech List, NFT Ventures, PA Consulting, and researchers from the Stockholm School of Economics—led to a classification of FinTech firms within Sweden into four categories for retail banking: wealth and cash management; payments and transfers; capital, debt, and equity; and InsurTech, as well as five categories for corporate banking: wealth and cash management; payments and transfers; capital, debt, and equity; InsurTech; and trading and exchange. In total, 69 subcategories were also developed (Gromek, Chapter 9, this volume).

Moving forward, while regulations are put in place to ensure a safe business environment and provide protection for customers, information security remains an integral part of the operations of a financial service provider, regardless of its size, to ensure customer trust and loyalty (Kryparos, Chapter 2, this volume).

New norms enabled by new technologies and standards

How—and from where—sources of influence come to change institutions varies. New technologies and standards can serve to challenge existing norms related to how "things are done around here" by enabling new value-creating activities. New technologies in particular are often championed by outsiders of a field, and thus can be considered to be an exogenous force that coerces organizations to change.

For example, in a study of Sun Microsystems' commercialization of the software Java, the open-source technology destroyed existing "taken-for-granted" standards and enabled new norms to emerge when it came to developing software for the Internet (Garud, Jain, and Kumaraswamy, 2002). This shift in norms, however, was not smooth. Existing software developers and the sponsors of other technological standards fought back, forcing the new open-source standard and

associated new rules to compete with established standards for supremacy. Yet over time, the momentum behind open-source software not only initiated institutional change, but also started a chain of events that would lead to institutional changes for years to come.

A parallel to this can be seen in the phenomenon of crowdfunding. One of the earliest areas for FinTech startups, crowdfunding platforms enable entrepreneurs to obtain funds through the Internet from a wider variety of individual investors. As noted above, four forms of crowdfunding have emerged: donation, reward, lending, and equity, thereby creating an additional source of funding beyond the traditional sources of business angels, venture capitalists, banks, and pension funds (Gromek and Dubois, Chapter 12, this volume).

Furthermore, the nascent robo-advisory industry has emerged to tackle investors' demand for a more transparent wealth management service with low commission fees. Robo-advisors replace traditional human investors with algorithm-based platforms to provide personalized financial advice on financial instruments, reducing its expenses, and thus associated commission fees (Mačijauskaitė, Chapter 14, this volume).

The speed with which new technologies influence norms differs across countries. For the adoption and uptake of online banking services, Sweden may not be the most technologically advanced; however, Sweden does have the largest population share that actively uses online banking services. This is due to Swedish consumers being quick to adopt new technologies and standards, thereby creating a test bed for new products and services (Björn, Chapter 5, this volume).

Sociologists have pointed to the fact that it is not just the creation of a new technology that can prompt institutional change, but also its diffusion and utilization by new actors within and across new fields. The importance of smartphones, for instance, lies not just in the fact that they were invented, but in the fact that the possibilities that they afford have varied across fields. Gaming, for instance, has not been affected by mobiles in the same way as finance has (although, of course, it too has been revolutionized). One norm that is being challenged is the use of credit cards and cash in society as mobile payments are rapidly overtaking as the standard form of payment in Sweden (Arvidsson, Chapter 4, this volume). This can also be described by the relatively early and swift uptake of mobile banking by Swedes (Björn, Chapter 5, this volume).

The diffusion of technologies, such as big data analytics enabled by digital traces and blockchain, has therefore meant that these technologies have affected different actors in finance. Digital traces have opened doors for data analysts to map human behavior and offer tailor-made services. These tailor-made services, based on user behavior, have proven to be successful and revolutionized the advertising industry. Currently, the same methods are being applied to a wider variety of businesses, such as credit scoring, fraud detection, asset management, and insurance, and they are taking a bigger role in our society.

As their diffusion and adoption increase, they will continue to be important drivers of change. For example, the blockchain technologies that were previously known and used only by a small fraction of the population in 2007 are

now being piloted by some of the leading international banks, for example, to facilitate settlement processes, payment transactions, enable electronic shareholder voting systems, and corporate governance (Moreno Puertas and Teigland, Chapter 15, this volume; Holmberg, Chapter 16, this volume).

A view of the actors

One key element that affects how changes occur is whether the changes are driven by endogenous or exogenous forces. While exogenous forces, particularly actors—such as entrepreneurs—that are completely new to a field, are commonly associated with institutional changes (Battilana, Leca, and Boxenbaum, 2009), incumbent firms have also been known to drive changes when they see this as necessary. The changes that result may therefore be completely different in different locations or in different organizations; the activities could be hybrids of one another, variations on the same, or new activities entirely.

Within Sweden, FinTech startups have been the initial drivers of transformation. Not only have changes in regulations and changing customer beliefs and behaviors enabled the emergence of FinTech startups, but also an exponential decrease in the financial resources required to start up a business has occurred. Today, there are more than 100 FinTech startups in the Stockholm area, with well over 240 in Sweden as a whole (Gromek, Chapter 9, this volume).

As noted above, many incumbent banks have started to realize the potential threat that inaction in the wake of these new entrants could hold. However, as heads-on competition with the new entrants is proving to be an expensive endeavor due to the relative advantage of the new entrants in terms of smaller organizational size and speed of innovation, the banks have started to look for alternative ways to approach these new companies and technologies (van der Zande, Chapter 17, this volume).

In addition to incumbent actors and startups, one other set of actors that has been found to play a vital role in the transformation of the financial services industry is that of business angels and venture capitalists (Press, Chapter 18, this volume). For example, the number of Swedish angel investments in FinTech in Sweden more than doubled from 2015 to 2016, from around 200 to 400. This group of investors began to notice the potential of high return in the industry, and many of these investors were from the traditional financial services industry and were looking to find the next disruptor. Additionally, many incumbent firms developed their own VC activities investing in FinTech startups in order to develop their businesses and better understand the disruptive forces in the industry. Even foreign actors have influenced the transformation as the amount of foreign investment in Sweden's FinTech has increased. As FinTech startups enter their expansion phase, foreign investors have in many instances joined domestic investors on the investor roster of a FinTech startup. These foreign actors provide not only money for growth, but they also enable cross-pollination across their many global locations, thus further accelerating the rate of change (Press, Chapter 18, this volume).

One example of a geographic shift that has implications for institutions lies in the UK's exit from the European Union. "Brexit," as it has been called, and the potential exodus of financial institutions and firms from the UK, could be a boon for continental Europe, as well as for the Nordics (Gromek and Mavropoulos, Chapter 22, this volume).

Lastly, although these drivers have been catalysts for change, the resulting changes are unlikely to be identical everywhere in the world—nor even identical in different parts of a country as small as Sweden. Instead, institutional theorists have highlighted that differences in environment, namely through different societies, fields, and organizations, lead to a diversity in activities. As Dacin, Goodstein, and Scott (2002) point out, "organizations and managers are not sponges or pawns, but actors responding to challenges under the guidance of existing institutions."

When it comes to crowdfunding, for instance, proximity has been seen to be of lasting importance: even with the advent of the Internet, investors are more likely to engage with local actors when it comes to investment and financing opportunities (Dubois and Gromek, Chapter 19, this volume). Moreover, there are both opportunities and costs to being located in a hub of economic activity, for instance inside or outside a cluster such as Stockholm (Jerezcek, Chapter 21, this volume).

Having examined in detail some of the extant theory around institutional changes and how these lead to change in the field of FinTech, we turn now to presenting summaries of the chapters contained in this book.

Chapter summaries

Part 1: New regulations

1 *Åke Freij*: Successful FinTech innovation is dependent on a number of key factors that comprise the financial services industry ecosystem, such as customer demand and new technologies. However, a less explored driver for FinTech innovation is the role of regulatory change. In the chapter "A Regulatory Innovation Framework: How Regulatory Change Leads to Innovation Outcomes for FinTechs," Åke Freij explores six strategies for realizing the benefits from regulatory change both for incumbents and FinTechs, and exemplifies an innovation opportunity by discussing the upcoming PSD2 directive (the Second Payment Services Directive).
2 *Georgios Kryparos*: While regulations are put in place to ensure a safe business environment and provide protection for customers, information security remains an integral part of the operations of a financial service provider, regardless of its size, to ensure customer trust and loyalty. In the chapter "Information Security in the Realm of FinTech," Georgios Kryparos examines the current landscape for FinTechs with regard to the relationship between information security and customer trust, and further looks into recent trends and developments that can pose as either threats or opportunities, and associated response recommendations.

3 *Björn Olsson and Mattias Hallberg*: Another key component of a successful FinTech ecosystem, arguably supporting the above-mentioned key drivers, such as customer demand, technological leadership, and an effective regulatory landscape, stems from innovation policy. In the chapter "FinTech in Sweden: Will Policymakers' (In)action Nurture or Starve Its Growth?" Björn Olsson and Mattias Hallberg explore the current policy landscape that is fueling the FinTech ecosystem in Sweden, and look at future threats and opportunities for Sweden to remain a competitive location for FinTechs to start, develop, and thrive.

4 *Niklas Arvidsson*: After the bankruptcy of the first Swedish bank, Banco Stockholm, in 1664, the Swedish government took a prominent role by establishing the first central bank in the world, in 1668, and issuing the first state-supported bills and coins. Today, Sweden is on track to becoming the first cashless society in the world. In the chapter "The Future of Cash," Niklas Arvidsson tracks the development of the Swedish monetary system over the centuries, discusses the proposed changes in legislations, and offers an insightful perspective on how Swedish cash may evolve over time.

5 *Michael Björn*: As discussed previously in the chapter, a key driver for innovation is customer demand. Sweden has a reputation for being a test bed for new products and services, and this is arguably due to the fact that Swedish consumers are quick to adopt new technologies and standards. In the chapter "The Adoption of Online Banking in Sweden," Michael Björn contrasts the adoption and uptake of online banking services compared to that of a selection of other developed countries, and argues that while Sweden may not be the most technologically advanced of them, Sweden has the largest population share that actively use online banking services.

Part 2: Cognition: legitimacy and views

6 *Mats Lewan*: Trust plays an essential role in the functioning of a capitalistic society (Hosking, 2014). However, trust is a dynamic concept that is perceived differently across cultures, industries, and time. Firms need to permanently adjust to fit the narrative in order to maintain and gain investors and clients. The narrative has been changing over time, and our introductory chapter aims to answer the question of what the current narrative is: how firms build trust as of 2017 and what the narrative of tomorrow could be. In the chapter "The Role of Trust in Emerging Technologies," Mats Lewan interviews some of the key players in the financial sector, the Scandinavian tech and startup community, to gain insights on how people perceive trust across different industries. Then he briefly investigates the new technologies that are changing the role of trust, such as the blockchain and the Trustnet.

7 *Anthony Larsson*: The Internet has changed the classical interaction between financial firms and their clients. In the past, firms needed to invest in subsidiaries in order to gain access to new clients. The reason was that consumers valued spatial convenience, and banks competed by establishing nearby

subsidiaries. However, the Internet has allowed consumers to interact with financial institutions directly through their computer or smartphone. As a result, the spatial competition transitioned toward a digital one. The digitalization of financial services also enabled a new wave of FinTech startups to compete against the established financial institutions. In the chapter "Responding to the FinTech Challenge: A Study of Swedish Bank Managers' Perceptions of FinTech's Effects on Digitalization and Customer e-Loyalty," Anthony Larsson explores the key challenges that FinTech firms have posed to Swedish banks in terms of securing customer loyalty through a series of interviews with managers representing different banks. The chapter also investigates the Bell Doctrine, in which large firms (traditional banks) in regulated industries are able to dominate non-regulated industries (FinTech).

8 *Anna Felländer, Shahryar Siri, and Robin Teigland*: The financial industry used to be characterized by high entry costs and required a high level of trust, which prevented other newly established companies from entering the market. However, the 2008 financial crisis revealed inefficiencies within the financial industry and decreased the level of trust deposited in them. This, combined with faster Internet, smartphones, and big data, allowed entrepreneurs to enter the market and challenge the established financial firms. In the chapter "The Three Phases of FinTech," Anna Fellander, Shahryar Siri, and Robin Teigland explain the redistribution of power from larger, established banks to FinTech firms. The chapter is divided into three phases, starting from 2008 and ending with a forecast of the relationship between the financial industry and FinTech startups in 2020.

9 *Michal Gromek*: The term "FinTech" is widely used in the media, yet there is no clear framework on what can be considered as FinTech. In the chapter "Clarifying the Blurry Lines of FinTech: Opening the Pandora's Box of FinTech categorization," Michal Gromek attempts to create a comprehensive guide for categorizing FinTech firms and provides a visualization of companies adopting a model from the area of social sciences to FinTech industry needs.

10 *Mats Lewan*: The FinTech revolution in Sweden wouldn't have happened without a specific set of conditions and innovations that allowed entrepreneurs to enter financial markets. The Swedish government played an important role in the early introduction of the Internet by designing the right incentives and effectively deregulating the telecom market in 1998 (Konkurrensverket, 1998). The resulting infrastructure also allowed mobile Internet to be introduced rapidly across the country. The early introduction of both the Internet and mobile Internet was essential to create a comfortable environment for FinTech startups to offer their services. The BankID, which was developed by Finansiell ID-Teknik BID AB, also played an important role, allowing third parties—FinTech startups—to use their system in exchange for a small fee. In the chapter "The Internet as an Enabler of FinTech," Mats Lewan aims to discover the key enablers of FinTech in Sweden by conducting a series of interviews with renowned people in the Scandinavian tech community.

Part 3: New norms enabled by new technologies and standards

11 *Claire Ingram Bogusz*: Digital traces have opened doors for data analysts to map human behavior and offer tailor-made services. These tailor-made services, based on user behavior, have proven to be successful and revolutionized the advertising industry. Currently, the same methods are being applied to a wider variety of businesses, such as credit scoring, fraud detection, asset management, and insurance, and they are taking a bigger role in our society. As the collection of data increases and the methods become more accurate, a new legal framework is necessary to ensure that we are comfortable sharing our data. In the chapter "Digital Traces, Ethics, and Insight: Data-Driven Services in FinTech," Claire Ingram Bogusz explores the ethical implications of collecting such data, and provides a detailed overview of the data-gathering industry and the data-driven services within the FinTech and banking landscape.

12 *Michal Gromek and Alexandre Dubois*: The revolution of the Internet has enabled entrepreneurs to obtain funds from a wider variety of investors. This has given rise to a new type of fundraising called crowdfunding. The chapter "Digital Meetings: Real Growth, Better Funding? An Introduction to Swedish Crowdfunding" describes the development of crowdfunding platforms with a focus on Sweden, gives a detailed view of the different types of crowdfunding, summarizes its key benefits and challenges, and proposes future scenarios for this industry.

13 *Niklas Arvidsson*: Sweden was the first country to issue central bank state-backed bills and coins. However, it is experimenting a transition toward a cashless society. A new wave of entrepreneurs are offering cash payment services that provide the simplicity and convenience that most users demand. The chapter "The Payment Landscape in Sweden" offers an overview of the current trends in payment systems in Sweden and promotes a payment landscape that is characterized by innovation and competition.

14 *Agnė Mačijauskaitė*: The financial crisis in 2008 revealed inefficiencies and a lack of transparency in the financial industry. As a result, the nascent robo-advisory industry has emerged to tackle the investors' demand for a more transparent wealth management service with low commission fees. Robo-advisors use algorithm-based platforms to provide personalized financial advice on financial instruments, reducing its expenses, and thus its associated commission fees. The chapter "Introduction to the Robo-Advisory Industry in Sweden" describes the development of the young robo-advisory industry, provides a qualitative analysis of the Swedish market, and offers insights into future trends.

15 *Alejandro Moreno Puertas and Robin Teigland*: Peer-to-peer networks were popularized by the famous, and now defunct, file-sharing service called Napster. The same concept was combined with cryptographic proof to create a new type of (crypto)currency called Bitcoin. The infrastructure of Bitcoin has proved to be efficient as it deals with over USD 1 billion in transactions per day without a clear centralized oversight. The chapter "Blockchain: The

Internet of Value" describes the history of Bitcoin, explains the key concepts of its underlying infrastructure and of other similar cryptocurrencies, such as Ethereum, Ripple, Hyperledger, and RSCoin, provides an overview of blockchain applications, and examines the wider discussion on the principles of blockchain technology.

16 *Håkan Holmberg*: As of 2017, bitcoin is the leading cryptocurrency in terms of market value. The original idea was to provide a decentralized electronic cash system with low transaction costs. However, the network was designed to only accept two to seven transactions per second. As the demand for transactions has grown over the last years, the network cannot process transactions in time. This has increased the transaction costs and the processing time, diminishing Bitcoin's advantages. In the chapter "How to Scale Bitcoin: A Payment Network That No One Controls," Håkan Holmberg explores the current challenges that the Bitcoin community is facing, and describes the two alternatives proposed by Bitcoin Unlimited and SegWit to solve the scalability problem.

Part 4: A view of the actors

17 *Jochem van der Zande*: A case in point of exogenous forces impacting the financial services sector, slowly but steadily capturing more of the traditional banks' customers and activities, many incumbent banks have started to realize the potential threat that inaction in the wake of these new entrants could result in. However, as head-on competition with the new entrants is proving to be an expensive endeavor due to the relative advantage of the new entrants in terms of smaller organizational size and speed of innovation, the banks have started to look for alternative ways to approach these new companies and technologies. In the chapter "Banks and Digitalization," Jochem van der Zande engages with the four major banks in Sweden to illustrate different strategies to respond to organizational change resulting from these exogenous change forces.

18 *Elizabeth Press*: A key enabling factor for new entrants is access to financing and willingness of these financiers to take risk in ventures that in many, if not most, cases do not turn profitable over their lifetime. In the chapter "The Role of Venture Capital in the Success of the Swedish FinTech Industry," Elizabeth Press discusses the role of venture capital in the Swedish FinTech landscape, and also looks at some of the future threats and opportunities for Swedish FinTech investments.

19 *Alexandre Dubois and Michal Gromek*: As argued previously, the resulting changes from an industry transformation are not evenly distributed across organizations, users, and geographies. In the chapter "How Distance Comes into Play in Equity Crowdfunding," Michal Gromek and Alexandre Dubois exemplify the discrepancy by looking at the continued importance of proximity in equity crowdfunding. Thus, pointing to the fact that even

with the advent of the Internet enabling us to communicate over great distances, we are still more likely to engage with our local communities, particularly with regard to investment and financing opportunities.

20 *Catharina Burenstam Linder*: While the rise of the FinTech sector can be seen both as a threat and an opportunity to the traditional banking sector, the fact that the industry, as a whole, is undergoing a transformation remains. In order for the ecosystem to be able to come together, discuss, plan, and collaborate for the continued success of the Stockholm FinTech cluster, and championing Sweden in the global FinTech community, a common space was needed. In the chapter "The Stockholm FinTech Hub," Catharina Burenstam Linder discusses the recently launched Stockholm FinTech Hub and how the hub works to assist and accommodate the continued growth of the local ecosystem, as well as develop the potential of Stockholm within the global finance ecosystem.

21 *Katarzyna Jereczek*: Referring to the above chapter on the importance of distance in crowdfunding, and the establishment of a physical hub for the growth of the Stockholm ecosystem, it becomes more evident that being close to the ecosystem is likely to increase the chances for success of a new FinTech startup. However, in the chapter "Geographic Decentralization of FinTech Companies in Sweden," Kata Jereczek looks into the rising FinTech activity in smaller cities in Sweden, and contrasts the advantages and disadvantages of starting up inside or outside a cluster such as Stockholm.

22 *Michal Gromek and Timotheos Mavropoulos*: Again, as Dacin, Goodstein, and Scott (2002, p.50) note, organizations are "actors responding to challenges under the guidance of existing institutions." In the wake of the 2016 UK referendum on leaving the EU, many have debated the future prospects for London remaining the world's strongest financial center, and arguably also the world's leading hub for FinTech and financial innovation. In the chapter "When Britain Leaves the EU, Will FinTechs Turn to the Vikings?" Michal Gromek and Timotheos Mavropoulos look at the arguments put forth for and against an exodus of financial institutions and firms from the UK to continental Europe, to the Nordics, and particularly to Stockholm.

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