



DEPARTMENT OF
APPLIED IT

SCOPING DIGITAL BUSINESS STRATEGY IN BANKING:

A COMPARATIVE STUDY OF ITALY,
SWEDEN AND SWITZERLAND

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Abstract

Digitalization is profoundly impacting the banking industry. Banks are no longer the sole providers of financial services as they face competition from fintech startups and firms from other industries entering the financial services market. In order to meet this increased competition and uncertainty, traditional banks are being compelled to adapt by creating digital business strategies that enable flexibility and adaptability of their products and services. This paper aims to contribute to the digital business strategy perspective by making a comparative study on the *scope* of digital activities of nine leading banks in Sweden, Switzerland and Italy. The research questions guiding this paper are: *What portfolios of digital activities do the banks conduct to build digital business strategy?* and *How do these portfolios of digital activities differ across markets?* This paper answers these questions by first revealing *areas of action* within *digital value disciplines* through an inductive approach by studying the annual reports of the three banks in each country. The digital activities undertaken by each bank within these areas of action is then compared in response to the second research question. The results show that the banks are actively building portfolios within ten areas of action as part of their digital business strategy. The results also show that the focus of the portfolios of digital activities differ between markets as well as between each bank in each market. This paper concludes that in regards to the digital business strategy it is important to highlight the strong interplay between the the digital value disciplines. For example, if companies digitally reshape their customer experience, they might have to reshape their operations, which might also affect their digital innovation capabilities.

Keywords: *Banking, Digital Business Strategy, Digital Value Disciplines, Areas of Action, Digitalization*

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- *Arber and Carl-Nicholas*

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1 Introduction

The rapid development of digital technologies is bringing major change to how business is conducted across all industries and, depending on the readiness of firms and organizations, can present either a great threat or a great opportunity to their current way of conducting business. With technological disruption and transformation, the banking industry is one where the effects of changing technology are being felt strongly and where technology is fundamentally changing how business is being conducted. No longer are the banks the only providers of financial services and solutions. Other firms, such as telecom, technology, and retail firms, that have previously had limited activities outside the boundaries of their industries now have, through the promises of digital transformation and technologies, the possibility to make inroads into the financial sector previously dominated by the traditional banks. With them, these firms are bringing innovations such as mobile payment systems, online lending, and online personal financial management advisory services. Along with these examples, these firms bring a new focus on renewing and transforming business processes in a way that makes them more efficient and customer-oriented (Alt & Puschmann 2016). Investments in technology by traditional banks have been mainly aimed towards reducing costs within operations and ensuring regulatory compliance (Alt & Puschmann 2012; Raghunathan & Maiya 2017). Traditional banks are also increasingly under pressure from new emerging financial companies (Fintechs) that with their greater agility can provide alternative products and services that are more innovative and cost-effective options for customers. However, these Fintechs are not always in direct competition with the established banks. Some are partnering with the established banks by breaking down individual elements of the value chain and capitalizing on them more efficiently than the established banks. Internet companies, with their technological expertise and access to big data, are also challenging the banks with their financial services offerings (Brühl & Dorschel 2017; Sia et al. 2016). How then are traditional banks adapting to this new digital competition with their products and services? Research by Bharadwaj, El Sawy, Pavlov and Venkatraman (2013) serves as the inspiration for this paper. In their research, Bharadwaj et al. (2013) argue for a necessary shift from a traditional business strategy in firms, where IT capabilities serve as only a part of a firm's overall strategy, to what they term as a *digital business strategy* where business and IT strategy co-evolve together to form the necessary digitally enabled business models of tomorrow. In the case of traditional banks, little research has been conducted on how they are approaching digital transformation from the perspective of digital business strategy. This paper aims to contribute to the digital business strategy perspective by

making a comparative study on the *scope* of the digital activities of nine major banks in Sweden, Switzerland and Italy. It argues that *scope* is a sound lens through which to study the process of how firms, in creating varied sets of digital activities, are building the capabilities that enable them to adapt to the digital age by creating options and flexibility in strategy. To investigate and compare scope within the digital business strategy, this paper develops three *digital value disciplines*, containing *areas of action*, that are based on the three value disciplines developed by Treacy and Wiersema (1993). The research questions guiding this paper are:

What portfolios of digital activities do the banks conduct to build digital business strategy?

How do these portfolios of digital activities differ across markets?

The purpose is to capture the extent to which the banking industry engages in any category of digital activities as a means of understanding how digital business strategy is conducted. As the investigation is based on the banks annual reports, which by nature include both aspirational and grounded content regarding business activities, it does not aspire to represent the absolute reality of what digital activities have been and will be carried out, but serve as a means of providing an understanding about the scope of the digital business strategies different banks in different countries are pursuing and what this might imply.

To frame the research questions, this paper begins with a brief introduction into past IT developments in banking. This is followed by a literature review dedicated to prevailing research in the field of *information systems strategy* and the further development into *digital business strategy*.

1.1 Past Developments in Banking

Historically, the use of IT systems in banks can be divided into five phases (Moormann 2004). In the early stages of IT penetration, simple systems based on punch cards were developed to support individual functional tasks such as mass data processing (phase one). During the second phase in the 1970's, individual programs were used by individual divisions or departments, which gave employees time-sharing access to the mainframe of the bank. The increasing maturity of IT allowed in the 1980's personalized information processing in the sense of individual access to data and information (phase three) and finally in the 1990's networked information processing was introduced (phase four). The banks developed their own network with corresponding client-server structures and actively promoted the exchange of electronic data with each other as well as with corporate customers and later on with private customers as well. With the possibilities of Internet technology, a fifth phase

has been observed since the end of the 1990s (Moormann 2004). The vision attributed to Bill Gates, but previously voiced by Neumann (1994), "banking is essential, banks are not" is increasingly seeing new competitors entering traditional banking, as the reduction of transaction costs through the internet reduces the barriers for new competitors. For individual retail banking services, it is no longer necessary to maintain large systems of cost-intensive branches. Digitalization in customer interaction has gained momentum over the past decade. After banking machines, online banking, the first mobile payment method and the cashless electronic payment by the use of cards were developed. Since around 2010 numerous banking innovations have arisen, which under the term fintech, have established various innovative solutions on the market. With a volume of \$112 billion in 2018, global investment in fintech has nearly multiplied tenfold compared to \$12 billion in 2014 (Alt & Puschmann 2016; KPMG, 2019). Examples of so called fintech companies, such as Square and Stripe, have reached market capitalization of \$27 billion (Square 2019) and \$22.5 billion respectively (Browne & Rooney 2019). These companies all fall into the category of so called unicorns, meaning companies with a market valuation of at least one billion dollars.

2 Strategy in the Digital Era

In understanding the emergence of digital business strategy and one of its key themes *scope*, it is important to understand the influencing research that existed previously within IS strategy that laid the groundwork for the digital business strategy perspective. This chapter of related works will provide an overview on prevailing research within the IS strategy field before moving on to defining and presenting the main concepts of digital business strategy.

2.1 Information Systems Strategy

Numerous research has been studying the meaning of Information Systems Strategy and how this has changed over time. However, defining what is meant by IS strategy has not been as straightforward as defining for example strategy in management studies according to Chen, Mocker, Preston and Teubner (2010). The obscurity is partly due to there not being established typologies as there is in management strategy research, as well as the many different terms that are used among the research community to speak about concepts similar and interchangeable with IS strategy (Chen et al. 2010; Teubner 2013). These include IS strategy, IT strategy, a combination of IT/IS strategy, and information strategy (Teubner 2013). Teubner (2013) makes the distinction between Information System (IS) strategy and Information Technology (IT) strategy, where IS strategy encompasses both the technological aspect and the way that they are employed in a business. Chen et al. (2010, p.235) define IS strategy as “an organizational perspective on the investment in, deployment, use, and management of information systems”. IS strategy thus constitutes a socio-technical view on IT strategy.

According to Chen et al. (2010), three research streams exist within IS strategy research. The first, use of IS to support business strategy, is also recognized as an alignment view where IT and business work in conjunction with one another in reaching business goals such as gaining and sustaining competitive advantage. The second, IS strategy as the master plan of the IS function, sees IS strategy as the plan of how to organize IS assets such as personnel, processes and budget in the firm as effectively and efficiently as possible. The third and final, IS strategy as the shared view of the IS role within the organization, sees IS strategy not as a plan but as a guiding perspective towards making IS related business decisions (Chen et al. 2010).

Furthering on the research streams made explicit by Chen et al. (2010), Teubner (2013) reveals four different perspectives in the IS strategy literature. The first is IT

as having an accepted role in the organisation. Secondly, IT as an instrumental part and accompaniment to business strategy whose purpose is to define what IT capabilities are required to support strategic business initiatives. Thirdly, as a general plan on how to acquire and structure the information processing capabilities throughout the organization. Fourth and last, as a departmental plan on how the IT department is to conduct work with their function.

2.2 Digital Business Strategy

Research performed by Bharadwaj et al. (2013) presents the concept of digital business strategy (DBS). The perspective originates as an effort to address shortcomings in the research within the IS strategy field and address the shortcomings of IS strategy as a way to tackle the potential of the fundamental changes that digital transformation is bringing to industries. While a business strategy is understood as a classic corporate strategy that summarizes the organization's visions and goals and sets the path for a period of time (Chen et al. 2010), an IT/IS strategy encompasses the streams and perspectives from Chen et al. (2010) and Teubner (2013) previously mentioned. Recent research increasingly acknowledges the combining of IT/IS strategy with overall business strategy (Matt, Hess & Benlian 2015; Teubner 2013) and Bharadwaj et al. (2013) merges the terms IT strategy and business strategy into digital business strategy, designating it as the contemporary business strategy in the digital era of which companies should be cognizant. Formulating digital business strategy incorporates specifying the design of the firm's products and services, their interoperability with complementary platforms, and how they can be deployed using digital resources. These digital resources show great potential in creating new IT capabilities and strategies around the firm's product and services (Bharadwaj et al. 2013).

According to Bharadwaj et al. (2013, p.473) digital business strategy is "broader, more prominent, more embedded, and more encompassing than other functional strategies". As such, digital business strategy should not, as IS/IT strategy does, exist as a functional level strategy under the organization's general business strategy, but rather as a fusion of the two (Mithas, Tafti & Mitchell 2013). As companies become increasingly reliant on digital functions to run their businesses, Bharadwaj et al. (2013) argue that the digital business strategy will in fact become or replace general business strategy due to the increasing importance and centrality of digital functions in the business, and should be aligned with its core values and identity (Oestreicher-Singer and Zalmanson 2013). Bharadwaj et al. (2013) identify four key themes in digital business strategy which are: (1) the scope of digital business strategy, (2) the scale of digital business strategy, (3) the speed of digital business strategy, and (4) the sources of business value creation and capture in digital business strategy. The focus of this paper will be on the first theme *scope*.

Other research such as by Mithas, Tafti and Mitchell (2013) shows that a tension exists within firms between tending to converge with industry norms and the opportunity to diverge from industry norms. The emergence of digital business strategy in a firm depends in part on the degree of digital investments in other firms within the same industry. It is therefore important for firms to anticipate the reaction that their competitors might have when making digital business initiatives (Mithas, Tafti & Mitchell 2013). Drnevich and Croson (2013) argue that IT affects industry structure and which business level strategic alternatives and value creation opportunities firms can pursue. This IT and business strategy relation determines the digital capabilities of the firm and how much value can be captured once created, and how much that dissipates through either competition or value chain partners.

3 Scoping in Digital Business Strategy

This chapter is divided into three sections. The first section introduces *scope*, one of four key themes within the digital business strategy framework that sees digital activities as part of revealing strategy and as such providing the foundation on strategy execution. In association to strategy execution the subsequent section introduces the concept of *value disciplines*, which define three disciplines on which firms focus should lie to create value for customers. Derived from the data and underpinned by the three value disciplines, the final section *digital value disciplines* serves to further define the activities that constitute scope, as granularity of the activities in scope is an aspect that is lacking in Bharadwaj et al. (2013). These three digital value disciplines therefore serve as the foundation through which scope is made explicit.

3.1 Scope

As presented in the previous section on digital business strategy, *scope* is one of four key themes in digital business strategy. In the digital age, market environments are inherently more volatile and varied compared to traditional markets. This necessitates that firms are prepared for several possible scenarios of rapidly changing market conditions. To achieve agility and flexibility in order to meet these uncertain conditions, it is necessary for firms to have many options available to them that enable them to rapidly adapt as required. One method of responding to the need for options is building large portfolios of digital activities that can be adapted to changing conditions (Luehrman 1998; Amram & Kulatilaka 1999). According to Bharadwaj et al. (2013, p.473), corporate scope “defines the portfolio of products and businesses as well as the activities that are carried out within a company’s direct control and ownership”. Scope in digital business strategy provides an understanding how they (digital activities that create options) can be effective in an organization’s setting and the relationship between digital business strategy and firms, industries, IT infrastructure and the external environment (Bharadwaj et al. 2013). As such and as previously stated, this paper argues that scope is a sound lens through which to study the process of how firms, in creating varied sets of digital activities, are building the capabilities that enable them to adapt to the digital age by creating options and flexibility in strategy.

With digital business strategy, firms are able to link together and improve their products and services with each other using digital capabilities in ways that were not possible before in the pre-digital era. For example, instead of existing in an environment of information scarcity of how their products and services were being used, digital capabilities are now allowing firms to gather big data that enables detailed understanding of usage in the real world and of the firm's clients themselves, knowledge that can be used to make specific improvements to products and services (Bharadwaj et al. 2013). One key aspect of digital business strategy is that it transcends functional areas within firms and is thus inherently trans-functional. Information exchange within and outside the organization on digital platforms that allow strategies and processes to be shared is crucial (Bharadwaj et al. 2013). The other key aspect of scope of digital business strategy according to Bharadwaj et al. (2013) is the importance of firms to work in dynamic and loosely coupled ecosystems instead of within traditional tight supply chain with partners.

According to Arvidsson, Holmström and Lyytinen (2014), IS is strategic as it is used to realize strategic extent. Parallels can be drawn between scope in digital business strategy and the idea that strategy is influenced by “the collective mind of all the organizational members through their intention and/or by their actions” (Chen et al. 2010, p.237). In the case of scope, digital business strategy is formed by the digital activities that an organization undertakes (Bhardwaj et al. 2013), while the digital activities are underpinned and categorized through the digital value disciplines presented in the following sections.

According to Bharadwaj et al. (2013), digital business strategy as a concept in research is still at an early stage and they urge researchers to theorize and develop metrics that are suitable for investigating the role of digital technologies on the corporate and network scope of firms. The following sections on value disciplines and further digital value disciplines will do so.

3.2 Value Disciplines

Treacy and Wiersema (1993) provide a framework that offers insight into how firms should align their business strategies to excel in one of three so called value disciplines in order to achieve competitive advantage and market leadership. They argue that when customers purchase a product or service from a firm they base their purchase on more than just a combination of quality and price, their purchase decision is also based on the perceived value of the product or service. The three value disciplines are: a) operational excellence, b) product leadership, and c) customer intimacy.

3.2.1 Operational Excellence

Companies in this category lead their market through price and convenience by optimizing business processes, reducing transaction costs, minimizing overhead costs and eliminating intermediate production steps (Treacy & Wiersema 1993). An example is Dell, who with their built to order and direct to consumer operating model, were able to undercut the prices of the leading PC manufacturer at the time, Compaq, and achieve market dominance (Treacy & Wiersema 1993).

3.2.2 Product Leadership

According to Treacy and Wiersema (1993) companies with market leading products and services fall under this category. They continuously strive to improve their offering, sometimes at the expense of their existing products, and are open to embracing ideas that emerge outside of their own organization. Speed in development and manufacturing is essential in keeping their market leading position and as such the organization is structured accordingly (Treacy & Wiersema 1993). The example given is a contact lens manufacturer Vistakon which gained market dominance through committing to a costly but rapid R&D process that allowed them to gain a technological advantage that caught their competitors off guard and left them unable to catch up with (Treacy & Wiersema 1993).

3.2.3 Customer Intimacy

Companies in this category focus on creating products and services for a defined type of customer and have a long term strategy on building customer loyalty. For companies with this approach it is important to create lifetime value for the customer and in doing so also for itself, rather than regarding each transaction as a one-off affair (Treacy & Wiersema 1993; Brendel 2002). The example given is Home Depot where store clerks make the effort to spend time with customers individually in order to give the right service and information so that the customers can leave the store with a product that is exactly what they need, not just the one that is the lowest priced (Treacy & Wiersema 1993).

These value disciplines have been commonly used to describe and prescribe the orientation of an organization's focus. According to Treacy and Wiersema (1993), organizations need to be competitive at all three value disciplines but focus especially on one to excel at, which will bring enhanced value and differentiate them from competitors. Companies that are not able to compete are often not able to do so because they lose their focus on excelling at one of the value disciplines. While initiatives taken by the company can seem to be responding aggressively to change, if they are not consistent with the chosen value discipline the energy and resources are in fact wasted as they are not focused on improving their chosen operating model. Although focusing on the chosen value discipline is important to stay competitive, companies still need to remain vigilant and be prepared to continually reevaluate their current

operating model as no market conditions remain static. Market leading value discipline and operating models are only market leading until the time that a competitor devises a superior alternative (Treacy & Wiersema 1993). Regardless of which value discipline firms chose to focus on, they cannot afford to ignore the two remaining ones. For example, a technologically advanced firm still needs low cost supplies and good customer relationships in order to prosper (Zacharias, Nijssen & Stock 2016).

3.3 Digital Value Disciplines of Digital Business Strategy Scope

This thesis searches for patterns in the reported digital activities that can build the categories of scope. The found categories in the banks' activities are referred to in this study as areas of action and describe in what context activities are conducted. In order to make sense of these ten areas of action in a structured way, shared characteristics are identified between them. The shared characteristics of the ten areas of action indicate a similar distinction as in the concept of Value Disciplines by Treacy & Wiersema (1993). Therefore the following digital value disciplines are developed. The digital value disciplines are on one side inductively substantiated by the emerging data of annual reports, which constitute the selected banks digital activities, and are deductively underpinned on the timeless and repeatable model of Treacy & Wiersema (1993). This conjunction further adds to a granular view and understanding of Digital Strategy scope as IT-driven changes in processes, products and services, customer relationships and innovation. Operational Excellence, by leveraging increasing computerization and connectivity across the organization evolves into IT Platform Excellence. Product Leadership is replaced by Digital Innovation Leadership, allowing unrestricted combinatorial innovation through software. Third, transactional and single-channel Customer Intimacy is altered by relationships with seamless Hybrid Customer Interactions propelled by the increasing use of mobile computing devices.

Bharadwaj et al. (2013, p.473) believe that “researchers should pay particular attention to how, when, and why the scope of digital business strategy is impacted by digital technologies”. According to Chan and Huff (1992), digital resources should generate value and contribute to the competitiveness of the organization. As such, this section will update Treacy and Wiersema's (1993) to the digital age, i.e. from value disciplines to digital value disciplines.

3.3.1 From Operational Excellence to IT Platform Excellence

Traditionally, digitization is equated with the transfer of tasks to the computer that were previously done by humans. Digitization thus refers to a special form of automation, specifically the (partial) automation by means of IT. Just a few decades ago,

such digitization has been largely limited to tasks that have been repeated in companies and repeatedly incurred in the same way, e.g. in accounting. In the meantime, digitization has extended to tasks that arise with private users or are less structured. Today, companies are using improved data mining technologies to automatically process large data volumes for abnormalities without the need for dedicated hypotheses (Hess 2019; Horlacher & Hess 2016; Matt, Hess & Benlian 2015). Efficiency gains from automation are no longer the focus of IT investments in the digital age. Today, IT is a fundamental enabler in creating flexible businesses able to adapt to emerging trends (Venkatraman 1994). For example, digital technology has enabled shared platforms between ecosystems and business communities, allowing for increased efficiency without sacrificing flexibility and differentiation (Markus and Loebbecke 2013).

The current development of future information systems, for example, towards service-oriented architectures, progressive networking with cross-company business processes or decentralization and virtualization of the IT infrastructure present management with operational and strategic challenges with regards to for example cyber security. In the days of a few mainframes operated exclusively by experts, IT security played little part and was focused on physical protection of access to the plant. As the level of electronic representation, networking and control of real-world processes in information systems increases, so does the scope of the term "cyber security", thereby affecting the types of security mechanisms required and available (Bishop 2005).

3.3.2 From Product Leadership to Digital Innovation Leadership

Digital product innovation frees firms from the constraints of traditional product innovation and production development which has been defined by linear processes and economies of scale towards dominant designed products, where traditional and vertically oriented firms use modularity for reuse and reconfiguring purposes (Svahn 2014). Instead, innovation dynamics in the digital era are characterized by the product as a catalyzer of new functions, firms having self-reinforcing and non-linear patterns, and software being characterized by economies of scope, leading towards an unconstrained potential for combinatorial innovation (Svahn 2014). According to Yoo, Henfridsson and Lyytinen (2010, p.725), digital innovation is "the carrying out of new combinations of digital and physical components to produce novel products". For firms whose strategy is to stay at the forefront of innovation with market leading products, the digital innovation process allows for a greatly increased ability to do so compared to previous product innovation processes. As in traditional product leadership where an important focus is on acting on new ideas that emerge in the market outside the firm's boundaries, ecosystems in the digital age play a central role

in digital innovation leadership. The rise of digital has created entirely new possibilities for the creation of partnerships and joint innovation efforts (Moore 1993; Keen & Williams 2013).

Previously, firms were able to track trends and monitor the success of competitors and product developments steps over time. They had time to decide whether to adopt and/or how to position themselves against the competition, if threatened. Today, new ideas emerge on a daily basis, diminishing the potential of sustainable competitive advantage.

Jansity and Levien (2004) highlight how critical it is for companies to actively engage in the analysis of its surrounding ecosystem, to search for improvements and to build partnerships in order to succeed. Derived from the evolutionary doctrine in biology and Darwinism, Moore (1993) describes the process of participating in an ecosystem as a gradual move from the collection of elements to a more structured community. Rather than only one, companies ought to engage with several digital ecosystems to enable the creation of products and services across different business units, as a basic economic construct of diversification (Selander, Svahn & Henfridsson 2013).

3.3.3 From Customer Intimacy to Hybrid Customer Intimacy

Digital technologies are changing the way consumers are interacting with firms as it is enabling consumers to interact simultaneously with the physical world as well as the online world. This multi-channel approach is termed hybrid customer interaction and it takes place on three levels: strategy (channel convergence), processes (process convergence) and systems (technology convergence) (Nüesch, Alt & Puschmann 2015). The first, channel convergence (strategy), is the connection of the digital and physical elements. Services are provided and designed for interaction through multiple channels, integration between the different channels and external service providers is important, and digital solutions allow customers to conduct services on their own (Nüesch, Alt & Puschmann 2015). Secondly, process convergence (organization), is integrating customer processes and Customer Relationship Management (CRM) processes. The third, technology convergence (system), is where device and application merge, and the service provided by the firm can be used on any type of device (Nüesch, Alt & Puschmann 2015).

Technologies such as data analytics and automated communication are also changing the way customers interact with firms (Pousttchi & Dehnert 2018) and improving firms knowledge of their customers, allowing them to anticipate customer needs rather than just reacting to them (Sebastian et al. 2017). A novel opportunity arises for a large number of classic end-user companies as they have very large and cross-sectional end-customer data and can apply big data techniques to them to set up novel

recommendations and marketing systems enabling them to target and penetrate customers in a tailored manner (Pousttchi & Hufenbach 2014).

Lanzolla and Anderson (2008) make clear three specific trends that makes digital transformation different from IT-enabled transformation with regards to the way customers interact with firms. Technology is enabling for: a) digital interactions, as it allows customers to actively interact by creating, eliminating and consuming content at the time, place and method of their own choosing, b) digital distribution, as it allows content to be distributed widely due to the increased amount of channels and devices available, c) digital reach, as it removes limits created by geographical locations and instead builds customer networks based on interests. As such, customer expectations are higher when it comes to the availability of digital services as they are more informed and communicate with each other to a much greater extent (von Leipzig et al. 2017). Consumers are now considered to be co-creators of value, knowledge organizers and important factors of production (Ismail, Khater & Zaki 2017).

Hippner and Wilde (2002, p.6) define Customer Relationship Management as “a customer-centric business strategy that uses modern information and communication technologies to build and sustain profitable customer relationships over the long term through holistic and customized marketing, sales and service concepts.” This definition highlights the two key aspects of CRM. The focus is on customer orientation, whose goal is to focus on aligning all business processes with the customer. The second essential component of this concept is the use of information and communication technologies. These serve to obtain customer-related information in order to capture the customer and his needs. The information gained can ultimately be used to target customers (Hippner, Rentzmann & Wilde 2007).

4 Method

This chapter describes the actions that were taken investigating the aim of this paper. It is divided into sections each describing the research process, the research setting, the data collection activities undertaken, as well as the data analysis process.

The aim of this thesis was to contribute to the digital business strategy perspective by making a comparative study on the scope of nine major European banks headquartered in Sweden, Switzerland and Italy through capturing their concrete and reported digital activities. To investigate and compare the scope this paper developed three *digital value disciplines* that were based on the three value disciplines developed by Treacy and Wiersema (1993). The guiding questions were:

1. *What portfolios of digital activities do the banks conduct to build digital business strategy?*
2. *How do these portfolios of digital activities differ across markets?*

4.1 Research Process

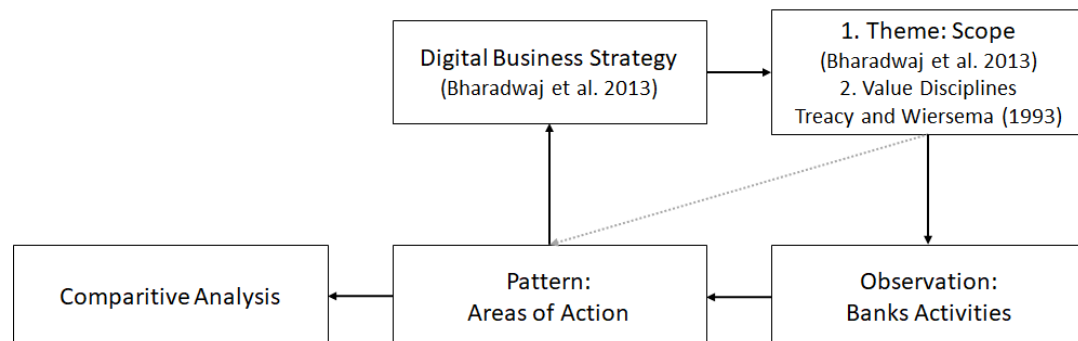


Figure 1. Research Process

This study followed an inductive approach to analyzing data and deriving the theoretical perspective. An inductive approach is defined as beginning with an area of study and allowing the theory to emerge from the data (Strauss & Corbin 1998). The annual reports were initially empirically analyzed which led to the discovery of several relevant areas of action pertaining to digital transformation. These preliminary findings led to the search for a theoretical framework that could be used as a lens to study the phenomena of digitalization activities in banks. Through the use of the Gothenburg University Library, Researchgate and Google Scholar online search en-

gines, the concept of *digital scope* in Bharadwaj et al.'s (2013) paper on digital business strategy was deemed an appropriate theoretical basis for further exploration of the chosen subject of investigation. Using scope in digital business strategy, defined by Bharadwaj et al. (2013, p.473) as “the portfolio of products and businesses as well as the activities that are carried out within a company’s direct control and ownership”, allowed us to place the revealed *areas of action* within a relevant theoretical context. However, to make sense of the emerging areas of action, the study was required to find a suitable theoretical base that clearly defines and categorizes these that firms undergo in order to build and achieve competitive advantage. After further enquiry via the aforementioned online channels, Treacy and Wiersema’s (1993) concept of *value disciplines* stood out as a relevant theoretical base on which this paper’s theoretical contribution of *areas of action* could be based upon. Out of the combination of *value disciplines* and *areas of action* emerged what this paper has termed *digital value disciplines*, which forms the main theoretical contribution to the field of digital business strategy of this paper.

4.2 Research Setting

The research setting for this paper are nine major banks in three Western European countries: Italy, Sweden and Switzerland. These three countries were chosen as they represent the northern, central, and southern European markets. The banks were chosen according to the requirement that they qualify into the top 3 retail banks by total assets as of 2017 in each of their respective countries (Statista 2017a; Statista 2017b; Statista 2017c).

The banks chosen are specified in Table 1 below. Along with the names of each bank, the table aims to provide an overview of the total assets of each bank, their main geographic markets outside of their home market, and the distribution of income according to business unit. However, each banks reporting structure varied significantly and it was not always possible to discern for each bank what percentage each of their business units contributed to income. The categories used by each bank to specify their different income centres varied significantly as well. Therefore, in the instances where a percentage could be found or calculated, it is presented below “as is”, i.e. according to the categorization made by each individual bank in their annual reports.

Table 1
Information on the chosen banks

Country	Bank	Total Assets in Billion EUR 2017 approx.*	Main Geographic Markets 2018 Outside Home Countries	Distribution of income in 2018
Italy	Intesa Sanpaolo (IS)	800	Central & Eastern Europe Egypt	International Subsidiary Banks 10% Private Banking 10% Asset Management 4% Insurance 6% Corporate and Investment Banking 20% Retail Banking 50%
	Unicredit (UC)	837	Central & Eastern Europe Germany Austria	Commercial Banking: 56% Central Eastern Europe: 21% Corporate & Investment Banking 19% Fineco 3%
	Banca Monte dei Paschi di Siena (MPS)	139	Only Italy	Small Business 7.2% Value 80.4% Premium 10.6% Private 0.8% Family Office 0.05%

Sweden	Nordea (N)	582	Nordics	Personal 32% Commercial & Business 23% Wholesale 19% Wealth 19% Group Finance 7%
	Handelsbanken (HB)	249	Nordics United Kingdom Netherlands	N/A
	Skandinaviska Enskilda Banken (SEB)	239	Nordics Baltics United Kingdom Germany	Personal 40% Corporate & Institutions 40% Asset Management 15% Insurance 5%
Switzerland	UBS	838	Global	Global Wealth management: 55% Personal & Corporate Banking: 13% Asset Management: 6% Investment Bank 26%
	Credit Suisse (CS)	709	Global	N/A
	Zürcher Kantonalbank (ZKB)	146	Mainly Switzerland	Interest operations 52% Commision business 33% Trading activities 12% Other 2%

*Asset figures converted from USD or CHF to EUR according to May 2019 exchange rate

4.2.1 Structure of annual reports

While the structure of the annual reports from each bank differs, they typically begin with a Letter from the Chairman containing comments on performance, financial or otherwise, major activities and business objectives that have been achieved and are upcoming. The content after this point is more varied in structure but commonly contains chapters dedicated to strategy and goals, organization, sustainability, operations, risk and governance, compensation etc. These chapters are usually around $\frac{1}{3}$ of the total length of the reports. The final sections contain the financial statements and regulatory and compliance information. The length of the reports vary. The Swedish annual reports are around 200-300 pages, the Swiss around 500 except for ZKB which is in the just under 200 range, while the Italian banks are around 500-600 pages. Interestingly, Intesa Sanpaolo's are by far the longest containing between 700-1000 pages.

4.2.2 Legitimacy of annual reports

The selected banks are publicly listed on the stock exchanges of their respective countries and are therefore obliged to disclose their financial data and other mandatory information to shareholders and regulators in order to adhere to the corporate reporting requirements of each country respectively. The reason for selecting annual reports for content analysis is based on its use by firms as one of the main medium for communication (Adam & Harte, 1998). For a considerable time, social science research has used the content analysis methodology. As the name implies, it is a method of analyzing the content of various elements. It browses text, images, videos, interviews, etc., about their content, message and meaning. Basically, content analysis helps researchers better understand the content of texts. Hsieh & Shannon (2005, p. 1278) claim that content analysis is "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns." Mayring (2000, p. 2) establishes content analysis as "...an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytical rules and step by step models, without rash quantification." Using annual reports as the empirical basis of an academic paper does present some challenges as annual reports are to some degree used as corporate marketing tools and a method of managing image (Stanton & Stanton 2002). However, we argue that since this paper is only based on definitive actions that have or are taking place as stated in the reports, the risk that the empirical data that this paper is based upon is compromised is minimal.

4.3 Data collection activities

The three most recent annual reports (years 2016, 2017 and 2018) were gathered from the investor relations page on each bank's corporate website. Reports from these three years were selected due to the amount of content regarding digitalization activities contained in them. Before the initial analysis, the choice was made to analyze reports from the past five years, i.e. 2013-2018. However, during the initial analysis it was found that reports from 2013 until 2015 did not contain as significant amounts of empirical data regarding digitalization as the ones from 2016-2018. Therefore the choice was made to base the empirical data only on reports from 2016-2018. The narrower time span of the reports also allowed a relatively more up to date perspective on digitalization efforts at each bank compared to if a greater span would have been used. This suited the aims of the paper which was to study the digitalization efforts from a current perspective and not a historical one.

No ethical dilemmas have been encountered during this study as the empirical data has been based on reports, not interviews or similar sources.

4.4 Data Analysis

This study uses a combination of qualitative and quantitative content analysis. In the qualitative part the data is browsed iteratively, as to develop an understanding of the activities described by the banks in larger context. The iterative interpretation of the different formulations allowed the creation of themes through manual observations and automated theme coding offered by NVivo, with the ladder presenting the most dominant words in the use and in relationship with other words. The quantitative part focused on capturing and coding the activities within the qualitatively defined themes numerically for each bank. Since there has no previous studies dealing with the different portfolios banks are conducting as part of their digital business strategy and the aim has been to provide themes emerging within the banking industry, the research takes an inductive analysis approach according to Elo and Kyngäs (2008) within the qualitative approach described with the following steps, based on and adjusted from Creswell (2014):

Step 1. The annual reports in the form of PDFs of nine banks over three years were uploaded within NVivo, resulting in 27 reports.

Step 2. The annual reports were structured hierarchically from country level, to bank level, to the concerning years in folders as well as mirroring this structure with nodes, where collected data would be coded to.

Step 3. First insights were obtained by reading through three annual reports on the structure, content and overall language used.

Step 4. A first apprehension and keywords in regards to digital activities to be used for the search purpose, were protocolled.

Step 5. Several searches were conducted according to the noted keywords and the sections surrounding the keywords were examined more closely to find additional keywords.

Step 6. Keywords were extended and reduced according to findings in iterations. A wide range of keywords was used due to diverse orthography across the banks annual reports, in the countries countries and over years. The functionality in NVivo of searching after stemmed words showed to be limited after samples were drawn. Therefore, several words were formulated in their different variety as part of nouns and verbs for example.

Step 7. The content found through the keywords and it's near surrounding context was coded into the concerning country and banks nodes, resulting in over 1285 codes.

Step 8. Dominant themes were crystallized through several iterations of structuring the data and making sense of the context manually and with an automated theme recognition function offered by NVivo. A large portion of codes was deleted for not providing concrete digital activities, resulting in 759 codes.

Step 9. Frameworks in research as a lens were searched in order to interrelate the themes. The found framework was adjusted in correspondence with the emerging themes and themes were accordingly embedded in the framework as a subset.

Step 10. The hierarchy of nodes per bank was extended through the framework with three further nodes and data coded for each bank was further distributed to the new nodes. This resulted in a refinement of codes, where certain paragraphs were split because they contained several activities, resulting in 823 codes.

Step 11. In a second iteration irrelevant data and unconcrete activities were deleted from the codes, resulting finally in 628 codes, while still containing sentences and paragraphs that describe more than one activity.

Step 12. The codes were further analyzed in defining the terminology for each theme.

Step 13: Activities were annotated with the corresponding theme, resulting in 708 activities.

It was not deemed right for the purpose of this study and also not possible to further categorize all activities into types in order to present the whole spectrum of undertaken activities by the banks in a table. The process of providing deeper granularity, would have meant another last step to go through 708 activities (that were already assessed, then annotated and coded into the ten areas of action) and to analyze their language to make sense for example whether “cyber security awareness trainings provided to customers” and ones provided to “employees” can or cannot be put into the same type of activity. Although we initially intended to perform this last step in the data analysis, we were taken off-guard with the magnitude of activities found in our data from the 27 reports. The population of activities into types would have gone beyond the time constraints available for this study.

The second of analysis corresponds to exploring the conduct of activities by frequency within the nine banks across three countries. Due to the small sample size of nine banks, this thesis follows a simplistic approach in explaining the frequency of activities within a specific dimension, with a higher emphasis on that specific dimension by the bank. The frequency of terms is therefore used as a proxy to evaluate the areas of action and disciplines banks are highly involved in with their activities.

During the analysis of the annual reports, it became apparent that the majority of banks do not prepare their reports from scratch every year. The banks use the same text as in the previous year and for the most part only change the figures in the annual financial statements. Only two banks wrote a completely different annual report in 2018 regarding the description and visualization of their digital portfolio.

5 Results

In this chapter the results from the annual reports are presented in two parts. The first part contributes to the thematization of the digital business strategy scope from the data collection entailing ten themes. The themes are presented and ranked by cumulative frequency within the corresponding and superordinate digital value disciplines. Thereupon the second part sets the nine banks in three countries for comparison in order to understand the similarities and variations of their focus within the areas of action and across the digital value disciplines: (1) *IT Platform Excellence*, (2) *Digital Innovation Leadership* and (3) *Hybrid Customer Interaction*. As such this serves the research question to initially present the granularity of digital business strategy scope with the most salient common patterns, in other words conceptualizing what digital activities banks conduct. While doing so it aids to explaining and interpreting the subsequent findings from the quantitative phase. This phase then illustrates secondly the variations in the distribution of activities at the banks in Italy, Sweden and Switzerland along the digital value disciplines and the implication for their respective digital business strategy.

5.1 Areas of Action

In this subsection predominant areas of action of the nine banks' within the three digital value disciplines are (I) abstracted and condensed from the results, (II) exemplified with representative statements from a bank of each country and (III) specified according to the concerning knowledge domain to provide a taxonomy, that resonates with the theoretical framework. As mentioned, the areas of action are presented as a means to theoretically contribute to the thematization of the digital business strategy scope but also practically to assist in explaining and interpreting the subsequent quantitative part. The following statements of annual reports per area of action have been chosen through several iterations driven by the following criteria:

- Representativity of the activity for the respective area of action.
- Tangibility of the activity related to information richness.

Beforehand we present the overall quantitative results as a means to capture the imminent *areas of action*, their allocation to the *digital value disciplines*, the overall *total* and their relative distribution overall (*ratio*), as well as their absolute frequency per bank, with the following table:

Table 2

Number of of all activities per bank in the countries Italy, Sweden and Switzerland along the ten areas of action

Digital Value		Italy			Sweden			Switzerland			Total	Ratio
Disciplines:	Areas of Action:	UC	IS	MPS	HB	N	SEB	UBS	CS	ZKB		
	IT Infrastructure	3	12	14	1	17	4	4	4	8	67	9.46%
IT Platform	Data Management	3	9	1	2	7	5	5	6	2	40	5.65%
Excellence	Cyber Security & Risk	1	28	8	8	7	8	6	16	12	94	13.28%
	Automation	2	9	10	4	15	8	5	6	2	61	8.62%
Digital	Open Innovation	9	26	4	3	14	15	5	6	23	105	14.83%
Innovation	New Product Development	3	30	22	4	11	11	10	4	7	102	14.41%
Leadership	Open Banking	7	5	7	1	5	8	1	0	4	38	5.37%
Hybrid	Digital Channels	6	16	15	10	14	9	14	7	8	99	13.98%
Customer	Customer Insights	2	3	15	4	6	6	5	2	2	45	6.36%
Interaction	Customer Process	3	10	9	4	12	7	4	3	5	57	8.05%
	Total	39	148	105	41	108	81	59	54	73	708	

Note: N = 9.

5.1.1 IT Platform Excellence

In the area of IT Platform Excellence, digital technologies are used to make internal processes and external processes more efficient and, if possible, to automate them. This depends heavily on the requirements of the respective industry. The following four areas of action have been identified for the banking industry in this digital value discipline:

Cyber Security & Risk

The results in this area of action outline the activities of protecting information from unauthorized access, use, disclosure, disruption, modification or deletion to within IT or by using IT to ensure confidentiality, integrity and availability. Customers are seen as the main data subjects to be protected throughout the nine banks and therefore are being encouraged by the banks to secure themselves by being made aware of how to abide certain security practices in the first place. In addition to implementing new tools to monitor and prevent cyber security breaches, all the banks in question have made steps forward in acknowledging cyber security as a central component of sustaining their business. This shows how cyber security has gained strategic relevance by being incorporated into the boards and top management agenda as it has achieved company-wide implications into all aspects of the organisation due its embeddedness into critical processes as stated by Bishop (2005). Activities in risk management within IT or leveraged by IT were in most cases related to cyber security as presented, but also in the context of fulfilling compliance requirements with IT-enabled solutions. This is exemplified in the activities, communicated in the following statements:

“In response to this issue, awareness-raising campaigns have been developed for customers on the dangers of certain phenomena like spamming and phishing, and how to defend themselves.” – Intesa Sanpaolo (Italy)

“In 2016, SEB’s governance frameworks and controls for information and cyber security were further strengthened and integrated into the risk management structure.” – SEB (Sweden)

“In 2016, in addition to several standing agenda items, the Board of Directors again devoted particular attention to digitally driven innovation and the effectiveness of our cybersecurity framework.” – Credit Suisse (Switzerland)

The increasing degree of digitization of processes and data, connectivity and embeddedness of critical operations in information systems amplifies the impact of Cyber Security and thus also demands increasing investments in security mechanisms by

any organization. The aspects of Cyber Security are to systematically and continuously assess what needs to be protected, what threats exist, and what vulnerabilities and vulnerabilities can be used to attack them. The definition of security requirements for an information system and the decision on the extent to which protective mechanisms used are the subject of IT security management (Bishop 2005). In regards to compliance as a risk, IT in business can be both a carrier of compliance requirements and a means of meeting compliance requirements. Legislative requirements cannot or only partially be fulfilled, for example, if the IT is not operated and used as required in a company, is insufficiently secured or can easily be manipulated. IT is thus a central component of corporate compliance (Mossanen & Amberg 2008; Klotz & Dorn 2008).

IT Infrastructure

The described activities across the three countries show that banks are committed to expanding their core IT infrastructure which may increase stability, its ability to support flexibility and maintaining up to date applications. On the other hand banks are also focusing on reducing complexity, while still making key investments in core systems. A solid IT infrastructure core is the keystone capability required to support the digital activities that build a digital business strategy. A more homogenised portfolio may lead to gains in efficiency regarding management. ZKB chooses to focus on the client side instead of on core infrastructure as a way to increase flexibility. This instead needs to be focused on what it means for the areas of actions.

“...Investments in IT that will support the business transformation with greater digitalization, the technological improvement of core systems, and ongoing infrastructure updates.” - Unicredit (Italy)

“To simplify the IT landscape, the total number of business applications has steadily been reduced year by year and Group IT has made core infrastructural deliveries for the new core banking platform such as tools for integration and testing.” - Nordea (Sweden)

“Since Zürcher Kantonalbank values short, quick decision-making paths and personal communication among staff, it has equipped all employees with new laptops to help them work more flexibly – at their own workplace, on the bank’s premises, during advisory consultations or from home.” - ZKB (Switzerland)

To quickly connect new digital solutions to existing systems requires a scalable, integrated architecture. Investing in the quality of the IT infrastructure and the agility of the backend systems play an important role in ensuring flexibility (Chakravarty, Grewal & Sambarrturthy 2013; Sambamurthy, Bharadwaj & Grover 2003). It is also imperative to build up in-house IT expertise in the key technologies (Bharadwaj

2000; Chakravarty, Grewal & Sambarrturthy 2013) to advise the different departments accordingly or to be required to guide external service providers. Another aspect is provided in the use of digital technologies, e.g. for communication and disclosure of information. This is caused by the growing networking of teams, e.g. at a global level (Smith & McKeen 2011). Digital technologies can improve the communication and collaboration of employees within the company. In the field of knowledge management, digital technologies make it particularly possible to connect employees across company divisions and thus strengthen the knowledge processes (Sambamurthy, Bharadwaj & Grover 2003). In this context, the possibility of flexible working also plays an important role. By using digital technologies, the company can support changing workplaces and mobile work. The activities of the banks present this as an important field of action, especially for client relationship managers, to provide them with tables for example.

Automation

An example of automation is Banca Monte dei Paschi di Siena who have automated their advisor's financial planning activities with robotization tools, enabling the advisers to focus their activities on building and enhancing the customer relationship. In this case automation supports the advisor to work increasingly in the front-office and hence promotes the redeployment of human resources from time-consuming and costly processes to higher value generating business activities. This is seen across the banks, where so called "robots" are helping banks gain efficiency and supporting decision making in order to free up employees and enable them to focus on tasks that require human input.

"...the new global advisory services and customer financial planning platform: a complete robot solution for advisors, in which technology and innovation support the advisor's entire work cycle, with all instruments integrated." – Banca Monte dei Paschi di Siena (Italy)

"One of the key objectives has been to develop and enforce harmonised ways of working, including high focus on building Robotic Process Automation (RPA) capabilities and automating processes across the Group. As of today, more than 500 robots are up and running to gain continuous efficiency improvements." – Nordea (Sweden)

"We also increased the number of robots performing routine tasks from roughly 700 to 1,000 last year. We will more broadly leverage machine learning and artificial intelligence-powered engines to automate more complex tasks and allow for better and faster decision-making, for example in risk management or anti-money laundering." – UBS (Switzerland)

The increasing standardization of processes and the use of IT also allows analogous to the industrialization of industrial production, for example, to anchor new types of division of labor between front office (highly paid consultant) and back office (simple agent for routine activities) (Becker et al. 2010).

Data Management

With increased digitalization of products and service, it is necessary for banks to adapt their information storage solutions accordingly. Analytics are becoming increasingly advanced and widely utilised and so require reliable and efficient data infrastructures as can be seen in the examples below.

“...advanced maintenance of the “credit algorithms” (so-called Score Engines) to support decision-making mechanisms for the disbursement of small scale loans to the Private and Small Business customers, in line with the best practices of the system and the new credit standards of Banca MPS...” - Banca Monte dei Paschi di Siena (Italy)

“In 2017 SEB established a data lake, a technical platform for gathering, quality assuring and providing easy access to all data at SEB’s disposal. This includes structured and unstructured data, internal as well as external data, and everything from real-time data to static data.” - SEB (Sweden)

“Credit Suisse’s advanced execution services (AES), a sophisticated suite of algorithmic trading strategies, tools and analytics to facilitate global equity trading. By employing algorithms to execute client orders and limit volatility, AES helps institutions and hedge funds reduce market impact.” - Credit Suisse

Traditional database storage at banks are no longer up to the task of handling the increasing amounts of online data retrieval, access, updating and maintenance that is occurring as digital transformation progresses. It is therefore becoming critical for banks to seek new methods of storing and retrieving information (Hwang et al. 2004).

5.1.2 Digital Innovation Leadership

In the area of Digital Innovation Leadership, digital technologies are changing the way that innovation is being conducted within the banks and their surroundings. The strategic planning of digital innovation is not just an IT strategy concern but the subject matter across the IT department-wide digital business strategy (Bharadwaj et al. 2013; Drnevich & Croson 2013). The following three areas of action within this digital value discipline have been identified:

Open Innovation

A salient activity for digital business strategy was identified as *Open Innovation*. The banks are partnering and cooperating with other organisations such as startups in

order to identify innovations and make use of the talent and ideas that exists outside of the banks own organisations as can be seen by the examples below. Utilising external resources in this way allows banks to benefit from innovative capacity while minimising risk and exposure towards themselves, whether it be monetary or other resources, which enables flexibility in choosing which innovations to include in building their digital strategies.

“...identify the best investment opportunities both in already consolidated fintech companies and in new start-ups through a partnership (called UniCredit EVO) with Anthemis Group (investment and advisory firm focused on re-inventing financial services). Through this investment, UniCredit has the opportunity to scout for new fintech solutions, to be then used to innovate the Group’s banking business.” - Unicredit (Italy)

“In 2016 we increased our speed in innovation and scaled up the co-operation with promising startups through Nordea’s Accelerator Programme. We see this as a great way of helping startups to grow and to ensure our customers can be offered innovative services that meet their ever-changing needs and preferences.” - Nordea (Sweden)

“We also pioneered the new blockchain-based trade finance platform we.trade, together with other industry participants, which allows corporate and institutional clients to easily and safely create trade orders online and manage the entire trade process from order to payment.” - UBS (Switzerland)

The Open Innovation paradigm describes the purposeful opening of innovation processes and the strategic integration of the business environment as future success factors for the innovation capacity of companies (Chesbrough 2003). This means that innovation through digital technologies plays a major role in the strategy and is actively promoted (Yoo, Henfridsson & Lyytinen 2010). This can also be used to open up innovation processes and better integrate external resources (Enkel, Bell, & Hogenkamp 2011).

New Product Development

Digital is compelling banks to innovate entirely new product categories and ways of delivering existing services to customers. As can be seen in the below examples, many of these products and services are directed at the increased use of mobile products by customers as the banks are compelled to adapt to meet customers on the platforms and devices that are becoming increasingly more prevalent in their daily lives.

“In 2017, the activities focused on operations from mobile phones, with the release and development of apps for specific customer segments, the development of the

Online Branches and their integration into the physical network, the release of the Digital Identity, the extension of the remote offering of insurance products and the restyling of the home banking website.” - Intesa Sanpaolo (Italy)

“We are developing a new function in the Swedish mobile app – a personal finance manager (PFM) – that will initially help customers categorise their savings and expenditure. More functions will be launched in stages during the year.” - Handelsbanken (Sweden)

“...the bank has intensively addressed the issue of digitisation and launched several new offerings including a smartwatch app, a budget tool and a mobile payment solution. “ ZKB (Switzerland)

Digital products and services must provide users with a rich user experience. This includes providing usability, aesthetics and engagement to the users (Nylén & Holmström 2015). Digitization also allows for the coupling of previously unrelated product with one another due to the flexibility digital development allows for, and can be either entirely new or existing products substantially enhanced by digital technology (Lyytinen, Yoo, Boland 2016).

Open Banking

Open banking is allowing banks to enhance the presence of their services outside of their own products and platforms by sharing access to their information with for example other banks and platform providers. The enhanced ability to share information allows banks to achieve the need for greater flexibility required when meeting change and uncertainty brought about by digital innovation through collaboration with the ecosystem around them.

“At the same time, significant partnerships have been developed with international ecosystems and incubators in order to capture the relevant fintech, specific to our business model, also with a view to an Open API Platform capable of agile integration of new technologies.” - Intesa Sanpaolo (Italy)

“Another result of collaboration is our new Corporate Business Services developed together with a fintech firm. This is a cloud-based platform that corporate customers can use to manage their finances and administration in a single place, in Handelsbanken’s Online Banking or Mobile Banking.” - Handelsbanken

“In parallel, we are working on creating the Wealth Management Americas Platform in collaboration with third-party software provider Broadridge. This platform is anticipated to improve advisor productivity and support advisors in growing their businesses. We expect the platform, scheduled to go live in 2021, to increase efficiency and scalability.” - UBS (Switzerland)

Open banking is opening up the exchange of data and information within the banking industry. Based on API technology, open banking is designed to facilitate collaborative data sharing between unaffiliated parties in the banking industry in order to deliver enhanced capabilities to the marketplace (Brodsky and Oakes 2017).

5.1.3 Hybrid Customer Interaction

In the area of Hybrid Customer Intimacy, digital technologies are used in a way that transforms the way that the banks and customers are interacting with each other, the way that banks are understanding their customers, and the way that customer facing processes are being integrated with internal processes. The following three areas of action within this digital value discipline have been identified:

Digital Channels

One of the most dominant area of activity across the three countries has been related to a multi-channel customer experience transformed through IT. How banks are meeting customers is changing across all three countries. This multi-channel interaction aims at becoming seamless and interaction is increasingly happening over digital channels such as web based meetings, social media, and applications on mobile devices such as mobile phones, tablets and smartwatches. The use of traditional channels, meeting customers at branches face to face or speaking to them via telephone, is declining in use within most banks but the banks are still aware that some customers retain a preference for face to face meetings in certain situations and so are not moving over to digital channels entirely. In the digital space dedicated applications allow customers to open accounts, apply for loans, conduct transactions, signing documents etc. anytime anywhere. These are examples of banks adapting to customers who are increasingly demanding that interactions take place at their convenience and at the place of their choosing. Some example statements below:

“Commercial Banking Austria has launched Smart Banking Solutions, an integrated new service model, allowing clients to decide when, where and how they contact UniCredit Bank Austria. This approach combines classic branches, new formats of advisory service centres and modern self-service branches, internet solutions, Mobile Banking with innovative apps and video-telephony.” – UniCredit (Italy)

“In step with advances in technology, the branches’ way of working and physical appearance are also changing. More and more branches have now replaced their cash desks and queue-ticket systems with open meeting places, tables for standing at, and rooms for meetings that have been booked in advance.” UBS (Switzerland)

“Digitalisation remained a main driver in the business areas and our customers’ usage of online and mobile solutions is growing rapidly. Customers need to be able to reach us anytime, anywhere. The eBranches and remote meetings are key initiatives to improve accessibility for customers. Our teambased advisory format enables

customers to obtain competent help easily by a renewed advisory model. One out of six customer meetings is now held online...” - Nordea (Sweden)

Digital has fostered a better physical experience in banking branches. For traditional companies with branch networks, the initial problem arising here is that when customers switch to electronic channels, the differentiation aspect of the branch network loses significance, but the costs can not generally be reduced to the same extent. The typical example is banks (Pousttchi, Moorman & Felten 2015).

Digital Customer Process

Digital technologies are impacting customer processes and relationship management at the banks. As can be seen by the examples, banks are becoming increasingly less paper based and to a greater degree able to meet their customer needs with automated decision processes.

“2016 was the launch of Widiba’s offer of credit with the first 100% paperless mortgage in Italy, from the application with a digital signature to the online upload of all documentation. The project made it possible to implement highly efficient processes for dealing with applications, which are at the top of the market in terms of timing and transparency for the customer.” - Banca Monte dei Paschi di Siena (Italy)

“An EU Instant payments functionality, launched in Estonia and Latvia, and an automated credit decision process for consumer loans simplified banking for customers.” - SEB (Sweden)

“In Switzerland, we now have a fully paperless account opening process that is digital from start to finish, meaning people can generally become a client of Credit Suisse in just 15 minutes – without having to visit one of our branches.” - Credit Suisse (Switzerland)

Across multiple platforms it is important that digital and mobile channels are seamlessly integrated with internal processes (touchpoint management) (Chaffey 2010). This goes beyond the automation of processes and covers topics such as consistent design thinking of interfaces, which is why this principle is located in this discipline and not IT Platform Excellence. The term customer process optimization is based on the operative CRM that serves to support the operational processes of all areas that have direct contact with the customer. These include mainly marketing, sales and customer service. In these areas, communication and the related business processes are supported by automation, which are also summarized under the term front office. All communication channels (in the sense of multi-channel management) as well as all customer touch-points must be integrated and synchronized. Although this has similarities with the area of action of "Digital Channels", a demarcation is made due

to distinguishing data being available, attributing to this area of action a strong process focus (Hippner, Rentzmann, Wilde 2007).

Customer Insights

Customers are increasingly demanding personalised solutions that provide service based on their personal situations. Artificial intelligence and machine learning along with extensive access to storing and analysing information are all digital activities that are allowing banks to meet this need. As can be seen by the below examples, digital technologies are allowing banks to engage with customer needs on an entirely new level with real time and feedback based solutions.

“...in 2016, with the launch of new campaign management tools to support new multi-step and multi-channel sales processes based on target setting standards or transactional events in certain cases that may be managed in real time, for the effective interception of customer needs” - Banca Monte dei Paschi di Siena (Italy)

“We meet these new demands by using emerging technology to lead the way in adopting new innovative services by involving our business clients in our development. We stay close to our customers, let them test new solutions and integrate the customer feedback to innovate and improve.” - Nordea (Sweden)

“We also launched a digital product advisor, which looks at a wide range of client needs, including saving, online shopping and making payments abroad, and offers a product recommendation on that basis. The product advisor makes it easier for our clients to select their banking products.” - Zürcher Kantonalbank (Switzerland)

Customer needs and expectations have changed as a result of digitization and the penetration of technologies in everyday life (Brenner et al. 2014). An important area of action for companies is therefore the ability to understand user needs and align their offerings to this changing behavior of customers (Chaffey 2010; Westerman et al. 2011). The third area of action is Customer Insights, which is mostly enabled through data analytics and entails the use of digital capabilities to aggregate customer data from multiple sources to generate customer knowledge and anticipate future behavior (Westerman et al. 2011).

5.2 Scattered Conduct

In the following second part the nine banks across the three countries in question are compared in how their activities (1) are distributed over the areas of action and digital value disciplines, (2) show a tendency with the mean and (3) present variability with the support of standard deviation (SD). Despite the fact that the sample size at a country level is only three ($N = 3$) and overall nine ($N = 9$), SD is used to understand the shape of distribution, how close individual data values are from the mean value. In context SD provides an indication of how far the banks activities within an area of action vary or deviate from the mean. The data is compared initially on the individual bank level per country to understand the dispersion of data within the country, as to aid the subsequent comparison of the aggregated results on a country level. A higher SD of the mean within an area of action indicates that activities were very polarized among the three banks per country and the distribution or variation is therefore defined as widely spread, scattered or dispersed. It could also mean that one specific bank polarizes significantly, which can simply be recognized through absolute numbers. The following Table 3, Table 4 and Table 5 presents the results of each country per area of action, as to build the base for comparing all the banks and countries with each other.

Italy

Table 3
Number of Activities at the Italian banks

Digital Value Disciplines:	Areas of Action:	UC	ISP	MPS	Total	Mean	SD
IT Platform Excellence	IT Infrastructure	3	12	14	29	9.67	4.784
	Data Management	3	9	1	13	4.33	3.399
	Cyber Security & Risk	1	28	8	37	12.33	11.441
	Automation	2	9	10	21	7.00	3.559
Digital Innovation Leadership	Open Innovation	9	26	4	39	13.00	9.416
	New Product Development	3	30	22	55	18.33	11.324
	Open Banking	7	5	7	19	6.33	0.943
Hybrid Customer Interaction	Digital Channels	6	16	15	37	12.33	4.497
	Customer Insights	2	3	15	20	6.67	5.907
	Customer Process	3	10	9	22	7.33	3.091
Total		39	148	105	292		

Note: N = 3

The results show that the three banks in Italy are setting their strongest focus within New Product Development and secondly within Open Innovation, with a mean of

18.33 and 13.00, respectively. But the number of activities conducted by the banks in the area of Digital Channels, showing the third strongest focus with a mean of 12.33, signifies to be more closely distributed throughout the three banks with a standard deviation of 4.497. Several areas of action are diffused from a country perspective, due to high numbers in activity by the bank Intesa Sanpaolo (IS), as for example within Cyber Security, presenting the highest SD of 11.324. In the area of Data Management all three banks show lower activities in relation to their other areas of action that is reflected in the lowest mean with 4.33. The second lowest area of action presented is the most closely distributed area of Open Banking, where UniCredit, Intesa Sanpaolo and Banca Monte dei Paschi di Siena have conducted 7, 5 and 7 activities respectively.

Sweden

Table 4
Number of Activities at the Swedish banks

Digital Value Disciplines:	Areas of Action:	HB	N	SEB	Total	Mean	SD
IT Platform Excellence	IT Infrastructure	1	17	4	22	7.33	6.944
	Data Management	2	7	5	14	4.67	2.055
	Cyber Security & Risk	8	7	8	23	7.67	0.471
	Automation	4	15	8	27	9.00	4.546
Digital Innovation Leadership	Open Innovation	3	14	15	32	10.67	5.437
	New Product Development	4	11	11	26	8.67	3.300
	Open Banking	1	5	8	14	4.67	2.867
Hybrid Customer Interaction	Digital Channels	10	14	9	33	11.00	2.160
	Customer Insights	4	6	6	16	5.33	0.943
	Customer Process	4	12	7	23	7.67	3.300
Total		41	108	81	230		

Note: N = 3

Most activities conducted by the Swedish banks could be found in the area of Digital Channels with an SD of 2.160. Open Innovation ranks second overall with 10.67 activities conducted on average and Handelsbanken carrying a weight on the wide dispersion with its three activities only. The lowest frequency of activities is exhibited by Data Management and Open Banking with the same mean of 4.67, with Handelsbankens' activities being scattered in the lower end for both areas with only two and one activity in each. Not far with 5.33 activities on average, Customer Insights is the third lowest area of action, showing a homogenous distribution with an SD of 0.943.

Switzerland

Table 5
Number of Activities at the Swiss banks

Digital Value Disciplines:	Areas of Action:	UBS	CS	ZKB	Total	Mean	SD
IT Platform Excellence	IT Infrastructure	4	4	8	16	5.33	1.886
	Data Management	5	6	2	13	4.33	1.700
	Cyber Security & Risk	6	16	12	34	11.33	4.110
	Automation	5	6	2	13	4.33	1.700
Digital Innovation Leadership	Open Innovation	5	6	23	34	11.33	8.260
	New Product Development	10	4	7	21	7.00	2.449
	Open Banking	1	0	4	5	1.67	1.700
Hybrid Customer Interaction	Digital Channels	14	7	8	29	9.67	3.091
	Customer Insights	5	2	2	9	3.00	1.414
	Customer Process	4	3	5	12	4.00	0.816
Total		59	54	73	186		

Note: N = 3

Activities in the areas of Cyber Security & Risk and Open Innovation are the highest among the three Swiss banks, totaling with 34 activities for each area. UBS presenting a conduct of 6 activities within Cyber Security & Risk and 5 activities in Open Innovation, is positioned at the lower end of the spectrum, unlike Zürcher Kantonalbank, accounting for accumulated 35 activities combined. The second highest activities on average are visible within the area of Digital Channels, where the data reveals a conduct of 14 activities by UBS, 7 by Credit Suisse and 8 by Zürcher Kantonalbank. The number of activities in the field of open banking are the lowest, with an average of 1.67, of which Credit Suisse has reported no activity, UBS only one and ZKB 5. With the same SD of 1.7, Automation shows the second lowest number of activities with an average of 4.33.

5.2.1 From South- to North- to Central Europe

In this subsection the descriptive statistics for the nine areas of action and its subordinated digital value disciplines from an aggregated country perspective are displayed in the table below.

Table 6

Descriptive statistics: Banks in Italy, Sweden and Switzerland. In the table below the accumulation of activities, the mean and the SD is presented per country by its three banks. Further on the overall ratio is presented as to describe the proportion of activities for each area aggregated from all countries, the mean of activities of all countries per area and the SD across the aggregated scores between the three countries. The Overall SD exhibits how dispersed the focus of area across the three countries is.

Digital Value Disciplines:		Italy			Sweden			Switzerland			Overall		
Areas of Action:		Score	Mean	SD	Score	Mean	SD	Score	Mean	SD	Ratio	Mean	SD
	IT Infrastructure	29	9.67	4.78	22	7.33	6.94	16	5.33	1.89	9.46%	22.33	5.31
IT Platform Excellence	Data Management	13	4.33	3.40	14	4.67	2.05	13	4.33	1.70	5.65%	13.33	0.47
	Cyber Security & Risk	37	12.33	11.44	23	7.67	0.47	34	11.33	4.11	13.28%	31.33	6.02
	Automation	21	7.00	3.56	27	9.00	4.55	13	4.33	1.70	8.62%	20.33	5.73
Digital Innovation Leadership	Open Innovation	39	13.00	9.42	32	10.67	5.44	34	11.33	8.26	14.83%	35	2.94
	New Product Development	55	18.33	11.32	26	8.67	3.30	21	7.00	2.45	14.41%	34	14.99
	Open Banking	19	6.33	0.94	14	4.67	2.87	5	1.67	1.70	5.37%	12.67	5.79
Hybrid Customer Interaction	Digital Channels	37	12.33	4.50	33	11.00	2.16	29	9.67	3.09	13.98%	33	3.27
	Customer Insights	20	6.67	5.91	16	5.33	0.94	9	3.00	1.41	6.36%	15	4.55
	Customer Process	22	7.33	3.09	23	7.67	3.30	12	4.00	0.82	8.05%	19	4.97
	Total Mean	292		5.84	230		3.20	186		2.71			5.4

Note: N = 9.

Table 6 shows that the total score of activities at the Italian banks to be the highest with 292, with Sweden to be mid-table with 230 and Switzerland to rank the lowest with 186. The aggregated activities of the Italian banks show for all areas of action the highest scores except for Data Management, Automation and Customer Process Digitalization. The aggregated activities within the areas of action in Switzerland show in all areas the lowest score, except for Cyber Security and Open Innovation, which rank mid-table. The homogeneity within the areas of action of a country, presented with the key figure of SD show the closest variation within the Swiss banks with five areas presenting the lowest number than compared to the Sweden and Italy. And none of the other areas of action from the Swiss banks exhibits the widest variation, but rank mid-table. Whereas the aggregated SD of the Italian banks present the widest variation in six areas. This has been mainly caused by the polarizing effect of the high number of the reported digital activities bank from Intesa Sanpaolo, blurring the interpretation for Italy. These results are reflected and summarized with the mean for each of the countries' standard deviations for Italy with 5.84, for Sweden with 3.20 and Switzerland with 2.71. From the overall industry perspective the Open innovation area of action shows the strongest focus with a ratio of 14.83% and is homogenous across the countries by the numbers of activities of 39, 32 and 34. This close distribution is reflected as well with the low standard deviation (relative to the overall mean of 5.4) of 2.94. Further on the second strongest focus in an area by all banks across the three countries is, as already noted, the widely scattered New Product Development, exhibiting at industry-level a standard deviation of 14.99. The area of Digital Channels exhibits a similar result as Open Innovation with a focus of 13.98%, ranking it as third, and a below mean distribution of 3.27. These two dominant areas of action, Open Innovation and Digital Channels, present however another view of distribution at the bank level for each country. The standard deviation for each country in the area of Open Innovation is above the standard deviation mean of the concerning country mean, in Italy $9.42 > 5.84$, in Sweden $5.44 > 3.20$ and in Switzerland $8.26 > 2.71$. This presents therefore a nuanced view of whether the area of Open Innovation is representative for each country, since the variations between the banks are spread above-mean. The strongly focused area of Digital Channels on the other side shows only a slight above-mean distribution in Switzerland with 3.09 being higher than 2.71. The lowest number of activities overall is within the area of Data Management, with SD at country level being below its mean as well as overall showing the lowest dispersion with an SD of 0.47. The second lowest number of activities is shown by the area of Customer Insights that seems dispersed within Italy only but below the overall mean of the SD with 4.55.

5.2.2 Digital Value Discipline Focus

For the Figure 2 below key figures are presented in percent, in order to show the proportional focus of each of the nine banks within the Digital Value Discipline. In Italy, UniCredit has the strongest focus on Digital Innovation Leadership (DIL) with 49%, as well as Intesa Sanpaolo with 41% but not significantly more than its activities within IT platform Excellence (ITP), accounting for 39% of all activities. Banca Monte dei Paschi di Siena is the most balanced throughout the three disciplines with 39% in Hybrid Customer Interaction (HCI) and for DIL and HCI each 33%. Sweden and Switzerland show for each discipline a bank focusing on more. In Sweden, Handelsbanken is committed with 44% of its digital activities to HCI, Nordea with 43% to ITP and the bank SEB focuses mostly on DIL with 42%. In Switzerland UBS is the most balanced across the disciplines with a slightly higher focus on digital activities related to HCI. Credit Suisse shows the strongest proportional emphasis across all banks with 59% of its activities being related to ITP. ZKB is conducting 47% of its activities in the discipline of DIL.

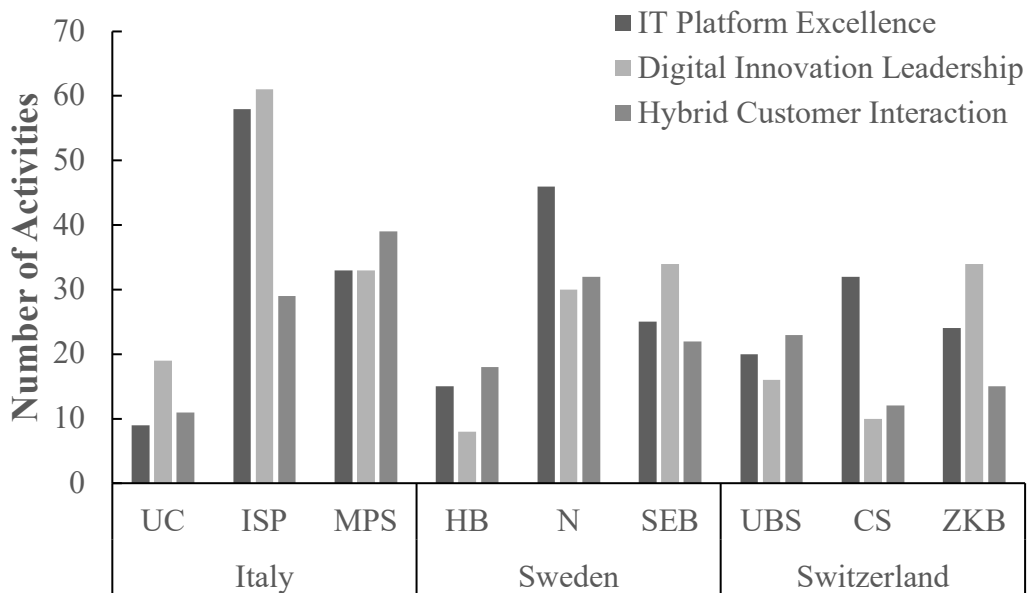


Figure 2. Digital Value Discipline Focus per bank in each country measured by numbers of activities

6 Discussion

This section discusses and reflects upon the findings of this investigation according to the stated research questions, followed by theoretical and practical implications, limitations, and finally gives suggestions for future research.

This paper aims to contribute to the digital business strategy perspective by making a comparative study on the *scope* of the digital activities of nine major European banks in Sweden, Switzerland and Italy. To investigate and compare scope in digital business strategy, this paper develops three *digital value disciplines* and sub-categories *areas of action*. The questions guiding this investigation are: 1. *What portfolios of digital activities do the banks conduct to build digital business strategy?* 2. *How do these portfolios of digital activities differ across markets?*

This paper finds that the the three leading banks in each of the studied countries; Italy, Sweden and Switzerland, are actively building portfolios consisting of ten areas of action within three digital value disciplines as part of their digital business strategy. The paper also finds that in regards to the second research question, the focus of the portfolios of digital activities that banks are building differ between each market and also between each bank in each market.

Research question 1: What portfolios of digital activities do the banks conduct to build digital business strategy?

The studied banks are actively building portfolios within ten areas of action as part of their digital business strategy. The revealing of the areas of action and the categorization of them within the three digital value disciplines within the theoretical framework section (section 3) is the main theoretical contribution of this study. The ten areas of action allow a granular view on the activities that banks undertake when scoping in digital business strategy, i.e. building digital options in order to adapt to an uncertain market environment brought about by the increasing prevalence of digital technologies. The investigation revealed a varying array of activities providing an understanding of innovation taking place in the back and front facing products and services, but fails to reveal in an explicit way the more abstract activities and capabilities such as innovation culture, digital culture and digital skills within the banks organisations. The activities were found mentioned only in very few instances across all annual reports and so were not included in the final areas of action as categories. In the example of culture, this may be due to the nature of culture as a somewhat abstract phenomena and therefore not prioritized to be included in a corporate

document such as annual reports, where the focus lies mainly on reporting achievements, strategy and financial results. The areas of action that were revealed are otherwise found to be on a general level across banks quite diverse with digital activities being undertaken in both the front end customer facing side and the backend internal processes side of the banks. A discussion on the difference between each bank and each country will be explored further in the next section.

Research question 2: How do these portfolios of digital activities differ across markets?

This study demonstrates that all banks conduct a broad area of digital activities, in which they inherently distinguish themselves, but have a lot of catching up to do in different areas before they can actually embrace a mature digital business strategy. Even the most heavily involved in digital activities engaged banks, those reporting over 100 activities, are limited in performing in some areas of action. Open Banking, being such an area that is comprised of horizontally or vertically integrating third-party technologies and postulates, as the name implies, to open up APIs. Therefore one of the managerial implications of this study is that if banks really want to emphasize their excellence in the Digital Innovation Leadership discipline, they need to inter-exchange capabilities across their organizations boundaries and explore their surrounding technological ecosystem. From the highest frequency in activities in Open Innovation, it can be derived that banks are strongly conducting activities across their organization boundaries to increase inter-exchange knowledge with for example innovation hubs and universities with a similar focus in all three countries. In contrast to Open Banking this means, that banks rather obtain knowledge and innovations from their ecosystem, to further develop inhouse than enterin a partnership with a thirdparty to integrate their technological capabilities. Certain presented prominent characteristics in their frequency of activities. Intesa SanPaolo with strong numbers in most areas of action permits to assume that this bank has a more mature digital business strategy. UniCredit shows the lowest number of digital activities among all banks, but it was noted throughout the data deduction process that content relating to digitalization was prominent at best related to their current digital strategic focus. Those statements could be described as aspirational and general. One could assume from the low number of digital activities that their digital business strategy is not strongly developed, but since the data is based from annual reports from 2016 until 2018, it cannot be precluded that significant activities and investments had not already been performed before that. Nevertheless, even if the data provides information at best about the increasing digital strategic focus, reporting so little in digital activities signifies a lack of current digital business strategy pursuit or a lack of priority in communicating such conduct. The very few reported digital activities by Handelsbanken and Credit Suisse within Digital Innovation Leadership could be ascribed to their different type of business they pursue. Their focus on Corporate and

Investment Banking might imply higher Economies of scope in regards of serving customers increasingly face-to-face, which then could indicate a lower need for a digitalized products and front-office. This study at large offered a varied view of which Digital Value Disciplines the the nine banks are pursuing mainly. There is no trend of a Digital Value Discipline to be of prominent focus within the overall banking industry, when accounting for each banks focus. Still the highest number of activities of all banks combined indicate that IT Platform Excellence is the dominant discipline.

Theoretical implications

Our study proves that areas of actions are a sound lens through which to study scope in digital business strategy and therefore adds to the body of knowledge on how to study scope. With the combination of the emergence of data and value disciplines we contributed to how activities can be viewed as strategy execution determinants and therefore define strategy.

Activities that are allocated in one discipline and more in detail in one area of action have not been distinguishable continually. The boundaries were blurred when for example an activity described the streamlining of processes due to a new tool offering a greater customer experience. Whereas the streamlining of processes would refer to the area of action Automation within the IT platform excellence discipline, the development of a new tool relates to a New Product Development within the Digital Innovation Leadership principle and the goal of customer experience would be assigned to Customer Process Digitalization within the Hybrid Customer Interaction discipline. Numerous activities exemplified the difficulty to allocate them in only one discipline and even one area of action. This does not inevitably constitute a weakness in the use of the framework, but rather indicates how blurred the lines can be and how converged activities can become through the digital layer. As such the findings rather constitute a weakness in the frameworks assumption that businesses ought to excel on one value discipline only to gain and sustain competitive advantage. At the very least it challenges this assumption for further research on whether it is a necessity to focus on only one strategy and whether the competitive landscape in the digital era and the changing customer needs demand excellence in all three disciplines. Our results indicate the dynamics of using IT to facilitate the pursuit of all three disciplines at the same time.

Practical implications

An important point to be made is that banks have to pursue all digital value disciplines, therefore, they have to pursue activities in all areas of action. It is especially not abundant to excel in one Digital Value Discipline by emphasizing just part of its

subordinated areas of action and leaving another part unaffected. Although the hurdles of regulation particularly within the banking industry are of substantial nature, hindering such activities and could be an explanation for the results. This is particularly evident in the here assumed effects on cyber & security. For example, the high levels of regulation through several systems and mechanisms of self-monitoring of the data subject, self-regulation of the bank and third-party control by independent state supervisory authorities are prompting banks to constantly meet the new challenges of emerging technologies. Banks especially are commonly known to have high requirements about accessing data for consent and principles for transferring information about clients' assets to foreign countries. In the absolute performance of the examined banks this significance is evident.

Limitations

Sample size

The relatively small sample size of nine banks and their annual reports has some implications for the statistical comparison that was performed. In context of the results a sample size of 50 would serve the purpose of quantitatively measuring the scope of portfolios, organizations conduct.

Reliability of the data

A challenge of the analysis process laid in the occasional tendency of annual reports to describe the same activity with different language in different sections. Close attention had to be paid to this, in order to not include double-entries. When for example a continuous effort in some activity was described that related to a previously mentioned similar activity, it was counted as an additional activity, since it highlighted its importance and implied additional subsequent efforts in the concerning area of action. However it should be acknowledged that for example one bank's data revealing the launch of an mobile banking app in 2016 and then revealing in 2017 that further upgrades or rollouts into other countries of the concerning app were made, resulted in a multiple enumeration of those activities in the findings. Also, since one focus of the study was to ascertain the predominant areas of action, scraping together all IT-related activities was not possible, due to their relatively low significance. Also, making sense of the labels, that resulted in the areas of action, by searching through the data, yielded early on in the data analysis to a preconceived notion by the authors, in expecting a high number of operations related activities. This bias might have affected the coding of the data.

Suggestions for Further Research

Soft factors

The methodology presented here can be seen as an attempt to measure digital business strategy, which can be single-sided. It does not include soft factors which, from the authors' experience during data analysis, are hardly reported by banks in annual reports, or when reported are of an aspirational nature. This study recognizes for example employee characteristics and skills, internal organizational change or changing work methodology, and other contextual issues relevant to understanding and distinguishing the digital business strategy. These factors should be included in future studies.

Comparing annual reports and other sources

Another relevant study would be to compare the digital activities within the areas of action that banks have included in their reports, with news or other publications and interviews with the aim of evaluating an eventual disconnect of what is being stated in the annual reports and what is being stated in the other mediums.

Theory validation

Further research on whether it is a necessity to focus on only one strategy and whether the competitive landscape in the digital era and the changing customer needs demand excellence in all three disciplines.

7 Conclusion

Digitalization is changing business practices through new innovative technologies, and the traditional banking industry has begun to accept and adopt this reality. A strong focus is still on the use of data and increasing computerization for the purpose of process automation and efficiency enhancement, driven by high regulatory requirements and, more recently, the pressure of more affordable services from Fintech firms. Banks need to significantly strengthen their position in an increasingly overlapping digital financial ecosystem. With recent regulatory changes in the EU driving the opening of APIs to third-party providers, traditional banks are called upon to develop a sense of urgency in their organization to cope with the changing market environment. This study shows that banks however have yet to find their sense of urgency in increasing their activities within Open Banking and as such to increase the relevance of this area of action for their digital business strategy. In regards to the digital business strategy it is further important to highlight the strong interplay between the the digital value disciplines. For example, if companies digitally reshape their customer experience, they might have to reshape their operations, which might also affect their digital innovation capabilities. Thus, there is a blurred boundary between the IT-induced changes and the consequently impacted areas as they cross firm's value chains and their entire value system. As firms become more digital and rely more on information, connectivity and other digital functionalities, digital business strategy will become the business strategy. This view could gain validity in using our proposed framework to capture how isolated or how blurred digital business strategy is executed.

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